



# 1901 Alton

Miami Beach, Florida 33139

prepared for:

**Crecent Heights**

traffic study

October 9, 2023

Mr. Graham Penn  
Bercow Radell & Fernandez, P.A.  
200 S. Biscayne Boulevard, Suite 850  
Miami, Florida 33131

**Re: 1901 Alton - Traffic Study**

Dear Graham:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study associated with the proposed 1901 Alton development planned to be located at 1901 Alton Road in the City of Miami Beach in Miami-Dade County, Florida.

It has been a pleasure working with you on this project.

Sincerely,

**TRAF TECH ENGINEERING, INC.**

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

## INTRODUCTION

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1901 Alton is a proposed development planned to be located at 1901 Alton Road in the City of Miami Beach in Miami-Dade County, Florida. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. was retained by Crescent Heights to conduct a traffic study<sup>1</sup> in connection with the proposed development. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Impact Analysis
7. Conclusions and Recommendations

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<sup>1</sup> The traffic methodology was discussed and agreed with the City of Miami Beach staff.





## INVENTORY

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### **Existing Land Use**

6,654 square feet of Drive-in Bank

### **Proposed Land Uses and Access**

The 1901 Alton project consists of the following land use and intensity:

- 34,953 square foot Supermarket
- 3,908 square foot Walk-in Bank

The access to the project's proposed parking garage will consist of the following:

- Full access driveway off of 19<sup>th</sup> Street

Appendix A contains a copy of the proposed site plan for the project site.

## EXISTING CONDITIONS

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This section addresses the existing roadway system located in the vicinity of the project site and nearby intersections.

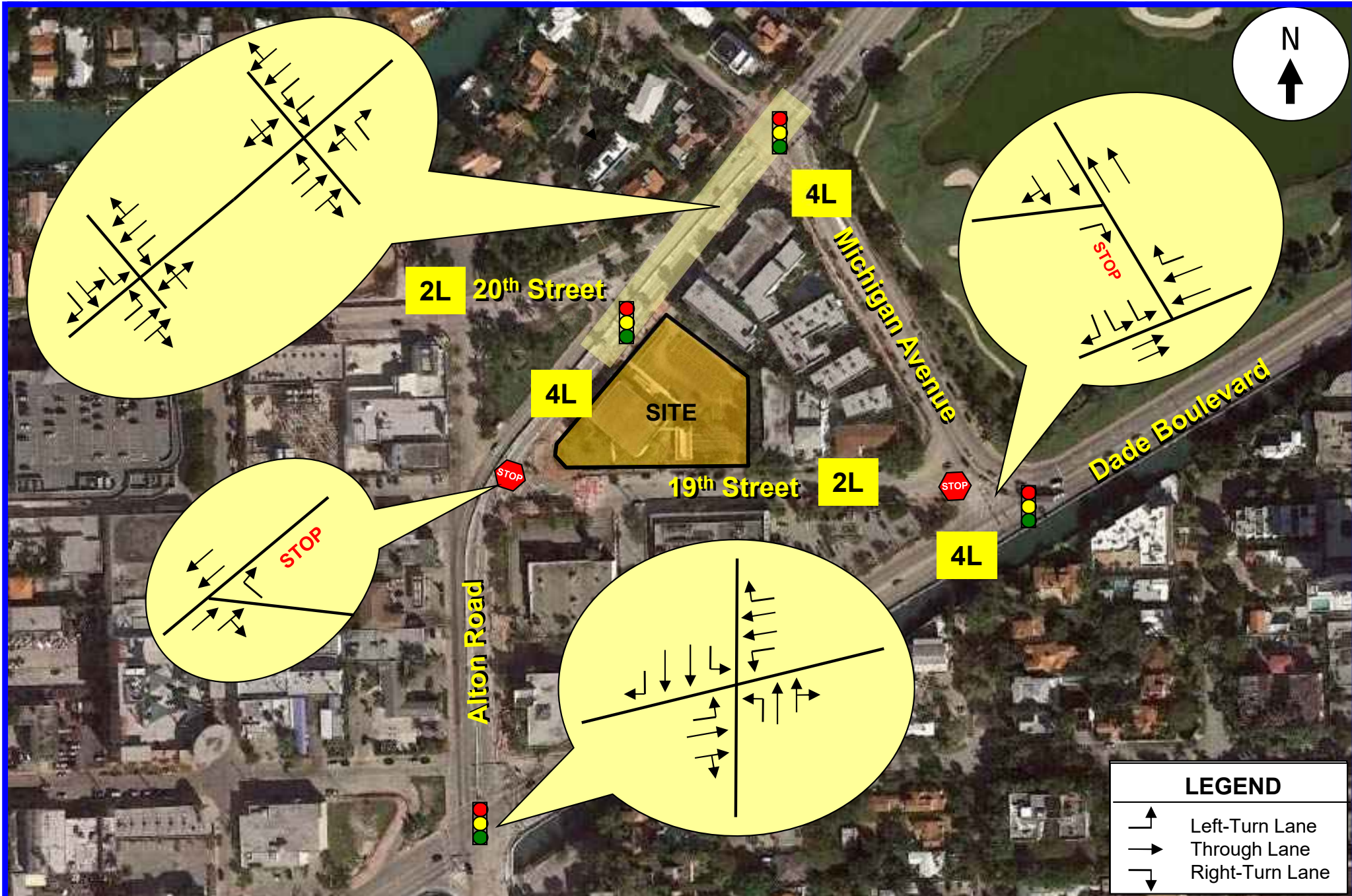
### **Roadway System**

The roadway system located near the project site includes Alton Road, Michigan Avenue, 20<sup>th</sup> Street, 19<sup>th</sup> Street, and Dade Avenue. Near the project site, Alton Road, Michigan Avenue, and Dade Boulevard are four-lane facilities, while 20<sup>th</sup> Street and 19<sup>th</sup> Street, are two-lane facilities.

### **Nearby Intersections**

With the assistance of City of Miami Beach staff, five intersections (plus the future access driveway) were identified as the locations that will be impacted the most by the proposed project. These intersections include Alton Road and Michigan Avenue, Alton Road and 20<sup>th</sup> Street, Alton Road and 19<sup>th</sup> Street, Alton Road and Dade Boulevard, and Michigan Avenue and Dade Boulevard.

Figure 2 shows the existing lane geometry of the five intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in the figure.



## TRAFFIC COUNTS

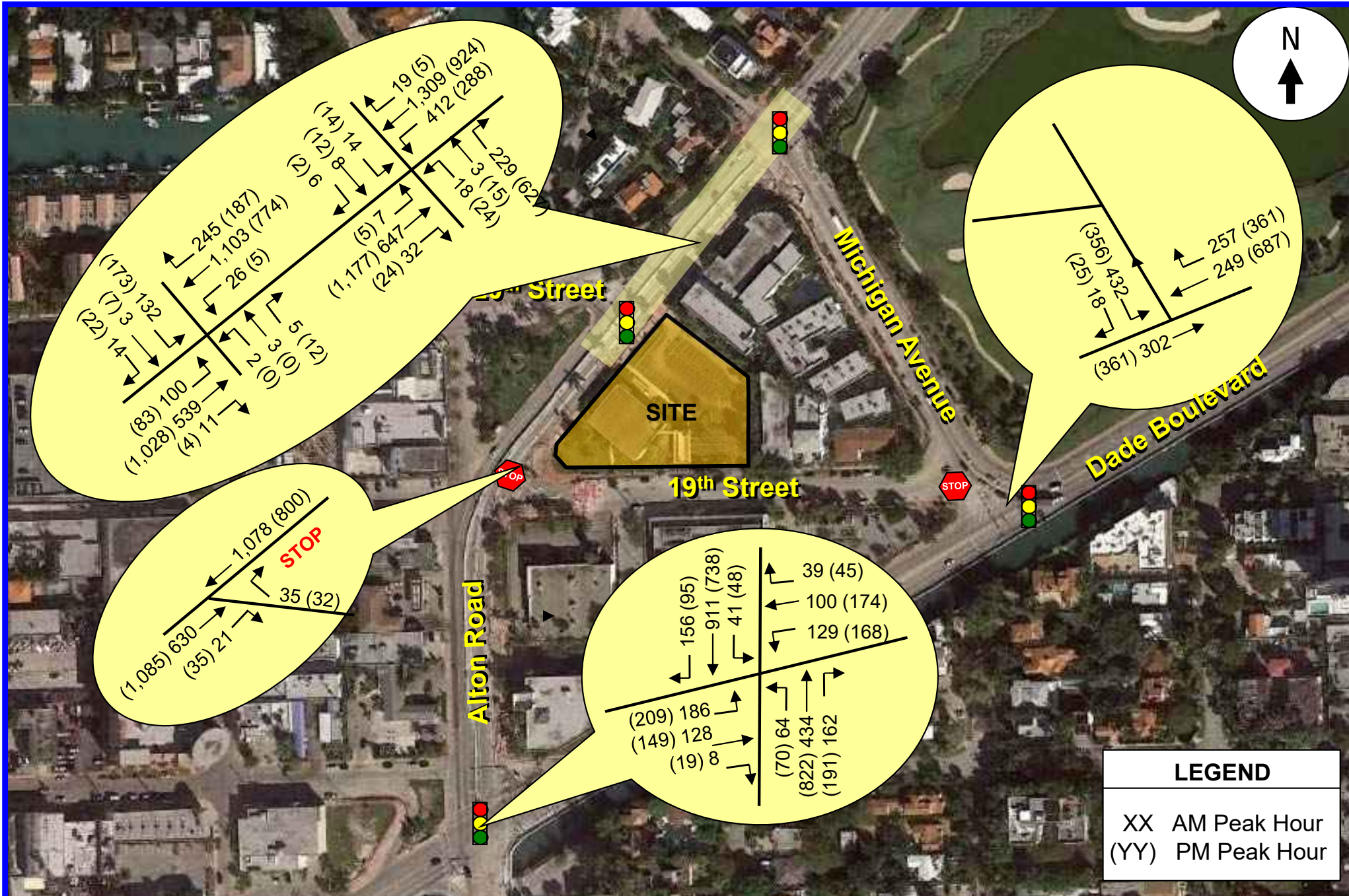
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Traf Tech Engineering, Inc., collected intersection turning movement counts at the six study intersections. The intersection turning movement counts were collected on Wednesday, August 9, 2023 from 7:00 AM and 9:00 AM and from 4:00 PM and 6:00 PM at the following intersections located near the project site:

1. Alton Road and Michigan Avenue (signalized intersection)
2. Alton Road and 20<sup>th</sup> Street (signalized intersection)
3. Alton Road and 19<sup>th</sup> Street (stop controlled)
4. Alton Road and Dade Boulevard (signalized intersection)
5. Michigan Avenue and Dade Boulevard (Signalized)

Figure 3 summarizes the results of the intersection turning movement counts undertaken during the weekday peak hours. Appendix B contains the intersection turning movement counts, as collected in the field. The signal timing plan for the signalized intersections were obtained from the Miami-Dade County's web site.





## TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (11<sup>th</sup> Edition). According to the subject ITE manual, the most appropriate "land use" categories for existing and proposed land uses include Land Use 912 – Drive-in Bank, Land Use 850 – Supermarket, and Land Use 911 – Walk in Bank.

The trip generation analysis was undertaken for Daily, AM peak hour, and PM peak hour conditions. Using the trip generation equations from the ITE document, a trip generation analysis was undertaken for the proposed project. The results of this effort are documented in Table 1.

| TABLE 1<br>Trip Generation Summary (Existing Use)<br>1901 Alton |          |             |              |           |           |              |           |           |
|-----------------------------------------------------------------|----------|-------------|--------------|-----------|-----------|--------------|-----------|-----------|
| Land Use                                                        | Size     | Daily Trips | AM Peak Hour |           |           | PM Peak Hour |           |           |
|                                                                 |          |             | Total Trips  | Inbound   | Outbound  | Total Trips  | Inbound   | Outbound  |
| Drive-in Bank (LUC 912)                                         | 6,654 sf | 668         | 66           | 38        | 28        | 140          | 70        | 69        |
| <b>External Trips</b>                                           |          | <b>668</b>  | <b>66</b>    | <b>38</b> | <b>28</b> | <b>139</b>   | <b>70</b> | <b>69</b> |

Source: ITE Trip Generation Manual (11th Edition)

| TABLE 1<br>Trip Generation Summary (Proposed Uses)<br>1901 Alton |           |              |              |           |           |              |            |            |
|------------------------------------------------------------------|-----------|--------------|--------------|-----------|-----------|--------------|------------|------------|
| Land Use                                                         | Size      | Daily Trips  | AM Peak Hour |           |           | PM Peak Hour |            |            |
|                                                                  |           |              | Total Trips  | Inbound   | Outbound  | Total Trips  | Inbound    | Outbound   |
| Supermarket (LUC 850)                                            | 34,953 sf | 3,454        | 101          | 60        | 41        | 314          | 157        | 157        |
| Walk in Bank (LUC 911)                                           | 3,908 sf  | n/a          | n/a          | n/a       | n/a       | 48           | 21         | 27         |
| <b>External Trips</b>                                            |           | <b>3,454</b> | <b>101</b>   | <b>60</b> | <b>41</b> | <b>362</b>   | <b>178</b> | <b>184</b> |

Source: ITE Trip Generation Manual (11th Edition)

| Difference          | Daily Trips | AM Peak Hour |         |          | PM Peak Hour |         |          |
|---------------------|-------------|--------------|---------|----------|--------------|---------|----------|
|                     |             | Total Trips  | Inbound | Outbound | Total Trips  | Inbound | Outbound |
| Proposed - Existing | 2,786       | 35           | 22      | 13       | 223          | 108     | 115      |

As indicated in Table 1, the proposed project is anticipated to generate approximately 2,286 new daily trips, approximately 35 AM peak hour trips (22 inbound and 13 outbound) and approximately 223 trips during the typical afternoon peak hour (108 inbound and 115 outbound).

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## TRIP DISTRUBUTION AND TRAFFIC ASSIGNMENT

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The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone 634, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

| <b>TABLE 2</b><br><b>Project Trip Distribution</b><br><b>TAZ #634 for 1901 Alton</b> |                 |            |            |            |            |            |            |            |
|--------------------------------------------------------------------------------------|-----------------|------------|------------|------------|------------|------------|------------|------------|
| <b>Year</b>                                                                          | <b>Movement</b> |            |            |            |            |            |            |            |
|                                                                                      | <b>NNE</b>      | <b>ENE</b> | <b>ESE</b> | <b>SSE</b> | <b>SSW</b> | <b>WSW</b> | <b>WNW</b> | <b>NNW</b> |
| 2015                                                                                 | 16.6%           | 1.2%       | 2.7%       | 9.3%       | 19.0%      | 21.3%      | 10.8%      | 19.1%      |
| 2045                                                                                 | 14.3%           | 0.8%       | 1.5%       | 7.9%       | 16.7%      | 27.8%      | 13.6%      | 17.4%      |
| 2026*                                                                                | 15.8%           | 1.1%       | 2.3%       | 8.8%       | 18.2%      | 23.7%      | 11.8%      | 18.5%      |

*Note: \* Interpolated Values*

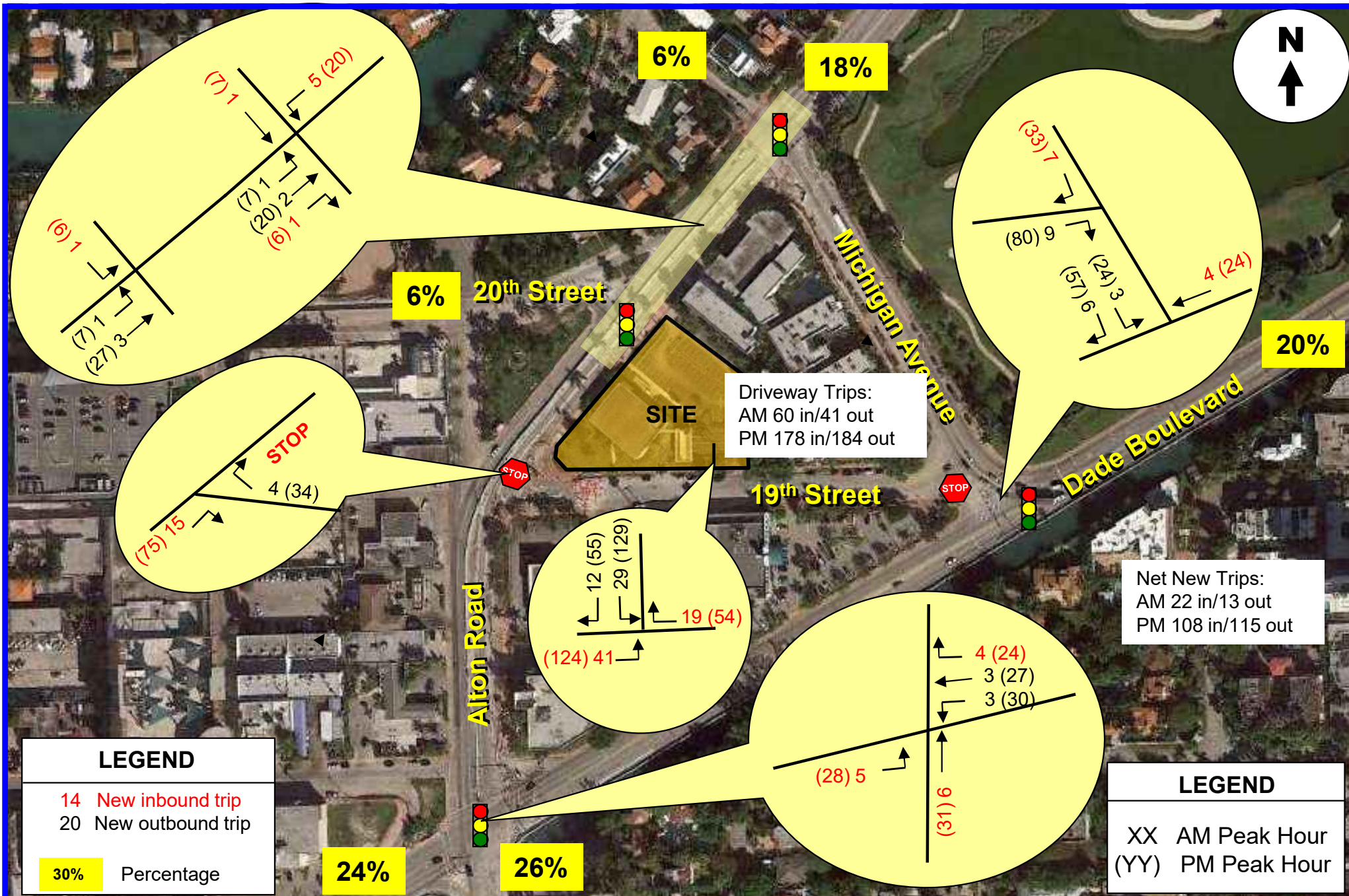
*Source: Miami-Dade County (2015 & 2045 SERPM)*

Using the trip distribution documented in Table 2, the following traffic assignment was assumed for the proposed development:

- o 18% to and from the north via Alton Road
- o 20% to and from the north via Dade Boulevard
- o 6% to and from the west via Michigan Avenue
- o 6% to and from the west via 20<sup>th</sup> Street
- o 26% to and from the south north via Alton Road
- o 24% to and from the south via Dade Boulevard

The new peak hour traffic generated by the project was assigned to the nearby transportation network using the traffic assignment documented above. The new project traffic assignment is summarized in Figure 4.







## TRAFFIC ANALYSIS

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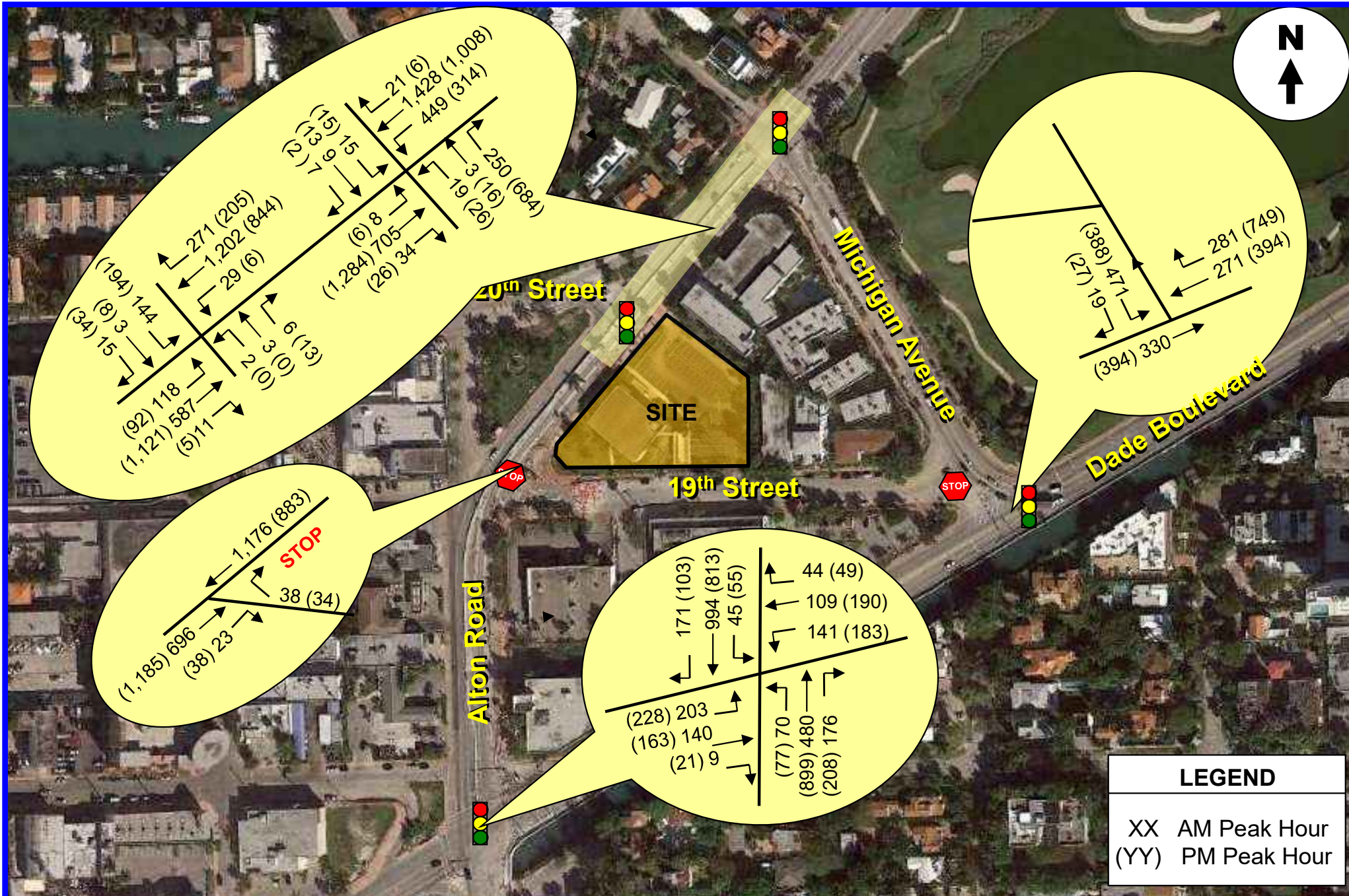
This section of the study is divided into two parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions.

### **Future Conditions Traffic Volumes**

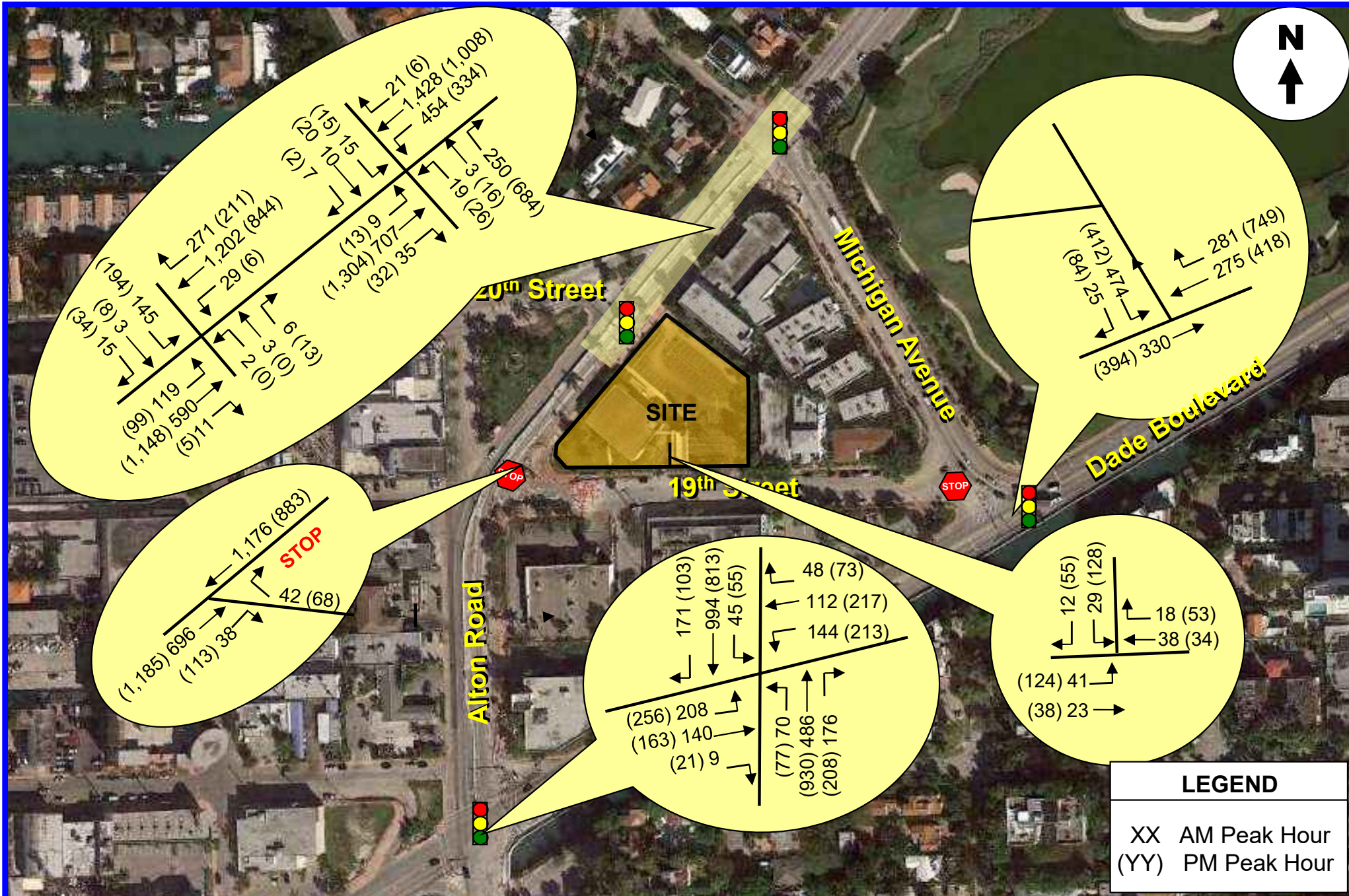
Two sets of future traffic volumes were developed. The first set includes project buildout conditions without the proposed project and the second set adds the new trips anticipated to be generated by the project.

In order to develop year 2026 traffic volumes (project anticipated to be built and occupied by the year 2026), without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field to average peak season conditions. Based on FDOT's Peak Season Factor Category report, a factor of 1.05 is required to convert collected traffic counts to average peak season conditions (refer to Appendix C). The second analysis includes a growth factor to project 2023 peak season traffic volumes to the year 2026. Based on traffic growth data published by the FDOT for a nearby traffic count stations, traffic growth has not occurred in the area. As documented in the historical and future growth analysis contained in Appendix C, a growth rate of 2.9%, compounded annually was used. In addition, project trips from committed development 1920 Alton Road were included.

The new trips generated by the proposed project (refer to Figure 4) were added to the 2026 background traffic in order to develop total traffic conditions. The future traffic projections for the study intersections are presented in tabular format in Appendix D. Figures 5 and 6 present the year 2026 future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the project.









## Level of Service Analyses

Intersection capacity/level of service analyses were conducted for the six study intersections. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCM) 6<sup>th</sup> Edition using the SYNCHRO software. The results of the capacity analyses are summarized in Tables 3A and 3B.

| TABLE 3A<br>AM Peak Hour Intersection Capacity Analysis<br>1901 Alton Road |              |                             |                |        |        |        |
|----------------------------------------------------------------------------|--------------|-----------------------------|----------------|--------|--------|--------|
| Intersection                                                               | Scenario     | Overall LOS/<br>Delay (sec) | Approach Delay |        |        |        |
|                                                                            |              |                             | EB             | WB     | NB     | SB     |
| 101: Alton Rd & N Michigan Ave                                             | Existing     | B/17.9                      | E/68.3         | E/67.5 | A/1.9  | C/22.7 |
|                                                                            | Background   | B/18.4                      | E/68.4         | E/67.5 | A/2.1  | C/23.5 |
|                                                                            | Future       | B/18.6                      | E/68.5         | E/67.5 | A/2.2  | C/23.7 |
| 102: Alton Rd & 20 St/Sunset Harbour Dr                                    | Existing     | B/15.8                      | E/70.6         | E/72.1 | A/6.3  | B/13.9 |
|                                                                            | Background   | B/18.0                      | E/70.5         | E/72.1 | A/7.3  | B/17.1 |
|                                                                            | Future       | B/17.2                      | E/70.8         | E/72.1 | A/7.3  | B/15.8 |
| 103: Alton Rd & 19 St                                                      | Existing     |                             |                | A/9.2  |        |        |
|                                                                            | Background   |                             |                | A/9.4  |        |        |
|                                                                            | Future       |                             |                | A/9.4  |        |        |
| 104: Alton Rd & Dade Blvd                                                  | Existing     | C/28.1                      | E/72.7         | E/58.4 | B/14.3 | B/17.5 |
|                                                                            | Background   | C/29.8                      | E/78.5         | E/58.6 | B/15.5 | B/18.7 |
|                                                                            | Future       | C/30.5                      | F/82.1         | E/58.9 | B/15.6 | B/18.7 |
|                                                                            | Future + Opt | C/29.9                      | E/76.9         | E/60.4 | B/15.6 | B/18.5 |
| 105: Dade Blvd & Michigan Ave                                              | Existing     | B/19.8                      | A/6.9          | A/3.7  |        | D/46.5 |
|                                                                            | Background   | B/19.7                      | A/7.7          | A/4.1  |        | D/45.3 |
|                                                                            | Future       | B/19.7                      | A/7.8          | A/4.2  |        | D/44.8 |
| 19 St & Driveway                                                           | Existing     |                             |                |        |        |        |
|                                                                            | Background   |                             |                |        |        |        |
|                                                                            | Future       |                             |                |        |        | A/8.7  |

Source: Highway Capacity Manual 6<sup>th</sup> Edition and HCM 2000

| TABLE 3B<br>PM Peak Hour Intersection Capacity Analysis<br>1901 Alton Road |              |                             |                |        |        |        |
|----------------------------------------------------------------------------|--------------|-----------------------------|----------------|--------|--------|--------|
| Intersection                                                               | Scenario     | Overall LOS/<br>Delay (sec) | Approach Delay |        |        |        |
|                                                                            |              |                             | EB             | WB     | NB     | SB     |
| 101: Alton Rd & N Michigan Ave                                             | Existing     | B/13.4                      | E/65.8         | E/66.5 | A/2.1  | C/21.6 |
|                                                                            | Background   | B/13.6                      | E/65.8         | E/66.7 | A/2.6  | C/21.6 |
|                                                                            | Future       | B/14.3                      | E/66.2         | E/66.6 | A/3.3  | C/22.4 |
| 102: Alton Rd & 20 St/Sunset Harbour Dr                                    | Existing     | B/15.0                      | E/70.9         | E/71.0 | A/7.7  | B/11.0 |
|                                                                            | Background   | B/16.2                      | E/71.1         | E/71.0 | A/8.6  | B/12.0 |
|                                                                            | Future       | B/15.6                      | E/71.1         | E/71.0 | A/8.8  | B/10.7 |
| 103: Alton Rd & 19 St                                                      | Existing     |                             |                | B/10.3 |        |        |
|                                                                            | Background   |                             |                | B/10.6 |        |        |
|                                                                            | Future       |                             |                | B/11.2 |        |        |
| 104: Alton Rd & Dade Blvd                                                  | Existing     | C/33.8                      | F/80.8         | E/58.4 | C/22.0 | B/19.6 |
|                                                                            | Background   | D/37.6                      | F/96.6         | E/60.7 | C/24.8 | C/20.7 |
|                                                                            | Future       | D/45.0                      | F/133.4        | E/69.0 | C/25.4 | C/20.7 |
|                                                                            | Future + Opt | D/39.5                      | F/80.0         | E/60.8 | C/29.9 | C/24.6 |
| 105: Dade Blvd & Michigan Ave                                              | Existing     | B/12.6                      | A/5.8          | A/2.8  |        | D/46.0 |
|                                                                            | Background   | B/12.6                      | A/6.6          | A/3.1  |        | D/44.4 |
|                                                                            | Future       | B/13.6                      | A/7.1          | A/3.4  |        | D/42.7 |
| 19 St & Driveway                                                           | Existing     |                             |                |        |        |        |
|                                                                            | Background   |                             |                |        |        |        |
|                                                                            | Future       |                             |                |        |        | B/10.7 |

Source: Highway Capacity Manual 6<sup>th</sup> Edition and HCM 2000

As indicated in Tables 3A and 3B, all study intersections are currently operating adequately and will continue to operate at a good level of service in the year 2026 with the proposed project in place, except for one intersection.

The exception is the intersection of Alton Road and Dade Boulevard. This intersection is projected to fail under future conditions with the proposed project in place. However, with the implementation of minor signal timing improvements, the delay and LOS are expected to improve.

The proposed driveway was also evaluated, and the results show adequate operating conditions (refer to SYNCHRO analyses at the end of Appendix E).

Table 3C summarizes the 95<sup>th</sup> percentile vehicle queues for the turn lanes at the intersections affected by the project. The table includes the existing turn lane storage and

the 95<sup>th</sup> percentile vehicle queue for each scenario. The computer printouts of the intersection capacity analyses are contained in Appendix E.

| TABLE 3C<br>95th Percentile Queue (ft) |                                 |              |           |
|----------------------------------------|---------------------------------|--------------|-----------|
| Alton Road & Michigan Avenue           |                                 | Movement     | SWBL      |
|                                        |                                 | Storage (ft) | 265       |
|                                        | Existing                        | AM           | 261       |
|                                        |                                 | PM           | 187       |
|                                        | Background                      | AM           | 279       |
|                                        |                                 | PM           | 201       |
|                                        | Future                          | AM           | 282       |
|                                        |                                 | PM           | 210       |
|                                        | Is 95th Queue Ok?<br>Mitigation |              | No<br>(1) |
| Alton Road & 20th Street               |                                 | Movement     | EBL       |
|                                        |                                 | Storage (ft) | 280       |
|                                        | Existing                        | AM           | 127       |
|                                        |                                 | PM           | 154       |
|                                        | Background                      | AM           | 138       |
|                                        |                                 | PM           | 168       |
|                                        | Future                          | AM           | 138       |
|                                        |                                 | PM           | 168       |
|                                        | Is 95th Queue Ok?<br>Mitigation |              | Yes<br>No |
| Alton Road & Dade Boulevard            |                                 | Movement     | WBR       |
|                                        |                                 | Storage (ft) | 60        |
|                                        | Existing                        | AM           | 0         |
|                                        |                                 | PM           | 0         |
|                                        | Background                      | AM           | 0         |
|                                        |                                 | PM           | 0         |
|                                        | Future                          | AM           | 0         |
|                                        |                                 | PM           | 28        |
|                                        | Is 95th Queue Ok?<br>Mitigation |              | Yes<br>No |

Notes:

# 95th percentile volume exceeds capacity, queue may be longer.

Turn lanes affected by project trips

(1) Future background queues without the project trips are expected to extend beyond the storage bay. The project increases the queue by 17 ft or one vehicle.

Note that the SWL queue at the intersection of Alton Road and Michigan Avenue extend beyond the length of the existing storage bay during the AM background condition scenario without the project traffic in place. The impact of the project trips on this queue is 17 ft or less than one vehicle. Therefore, mitigation is not provided.



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## Parking Analysis

Table 4 provides a summary of the required and provided parking spaces for each of the proposed land uses. As shown in Table 4, a total of 165 spaces are provided and the proposed development is to provide a total of 277 spaces. Please refer to the site plan sheet No 1 for more details.

Table 4 – Parking Summary

| PARKING REQUIREMENTS |                   |                   |        |                |
|----------------------|-------------------|-------------------|--------|----------------|
| SPACE                | REQUIRED          | GROSS AREA/ SEATS | FACTOR | PARKING SPACES |
| GROCERY STORE        | 1 SPACE / 250 SF  | 34,953            | 250    | 140            |
| CAFÉ (WITHIN STORE)  | 1 SPACE / 4 SEATS | 60                | 4      | 15             |
| BANK                 | 1 SPACE / 400 SF  | 3,908             | 400    | 10             |
|                      |                   |                   |        | TOTAL 165      |
|                      |                   |                   |        | PROVIDED 277   |
|                      |                   |                   |        | EXCESS -112    |

## Maneuverability Analysis

A maneuverability analysis was conducted for passenger vehicles within the parking garage and loading areas using Auto-Turn. Exhibits are included in Appendix F.

## MULTIMODAL EVALUATION

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Sidewalks are provided on both sides of Alton Road, Michigan Avenue, 20<sup>th</sup> Street and 19<sup>th</sup> Street. The width of the sidewalk along Alton Road is nine (9) feet and along 19<sup>th</sup> Street it is five (5) feet.

Safe pedestrian features (ramps, pedestrian signals with push buttons) are provided at the signalized intersections of Alton Road and Michigan Avenue, Alton Road and 20<sup>th</sup> Street, Alton Road and Dade Boulevard, and Michigan Avenue and Dade Boulevard. Miami Dade Transit routes 115, middle beach loop, and south beach loop travel north and south along Alton Road and Dade Boulevard. Bus stops are located along Alton Road and Dade Boulevard. A Citi Bike station is located on 19<sup>th</sup> Street, approximately 200 feet from the 1901 Alton project (south side of 19<sup>th</sup> Street near Dade Boulevard). Additionally, the project is providing bicycle racks along Alton Road (for 80 bicycles).

## **TRANSPORTATION DEMAND MANAGEMENT**

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Traf Tech Engineering, Inc. prepared a Transportation Demand Management (TDM) plan for the 1901 Alton Road project. Travel Demand Management plans (TDM) establish policies and mechanisms to reduce automobile trips to and from designated facilities. TDM plans usually use several approaches to address all modes of transportation likely to be used to provide access to a facility such as single occupant driving, carpooling, transit, bicycling and walking. The goal of TDM plans is to increase the use of alternatives modes to single occupant driving, i.e., to reduce the number of automobile trips to and from the facility and consequently, minimizing automobile traffic impacts on the street system.

Successful TDM plans not only address all modes of transportation, but also use policies such as inducements for alternative modes (subsidies), physical enhancements (bike lockers, preferential parking for carpools) and disincentives for automobile use (no free parking for employees).

Potential measures for each mode are addressed below. Use of an employee transportation subsidy is also presented.

### **Pedestrian Access**

Walking not only reduces automobile trips and their contribution to congestion and emissions, it also provides health benefits to the employees who use this mode of transportation. It is, however, the mode that is least likely to be used for a number of reasons. It is unlikely that employees of the commercial building use will reside within a reasonable walking distance (within  $\frac{1}{4}$  -  $\frac{1}{2}$  mile) of the subject facility. However, the area near the subject project is a high pedestrian traffic area and therefore, many bank customers and future grocery shoppers of the 1901 Alton Road project are expected to be walking trips. Sidewalks exist on both sides of Alton Road and 19<sup>th</sup> Street, as well as safe pedestrian crosswalks (with ramps and pedestrian signals) at the adjacent and nearby signalized intersections of Alton Road & Dade Boulevard, Alton Road and 20<sup>th</sup> Street,



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Alton Road & Michigan Avenue, and Dade Boulevard & Michigan Avenue. The sidewalk width along Alton Road is nine (9) feet and along 19<sup>th</sup> Street it is five (5) feet.

### **Bicycling**

The site of the 1901 Alton Road project offers two potential approaches to encourage cycling, the use of the Citi Bike program and use of grocery store employee-owned bicycles. Additionally, use of Citi Bike could be supported by providing monthly passes to employees. Monthly passes are \$15.00 for unlimited 30-minute rides and \$25.00 for unlimited 60-minute rides. Within the immediate area of the project, there is one (1) convenient Citi Bike rental station (located on the southwest corner of 20<sup>th</sup> Street and Sunset Drive). Future customers and employees could be informed of this Citi Bike Station. This station has sixteen (16) bicycle rental bicycles.

**(Goal: Offer 2 free City Bike passes to retail employees. Integrate bikeshare information into communication materials for future residents and visitors).**

### **Mass Transit**

There are several transit options for the 1901 Alton Road development. These transit options include Routes 115, South Beach Loop, and Middle Beach Loop. The nearest bus stop for these services is located on Alton Road, just south of 19<sup>th</sup> Street (within 250 feet from the project site). These transit routes provide frequent service and access to all of Miami-Dade County as well as connections to other destinations outside of the County. Employers of the grocery store can provide a significant inducement to employees to use public transportation (Miami-Dade Transit, MDT) through a transit subsidy. Transit subsidies can also provide tax benefits to both employees and employers.

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**MDT offers three methods to provide transit subsidies:**

The employee uses pre-tax dollars from their salary to purchase monthly transit passes. There is no income tax on the portion of their salary used for transit passes. The pre-tax funds also reduce the employees' taxable salary, reducing the total amount of income tax paid by the employees. The employer pays the total cost of a monthly transit pass using a tax-deductible (to the employer) subsidy. The employer receives a tax deduction equivalent to the value of the transit subsidies provided to the employees. The transit subsidy is a fringe benefit to employees and is not taxable income.

Both the employer and employees share the cost of transit passes, paying for them with pre-tax dollars. The employer reduces his/her payroll taxes. Employees do not pay income tax on the money used for transit passes.

MDT monthly passes if purchased by an individual are \$112.50. Corporate discounts are available based on the number of participating employees. For 4 – 99 employees, monthly passes are \$101.25 per employee, for 100 or more employees, the cost is \$95.65 per employee.

**Goal: Offer 2 free transit passes to retail employees. Provide bus schedule information on the lobby of the grocery store.**

## CONCLUSIONS AND RECOMMENDATIONS

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1901 Alton is a proposed development planned to be located at 1901 Alton Road in the City of Miami Beach in Miami-Dade County, Florida. The site will be developed with the following land use and intensity:

- 34,953 square foot Supermarket
- 3,908 square foot Drive-in Bank

Access to the site is provided via a full access driveway off 19<sup>th</sup> Street. The conclusions and recommendations of the traffic study are presented below:

- The proposed project is anticipated to generate approximately 2,286 new daily trips, approximately 35 AM peak hour trips (22 inbound and 13 outbound) and approximately 223 trips during the typical afternoon peak hour (108 inbound and 115 outbound).

As indicated in Table 1, the proposed project is anticipated to generate approximately

- All study intersections are currently operating adequately and will continue to operate at a good level of service in the year 2026 with the proposed project in place, except for one intersection. The exception is the intersection of Alton Road and Dade Boulevard. This intersection is projected to fail under future conditions with the proposed project in place. However, with the implementation of minor signal timing improvements, the delay and LOS are expected to improve.
- The proposed driveway was also evaluated, and the results show adequate operating conditions.

# **APPENDIX A**

## **Site Plan – 1901 Alton**



DESIGN REVIEW BOARD  
1901 ALTON ROAD

FINAL SUBMITTAL  
10/09/2023

FILE NO. DRB23-0956

COMMERCIAL PROJECT  
1901 ALTON ROAD MIAMI BEACH, FLORIDA, 33139  
SCOPE OF WORK: NEW CONSTRUCTION OF 4 STORY BUILDING WITH GROUND FLOOR RETAIL AND 3 LEVELS OF PARKING



STUDIO  
MCG  
ARCHITECTURE

OPPENHEIM  
ARCHITECTURE

STUDIO  
MCG  
ARCHITECTURE

7500 NE 4th Court  
Suite 102  
Miami, FL 33138  
T: (305) 573-2728

PROJECT NUMBER

2314

PROJECT NAME

WHOLE FOODS  
AND  
WELLS FARGO  
1901 ALTON ROAD  
MIAMI BEACH, FL 33141

OWNER

CRESCENT HEIGHTS

FACADE ARCHITECT

OPPENHEIM ARCHITECTURE  
AND DESIGN

DRAWING

COVER-DRB

Digitally signed by  
Jennifer McConney  
DN: c=US, o=STUDIO  
MCG+G  
ARCHITECTURE,  
dnQualifier=A01410  
D00000186945F530E  
0000E32D,  
cn=Jennifer  
McConney  
Date: 2023.10.06  
16:00:59 -04'00'

(JENNIFER MCCONNEY FLORIDA LIC# AB0394)

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SCALE:

DRAWN: CV, JDB

CHECK: JMcG

DATE: 10/09/23

SHEET NUMBER

A0.00

ZONING DATA SHEET

| ITEM # | Zoning Information LAND USE: CD-2 |                                                              |                      |                                            |
|--------|-----------------------------------|--------------------------------------------------------------|----------------------|--------------------------------------------|
| 1      | Address:                          | 1901 Alton Rd, Miami Beach, FL 33139                         |                      |                                            |
| 2      | Board and File numbers:           |                                                              |                      |                                            |
| 3      | Folio number(s):                  | 02-3234-001-0030                                             |                      |                                            |
| 4      | Year constructed:                 | 1986                                                         | Zoning District:     | CD-1 COMMERCIAL, LOW INTENSITY DISTRICT    |
| 5      | Base Flood Elevation:             | 8'-0 " NGVD                                                  | Grade Value in NGVD: | 3.7 NGVD (existing) 8' 0 NGVD proposed     |
|        |                                   | (road elevation to be raised in 2025 per City of Miami Beach |                      |                                            |
| 6      | Adjusted grade (Flood+Grade/2)    | 8'-0"                                                        | Lot Area:            | 55,377 SF                                  |
| 7      | Lot Width                         | N/A                                                          | Lot Depth:           | N/A                                        |
| 8      | Minimum Unit Size                 | N/A                                                          |                      |                                            |
| 9      | Existing User                     | WELLS FARGO                                                  | Proposed Use:        | GROCERY STORE MAIN USE, BANK ACCESSORY USE |

|    |                             | Maximum   | Existing | Proposed   | Deficiencies |
|----|-----------------------------|-----------|----------|------------|--------------|
| 10 | Height                      | 45'-0"    |          | 43'-0"     | -            |
| 11 | Number of Stories           | N/A       | 1        | 4          | -            |
| 12 | FAR                         | 1         | 0.00     | 0.94       | -            |
| 13 | FLOOR AREA Square Footage   | 55,377 SF | 0 SF     | 52,100 SF  | -            |
| 14 | GROSS Square Footage        | N/A       | N/A      | 199,772 SF | -            |
| 15 | Number of Units Residential | N/A       | N/A      | N/A        | -            |
| 16 | Number of Units Hotel       | N/A       | N/A      | N/A        | -            |
| 17 | Number of Seats             | N/A       | N/A      | N/A        | -            |
| 18 | Occupancy Load              | N/A       | N/A      | SEE CHART  | -            |

|    | Setbacks                                                  | Required | Existing | Proposed | Deficiencies |
|----|-----------------------------------------------------------|----------|----------|----------|--------------|
|    | <b>Pedestal (CD-1) COMMERCIAL, LOW INTENSITY DISTRICT</b> |          |          |          |              |
| 19 | Front Setback (ALTON RD):                                 | 0'-0"    | N/A      | 0' - 0"  | -            |
| 20 | Interior side Setback (NE):                               | 10'-0"   | N/A      | 10'-0"   | -            |
| 21 | Rear Setback (E):                                         | 10'-0"   | N/A      | 10'-0"   | -            |
| 22 | Side Setback facing Street (NE 19th ST):                  | 0'-0"    | N/A      | 0'-0"    | -            |
|    |                                                           |          |          |          |              |

|    | Parking                                  | Required   | Existing | Proposed   | Deficiencies |
|----|------------------------------------------|------------|----------|------------|--------------|
| 23 | Parking District (DISTRICT #1) TIER 1    | 163        |          | 277        | -            |
| 24 | Total # of parking spaces required       | 163        | N/A      | 277        | -            |
| 25 | Parking Space Dimensions                 | 8.5' X 18' | N/A      | 8.5' X 18' |              |
|    | Parking Space Configurations             |            |          |            |              |
| 26 | (45°,60°,90°,Parallel)                   |            | N/A      | 90 DEG     | -            |
| 27 | ADA Spaces                               |            | N/A      | 12         | -            |
| 28 | Tandem Spaces                            | 0          | N/A      | 0          | -            |
| 29 | Drive Aisle Width                        | 22'        | N/A      | 22'        | -            |
| 30 | Valet Drop off and pick up               | N/A        | N/A      | N/A        | -            |
| 31 | Loading zones and Trash collection areas | 2          | N/A      | 2          | -            |
| 32 | Bikes (SHORT TERM)                       | 4          | N/A      | 4          |              |
| 33 | Bikes (LONG TERM)                        | 15         | N/A      | 15         | -            |
| 34 | loading spaces: 3 for 20-40k sf          | 3          | N/A      | 3          | -            |

|    |                                           |    |
|----|-------------------------------------------|----|
| 35 | Is this a contributing building?          | NO |
| 36 | Located within a Local Historic District? | NO |

| INDEX OF DRAWINGS |                                              |       |       |       |
|-------------------|----------------------------------------------|-------|-------|-------|
| SHEET #           | DESCRIPTION                                  | SUBM1 | SUBM2 | SUBM3 |
| _____             | SURVEY                                       |       | •     |       |
| A0.00-PB          | COVER-PB                                     |       | •     |       |
| A0.01             | INDEX OF DRAWINGS AND SITE DATA              |       | •     |       |
| A0.02             | GROSS AREA DIAGRAMS                          |       | •     |       |
| A0.03             | FAR DIAGRAMS                                 |       | •     |       |
| A0.04             | RENDERING VIEW OF SOUTH AND ALTON RD FACADES |       | •     |       |
| A0.07             | AERIAL VIEWS                                 |       | •     |       |
| A0.08             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.09             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.10             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.11             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.12             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.13             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.14             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.14.1           | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.15             | SITE ELEVATIONS                              |       | •     |       |
| A0.16             | SITE ELEVATIONS                              |       | •     |       |
| A0.17             | EXPLODED AXONOMETRIC DIAGRAM                 |       | •     |       |
| A1.00             | SITE PLAN                                    |       | •     |       |
| A1.01             | LEVEL 1 FLOOR PLAN                           |       | •     |       |
| A1.02             | LEVEL 1.5 FLOOR PLAN                         |       | •     |       |
| A1.03             | LEVEL 2 FLOOR PLAN                           |       | •     |       |
| A1.04             | LEVEL 3 FLOOR PLAN                           |       | •     |       |
| A1.05             | LEVEL 4 FLOOR PLAN AND ROOF PLAN             |       | •     |       |
| A1.06             | LOADING DOCK DIAGRAMS                        |       | •     |       |
| A1.07             | DEMO FLOOR PLAN                              |       | •     |       |
| A2.01             | BUILDING ELEVATIONS                          |       | •     |       |
| A2.02             | BUILDING ELEVATIONS                          |       | •     |       |
| A2.03             | BUILDING SECTIONS                            |       | •     |       |
| A2.10             | WALL SECTION                                 |       | •     |       |
| A2.11             | WALL SECTION                                 |       | •     |       |
| A2.12             | WALL SECTION                                 |       | •     |       |

| PARKING REQUIREMENTS |                   |                   |                |                |
|----------------------|-------------------|-------------------|----------------|----------------|
| SPACE                | REQUIRED          | GROSS AREA/ SEATS | FACTOR         | PARKING SPACES |
| GROCERY STORE        | 1 SPACE / 250 SF  | 34,953            | 250            | 140            |
| CAFÉ (WITHIN STORE)  | 1 SPACE / 4 SEATS | 60                | 4              | 15             |
| BANK                 | 1 SPACE / 400 SF  | 3,908             | 400            | 10             |
|                      |                   |                   | TOTAL PROVIDED | 165            |
|                      |                   |                   | EXCESS         | 277 -112       |



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CRESCENT HEIGHTS

FACADE ARCHITECT  
OPPENHEIM ARCHITECTURE  
AND DESIGN

DRAWING

INDEX OF  
DRAWINGS  
AND SITE  
DATA

JENNIFER McCONNIEY FLORIDA LIC# AR93044

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SCALE: 1/4" = 1'-0"

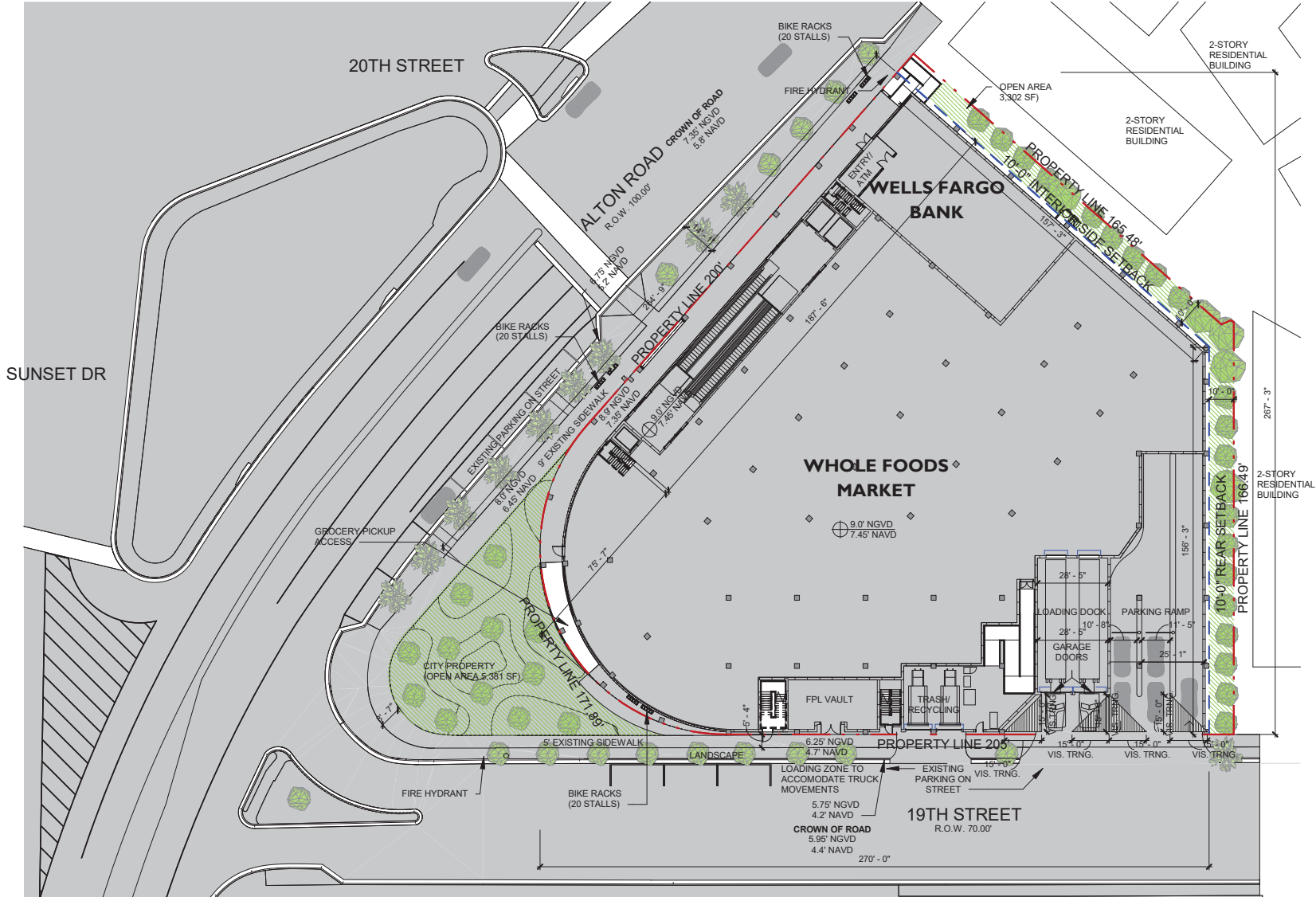
DRAWN: CV, JDB

CHECK: JMcG

DATE: 10/09/23

SHEET NUMBER  
A0.01





**SITE PLAN**  
1" = 40'-0"

**STUDIO**  
**MCG**  
**ARCHITECTURE**

7500 NE 4th Court  
Suite 102  
Miami, FL 33138  
T: (305) 573-2728

PROJECT NUMBER  
2314

PROJECT NAME  
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OWNER  
**CRESCENT HEIGHTS**

FACADE ARCHITECT  
OPPENHEIM ARCHITECTURE  
AND DESIGN

DRAWING

**SITE PLAN**

(JENNIFER MCCONNEY FLORIDA LIC# AB0394)

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SCALE: 1" = 40'-0"

DRAWN: CV, JDB

CHECK: JMcG

DATE: 10/09/23

SHEET NUMBER

**A1.00**



# **APPENDIX B**

## **Traffic Counts**



# Traf Tech Engineering Inc.

File Name : 1-Alton Rd & Michigan Ave

Site Code : 00000000

Start Date : 8/9/2023

Page No : 1

## Groups Printed- Peds & Bikes

|               | Alton Rd<br>From North |   |   |      | Michigan Ave<br>From East |   |   |      | Alton Rd<br>From South |   |   |      | Michigan Ave<br>From West |   |   |      | Int. Total |
|---------------|------------------------|---|---|------|---------------------------|---|---|------|------------------------|---|---|------|---------------------------|---|---|------|------------|
| Start Time    | Bikes                  |   |   | Peds | Bikes                     |   |   | Peds | Bikes                  |   |   | Peds | Bikes                     |   |   | Peds |            |
| 07:00         | 1                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 0                         | 0 | 0 | 0    | 3          |
| 07:15         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 1          |
| 07:30         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                         | 0 | 0 | 0    | 1          |
| 07:45         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 3                         | 0 | 0 | 0    | 5          |
| Total         | 1                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 5    | 4                         | 0 | 0 | 0    | 10         |
| 08:00         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 2                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 2          |
| 08:15         | 0                      | 0 | 0 | 0    | 2                         | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 9                         | 0 | 0 | 0    | 13         |
| 08:30         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 1          |
| 08:45         | 0                      | 0 | 0 | 0    | 3                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 3          |
| Total         | 0                      | 0 | 0 | 0    | 5                         | 0 | 0 | 0    | 2                      | 0 | 0 | 2    | 10                        | 0 | 0 | 0    | 19         |
| *** BREAK *** |                        |   |   |      |                           |   |   |      |                        |   |   |      |                           |   |   |      |            |
| 16:00         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 2                         | 0 | 0 | 0    | 5          |
| 16:15         | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 1          |
| 16:30         | 0                      | 0 | 0 | 1    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                         | 0 | 0 | 1    | 3          |
| 16:45         | 0                      | 0 | 0 | 0    | 26                        | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 1    | 27         |
| Total         | 0                      | 0 | 0 | 1    | 27                        | 0 | 0 | 0    | 0                      | 0 | 0 | 4    | 2                         | 0 | 0 | 2    | 36         |
| 17:00         | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 2          |
| 17:15         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                         | 0 | 0 | 0    | 1          |
| 17:30         | 0                      | 0 | 0 | 0    | 1                         | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 1          |
| 17:45         | 0                      | 0 | 0 | 0    | 0                         | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 0                         | 0 | 0 | 0    | 2          |
| Total         | 0                      | 0 | 0 | 0    | 2                         | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 1                         | 0 | 0 | 0    | 6          |
| Grand Total   | 1                      | 0 | 0 | 1    | 34                        | 0 | 0 | 0    | 2                      | 0 | 0 | 14   | 17                        | 0 | 0 | 2    | 71         |
| Apprch %      | 50                     | 0 | 0 | 50   | 100                       | 0 | 0 | 0    | 12.5                   | 0 | 0 | 87.5 | 89.5                      | 0 | 0 | 10.5 |            |
| Total %       | 1.4                    | 0 | 0 | 1.4  | 47.9                      | 0 | 0 | 0    | 2.8                    | 0 | 0 | 19.7 | 23.9                      | 0 | 0 | 2.8  |            |

# Traf Tech Engineering Inc.

File Name : 1-Alton Rd & Michigan Ave

Site Code : 00000000

Start Date : 8/9/2023

Page No : 1

## Groups Printed- Autos - Heavy Vehicles

|                  | Alton Rd<br>From North |      |      |         |            | Michigan Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Michigan Ave<br>From West |      |      |         |            |            |
|------------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------|
| Start Time       | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Int. Total |
| 07:00            | 2                      | 235  | 59   | 0       | 296        | 46                        | 0    | 5    | 0       | 51         | 5                      | 71   | 0    | 1       | 77         | 0                         | 0    | 0    | 0       | 0          | 424        |
| 07:15            | 2                      | 284  | 88   | 0       | 374        | 37                        | 0    | 1    | 0       | 38         | 5                      | 91   | 0    | 0       | 96         | 2                         | 0    | 2    | 0       | 4          | 512        |
| 07:30            | 2                      | 244  | 62   | 0       | 308        | 54                        | 0    | 7    | 0       | 61         | 1                      | 100  | 1    | 0       | 102        | 1                         | 0    | 4    | 0       | 5          | 476        |
| 07:45            | 2                      | 304  | 84   | 0       | 390        | 37                        | 1    | 3    | 0       | 41         | 4                      | 98   | 1    | 0       | 103        | 0                         | 1    | 4    | 0       | 5          | 539        |
| Total            | 8                      | 1067 | 293  | 0       | 1368       | 174                       | 1    | 16   | 0       | 191        | 15                     | 360  | 2    | 1       | 378        | 3                         | 1    | 10   | 0       | 14         | 1951       |
| 08:00            | 5                      | 286  | 81   | 1       | 373        | 58                        | 1    | 2    | 0       | 61         | 7                      | 142  | 2    | 0       | 151        | 1                         | 2    | 2    | 0       | 5          | 590        |
| 08:15            | 6                      | 313  | 94   | 0       | 413        | 55                        | 2    | 5    | 0       | 62         | 4                      | 151  | 3    | 1       | 159        | 2                         | 0    | 1    | 0       | 3          | 637        |
| 08:30            | 5                      | 300  | 100  | 1       | 406        | 50                        | 0    | 2    | 0       | 52         | 8                      | 173  | 1    | 0       | 182        | 2                         | 2    | 7    | 0       | 11         | 651        |
| 08:45            | 2                      | 348  | 115  | 0       | 465        | 55                        | 0    | 8    | 0       | 63         | 11                     | 150  | 0    | 0       | 161        | 1                         | 4    | 3    | 0       | 8          | 697        |
| Total            | 18                     | 1247 | 390  | 2       | 1657       | 218                       | 3    | 17   | 0       | 238        | 30                     | 616  | 6    | 1       | 653        | 6                         | 8    | 13   | 0       | 27         | 2575       |
| *** BREAK ***    |                        |      |      |         |            |                           |      |      |         |            |                        |      |      |         |            |                           |      |      |         |            |            |
| 16:00            | 1                      | 226  | 79   | 0       | 306        | 181                       | 3    | 4    | 0       | 188        | 8                      | 255  | 0    | 1       | 264        | 1                         | 4    | 3    | 0       | 8          | 766        |
| 16:15            | 2                      | 221  | 50   | 2       | 275        | 150                       | 3    | 6    | 0       | 159        | 6                      | 305  | 0    | 0       | 311        | 1                         | 4    | 3    | 0       | 8          | 753        |
| 16:30            | 0                      | 210  | 71   | 0       | 281        | 130                       | 3    | 7    | 0       | 140        | 6                      | 303  | 4    | 0       | 313        | 0                         | 1    | 3    | 0       | 4          | 738        |
| 16:45            | 2                      | 223  | 72   | 0       | 297        | 136                       | 5    | 6    | 0       | 147        | 3                      | 258  | 0    | 0       | 261        | 0                         | 2    | 4    | 0       | 6          | 711        |
| Total            | 5                      | 880  | 272  | 2       | 1159       | 597                       | 14   | 23   | 0       | 634        | 23                     | 1121 | 4    | 1       | 1149       | 2                         | 11   | 13   | 0       | 26         | 2968       |
| 17:00            | 1                      | 218  | 64   | 0       | 283        | 159                       | 2    | 8    | 0       | 169        | 8                      | 262  | 0    | 0       | 270        | 0                         | 4    | 9    | 0       | 13         | 735        |
| 17:15            | 0                      | 212  | 52   | 0       | 264        | 151                       | 2    | 8    | 0       | 161        | 8                      | 269  | 2    | 0       | 279        | 0                         | 3    | 7    | 0       | 10         | 714        |
| 17:30            | 1                      | 257  | 50   | 0       | 308        | 117                       | 2    | 3    | 0       | 122        | 7                      | 277  | 0    | 1       | 285        | 1                         | 3    | 2    | 0       | 6          | 721        |
| 17:45            | 2                      | 264  | 43   | 0       | 309        | 101                       | 0    | 6    | 0       | 107        | 5                      | 212  | 0    | 0       | 217        | 0                         | 1    | 1    | 0       | 2          | 635        |
| Total            | 4                      | 951  | 209  | 0       | 1164       | 528                       | 6    | 25   | 0       | 559        | 28                     | 1020 | 2    | 1       | 1051       | 1                         | 11   | 19   | 0       | 31         | 2805       |
| Grand Total      | 35                     | 4145 | 1164 | 4       | 5348       | 1517                      | 24   | 81   | 0       | 1622       | 96                     | 3117 | 14   | 4       | 3231       | 12                        | 31   | 55   | 0       | 98         | 10299      |
| Apprch %         | 0.7                    | 77.5 | 21.8 | 0.1     |            | 93.5                      | 1.5  | 5    | 0       |            | 3                      | 96.5 | 0.4  | 0.1     |            | 12.2                      | 31.6 | 56.1 | 0       |            |            |
| Total %          | 0.3                    | 40.2 | 11.3 | 0       | 51.9       | 14.7                      | 0.2  | 0.8  | 0       | 15.7       | 0.9                    | 30.3 | 0.1  | 0       | 31.4       | 0.1                       | 0.3  | 0.5  | 0       | 1          |            |
| Autos            | 31                     | 4050 | 1145 |         |            | 1496                      |      |      |         |            |                        | 3055 |      |         |            |                           |      |      |         |            | 10082      |
| % Autos          | 88.6                   | 97.7 | 98.4 | 100     | 97.8       | 98.6                      | 100  | 96.3 | 0       | 98.5       | 94.8                   | 98   | 92.9 | 100     | 97.9       | 66.7                      | 96.8 | 96.4 | 0       | 92.9       | 97.9       |
| Heavy Vehicles   |                        |      |      |         |            |                           |      |      |         |            |                        |      |      |         |            |                           |      |      |         |            |            |
| % Heavy Vehicles | 11.4                   | 2.3  | 1.6  | 0       | 2.2        | 1.4                       | 0    | 3.7  | 0       | 1.5        | 5.2                    | 2    | 7.1  | 0       | 2.1        | 33.3                      | 3.2  | 3.6  | 0       | 7.1        | 2.1        |

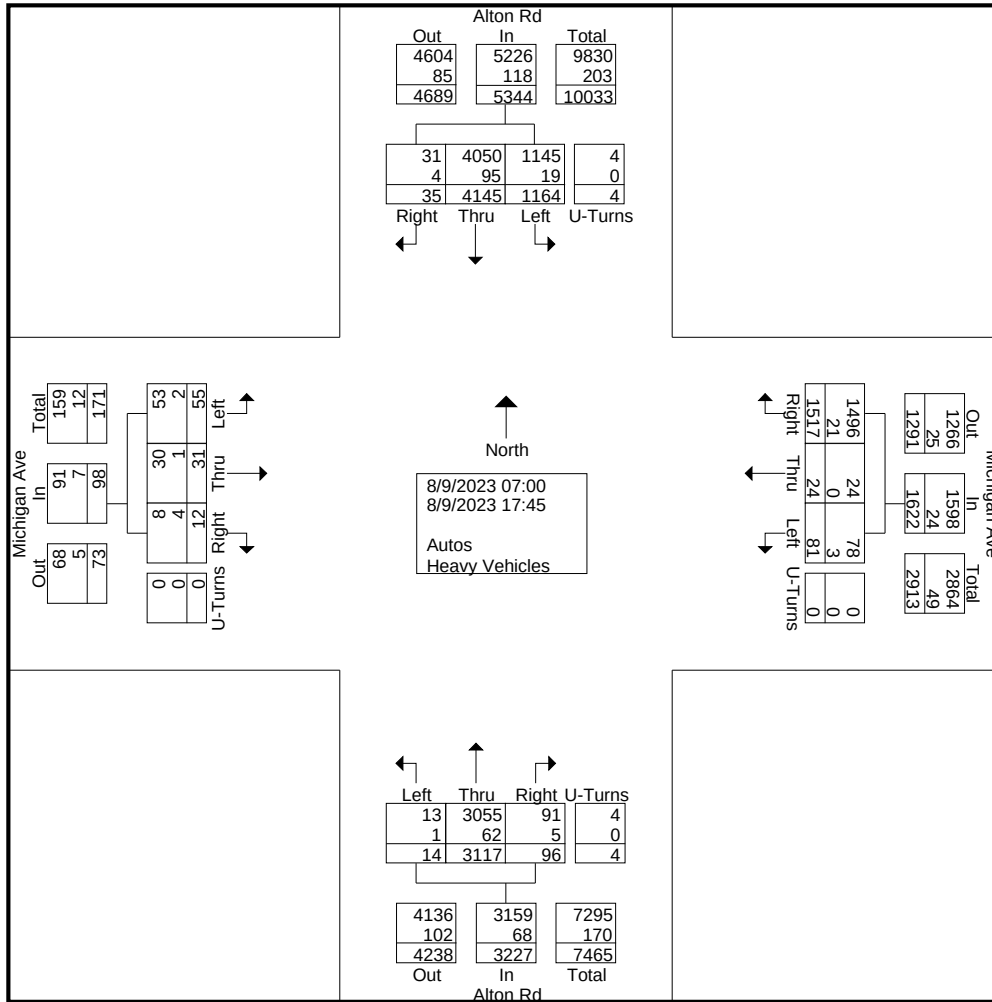
# Traf Tech Engineering Inc.

File Name : 1-Alton Rd & Michigan Ave

Site Code : 00000000

Start Date : 8/9/2023

Page No : 2



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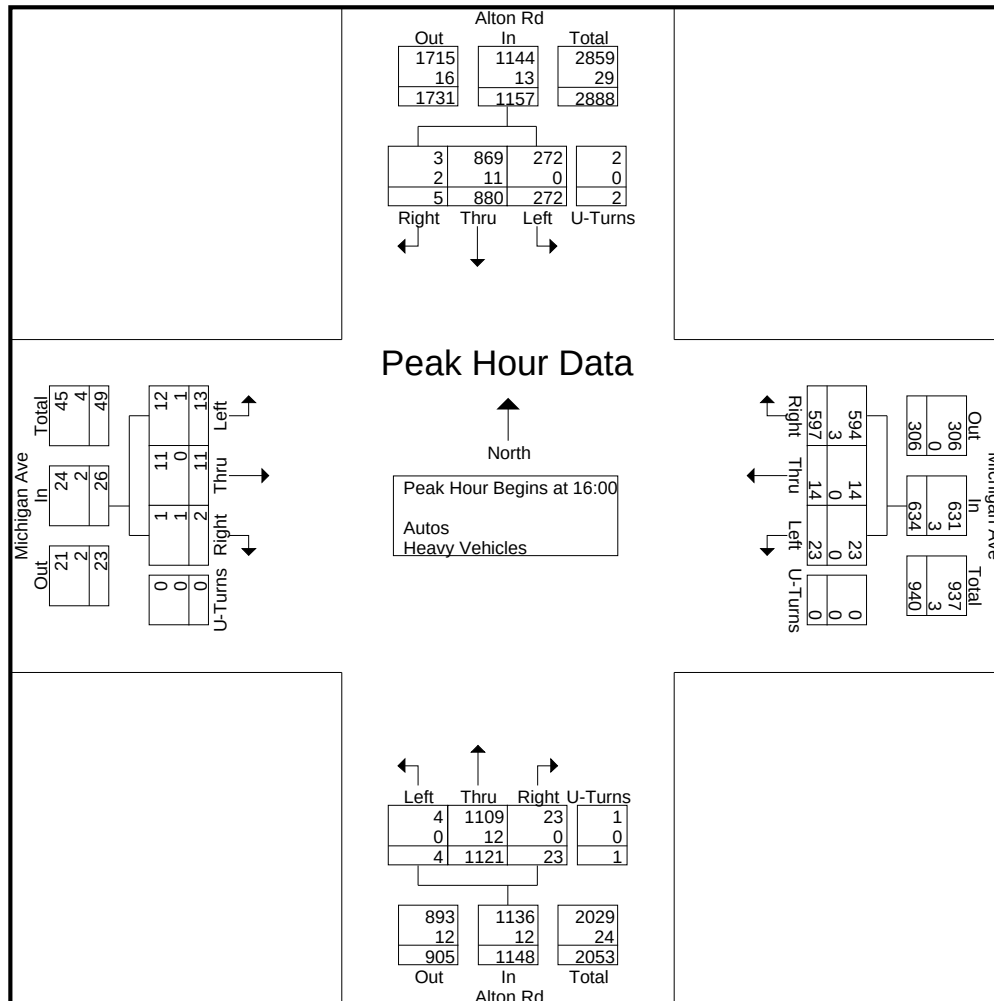
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Page No : 3

|                                                      | Alton Rd<br>From North |      |      |         |            | Michigan Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Michigan Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 |                        |      |      |         |            |                           |      |      |         |            |                        |      |      |         |            |                           |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:00    |                        |      |      |         |            |                           |      |      |         |            |                        |      |      |         |            |                           |      |      |         |            |            |
| 16:00                                                | 1                      | 226  | 79   | 0       | 306        | 181                       | 3    | 4    | 0       | 188        | 8                      | 255  | 0    | 1       | 264        | 1                         | 4    | 3    | 0       | 8          | 766        |
| 16:15                                                | 2                      | 221  | 50   | 2       | 275        | 150                       | 3    | 6    | 0       | 159        | 6                      | 305  | 0    | 0       | 311        | 1                         | 4    | 3    | 0       | 8          | 753        |
| 16:30                                                | 0                      | 210  | 71   | 0       | 281        | 130                       | 3    | 7    | 0       | 140        | 6                      | 303  | 4    | 0       | 313        | 0                         | 1    | 3    | 0       | 4          | 738        |
| 16:45                                                | 2                      | 223  | 72   | 0       | 297        | 136                       | 5    | 6    | 0       | 147        | 3                      | 258  | 0    | 0       | 261        | 0                         | 2    | 4    | 0       | 6          | 711        |
| Total Volume                                         | 5                      | 880  | 272  | 2       | 1159       | 597                       | 14   | 23   | 0       | 634        | 23                     | 1121 | 4    | 1       | 1149       | 2                         | 11   | 13   | 0       | 26         | 2968       |
| % App. Total                                         | 0.4                    | 75.9 | 23.5 | 0.2     |            | 94.2                      | 2.2  | 3.6  | 0       |            | 2                      | 97.6 | 0.3  | 0.1     |            | 7.7                       | 42.3 | 50   | 0       |            |            |
| PHF                                                  | .625                   | .973 | .861 | .250    | .947       | .825                      | .700 | .821 | .000    | .843       | .719                   | .919 | .250 | .250    | .918       | .500                      | .688 | .813 | .000    | .813       | .969       |
| Autos                                                | 3                      | 869  | 272  | 2       | 1146       | 594                       | 14   | 23   | 0       | 631        | 23                     | 1109 |      |         |            |                           |      |      |         |            |            |
| % Autos                                              | 60.0                   | 98.8 | 100  | 100     | 98.9       | 99.5                      | 100  | 100  | 0       | 99.5       | 100                    | 98.9 | 100  | 100     | 99.0       | 50.0                      | 100  | 92.3 | 0       | 92.3       | 99.0       |
| Heavy Vehicles                                       |                        |      |      |         |            |                           |      |      |         |            |                        |      |      |         |            |                           |      |      |         |            |            |
| % Heavy Vehicles                                     | 40.0                   | 1.3  | 0    | 0       | 1.1        | 0.5                       | 0    | 0    | 0       | 0.5        | 0                      | 1.1  | 0    | 0       | 1.0        | 50.0                      | 0    | 7.7  | 0       | 7.7        | 1.0        |





# Traf Tech Engineering Inc.

File Name : 1-Alton Rd & Michigan Ave

Site Code : 00000000

Start Date : 8/9/2023

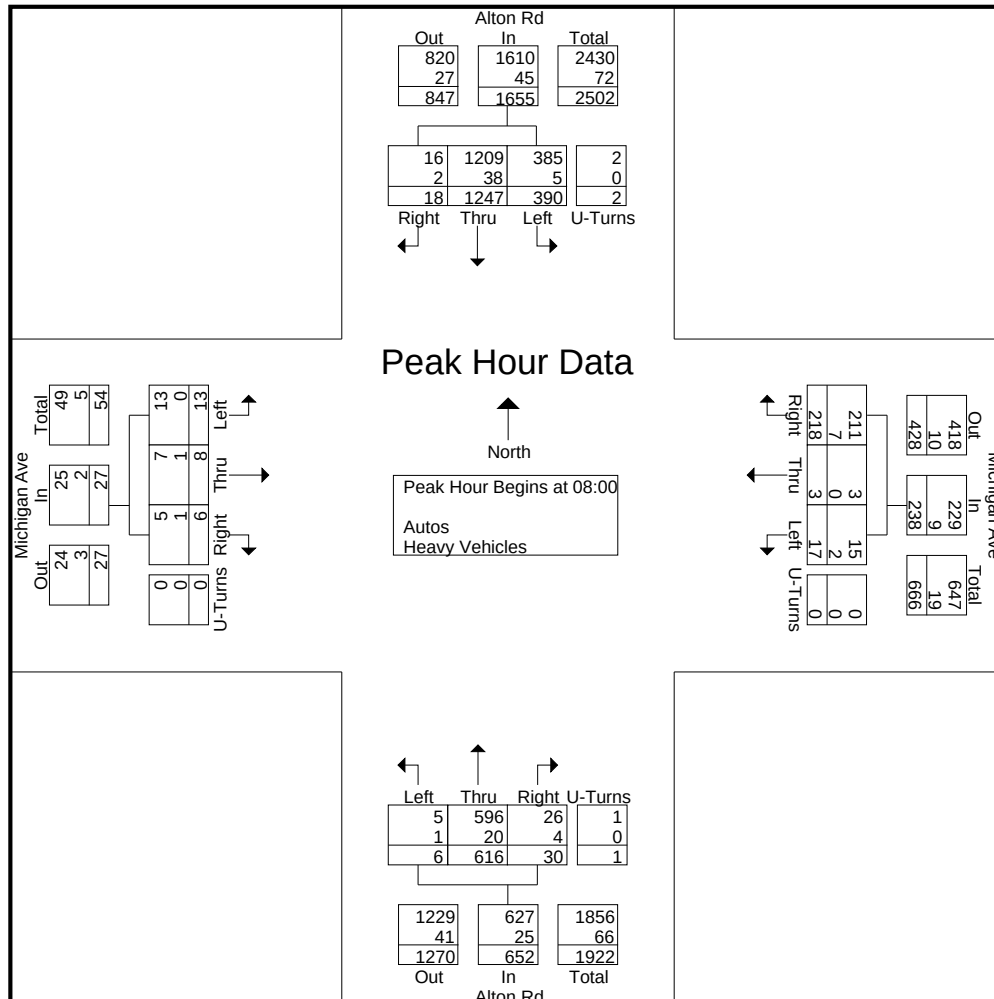
Page No : 4

|               | Alton Rd<br>From North |      |      |         |            | Michigan Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Michigan Ave<br>From West |      |      |         |            |            |
|---------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------|
| Start<br>Time | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Int. Total |

Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 08:00

|                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 08:00            | 5    | 286  | 81   | 1    | 373  | 58   | 1    | 2    | 0    | 61   | 7    | 142  | 2    | 0    | 151  | 1    | 2    | 2    | 0    | 5    | 590  |
| 08:15            | 6    | 313  | 94   | 0    | 413  | 55   | 2    | 5    | 0    | 62   | 4    | 151  | 3    | 1    | 159  | 2    | 0    | 1    | 0    | 3    | 637  |
| 08:30            | 5    | 300  | 100  | 1    | 406  | 50   | 0    | 2    | 0    | 52   | 8    | 173  | 1    | 0    | 182  | 2    | 2    | 7    | 0    | 11   | 651  |
| 08:45            | 2    | 348  | 115  | 0    | 465  | 55   | 0    | 8    | 0    | 63   | 11   | 150  | 0    | 0    | 161  | 1    | 4    | 3    | 0    | 8    | 697  |
| Total Volume     | 18   | 1247 | 390  | 2    | 1657 | 218  | 3    | 17   | 0    | 238  | 30   | 616  | 6    | 1    | 653  | 6    | 8    | 13   | 0    | 27   | 2575 |
| % App. Total     | 1.1  | 75.3 | 23.5 | 0.1  |      | 91.6 | 1.3  | 7.1  | 0    |      | 4.6  | 94.3 | 0.9  | 0.2  |      | 22.2 | 29.6 | 48.1 | 0    |      |      |
| PHF              | .750 | .896 | .848 | .500 | .891 | .940 | .375 | .531 | .000 | .944 | .682 | .890 | .500 | .250 | .897 | .750 | .500 | .464 | .000 | .614 | .924 |
| Autos            | 16   | 1209 |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Autos          | 88.9 | 97.0 | 98.7 | 100  | 97.3 | 96.8 | 100  | 88.2 | 0    | 96.2 | 86.7 | 96.8 | 83.3 | 100  | 96.2 | 83.3 | 87.5 | 100  | 0    | 92.6 | 96.9 |
| Heavy Vehicles   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Heavy Vehicles | 11.1 | 3.0  | 1.3  | 0    | 2.7  | 3.2  | 0    | 11.8 | 0    | 3.8  | 13.3 | 3.2  | 16.7 | 0    | 3.8  | 16.7 | 12.5 | 0    | 0    | 7.4  | 3.1  |



# Traf Tech Engineering Inc.

File Name : 1-Alton Rd & Michigan Ave

Site Code : 00000000

Start Date : 8/9/2023

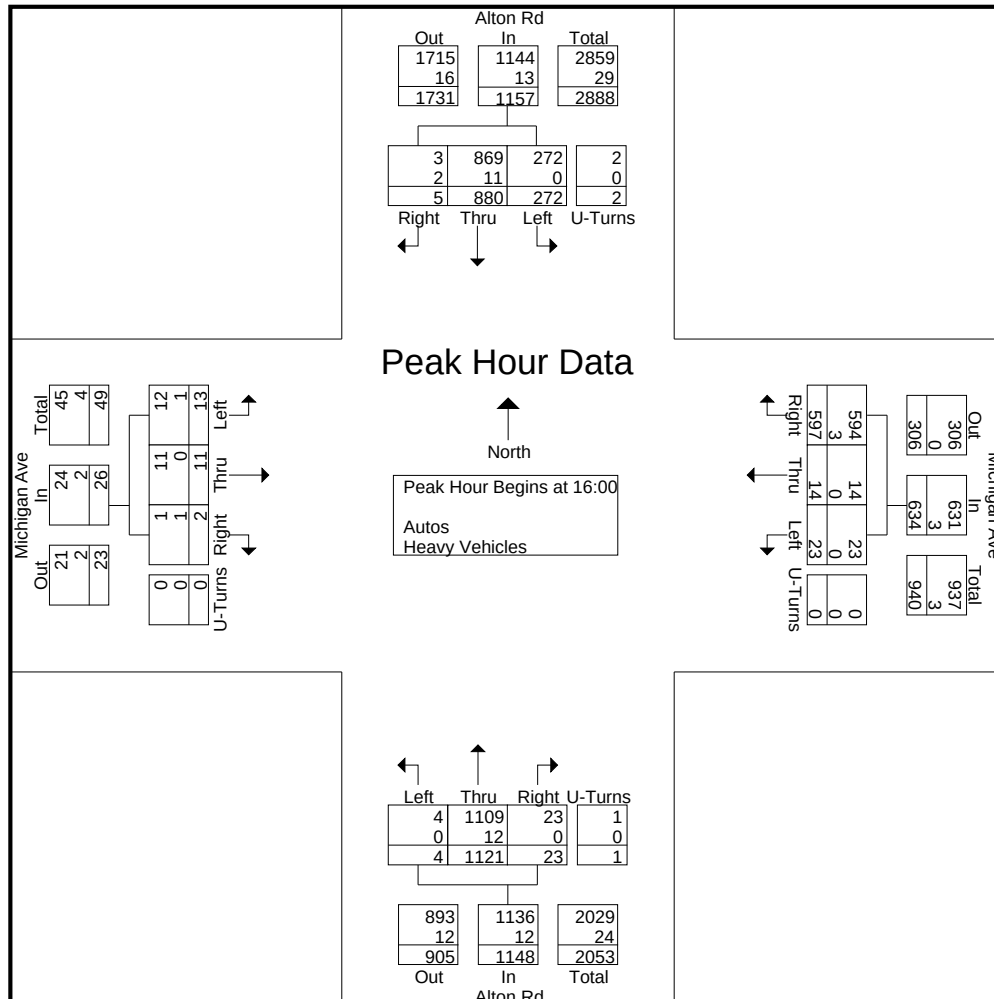
Page No : 5

|               | Alton Rd<br>From North |      |      |         |            | Michigan Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Michigan Ave<br>From West |      |      |         |            |            |
|---------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|---------------------------|------|------|---------|------------|------------|
| Start<br>Time | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                     | Thru | Left | U-Turns | App. Total | Int. Total |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:00

|                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:00            | 1    | 226  | 79   | 0    | 306  | 181  | 3    | 4    | 0    | 188  | 8    | 255  | 0    | 1    | 264  | 1    | 4    | 3    | 0    | 8    | 766  |
| 16:15            | 2    | 221  | 50   | 2    | 275  | 150  | 3    | 6    | 0    | 159  | 6    | 305  | 0    | 0    | 311  | 1    | 4    | 3    | 0    | 8    | 753  |
| 16:30            | 0    | 210  | 71   | 0    | 281  | 130  | 3    | 7    | 0    | 140  | 6    | 303  | 4    | 0    | 313  | 0    | 1    | 3    | 0    | 4    | 738  |
| 16:45            | 2    | 223  | 72   | 0    | 297  | 136  | 5    | 6    | 0    | 147  | 3    | 258  | 0    | 0    | 261  | 0    | 2    | 4    | 0    | 6    | 711  |
| Total Volume     | 5    | 880  | 272  | 2    | 1159 | 597  | 14   | 23   | 0    | 634  | 23   | 1121 | 4    | 1    | 1149 | 2    | 11   | 13   | 0    | 26   | 2968 |
| % App. Total     | 0.4  | 75.9 | 23.5 | 0.2  |      | 94.2 | 2.2  | 3.6  | 0    |      | 2    | 97.6 | 0.3  | 0.1  |      | 7.7  | 42.3 | 50   | 0    |      |      |
| PHF              | .625 | .973 | .861 | .250 | .947 | .825 | .700 | .821 | .000 | .843 | .719 | .919 | .250 | .250 | .918 | .500 | .688 | .813 | .000 | .813 | .969 |
| Autos            | 3    | 869  | 272  | 2    | 1146 | 594  | 14   | 23   | 0    | 631  | 23   | 1109 |      |      |      |      |      |      |      |      |      |
| % Autos          | 60.0 | 98.8 | 100  | 100  | 98.9 | 99.5 | 100  | 100  | 0    | 99.5 | 100  | 98.9 | 100  | 100  | 99.0 | 50.0 | 100  | 92.3 | 0    | 92.3 | 99.0 |
| Heavy Vehicles   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Heavy Vehicles | 40.0 | 1.3  | 0    | 0    | 1.1  | 0.5  | 0    | 0    | 0    | 0.5  | 0    | 1.1  | 0    | 0    | 1.0  | 50.0 | 0    | 7.7  | 0    | 7.7  | 1.0  |



# Traf Tech Engineering Inc.

File Name : 2-Alton Rd & 20th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Peds & Bikes

|               | Alton Rd<br>From North |   |   |      | 20th Street<br>From East |   |   |      | Alton Rd<br>From South |   |   |      | 20th Street<br>From West |   |   |      | Int. Total |
|---------------|------------------------|---|---|------|--------------------------|---|---|------|------------------------|---|---|------|--------------------------|---|---|------|------------|
| Start Time    | Bikes                  |   |   | Peds | Bikes                    |   |   | Peds | Bikes                  |   |   | Peds | Bikes                    |   |   | Peds |            |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 08:00         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 1          |
| 08:15         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 10                       | 0 | 0 | 0    | 11         |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| Total         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 10                       | 0 | 0 | 1    | 12         |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 16:00         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 0                        | 0 | 0 | 0    | 3          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 16:30         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 1                        | 0 | 0 | 0    | 1          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| Total         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 1                        | 0 | 0 | 0    | 4          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 17:15         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 1                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 1          |
| 17:30         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 2          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| Total         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 3          |
| Grand Total   | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1                      | 0 | 0 | 5    | 11                       | 0 | 0 | 1    | 19         |
| Apprch %      | 0                      | 0 | 0 | 100  | 0                        | 0 | 0 | 0    | 16.7                   | 0 | 0 | 83.3 | 91.7                     | 0 | 0 | 8.3  |            |
| Total %       | 0                      | 0 | 0 | 5.3  | 0                        | 0 | 0 | 0    | 5.3                    | 0 | 0 | 26.3 | 57.9                     | 0 | 0 | 5.3  |            |

# Traf Tech Engineering Inc.

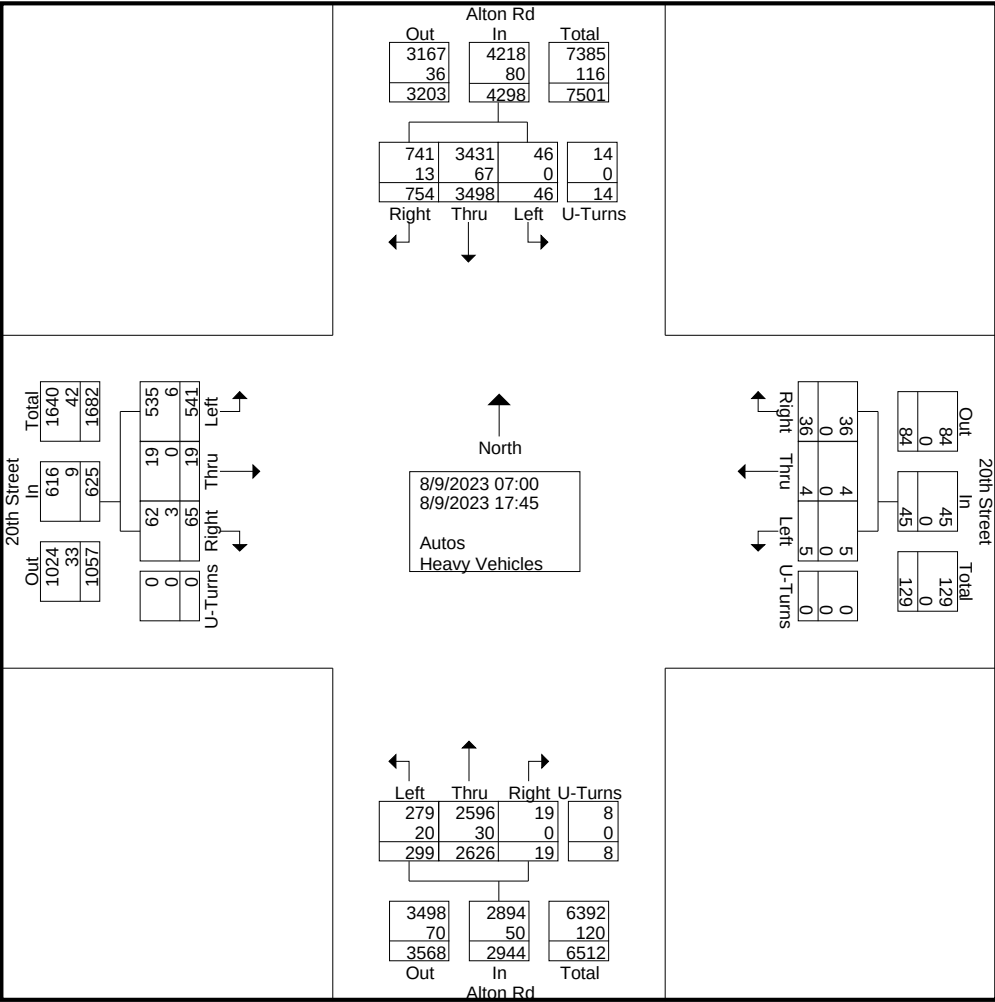
File Name : 2-Alton Rd & 20th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Autos - Heavy Vehicles

|                  | Alton Rd<br>From North |      |      |         |            | 20th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 20th Street<br>From West |      |      |         |            |            |
|------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time       | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| 07:00            | 40                     | 196  | 6    | 1       | 243        | 3                        | 0    | 0    | 0       | 3          | 2                      | 64   | 9    | 0       | 75         | 5                        | 1    | 16   | 0       | 22         | 343        |
| 07:15            | 45                     | 207  | 3    | 2       | 257        | 1                        | 0    | 0    | 0       | 1          | 0                      | 75   | 16   | 1       | 92         | 2                        | 0    | 15   | 0       | 17         | 367        |
| 07:30            | 42                     | 245  | 6    | 0       | 293        | 1                        | 0    | 0    | 0       | 1          | 0                      | 84   | 13   | 0       | 97         | 0                        | 1    | 13   | 0       | 14         | 405        |
| 07:45            | 54                     | 246  | 1    | 2       | 303        | 0                        | 0    | 0    | 0       | 0          | 0                      | 94   | 22   | 0       | 116        | 5                        | 0    | 19   | 0       | 24         | 443        |
| Total            | 181                    | 894  | 16   | 5       | 1096       | 5                        | 0    | 0    | 0       | 5          | 2                      | 317  | 60   | 1       | 380        | 12                       | 2    | 63   | 0       | 77         | 1558       |
| 08:00            | 50                     | 238  | 2    | 0       | 290        | 1                        | 1    | 0    | 0       | 2          | 3                      | 113  | 19   | 0       | 135        | 4                        | 1    | 26   | 0       | 31         | 458        |
| 08:15            | 65                     | 257  | 3    | 0       | 325        | 1                        | 1    | 0    | 0       | 2          | 3                      | 124  | 27   | 0       | 154        | 2                        | 1    | 27   | 0       | 30         | 511        |
| 08:30            | 50                     | 247  | 10   | 0       | 307        | 2                        | 1    | 1    | 0       | 4          | 1                      | 151  | 21   | 0       | 173        | 2                        | 0    | 32   | 0       | 34         | 518        |
| 08:45            | 68                     | 308  | 4    | 6       | 386        | 1                        | 0    | 1    | 0       | 2          | 3                      | 125  | 27   | 1       | 156        | 5                        | 1    | 41   | 0       | 47         | 591        |
| Total            | 233                    | 1050 | 19   | 6       | 1308       | 5                        | 3    | 2    | 0       | 10         | 10                     | 513  | 94   | 1       | 618        | 13                       | 3    | 126  | 0       | 142        | 2078       |
| *** BREAK ***    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 16:00            | 45                     | 184  | 2    | 0       | 231        | 5                        | 0    | 0    | 0       | 5          | 1                      | 222  | 20   | 0       | 243        | 9                        | 4    | 41   | 0       | 54         | 533        |
| 16:15            | 44                     | 184  | 2    | 0       | 230        | 2                        | 0    | 0    | 0       | 2          | 1                      | 269  | 18   | 3       | 291        | 5                        | 3    | 36   | 0       | 44         | 567        |
| 16:30            | 45                     | 175  | 0    | 0       | 220        | 2                        | 0    | 0    | 0       | 2          | 0                      | 261  | 13   | 0       | 274        | 2                        | 0    | 40   | 0       | 42         | 538        |
| 16:45            | 44                     | 194  | 1    | 0       | 239        | 2                        | 0    | 0    | 0       | 2          | 2                      | 227  | 25   | 0       | 254        | 5                        | 0    | 48   | 0       | 53         | 548        |
| Total            | 178                    | 737  | 5    | 0       | 920        | 11                       | 0    | 0    | 0       | 11         | 4                      | 979  | 76   | 3       | 1062       | 21                       | 7    | 165  | 0       | 193        | 2186       |
| 17:00            | 43                     | 181  | 3    | 0       | 227        | 3                        | 0    | 0    | 0       | 3          | 1                      | 195  | 19   | 0       | 215        | 4                        | 1    | 47   | 0       | 52         | 497        |
| 17:15            | 44                     | 175  | 1    | 1       | 221        | 2                        | 0    | 1    | 0       | 3          | 0                      | 234  | 19   | 2       | 255        | 5                        | 5    | 54   | 0       | 64         | 543        |
| 17:30            | 37                     | 227  | 1    | 1       | 266        | 7                        | 1    | 1    | 0       | 9          | 2                      | 220  | 21   | 0       | 243        | 6                        | 0    | 45   | 0       | 51         | 569        |
| 17:45            | 38                     | 234  | 1    | 1       | 274        | 3                        | 0    | 1    | 0       | 4          | 0                      | 168  | 10   | 1       | 179        | 4                        | 1    | 41   | 0       | 46         | 503        |
| Total            | 162                    | 817  | 6    | 3       | 988        | 15                       | 1    | 3    | 0       | 19         | 3                      | 817  | 69   | 3       | 892        | 19                       | 7    | 187  | 0       | 213        | 2112       |
| Grand Total      | 754                    | 3498 | 46   | 14      | 4312       | 36                       | 4    | 5    | 0       | 45         | 19                     | 2626 | 299  | 8       | 2952       | 65                       | 19   | 541  | 0       | 625        | 7934       |
| Apprch %         | 17.5                   | 81.1 | 1.1  | 0.3     |            | 80                       | 8.9  | 11.1 | 0       |            | 0.6                    | 89   | 10.1 | 0.3     |            | 10.4                     | 3    | 86.6 | 0       |            |            |
| Total %          | 9.5                    | 44.1 | 0.6  | 0.2     | 54.3       | 0.5                      | 0.1  | 0.1  | 0       | 0.6        | 0.2                    | 33.1 | 3.8  | 0.1     | 37.2       | 0.8                      | 0.2  | 6.8  | 0       | 7.9        |            |
| Autos            | 741                    | 3431 |      |         |            |                          |      |      |         |            |                        | 2596 |      |         |            |                          |      |      |         |            |            |
| % Autos          | 98.3                   | 98.1 | 100  | 100     | 98.1       | 100                      | 100  | 100  | 0       | 100        | 100                    | 98.9 | 93.3 | 100     | 98.3       | 95.4                     | 100  | 98.9 | 0       | 98.6       | 98.2       |
| Heavy Vehicles   |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles | 1.7                    | 1.9  | 0    | 0       | 1.9        | 0                        | 0    | 0    | 0       | 0          | 0                      | 1.1  | 6.7  | 0       | 1.7        | 4.6                      | 0    | 1.1  | 0       | 1.4        | 1.8        |

# Traf Tech Engineering Inc.

File Name : 2-Alton Rd & 20th St  
Site Code : 00000000  
Start Date : 8/9/2023  
Page No : 2

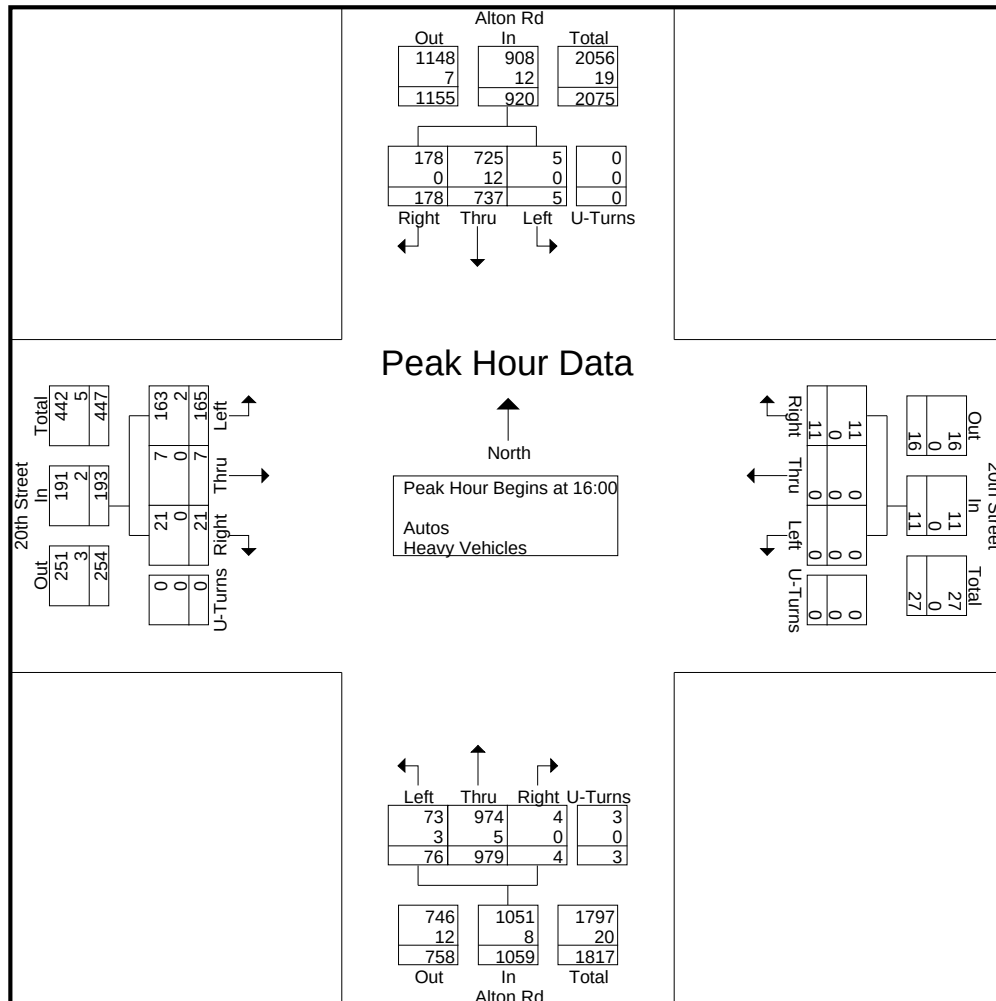




# Traf Tech Engineering Inc.

File Name : 2-Alton Rd & 20th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 3

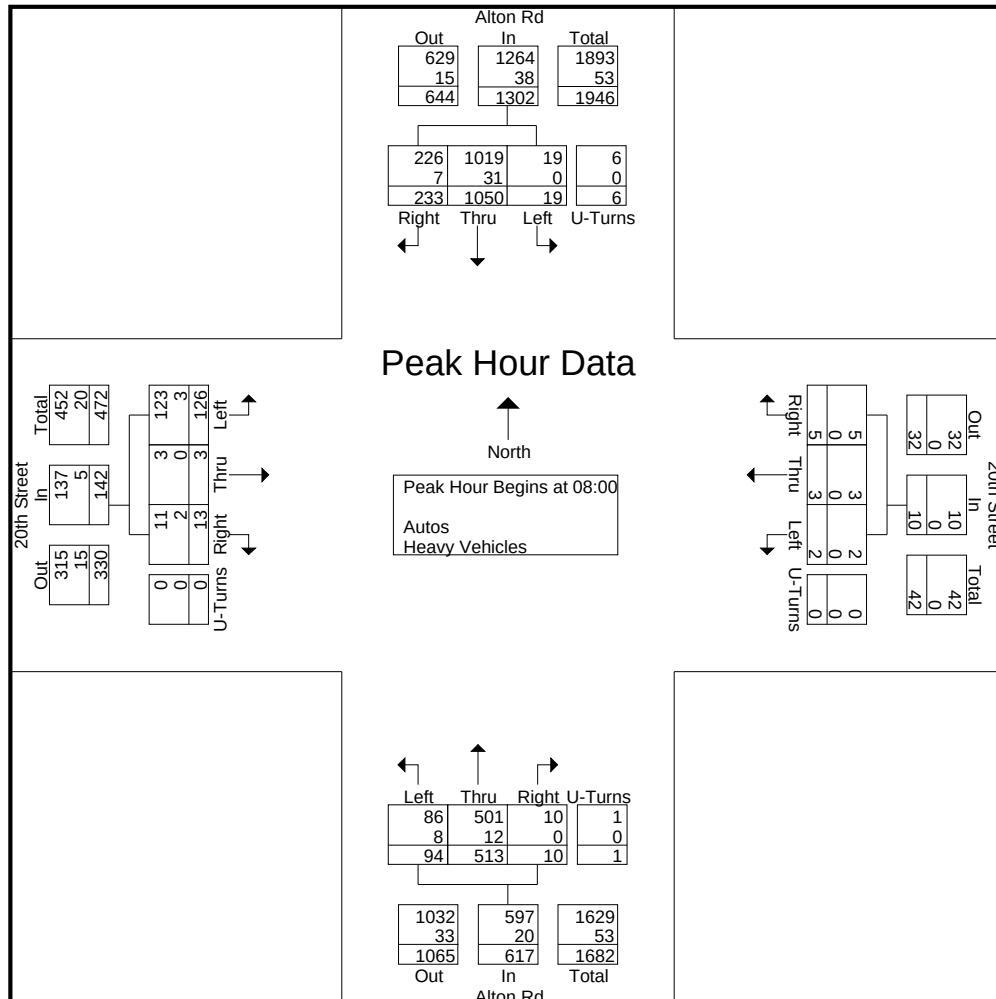
|                                                      | Alton Rd<br>From North |      |      |         |            | 20th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 20th Street<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:00    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 16:00                                                | 45                     | 184  | 2    | 0       | 231        | 5                        | 0    | 0    | 0       | 5          | 1                      | 222  | 20   | 0       | 243        | 9                        | 4    | 41   | 0       | 54         | 533        |
| 16:15                                                | 44                     | 184  | 2    | 0       | 230        | 2                        | 0    | 0    | 0       | 2          | 1                      | 269  | 18   | 3       | 291        | 5                        | 3    | 36   | 0       | 44         | 567        |
| 16:30                                                | 45                     | 175  | 0    | 0       | 220        | 2                        | 0    | 0    | 0       | 2          | 0                      | 261  | 13   | 0       | 274        | 2                        | 0    | 40   | 0       | 42         | 538        |
| 16:45                                                | 44                     | 194  | 1    | 0       | 239        | 2                        | 0    | 0    | 0       | 2          | 2                      | 227  | 25   | 0       | 254        | 5                        | 0    | 48   | 0       | 53         | 548        |
| Total Volume                                         | 178                    | 737  | 5    | 0       | 920        | 11                       | 0    | 0    | 0       | 11         | 4                      | 979  | 76   | 3       | 1062       | 21                       | 7    | 165  | 0       | 193        | 2186       |
| % App. Total                                         | 19.3                   | 80.1 | 0.5  | 0       |            | 100                      | 0    | 0    | 0       |            | 0.4                    | 92.2 | 7.2  | 0.3     |            | 10.9                     | 3.6  | 85.5 | 0       |            |            |
| PHF                                                  | .989                   | .950 | .625 | .000    | .962       | .550                     | .000 | .000 | .000    | .550       | .500                   | .910 | .760 | .250    | .912       | .583                     | .438 | .859 | .000    | .894       | .964       |
| Autos                                                | 178                    | 725  | 5    | 0       | 908        | 11                       | 0    | 0    | 0       | 11         | 4                      | 974  | 73   | 3       | 1054       | 21                       | 7    | 163  | 0       | 191        | 2164       |
| % Autos                                              | 100                    | 98.4 | 100  | 0       | 98.7       | 100                      | 0    | 0    | 0       | 100        | 100                    | 99.5 | 96.1 | 100     | 99.2       | 100                      | 100  | 98.8 | 0       | 99.0       | 99.0       |
| Heavy Vehicles                                       |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                      | 1.6  | 0    | 0       | 1.3        | 0                        | 0    | 0    | 0       | 0          | 0                      | 0.5  | 3.9  | 0       | 0.8        | 0                        | 0    | 1.2  | 0       | 1.0        | 1.0        |



# Traf Tech Engineering Inc.

File Name : 2-Alton Rd & 20th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
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|                                                      | Alton Rd<br>From North |      |      |         |            | 20th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 20th Street<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 08:00                                                | 50                     | 238  | 2    | 0       | 290        | 1                        | 1    | 0    | 0       | 2          | 3                      | 113  | 19   | 0       | 135        | 4                        | 1    | 26   | 0       | 31         | 458        |
| 08:15                                                | 65                     | 257  | 3    | 0       | 325        | 1                        | 1    | 0    | 0       | 2          | 3                      | 124  | 27   | 0       | 154        | 2                        | 1    | 27   | 0       | 30         | 511        |
| 08:30                                                | 50                     | 247  | 10   | 0       | 307        | 2                        | 1    | 1    | 0       | 4          | 1                      | 151  | 21   | 0       | 173        | 2                        | 0    | 32   | 0       | 34         | 518        |
| 08:45                                                | 68                     | 308  | 4    | 6       | 386        | 1                        | 0    | 1    | 0       | 2          | 3                      | 125  | 27   | 1       | 156        | 5                        | 1    | 41   | 0       | 47         | 591        |
| Total Volume                                         | 233                    | 1050 | 19   | 6       | 1308       | 5                        | 3    | 2    | 0       | 10         | 10                     | 513  | 94   | 1       | 618        | 13                       | 3    | 126  | 0       | 142        | 2078       |
| % App. Total                                         | 17.8                   | 80.3 | 1.5  | 0.5     |            | 50                       | 30   | 20   | 0       |            | 1.6                    | 83   | 15.2 | 0.2     |            | 9.2                      | 2.1  | 88.7 | 0       |            |            |
| PHF                                                  | .857                   | .852 | .475 | .250    | .847       | .625                     | .750 | .500 | .000    | .625       | .833                   | .849 | .870 | .250    | .893       | .650                     | .750 | .768 | .000    | .755       | .879       |
| Autos                                                | 226                    | 1019 |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Autos                                              | 97.0                   | 97.0 | 100  | 100     | 97.1       | 100                      | 100  | 100  | 0       | 100        | 100                    | 97.7 | 91.5 | 100     | 96.8       | 84.6                     | 100  | 97.6 | 0       | 96.5       | 97.0       |
| Heavy Vehicles                                       |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles                                     | 3.0                    | 3.0  | 0    | 0       | 2.9        | 0                        | 0    | 0    | 0       | 0          | 0                      | 2.3  | 8.5  | 0       | 3.2        | 15.4                     | 0    | 2.4  | 0       | 3.5        | 3.0        |



# Traf Tech Engineering Inc.

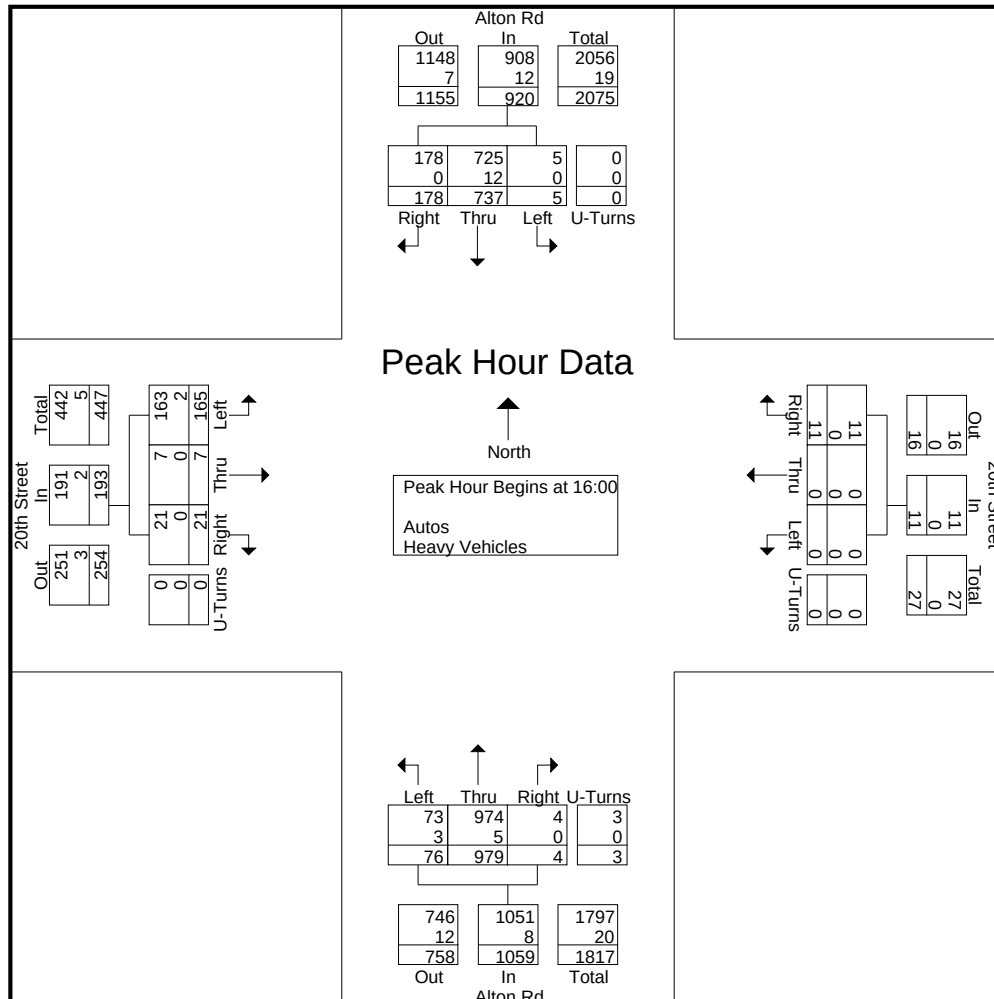
File Name : 2-Alton Rd & 20th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
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|               | Alton Rd<br>From North |      |      |         |            | 20th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 20th Street<br>From West |      |      |         |            |            |
|---------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start<br>Time | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:00

|                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:00            | 45   | 184  | 2    | 0    | 231  | 5    | 0    | 0    | 0    | 5    | 1    | 222  | 20   | 0    | 243  | 9    | 4    | 41   | 0    | 54   | 533  |
| 16:15            | 44   | 184  | 2    | 0    | 230  | 2    | 0    | 0    | 0    | 2    | 1    | 269  | 18   | 3    | 291  | 5    | 3    | 36   | 0    | 44   | 567  |
| 16:30            | 45   | 175  | 0    | 0    | 220  | 2    | 0    | 0    | 0    | 2    | 0    | 261  | 13   | 0    | 274  | 2    | 0    | 40   | 0    | 42   | 538  |
| 16:45            | 44   | 194  | 1    | 0    | 239  | 2    | 0    | 0    | 0    | 2    | 2    | 227  | 25   | 0    | 254  | 5    | 0    | 48   | 0    | 53   | 548  |
| Total Volume     | 178  | 737  | 5    | 0    | 920  | 11   | 0    | 0    | 0    | 11   | 4    | 979  | 76   | 3    | 1062 | 21   | 7    | 165  | 0    | 193  | 2186 |
| % App. Total     | 19.3 | 80.1 | 0.5  | 0    |      | 100  | 0    | 0    | 0    |      | 0.4  | 92.2 | 7.2  | 0.3  |      | 10.9 | 3.6  | 85.5 | 0    |      |      |
| PHF              | .989 | .950 | .625 | .000 | .962 | .550 | .000 | .000 | .000 | .550 | .500 | .910 | .760 | .250 | .912 | .583 | .438 | .859 | .000 | .894 | .964 |
| Autos            | 178  | 725  | 5    | 0    | 908  | 11   | 0    | 0    | 0    | 11   | 4    | 974  | 73   | 3    | 1054 | 21   | 7    | 163  | 0    | 191  | 2164 |
| % Autos          | 100  | 98.4 | 100  | 0    | 98.7 | 100  | 0    | 0    | 0    | 100  | 100  | 99.5 | 96.1 | 100  | 99.2 | 100  | 100  | 98.8 | 0    | 99.0 | 99.0 |
| Heavy Vehicles   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Heavy Vehicles | 0    | 1.6  | 0    | 0    | 1.3  | 0    | 0    | 0    | 0    | 0    | 0    | 0.5  | 3.9  | 0    | 0.8  | 0    | 0    | 1.2  | 0    | 1.0  | 1.0  |



# Traf Tech Engineering Inc.

File Name : 3-Alton Rd & 19th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Peds & Bikes

|               | Alton Rd<br>From North |   |   |      | 19th Street<br>From East |   |   |      | Alton Rd<br>From South |   |   |      | 19th Street<br>From West |   |   |      | Int. Total |
|---------------|------------------------|---|---|------|--------------------------|---|---|------|------------------------|---|---|------|--------------------------|---|---|------|------------|
| Start Time    | Bikes                  |   |   | Peds | Bikes                    |   |   | Peds | Bikes                  |   |   | Peds | Bikes                    |   |   | Peds |            |
| 07:00         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 1          |
| 07:15         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 0                        | 0 | 0 | 0    | 4          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 07:45         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1          |
| Total         | 0                      | 0 | 0 | 2    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 4    | 0                        | 0 | 0 | 0    | 6          |
| 08:00         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1          |
| 08:15         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 3    | 0                        | 0 | 0 | 0    | 3          |
| 08:30         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1          |
| 08:45         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 2          |
| Total         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 6    | 0                        | 0 | 0 | 0    | 7          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 16:00         | 0                      | 0 | 0 | 2    | 0                        | 0 | 0 | 2    | 1                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 5          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 16:30         | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 1          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| Total         | 0                      | 0 | 0 | 3    | 0                        | 0 | 0 | 2    | 1                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 6          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 17:15         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1          |
| *** BREAK *** |                        |   |   |      |                          |   |   |      |                        |   |   |      |                          |   |   |      |            |
| 17:45         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 1    | 0                        | 0 | 0 | 0    | 1          |
| Total         | 0                      | 0 | 0 | 0    | 0                        | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 0                        | 0 | 0 | 0    | 2          |
| Grand Total   | 0                      | 0 | 0 | 6    | 0                        | 0 | 0 | 2    | 1                      | 0 | 0 | 12   | 0                        | 0 | 0 | 0    | 21         |
| Apprch %      | 0                      | 0 | 0 | 100  | 0                        | 0 | 0 | 100  | 7.7                    | 0 | 0 | 92.3 | 0                        | 0 | 0 | 0    |            |
| Total %       | 0                      | 0 | 0 | 28.6 | 0                        | 0 | 0 | 9.5  | 4.8                    | 0 | 0 | 57.1 | 0                        | 0 | 0 | 0    |            |

# Traf Tech Engineering Inc.

File Name : 3-Alton Rd & 19th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
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## Groups Printed- Autos - Heavy Vehicles

|                  | Alton Rd<br>From North |      |      |         |            | 19th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 19th Street<br>From West |      |      |         |            |            |
|------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time       | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| 07:00            | 1                      | 211  | 0    | 0       | 212        | 2                        | 0    | 0    | 0       | 2          | 1                      | 72   | 0    | 0       | 73         | 5                        | 0    | 0    | 0       | 5          | 292        |
| 07:15            | 0                      | 193  | 0    | 0       | 193        | 2                        | 0    | 0    | 0       | 2          | 1                      | 94   | 0    | 0       | 95         | 7                        | 0    | 0    | 0       | 7          | 297        |
| 07:30            | 0                      | 247  | 0    | 0       | 247        | 1                        | 0    | 0    | 0       | 1          | 3                      | 96   | 0    | 0       | 99         | 15                       | 0    | 0    | 0       | 15         | 362        |
| 07:45            | 2                      | 244  | 0    | 0       | 246        | 3                        | 0    | 0    | 0       | 3          | 2                      | 109  | 0    | 0       | 111        | 18                       | 0    | 0    | 0       | 18         | 378        |
| Total            | 3                      | 895  | 0    | 0       | 898        | 8                        | 0    | 0    | 0       | 8          | 7                      | 371  | 0    | 0       | 378        | 45                       | 0    | 0    | 0       | 45         | 1329       |
| 08:00            | 1                      | 235  | 0    | 0       | 236        | 11                       | 0    | 0    | 0       | 11         | 4                      | 133  | 0    | 0       | 137        | 29                       | 0    | 0    | 0       | 29         | 413        |
| 08:15            | 0                      | 258  | 0    | 0       | 258        | 6                        | 0    | 0    | 0       | 6          | 3                      | 160  | 0    | 0       | 163        | 26                       | 0    | 0    | 0       | 26         | 453        |
| 08:30            | 1                      | 243  | 0    | 0       | 244        | 10                       | 0    | 0    | 0       | 10         | 4                      | 157  | 0    | 0       | 161        | 23                       | 0    | 0    | 0       | 23         | 438        |
| 08:45            | 0                      | 291  | 0    | 0       | 291        | 6                        | 0    | 0    | 0       | 6          | 9                      | 150  | 0    | 0       | 159        | 29                       | 0    | 0    | 0       | 29         | 485        |
| Total            | 2                      | 1027 | 0    | 0       | 1029       | 33                       | 0    | 0    | 0       | 33         | 20                     | 600  | 0    | 0       | 620        | 107                      | 0    | 0    | 0       | 107        | 1789       |
| *** BREAK ***    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 16:00            | 0                      | 196  | 0    | 0       | 196        | 7                        | 0    | 0    | 0       | 7          | 7                      | 247  | 0    | 0       | 254        | 22                       | 0    | 0    | 0       | 22         | 479        |
| 16:15            | 0                      | 192  | 0    | 0       | 192        | 13                       | 0    | 0    | 0       | 13         | 11                     | 265  | 0    | 0       | 276        | 31                       | 0    | 0    | 0       | 31         | 512        |
| 16:30            | 0                      | 177  | 0    | 0       | 177        | 4                        | 0    | 0    | 0       | 4          | 8                      | 272  | 0    | 0       | 280        | 31                       | 0    | 0    | 0       | 31         | 492        |
| 16:45            | 0                      | 197  | 0    | 0       | 197        | 6                        | 0    | 0    | 0       | 6          | 7                      | 249  | 0    | 0       | 256        | 20                       | 0    | 0    | 0       | 20         | 479        |
| Total            | 0                      | 762  | 0    | 0       | 762        | 30                       | 0    | 0    | 0       | 30         | 33                     | 1033 | 0    | 0       | 1066       | 104                      | 0    | 0    | 0       | 104        | 1962       |
| 17:00            | 2                      | 181  | 0    | 0       | 183        | 7                        | 0    | 0    | 0       | 7          | 3                      | 210  | 0    | 0       | 213        | 30                       | 0    | 0    | 0       | 30         | 433        |
| 17:15            | 0                      | 183  | 0    | 0       | 183        | 9                        | 0    | 0    | 0       | 9          | 4                      | 252  | 0    | 0       | 256        | 25                       | 0    | 0    | 0       | 25         | 473        |
| 17:30            | 0                      | 231  | 0    | 0       | 231        | 10                       | 0    | 0    | 0       | 10         | 5                      | 239  | 0    | 0       | 244        | 18                       | 0    | 0    | 0       | 18         | 503        |
| 17:45            | 1                      | 234  | 0    | 0       | 235        | 3                        | 0    | 0    | 0       | 3          | 4                      | 183  | 0    | 0       | 187        | 18                       | 0    | 0    | 0       | 18         | 443        |
| Total            | 3                      | 829  | 0    | 0       | 832        | 29                       | 0    | 0    | 0       | 29         | 16                     | 884  | 0    | 0       | 900        | 91                       | 0    | 0    | 0       | 91         | 1852       |
| Grand Total      | 8                      | 3513 | 0    | 0       | 3521       | 100                      | 0    | 0    | 0       | 100        | 76                     | 2888 | 0    | 0       | 2964       | 347                      | 0    | 0    | 0       | 347        | 6932       |
| Apprch %         | 0.2                    | 99.8 | 0    | 0       |            | 100                      | 0    | 0    | 0       |            | 2.6                    | 97.4 | 0    | 0       |            | 100                      | 0    | 0    | 0       |            |            |
| Total %          | 0.1                    | 50.7 | 0    | 0       | 50.8       | 1.4                      | 0    | 0    | 0       | 1.4        | 1.1                    | 41.7 | 0    | 0       | 42.8       | 5                        | 0    | 0    | 0       | 5          |            |
| Autos            | 8                      | 3428 |      |         |            |                          |      |      |         |            |                        | 2806 |      |         |            |                          |      |      |         |            |            |
| % Autos          | 100                    | 97.6 | 0    | 0       | 97.6       | 96                       | 0    | 0    | 0       | 96         | 84.2                   | 97.2 | 0    | 0       | 96.8       | 91.4                     | 0    | 0    | 0       | 91.4       | 96.9       |
| Heavy Vehicles   |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles | 0                      | 2.4  | 0    | 0       | 2.4        | 4                        | 0    | 0    | 0       | 4          | 15.8                   | 2.8  | 0    | 0       | 3.2        | 8.6                      | 0    | 0    | 0       | 8.6        | 3.1        |

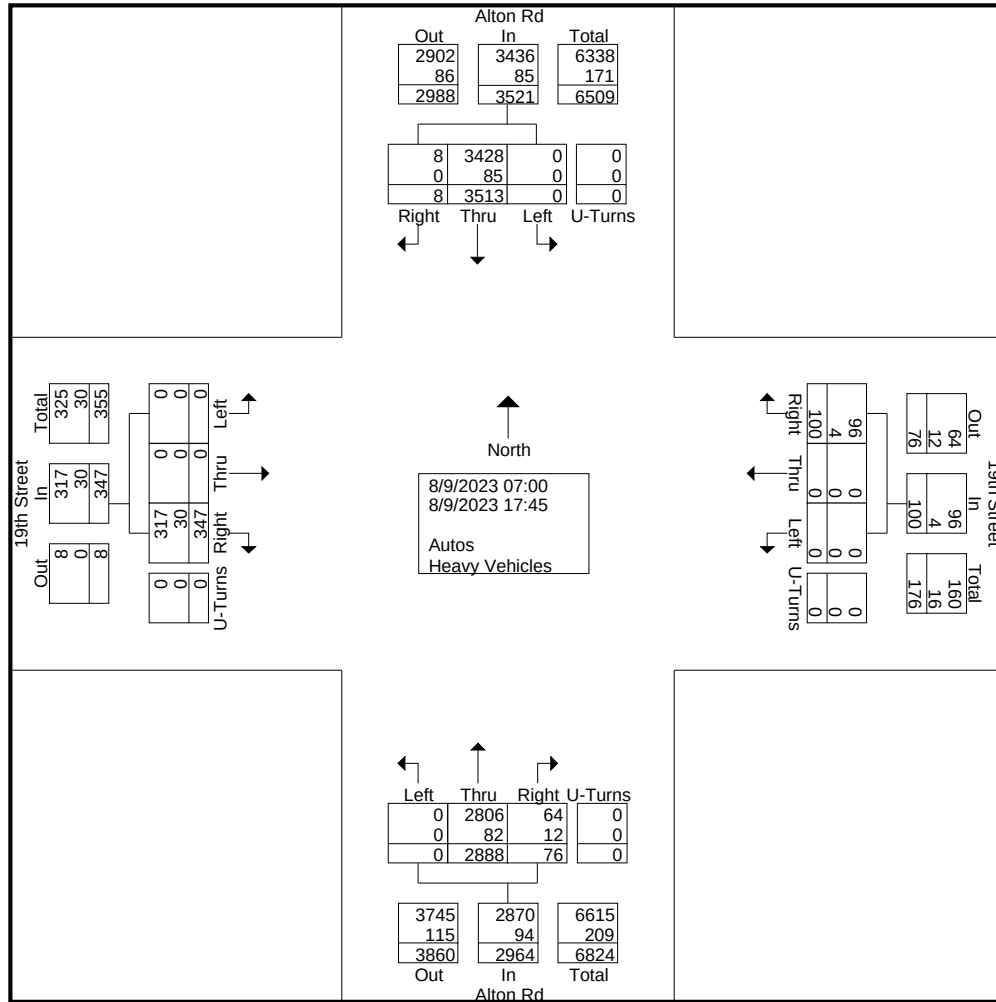
# Traf Tech Engineering Inc.

File Name : 3-Alton Rd & 19th St

Site Code : 00000000

Start Date : 8/9/2023

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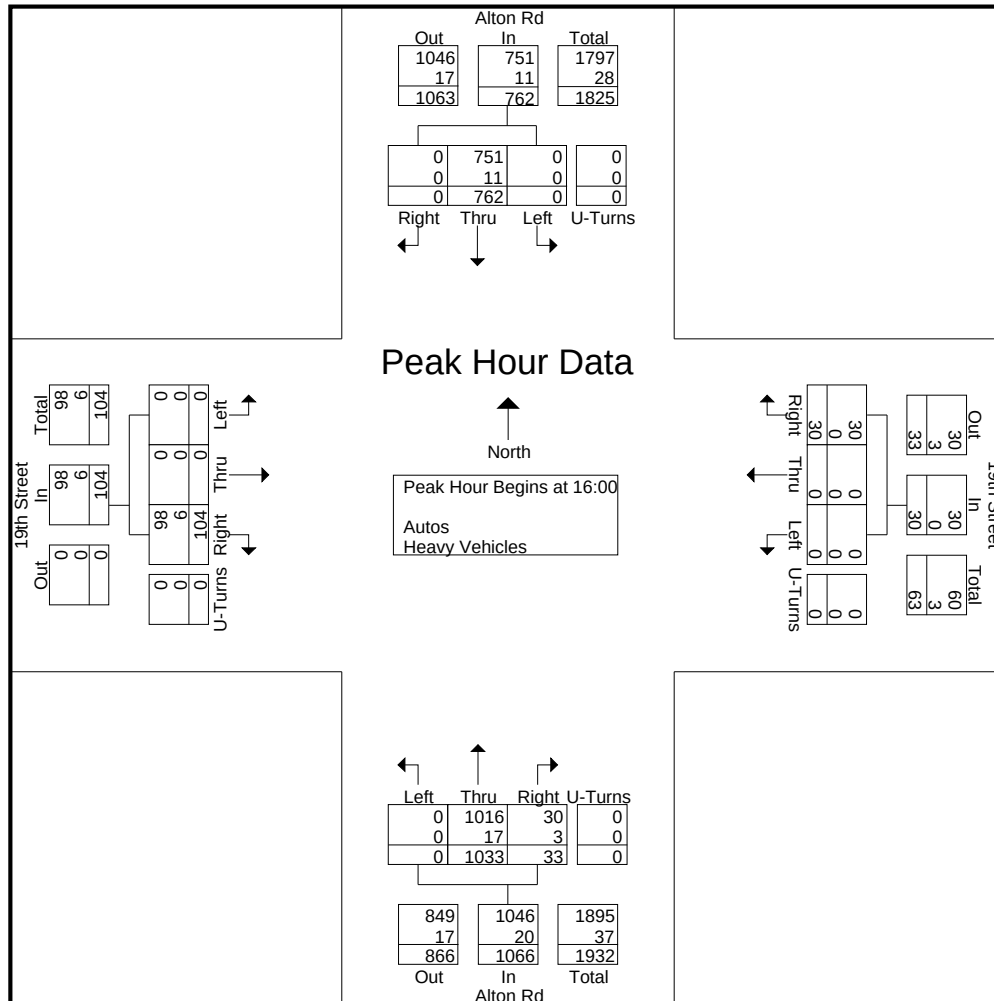




# Traf Tech Engineering Inc.

File Name : 3-Alton Rd & 19th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
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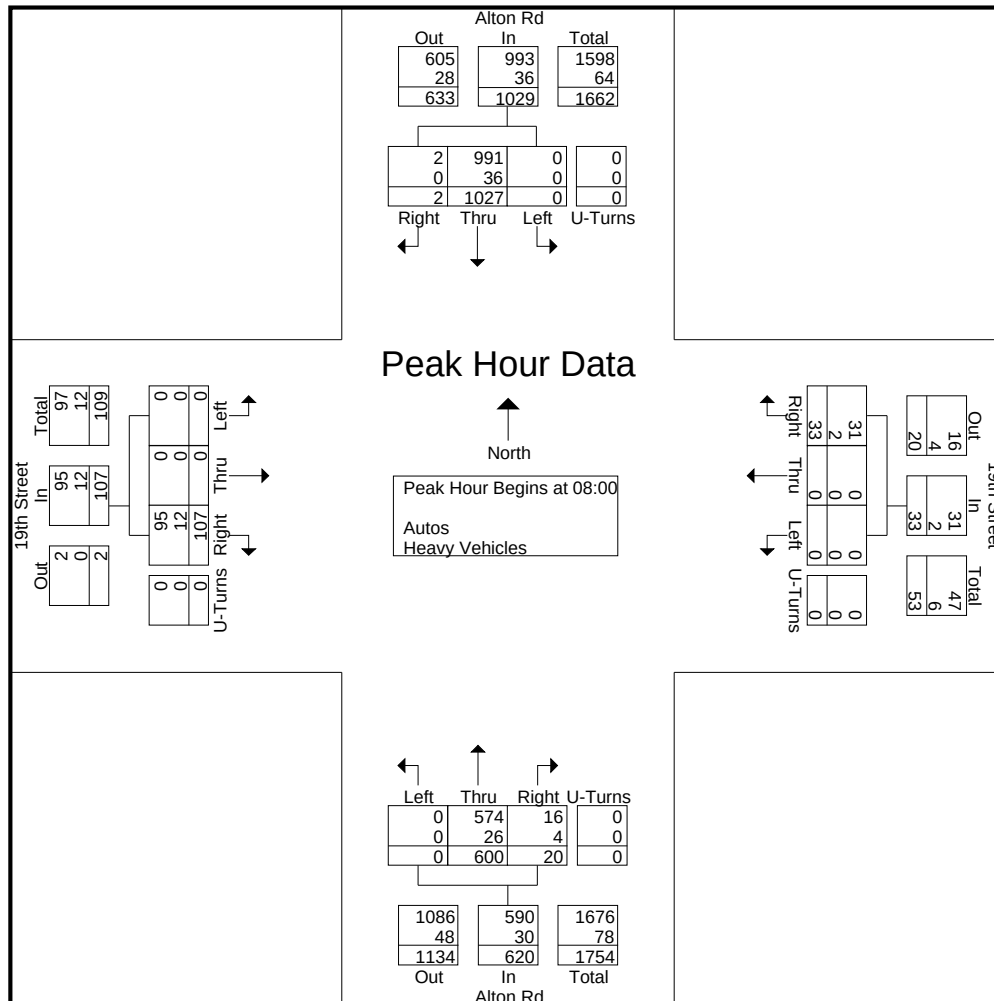
|                                                      | Alton Rd<br>From North |      |      |         |            | 19th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 19th Street<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:00    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 16:00                                                | 0                      | 196  | 0    | 0       | 196        | 7                        | 0    | 0    | 0       | 7          | 7                      | 247  | 0    | 0       | 254        | 22                       | 0    | 0    | 0       | 22         | 479        |
| 16:15                                                | 0                      | 192  | 0    | 0       | 192        | 13                       | 0    | 0    | 0       | 13         | 11                     | 265  | 0    | 0       | 276        | 31                       | 0    | 0    | 0       | 31         | 512        |
| 16:30                                                | 0                      | 177  | 0    | 0       | 177        | 4                        | 0    | 0    | 0       | 4          | 8                      | 272  | 0    | 0       | 280        | 31                       | 0    | 0    | 0       | 31         | 492        |
| 16:45                                                | 0                      | 197  | 0    | 0       | 197        | 6                        | 0    | 0    | 0       | 6          | 7                      | 249  | 0    | 0       | 256        | 20                       | 0    | 0    | 0       | 20         | 479        |
| Total Volume                                         | 0                      | 762  | 0    | 0       | 762        | 30                       | 0    | 0    | 0       | 30         | 33                     | 1033 | 0    | 0       | 1066       | 104                      | 0    | 0    | 0       | 104        | 1962       |
| % App. Total                                         | 0                      | 100  | 0    | 0       |            | 100                      | 0    | 0    | 0       |            | 3.1                    | 96.9 | 0    | 0       |            | 100                      | 0    | 0    | 0       |            |            |
| PHF                                                  | .000                   | .967 | .000 | .000    | .967       | .577                     | .000 | .000 | .000    | .577       | .750                   | .949 | .000 | .000    | .952       | .839                     | .000 | .000 | .000    | .839       | .958       |
| Autos                                                | 0                      | 751  | 0    | 0       | 751        | 30                       | 0    | 0    | 0       | 30         | 30                     | 1016 |      |         |            | 94.2                     | 0    | 0    | 0       | 94.2       | 98.1       |
| % Autos                                              | 0                      | 98.6 | 0    | 0       | 98.6       | 100                      | 0    | 0    | 0       | 100        | 90.9                   | 98.4 | 0    | 0       | 98.1       | 94.2                     | 0    | 0    | 0       | 94.2       | 98.1       |
| Heavy Vehicles                                       |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                      | 1.4  | 0    | 0       | 1.4        | 0                        | 0    | 0    | 0       | 0          | 9.1                    | 1.6  | 0    | 0       | 1.9        | 5.8                      | 0    | 0    | 0       | 5.8        | 1.9        |



# Traf Tech Engineering Inc.

File Name : 3-Alton Rd & 19th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
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|                                                      | Alton Rd<br>From North |      |      |         |            | 19th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 19th Street<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| 08:00                                                | 1                      | 235  | 0    | 0       | 236        | 11                       | 0    | 0    | 0       | 11         | 4                      | 133  | 0    | 0       | 137        | 29                       | 0    | 0    | 0       | 29         | 413        |
| 08:15                                                | 0                      | 258  | 0    | 0       | 258        | 6                        | 0    | 0    | 0       | 6          | 3                      | 160  | 0    | 0       | 163        | 26                       | 0    | 0    | 0       | 26         | 453        |
| 08:30                                                | 1                      | 243  | 0    | 0       | 244        | 10                       | 0    | 0    | 0       | 10         | 4                      | 157  | 0    | 0       | 161        | 23                       | 0    | 0    | 0       | 23         | 438        |
| 08:45                                                | 0                      | 291  | 0    | 0       | 291        | 6                        | 0    | 0    | 0       | 6          | 9                      | 150  | 0    | 0       | 159        | 29                       | 0    | 0    | 0       | 29         | 485        |
| Total Volume                                         | 2                      | 1027 | 0    | 0       | 1029       | 33                       | 0    | 0    | 0       | 33         | 20                     | 600  | 0    | 0       | 620        | 107                      | 0    | 0    | 0       | 107        | 1789       |
| % App. Total                                         | 0.2                    | 99.8 | 0    | 0       |            | 100                      | 0    | 0    | 0       |            | 3.2                    | 96.8 | 0    | 0       |            | 100                      | 0    | 0    | 0       |            |            |
| PHF                                                  | .500                   | .882 | .000 | .000    | .884       | .750                     | .000 | .000 | .000    | .750       | .556                   | .938 | .000 | .000    | .951       | .922                     | .000 | .000 | .000    | .922       | .922       |
| Autos                                                | 2                      | 991  | 0    | 0       | 993        | 31                       | 0    | 0    | 0       | 31         | 16                     | 574  | 0    | 0       | 590        | 95                       | 0    | 0    | 0       | 95         | 1709       |
| % Autos                                              | 100                    | 96.5 | 0    | 0       | 96.5       | 93.9                     | 0    | 0    | 0       | 93.9       | 80.0                   | 95.7 | 0    | 0       | 95.2       | 88.8                     | 0    | 0    | 0       | 88.8       | 95.5       |
| Heavy Vehicles                                       |                        |      |      |         |            |                          |      |      |         |            |                        |      |      |         |            |                          |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                      | 3.5  | 0    | 0       | 3.5        | 6.1                      | 0    | 0    | 0       | 6.1        | 20.0                   | 4.3  | 0    | 0       | 4.8        | 11.2                     | 0    | 0    | 0       | 11.2       | 4.5        |



# Traf Tech Engineering Inc.

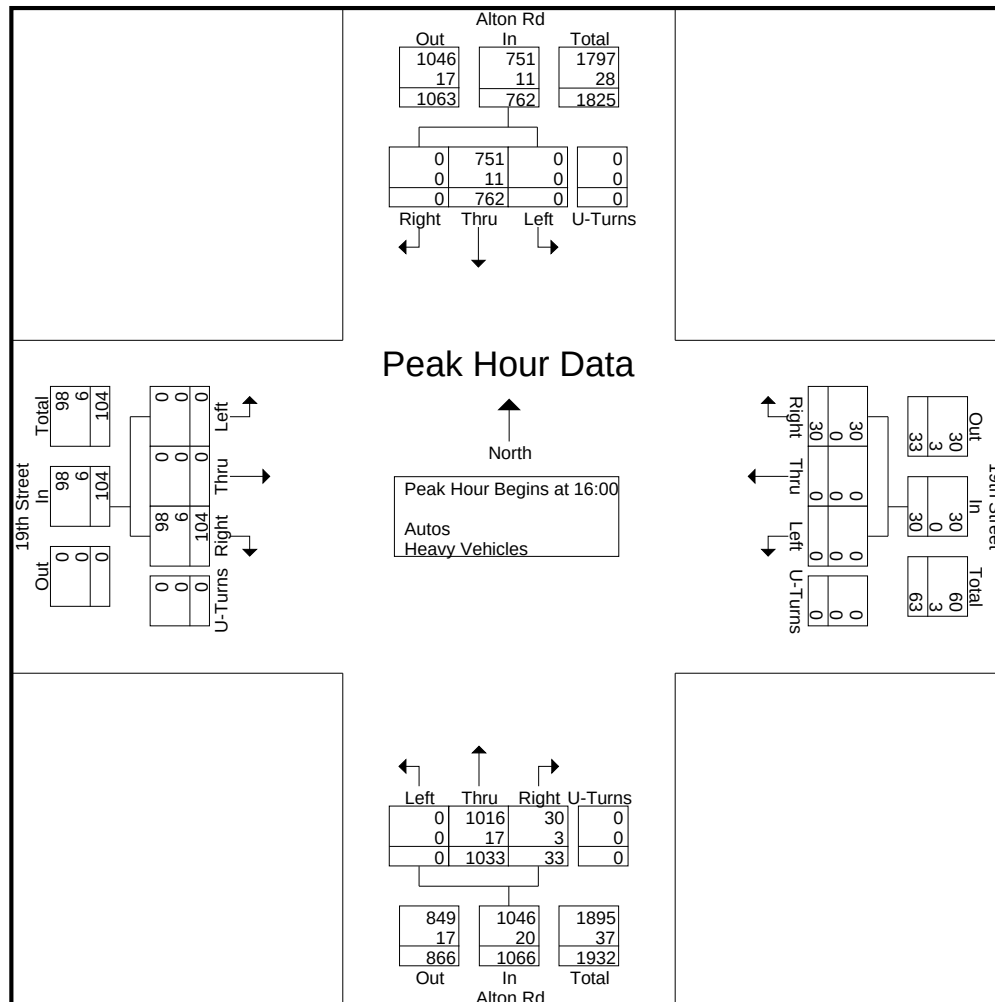
File Name : 3-Alton Rd & 19th St  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 5

|               | Alton Rd<br>From North |      |      |         |            | 19th Street<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | 19th Street<br>From West |      |      |         |            |            |
|---------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start<br>Time | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                    | Thru | Left | U-Turns | App. Total | Int. Total |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:00

|                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:00            | 0    | 196  | 0    | 0    | 196  | 7    | 0    | 0    | 0    | 7    | 7    | 247  | 0    | 0    | 254  | 22   | 0    | 0    | 0    | 22   | 479  |
| 16:15            | 0    | 192  | 0    | 0    | 192  | 13   | 0    | 0    | 0    | 13   | 11   | 265  | 0    | 0    | 276  | 31   | 0    | 0    | 0    | 31   | 512  |
| 16:30            | 0    | 177  | 0    | 0    | 177  | 4    | 0    | 0    | 0    | 4    | 8    | 272  | 0    | 0    | 280  | 31   | 0    | 0    | 0    | 31   | 492  |
| 16:45            | 0    | 197  | 0    | 0    | 197  | 6    | 0    | 0    | 0    | 6    | 7    | 249  | 0    | 0    | 256  | 20   | 0    | 0    | 0    | 20   | 479  |
| Total Volume     | 0    | 762  | 0    | 0    | 762  | 30   | 0    | 0    | 0    | 30   | 33   | 1033 | 0    | 0    | 1066 | 104  | 0    | 0    | 0    | 104  | 1962 |
| % App. Total     | 0    | 100  | 0    | 0    |      | 100  | 0    | 0    | 0    |      | 3.1  | 96.9 | 0    | 0    |      | 100  | 0    | 0    | 0    |      |      |
| PHF              | .000 | .967 | .000 | .000 | .967 | .577 | .000 | .000 | .000 | .577 | .750 | .949 | .000 | .000 | .952 | .839 | .000 | .000 | .000 | .839 | .958 |
| Autos            | 0    | 751  | 0    | 0    | 751  | 30   | 0    | 0    | 0    | 30   | 30   | 1016 |      |      |      |      |      |      |      |      |      |
| % Autos          | 0    | 98.6 | 0    | 0    | 98.6 | 100  | 0    | 0    | 0    | 100  | 90.9 | 98.4 | 0    | 0    | 98.1 | 94.2 | 0    | 0    | 0    | 94.2 | 98.1 |
| Heavy Vehicles   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Heavy Vehicles | 0    | 1.4  | 0    | 0    | 1.4  | 0    | 0    | 0    | 0    | 0    | 9.1  | 1.6  | 0    | 0    | 1.9  | 5.8  | 0    | 0    | 0    | 5.8  | 1.9  |



# Traf Tech Engineering Inc.

File Name : 4-Alton Rd & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Peds & Bikes

|               | Alton Rd<br>From North |   |   |      | Dade Ave<br>From East |   |   |      | Alton Rd<br>From South |   |   |      | Dade Ave<br>From West |   |   |      | Int. Total |
|---------------|------------------------|---|---|------|-----------------------|---|---|------|------------------------|---|---|------|-----------------------|---|---|------|------------|
| Start Time    | Bikes                  |   |   | Peds | Bikes                 |   |   | Peds | Bikes                  |   |   | Peds | Bikes                 |   |   | Peds |            |
| 07:00         | 1                      | 0 | 0 | 2    | 0                     | 0 | 0 | 2    | 2                      | 0 | 0 | 0    | 1                     | 0 | 0 | 3    | 11         |
| 07:15         | 4                      | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 0                      | 0 | 0 | 2    | 0                     | 0 | 0 | 4    | 10         |
| 07:30         | 1                      | 0 | 0 | 0    | 0                     | 0 | 0 | 5    | 3                      | 0 | 0 | 0    | 0                     | 0 | 0 | 5    | 14         |
| 07:45         | 3                      | 0 | 0 | 0    | 0                     | 0 | 0 | 5    | 5                      | 0 | 0 | 0    | 1                     | 0 | 0 | 4    | 18         |
| Total         | 9                      | 0 | 0 | 2    | 0                     | 0 | 0 | 12   | 10                     | 0 | 0 | 2    | 2                     | 0 | 0 | 16   | 53         |
| 08:00         | 4                      | 0 | 0 | 0    | 1                     | 0 | 0 | 2    | 11                     | 0 | 0 | 4    | 2                     | 0 | 0 | 3    | 27         |
| 08:15         | 6                      | 0 | 0 | 0    | 1                     | 0 | 0 | 5    | 5                      | 0 | 0 | 0    | 2                     | 0 | 0 | 2    | 21         |
| 08:30         | 0                      | 0 | 0 | 0    | 0                     | 0 | 0 | 1    | 4                      | 0 | 0 | 0    | 0                     | 0 | 0 | 3    | 8          |
| 08:45         | 3                      | 0 | 0 | 2    | 1                     | 0 | 0 | 6    | 3                      | 0 | 0 | 2    | 3                     | 0 | 0 | 0    | 20         |
| Total         | 13                     | 0 | 0 | 2    | 3                     | 0 | 0 | 14   | 23                     | 0 | 0 | 6    | 7                     | 0 | 0 | 8    | 76         |
| *** BREAK *** |                        |   |   |      |                       |   |   |      |                        |   |   |      |                       |   |   |      |            |
| 16:00         | 3                      | 0 | 0 | 0    | 1                     | 0 | 0 | 1    | 1                      | 0 | 0 | 1    | 2                     | 0 | 0 | 1    | 10         |
| 16:15         | 0                      | 0 | 0 | 0    | 1                     | 0 | 0 | 8    | 2                      | 0 | 0 | 0    | 1                     | 0 | 0 | 9    | 21         |
| 16:30         | 0                      | 0 | 0 | 0    | 0                     | 0 | 0 | 3    | 4                      | 0 | 0 | 0    | 1                     | 0 | 0 | 1    | 9          |
| 16:45         | 0                      | 0 | 0 | 0    | 5                     | 0 | 0 | 1    | 5                      | 0 | 0 | 0    | 1                     | 0 | 0 | 3    | 15         |
| Total         | 3                      | 0 | 0 | 0    | 7                     | 0 | 0 | 13   | 12                     | 0 | 0 | 1    | 5                     | 0 | 0 | 14   | 55         |
| 17:00         | 1                      | 0 | 0 | 2    | 3                     | 0 | 0 | 2    | 1                      | 0 | 0 | 0    | 6                     | 0 | 0 | 3    | 18         |
| 17:15         | 3                      | 0 | 0 | 1    | 0                     | 0 | 0 | 6    | 1                      | 0 | 0 | 3    | 0                     | 0 | 0 | 9    | 23         |
| 17:30         | 2                      | 0 | 0 | 1    | 1                     | 0 | 0 | 0    | 1                      | 0 | 0 | 4    | 0                     | 0 | 0 | 2    | 11         |
| 17:45         | 3                      | 0 | 0 | 8    | 0                     | 0 | 0 | 3    | 0                      | 0 | 0 | 2    | 1                     | 0 | 0 | 4    | 21         |
| Total         | 9                      | 0 | 0 | 12   | 4                     | 0 | 0 | 11   | 3                      | 0 | 0 | 9    | 7                     | 0 | 0 | 18   | 73         |
| Grand Total   | 34                     | 0 | 0 | 16   | 14                    | 0 | 0 | 50   | 48                     | 0 | 0 | 18   | 21                    | 0 | 0 | 56   | 257        |
| Apprch %      | 68                     | 0 | 0 | 32   | 21.9                  | 0 | 0 | 78.1 | 72.7                   | 0 | 0 | 27.3 | 27.3                  | 0 | 0 | 72.7 |            |
| Total %       | 13.2                   | 0 | 0 | 6.2  | 5.4                   | 0 | 0 | 19.5 | 18.7                   | 0 | 0 | 7    | 8.2                   | 0 | 0 | 21.8 |            |

# Traf Tech Engineering Inc.

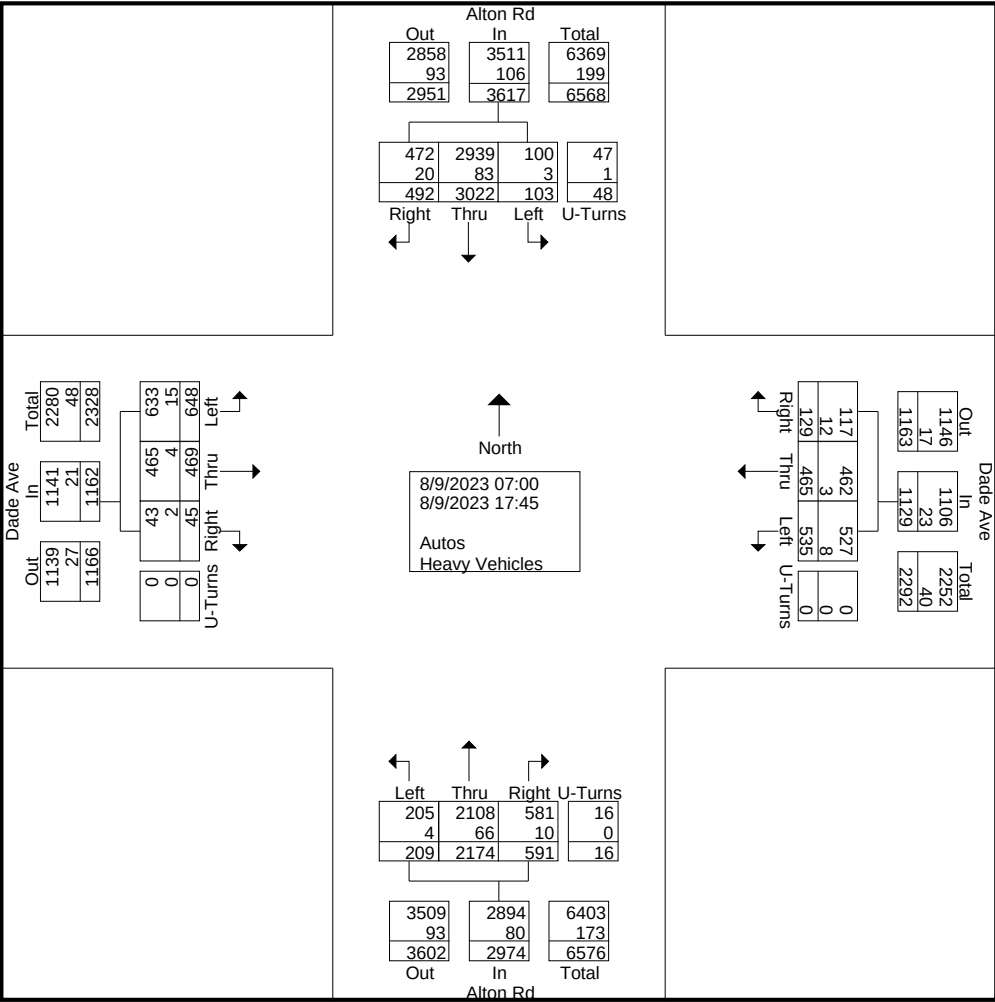
File Name : 4-Alton Rd & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Autos - Heavy Vehicles

|                  | Alton Rd<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time       | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| 07:00            | 38                     | 178  | 2    | 0       | 218        | 0                     | 11   | 18   | 0       | 29         | 27                     | 52   | 9    | 1       | 89         | 1                     | 11   | 21   | 0       | 33         | 369        |
| 07:15            | 27                     | 168  | 4    | 1       | 200        | 1                     | 16   | 23   | 0       | 40         | 23                     | 67   | 8    | 0       | 98         | 3                     | 17   | 24   | 0       | 44         | 382        |
| 07:30            | 38                     | 197  | 3    | 1       | 239        | 2                     | 16   | 26   | 0       | 44         | 31                     | 74   | 10   | 1       | 116        | 1                     | 12   | 23   | 0       | 36         | 435        |
| 07:45            | 45                     | 194  | 9    | 1       | 249        | 7                     | 18   | 30   | 0       | 55         | 24                     | 70   | 6    | 0       | 100        | 0                     | 17   | 35   | 0       | 52         | 456        |
| Total            | 148                    | 737  | 18   | 3       | 906        | 10                    | 61   | 97   | 0       | 168        | 105                    | 263  | 33   | 2       | 403        | 5                     | 57   | 103  | 0       | 165        | 1642       |
| 08:00            | 45                     | 181  | 8    | 4       | 238        | 8                     | 25   | 31   | 0       | 64         | 34                     | 88   | 13   | 1       | 136        | 3                     | 31   | 40   | 0       | 74         | 512        |
| 08:15            | 35                     | 206  | 10   | 3       | 254        | 13                    | 19   | 27   | 0       | 59         | 32                     | 109  | 20   | 1       | 162        | 2                     | 24   | 43   | 0       | 69         | 544        |
| 08:30            | 30                     | 242  | 7    | 0       | 279        | 8                     | 15   | 30   | 0       | 53         | 37                     | 110  | 11   | 0       | 158        | 1                     | 32   | 49   | 0       | 82         | 572        |
| 08:45            | 39                     | 239  | 3    | 4       | 285        | 8                     | 36   | 35   | 0       | 79         | 50                     | 106  | 13   | 2       | 171        | 2                     | 35   | 45   | 0       | 82         | 617        |
| Total            | 149                    | 868  | 28   | 11      | 1056       | 37                    | 95   | 123  | 0       | 255        | 153                    | 413  | 57   | 4       | 627        | 8                     | 122  | 177  | 0       | 307        | 2245       |
| *** BREAK ***    |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| 16:00            | 20                     | 169  | 4    | 6       | 199        | 11                    | 32   | 41   | 0       | 84         | 32                     | 189  | 11   | 1       | 233        | 3                     | 34   | 57   | 0       | 94         | 610        |
| 16:15            | 27                     | 184  | 7    | 5       | 223        | 9                     | 40   | 47   | 0       | 96         | 44                     | 235  | 15   | 0       | 294        | 4                     | 39   | 55   | 0       | 98         | 711        |
| 16:30            | 19                     | 171  | 4    | 8       | 202        | 8                     | 35   | 42   | 0       | 85         | 37                     | 181  | 14   | 2       | 234        | 2                     | 43   | 59   | 0       | 104        | 625        |
| 16:45            | 23                     | 174  | 9    | 3       | 209        | 16                    | 45   | 37   | 0       | 98         | 54                     | 191  | 15   | 1       | 261        | 4                     | 34   | 42   | 0       | 80         | 648        |
| Total            | 89                     | 698  | 24   | 22      | 833        | 44                    | 152  | 167  | 0       | 363        | 167                    | 796  | 55   | 4       | 1022       | 13                    | 150  | 213  | 0       | 376        | 2594       |
| 17:00            | 21                     | 174  | 6    | 4       | 205        | 10                    | 46   | 34   | 0       | 90         | 47                     | 176  | 18   | 2       | 243        | 8                     | 26   | 43   | 0       | 77         | 615        |
| 17:15            | 25                     | 158  | 5    | 3       | 191        | 9                     | 41   | 38   | 0       | 88         | 38                     | 195  | 14   | 1       | 248        | 1                     | 36   | 35   | 0       | 72         | 599        |
| 17:30            | 26                     | 196  | 13   | 4       | 239        | 15                    | 37   | 43   | 0       | 95         | 45                     | 188  | 17   | 1       | 251        | 7                     | 34   | 42   | 0       | 83         | 668        |
| 17:45            | 34                     | 191  | 9    | 1       | 235        | 4                     | 33   | 33   | 0       | 70         | 36                     | 143  | 15   | 2       | 196        | 3                     | 44   | 35   | 0       | 82         | 583        |
| Total            | 106                    | 719  | 33   | 12      | 870        | 38                    | 157  | 148  | 0       | 343        | 166                    | 702  | 64   | 6       | 938        | 19                    | 140  | 155  | 0       | 314        | 2465       |
| Grand Total      | 492                    | 3022 | 103  | 48      | 3665       | 129                   | 465  | 535  | 0       | 1129       | 591                    | 2174 | 209  | 16      | 2990       | 45                    | 469  | 648  | 0       | 1162       | 8946       |
| Apprch %         | 13.4                   | 82.5 | 2.8  | 1.3     |            | 11.4                  | 41.2 | 47.4 | 0       |            | 19.8                   | 72.7 | 7    | 0.5     |            | 3.9                   | 40.4 | 55.8 | 0       |            |            |
| Total %          | 5.5                    | 33.8 | 1.2  | 0.5     | 41         | 1.4                   | 5.2  | 6    | 0       | 12.6       | 6.6                    | 24.3 | 2.3  | 0.2     | 33.4       | 0.5                   | 5.2  | 7.2  | 0       | 13         |            |
| Autos            | 472                    | 2939 |      |         |            |                       |      |      |         |            |                        | 2108 |      |         |            |                       |      |      |         |            |            |
| % Autos          | 95.9                   | 97.3 | 97.1 | 97.9    | 97.1       | 90.7                  | 99.4 | 98.5 | 0       | 98         | 98.3                   | 97   | 98.1 | 100     | 97.3       | 95.6                  | 99.1 | 97.7 | 0       | 98.2       | 97.4       |
| Heavy Vehicles   |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles | 4.1                    | 2.7  | 2.9  | 2.1     | 2.9        | 9.3                   | 0.6  | 1.5  | 0       | 2          | 1.7                    | 3    | 1.9  | 0       | 2.7        | 4.4                   | 0.9  | 2.3  | 0       | 1.8        | 2.6        |

# Traf Tech Engineering Inc.

File Name : 4-Alton Rd & Dade Ave  
Site Code : 00000000  
Start Date : 8/9/2023  
Page No : 2

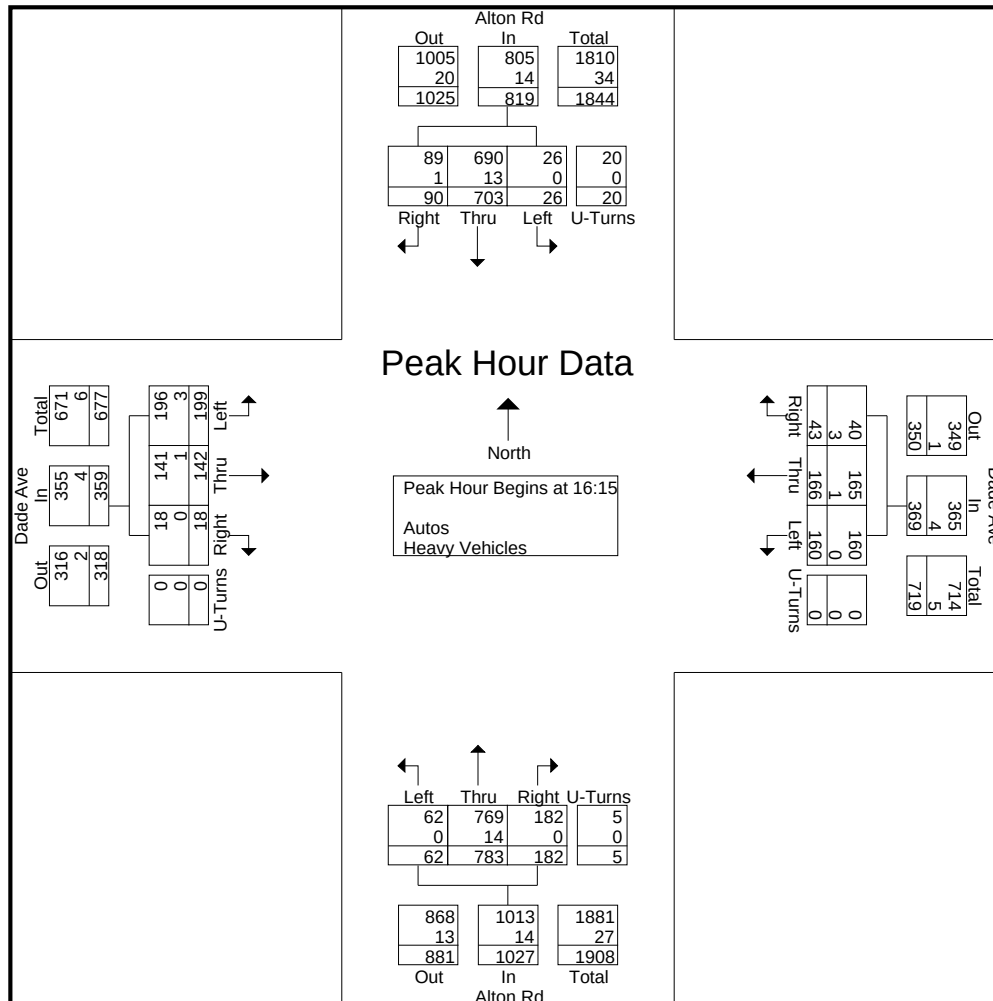




# Traf Tech Engineering Inc.

File Name : 4-Alton Rd & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 3

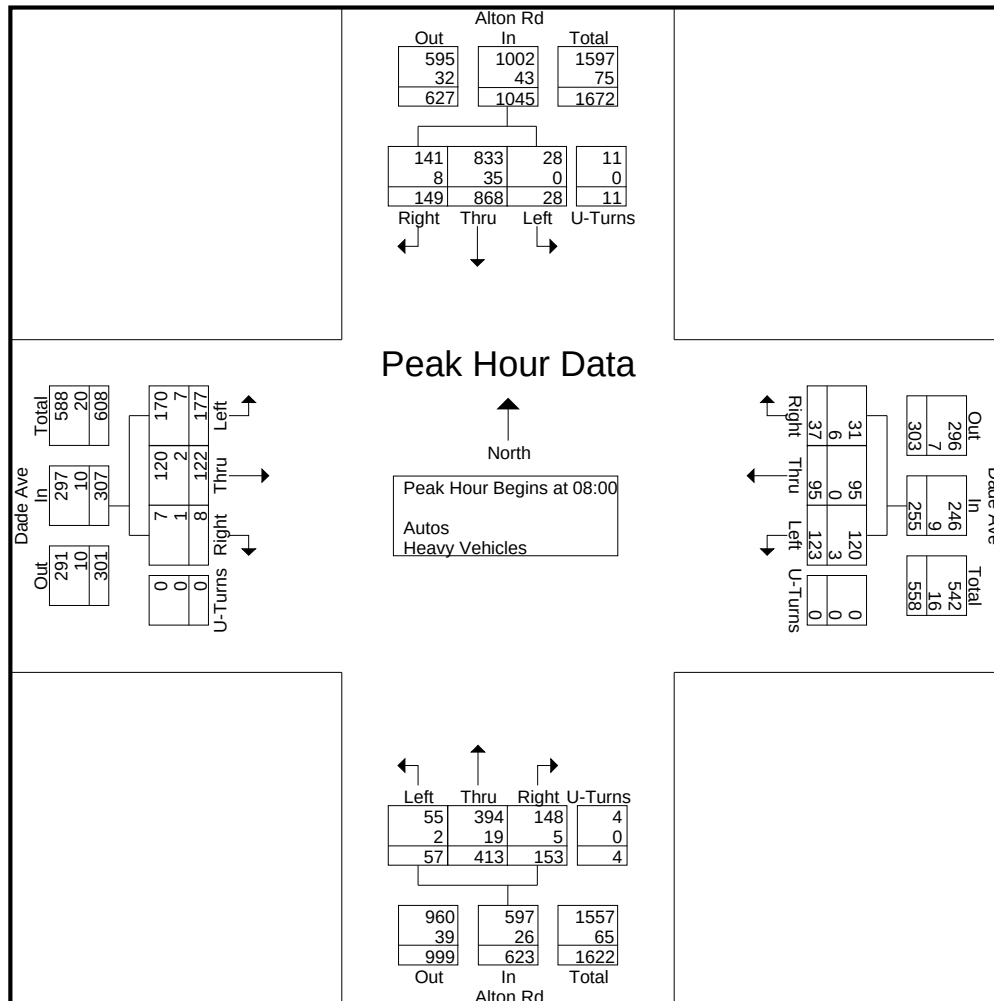
|                                                      | Alton Rd<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:15    |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| 16:15                                                | 27                     | 184  | 7    | 5       | 223        | 9                     | 40   | 47   | 0       | 96         | 44                     | 235  | 15   | 0       | 294        | 4                     | 39   | 55   | 0       | 98         | 711        |
| 16:30                                                | 19                     | 171  | 4    | 8       | 202        | 8                     | 35   | 42   | 0       | 85         | 37                     | 181  | 14   | 2       | 234        | 2                     | 43   | 59   | 0       | 104        | 625        |
| 16:45                                                | 23                     | 174  | 9    | 3       | 209        | 16                    | 45   | 37   | 0       | 98         | 54                     | 191  | 15   | 1       | 261        | 4                     | 34   | 42   | 0       | 80         | 648        |
| 17:00                                                | 21                     | 174  | 6    | 4       | 205        | 10                    | 46   | 34   | 0       | 90         | 47                     | 176  | 18   | 2       | 243        | 8                     | 26   | 43   | 0       | 77         | 615        |
| Total Volume                                         | 90                     | 703  | 26   | 20      | 839        | 43                    | 166  | 160  | 0       | 369        | 182                    | 783  | 62   | 5       | 1032       | 18                    | 142  | 199  | 0       | 359        | 2599       |
| % App. Total                                         | 10.7                   | 83.8 | 3.1  | 2.4     |            | 11.7                  | 45   | 43.4 | 0       |            | 17.6                   | 75.9 | 6    | 0.5     |            | 5                     | 39.6 | 55.4 | 0       |            |            |
| PHF                                                  | .833                   | .955 | .722 | .625    | .941       | .672                  | .902 | .851 | .000    | .941       | .843                   | .833 | .861 | .625    | .878       | .563                  | .826 | .843 | .000    | .863       | .914       |
| Autos                                                | 89                     | 690  | 26   | 20      | 825        | 40                    | 165  | 160  | 0       | 365        | 182                    | 769  | 62   | 5       | 1018       | 18                    | 141  | 196  | 0       | 355        | 2563       |
| % Autos                                              | 98.9                   | 98.2 | 100  | 100     | 98.3       | 93.0                  | 99.4 | 100  | 0       | 98.9       | 100                    | 98.2 | 100  | 100     | 98.6       | 100                   | 99.3 | 98.5 | 0       | 98.9       | 98.6       |
| Heavy Vehicles                                       |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles                                     | 1.1                    | 1.8  | 0    | 0       | 1.7        | 7.0                   | 0.6  | 0    | 0       | 1.1        | 0                      | 1.8  | 0    | 0       | 1.4        | 0                     | 0.7  | 1.5  | 0       | 1.1        | 1.4        |



# Traf Tech Engineering Inc.

File Name : 4-Alton Rd & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 4

|                                                      | Alton Rd<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| 08:00                                                | 45                     | 181  | 8    | 4       | 238        | 8                     | 25   | 31   | 0       | 64         | 34                     | 88   | 13   | 1       | 136        | 3                     | 31   | 40   | 0       | 74         | 512        |
| 08:15                                                | 35                     | 206  | 10   | 3       | 254        | 13                    | 19   | 27   | 0       | 59         | 32                     | 109  | 20   | 1       | 162        | 2                     | 24   | 43   | 0       | 69         | 544        |
| 08:30                                                | 30                     | 242  | 7    | 0       | 279        | 8                     | 15   | 30   | 0       | 53         | 37                     | 110  | 11   | 0       | 158        | 1                     | 32   | 49   | 0       | 82         | 572        |
| 08:45                                                | 39                     | 239  | 3    | 4       | 285        | 8                     | 36   | 35   | 0       | 79         | 50                     | 106  | 13   | 2       | 171        | 2                     | 35   | 45   | 0       | 82         | 617        |
| Total Volume                                         | 149                    | 868  | 28   | 11      | 1056       | 37                    | 95   | 123  | 0       | 255        | 153                    | 413  | 57   | 4       | 627        | 8                     | 122  | 177  | 0       | 307        | 2245       |
| % App. Total                                         | 14.1                   | 82.2 | 2.7  | 1       |            | 14.5                  | 37.3 | 48.2 | 0       |            | 24.4                   | 65.9 | 9.1  | 0.6     |            | 2.6                   | 39.7 | 57.7 | 0       |            |            |
| PHF                                                  | .828                   | .897 | .700 | .688    | .926       | .712                  | .660 | .879 | .000    | .807       | .765                   | .939 | .713 | .500    | .917       | .667                  | .871 | .903 | .000    | .936       | .910       |
| Autos                                                | 141                    | 833  | 28   | 11      | 1013       | 31                    | 95   | 120  | 0       | 246        | 148                    | 394  | 55   | 4       | 601        | 7                     | 120  | 170  | 0       | 297        | 2157       |
| % Autos                                              | 94.6                   | 96.0 | 100  | 100     | 95.9       | 83.8                  | 100  | 97.6 | 0       | 96.5       | 96.7                   | 95.4 | 96.5 | 100     | 95.9       | 87.5                  | 98.4 | 96.0 | 0       | 96.7       | 96.1       |
| Heavy Vehicles                                       |                        |      |      |         |            |                       |      |      |         |            |                        |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles                                     | 5.4                    | 4.0  | 0    | 0       | 4.1        | 16.2                  | 0    | 2.4  | 0       | 3.5        | 3.3                    | 4.6  | 3.5  | 0       | 4.1        | 12.5                  | 1.6  | 4.0  | 0       | 3.3        | 3.9        |



# Traf Tech Engineering Inc.

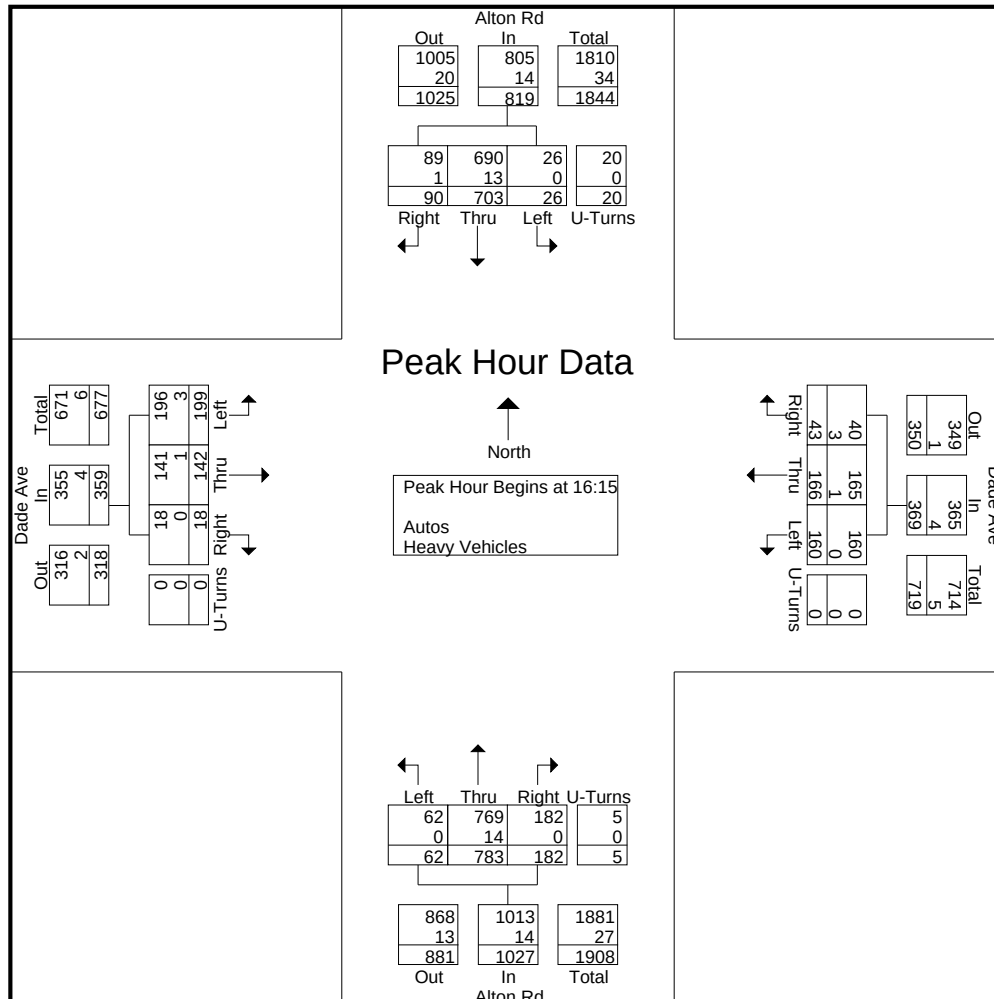
File Name : 4-Alton Rd & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 5

|               | Alton Rd<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Alton Rd<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|---------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start<br>Time | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                  | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |

Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1

Peak Hour for Entire Intersection Begins at 16:15

|                  |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
|------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| 16:15            | 27   | 184  | 7    | 5    | 223  | 9    | 40   | 47   | 0    | 96   | 44   | 235  | 15   | 0    | 294  | 4    | 39   | 55   | 0    | 98   | 711  |
| 16:30            | 19   | 171  | 4    | 8    | 202  | 8    | 35   | 42   | 0    | 85   | 37   | 181  | 14   | 2    | 234  | 2    | 43   | 59   | 0    | 104  | 625  |
| 16:45            | 23   | 174  | 9    | 3    | 209  | 16   | 45   | 37   | 0    | 98   | 54   | 191  | 15   | 1    | 261  | 4    | 34   | 42   | 0    | 80   | 648  |
| 17:00            | 21   | 174  | 6    | 4    | 205  | 10   | 46   | 34   | 0    | 90   | 47   | 176  | 18   | 2    | 243  | 8    | 26   | 43   | 0    | 77   | 615  |
| Total Volume     | 90   | 703  | 26   | 20   | 839  | 43   | 166  | 160  | 0    | 369  | 182  | 783  | 62   | 5    | 1032 | 18   | 142  | 199  | 0    | 359  | 2599 |
| % App. Total     | 10.7 | 83.8 | 3.1  | 2.4  |      | 11.7 | 45   | 43.4 | 0    |      | 17.6 | 75.9 | 6    | 0.5  |      | 5    | 39.6 | 55.4 | 0    |      |      |
| PHF              | .833 | .955 | .722 | .625 | .941 | .672 | .902 | .851 | .000 | .941 | .843 | .833 | .861 | .625 | .878 | .563 | .826 | .843 | .000 | .863 | .914 |
| Autos            | 89   | 690  | 26   | 20   | 825  | 40   | 165  | 160  | 0    | 365  | 182  | 769  | 62   | 5    | 1018 | 18   | 141  | 196  | 0    | 355  | 2563 |
| % Autos          | 98.9 | 98.2 | 100  | 100  | 98.3 | 93.0 | 99.4 | 100  | 0    | 98.9 | 100  | 98.2 | 100  | 100  | 98.6 | 100  | 99.3 | 98.5 | 0    | 98.9 | 98.6 |
| Heavy Vehicles   |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |
| % Heavy Vehicles | 1.1  | 1.8  | 0    | 0    | 1.7  | 7.0  | 0.6  | 0    | 0    | 1.1  | 0    | 1.8  | 0    | 0    | 1.4  | 0    | 0.7  | 1.5  | 0    | 1.1  | 1.4  |



# Traf Tech Engineering Inc.

File Name : 5-Michigan Ave & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Peds & Bikes

|               | Michigan Ave<br>From North |   |   |      | Dade Ave<br>From East |   |   |      | Michigan Ave<br>From South |   |   |      | Dade Ave<br>From West |   |   |      |            |
|---------------|----------------------------|---|---|------|-----------------------|---|---|------|----------------------------|---|---|------|-----------------------|---|---|------|------------|
| Start Time    | Bikes                      |   |   | Peds | Bikes                 |   |   | Peds | Bikes                      |   |   | Peds | Bikes                 |   |   | Peds | Int. Total |
| 07:00         | 1                          | 0 | 0 | 1    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 1    | 3          |
| 07:15         | 3                          | 0 | 0 | 1    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 1                     | 0 | 0 | 0    | 5          |
| 07:30         | 2                          | 0 | 0 | 2    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 4          |
| 07:45         | 2                          | 0 | 0 | 2    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 4          |
| Total         | 8                          | 0 | 0 | 6    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 1                     | 0 | 0 | 1    | 16         |
| 08:00         | 1                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 1                     | 0 | 0 | 0    | 2          |
| 08:15         | 2                          | 0 | 0 | 3    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 5          |
| 08:30         | 2                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 2          |
| 08:45         | 1                          | 0 | 0 | 1    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 2          |
| Total         | 6                          | 0 | 0 | 4    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 1                     | 0 | 0 | 0    | 11         |
| *** BREAK *** |                            |   |   |      |                       |   |   |      |                            |   |   |      |                       |   |   |      |            |
| 16:00         | 2                          | 0 | 0 | 1    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 1    | 4          |
| 16:15         | 0                          | 0 | 0 | 1    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 1          |
| 16:30         | 2                          | 0 | 0 | 3    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 5          |
| 16:45         | 1                          | 0 | 0 | 8    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 9          |
| Total         | 5                          | 0 | 0 | 13   | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 1    | 19         |
| 17:00         | 1                          | 0 | 0 | 7    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 8          |
| 17:15         | 2                          | 0 | 0 | 6    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 8          |
| 17:30         | 2                          | 0 | 0 | 3    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 5          |
| 17:45         | 1                          | 0 | 0 | 8    | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 9          |
| Total         | 6                          | 0 | 0 | 24   | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 0                     | 0 | 0 | 0    | 30         |
| Grand Total   | 25                         | 0 | 0 | 47   | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 2                     | 0 | 0 | 2    | 76         |
| Apprch %      | 34.7                       | 0 | 0 | 65.3 | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 50                    | 0 | 0 | 50   |            |
| Total %       | 32.9                       | 0 | 0 | 61.8 | 0                     | 0 | 0 | 0    | 0                          | 0 | 0 | 0    | 2.6                   | 0 | 0 | 2.6  |            |

# Traf Tech Engineering Inc.

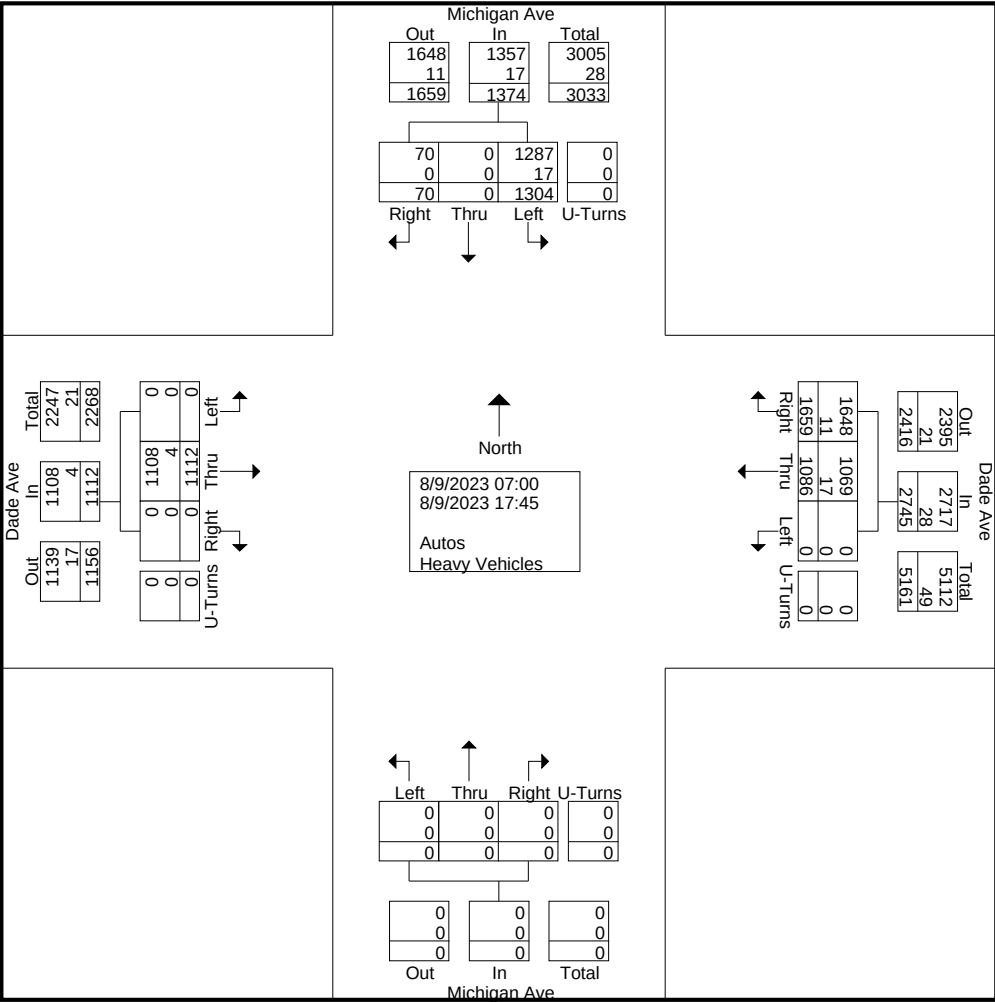
File Name : 5-Michigan Ave & Dade Ave  
 Site Code : 00000000  
 Start Date : 8/9/2023  
 Page No : 1

## Groups Printed- Autos - Heavy Vehicles

|                  | Michigan Ave<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Michigan Ave<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time       | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| 07:00            | 3                          | 0    | 62   | 0       | 65         | 54                    | 29   | 0    | 0       | 83         | 0                          | 0    | 0    | 0       | 0          | 0                     | 39   | 0    | 0       | 39         | 187        |
| 07:15            | 2                          | 0    | 78   | 0       | 80         | 35                    | 46   | 0    | 0       | 81         | 0                          | 0    | 0    | 0       | 0          | 0                     | 31   | 0    | 0       | 31         | 192        |
| 07:30            | 1                          | 0    | 80   | 0       | 81         | 70                    | 32   | 0    | 0       | 102        | 0                          | 0    | 0    | 0       | 0          | 0                     | 48   | 0    | 0       | 48         | 231        |
| 07:45            | 1                          | 0    | 67   | 0       | 68         | 33                    | 42   | 0    | 0       | 75         | 0                          | 0    | 0    | 0       | 0          | 0                     | 36   | 0    | 0       | 36         | 179        |
| Total            | 7                          | 0    | 287  | 0       | 294        | 192                   | 149  | 0    | 0       | 341        | 0                          | 0    | 0    | 0       | 0          | 0                     | 154  | 0    | 0       | 154        | 789        |
| 08:00            | 4                          | 0    | 84   | 0       | 88         | 64                    | 47   | 0    | 0       | 111        | 0                          | 0    | 0    | 0       | 0          | 0                     | 75   | 0    | 0       | 75         | 274        |
| 08:15            | 4                          | 0    | 99   | 0       | 103        | 65                    | 55   | 0    | 0       | 120        | 0                          | 0    | 0    | 0       | 0          | 0                     | 60   | 0    | 0       | 60         | 283        |
| 08:30            | 2                          | 0    | 105  | 0       | 107        | 48                    | 50   | 0    | 0       | 98         | 0                          | 0    | 0    | 0       | 0          | 0                     | 73   | 0    | 0       | 73         | 278        |
| 08:45            | 7                          | 0    | 123  | 0       | 130        | 68                    | 85   | 0    | 0       | 153        | 0                          | 0    | 0    | 0       | 0          | 0                     | 80   | 0    | 0       | 80         | 363        |
| Total            | 17                         | 0    | 411  | 0       | 428        | 245                   | 237  | 0    | 0       | 482        | 0                          | 0    | 0    | 0       | 0          | 0                     | 288  | 0    | 0       | 288        | 1198       |
| *** BREAK ***    |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| 16:00            | 9                          | 0    | 104  | 0       | 113        | 206                   | 78   | 0    | 0       | 284        | 0                          | 0    | 0    | 0       | 0          | 0                     | 71   | 0    | 0       | 71         | 468        |
| 16:15            | 7                          | 0    | 56   | 0       | 63         | 147                   | 86   | 0    | 0       | 233        | 0                          | 0    | 0    | 0       | 0          | 0                     | 76   | 0    | 0       | 76         | 372        |
| 16:30            | 7                          | 0    | 95   | 0       | 102        | 159                   | 91   | 0    | 0       | 250        | 0                          | 0    | 0    | 0       | 0          | 0                     | 89   | 0    | 0       | 89         | 441        |
| 16:45            | 1                          | 0    | 84   | 0       | 85         | 142                   | 89   | 0    | 0       | 231        | 0                          | 0    | 0    | 0       | 0          | 0                     | 108  | 0    | 0       | 108        | 424        |
| Total            | 24                         | 0    | 339  | 0       | 363        | 654                   | 344  | 0    | 0       | 998        | 0                          | 0    | 0    | 0       | 0          | 0                     | 344  | 0    | 0       | 344        | 1705       |
| 17:00            | 5                          | 0    | 77   | 0       | 82         | 158                   | 85   | 0    | 0       | 243        | 0                          | 0    | 0    | 0       | 0          | 0                     | 75   | 0    | 0       | 75         | 400        |
| 17:15            | 6                          | 0    | 66   | 0       | 72         | 174                   | 95   | 0    | 0       | 269        | 0                          | 0    | 0    | 0       | 0          | 0                     | 87   | 0    | 0       | 87         | 428        |
| 17:30            | 7                          | 0    | 70   | 0       | 77         | 120                   | 91   | 0    | 0       | 211        | 0                          | 0    | 0    | 0       | 0          | 0                     | 76   | 0    | 0       | 76         | 364        |
| 17:45            | 4                          | 0    | 54   | 0       | 58         | 116                   | 85   | 0    | 0       | 201        | 0                          | 0    | 0    | 0       | 0          | 0                     | 88   | 0    | 0       | 88         | 347        |
| Total            | 22                         | 0    | 267  | 0       | 289        | 568                   | 356  | 0    | 0       | 924        | 0                          | 0    | 0    | 0       | 0          | 0                     | 326  | 0    | 0       | 326        | 1539       |
| Grand Total      | 70                         | 0    | 1304 | 0       | 1374       | 1659                  | 1086 | 0    | 0       | 2745       | 0                          | 0    | 0    | 0       | 0          | 0                     | 1112 | 0    | 0       | 1112       | 5231       |
| Apprch %         | 5.1                        | 0    | 94.9 | 0       |            | 60.4                  | 39.6 | 0    | 0       |            | 0                          | 0    | 0    | 0       |            | 0                     | 100  | 0    | 0       |            |            |
| Total %          | 1.3                        | 0    | 24.9 | 0       | 26.3       | 31.7                  | 20.8 | 0    | 0       | 52.5       | 0                          | 0    | 0    | 0       | 0          | 0                     | 21.3 | 0    | 0       | 21.3       |            |
| Autos            | 70                         | 0    | 1287 |         |            | 1648                  | 1069 |      |         |            |                            |      |      |         |            |                       | 1108 |      |         |            |            |
| % Autos          | 100                        | 0    | 98.7 | 0       | 98.8       | 99.3                  | 98.4 | 0    | 0       | 99         | 0                          | 0    | 0    | 0       | 0          | 0                     | 99.6 | 0    | 0       | 99.6       | 99.1       |
| Heavy Vehicles   |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles | 0                          | 0    | 1.3  | 0       | 1.2        | 0.7                   | 1.6  | 0    | 0       | 1          | 0                          | 0    | 0    | 0       | 0          | 0                     | 0.4  | 0    | 0       | 0.4        | 0.9        |

# Traf Tech Engineering Inc.

File Name : 5-Michigan Ave & Dade Ave  
Site Code : 00000000  
Start Date : 8/9/2023  
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# Traf Tech Engineering Inc.

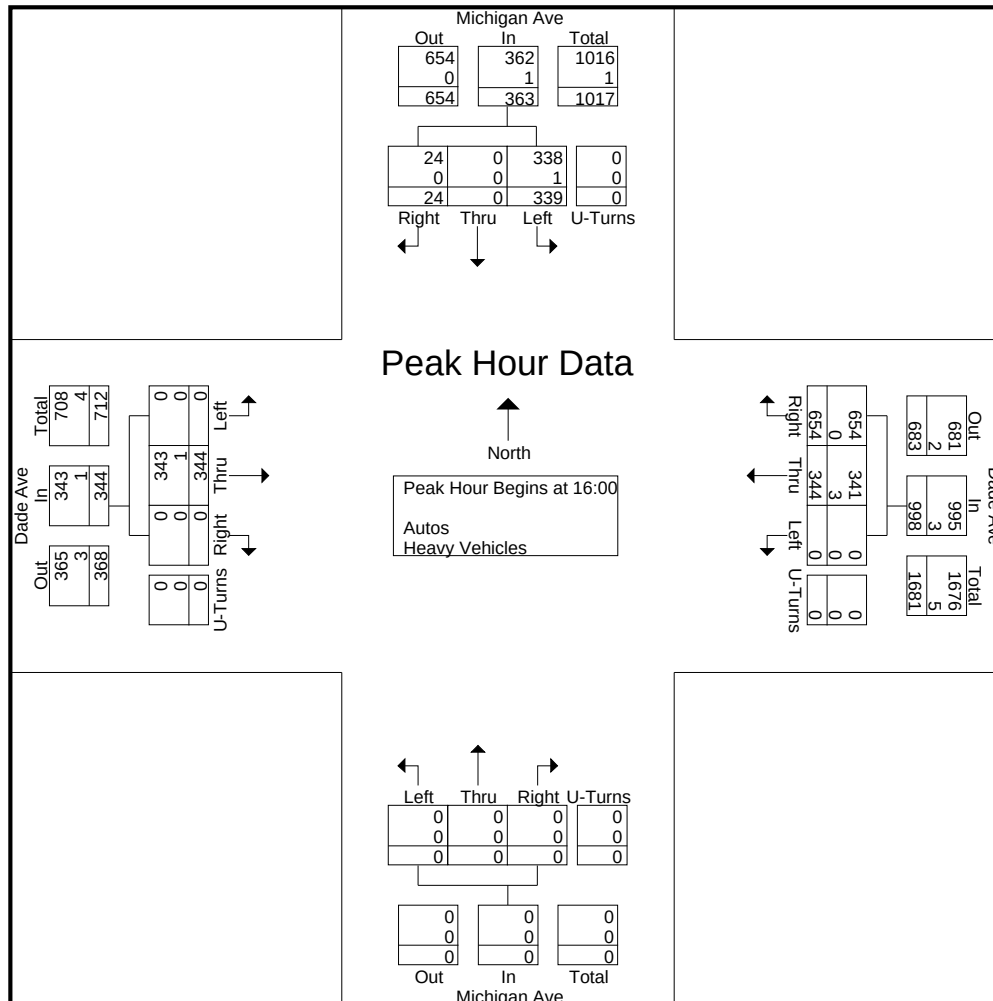
File Name : 5-Michigan Ave & Dade Ave

Site Code : 00000000

Start Date : 8/9/2023

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|                                                      | Michigan Ave<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Michigan Ave<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 17:45 - Peak 1 of 1 |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:00    |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| 16:00                                                | 9                          | 0    | 104  | 0       | 113        | 206                   | 78   | 0    | 0       | 284        | 0                          | 0    | 0    | 0       | 0          | 0                     | 71   | 0    | 0       | 71         | 468        |
| 16:15                                                | 7                          | 0    | 56   | 0       | 63         | 147                   | 86   | 0    | 0       | 233        | 0                          | 0    | 0    | 0       | 0          | 0                     | 76   | 0    | 0       | 76         | 372        |
| 16:30                                                | 7                          | 0    | 95   | 0       | 102        | 159                   | 91   | 0    | 0       | 250        | 0                          | 0    | 0    | 0       | 0          | 0                     | 89   | 0    | 0       | 89         | 441        |
| 16:45                                                | 1                          | 0    | 84   | 0       | 85         | 142                   | 89   | 0    | 0       | 231        | 0                          | 0    | 0    | 0       | 0          | 0                     | 108  | 0    | 0       | 108        | 424        |
| Total Volume                                         | 24                         | 0    | 339  | 0       | 363        | 654                   | 344  | 0    | 0       | 998        | 0                          | 0    | 0    | 0       | 0          | 0                     | 344  | 0    | 0       | 344        | 1705       |
| % App. Total                                         | 6.6                        | 0    | 93.4 | 0       |            | 65.5                  | 34.5 | 0    | 0       |            | 0                          | 0    | 0    | 0       | 0          | 0                     | 100  | 0    | 0       |            |            |
| PHF                                                  | .667                       | .000 | .815 | .000    | .803       | .794                  | .945 | .000 | .000    | .879       | .000                       | .000 | .000 | .000    | .000       | .000                  | .796 | .000 | .000    | .796       | .911       |
| Autos                                                | 24                         | 0    | 338  | 0       | 362        | 654                   | 341  | 0    | 0       | 995        | 0                          | 0    | 0    | 0       | 0          | 0                     | 343  | 0    | 0       | 343        | 1700       |
| % Autos                                              | 100                        | 0    | 99.7 | 0       | 99.7       | 100                   | 99.1 | 0    | 0       | 99.7       | 0                          | 0    | 0    | 0       | 0          | 0                     | 99.7 | 0    | 0       | 99.7       | 99.7       |
| Heavy Vehicles                                       |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                          | 0    | 0.3  | 0       | 0.3        | 0                     | 0.9  | 0    | 0       | 0.3        | 0                          | 0    | 0    | 0       | 0          | 0                     | 0.3  | 0    | 0       | 0.3        | 0.3        |





# Traf Tech Engineering Inc.

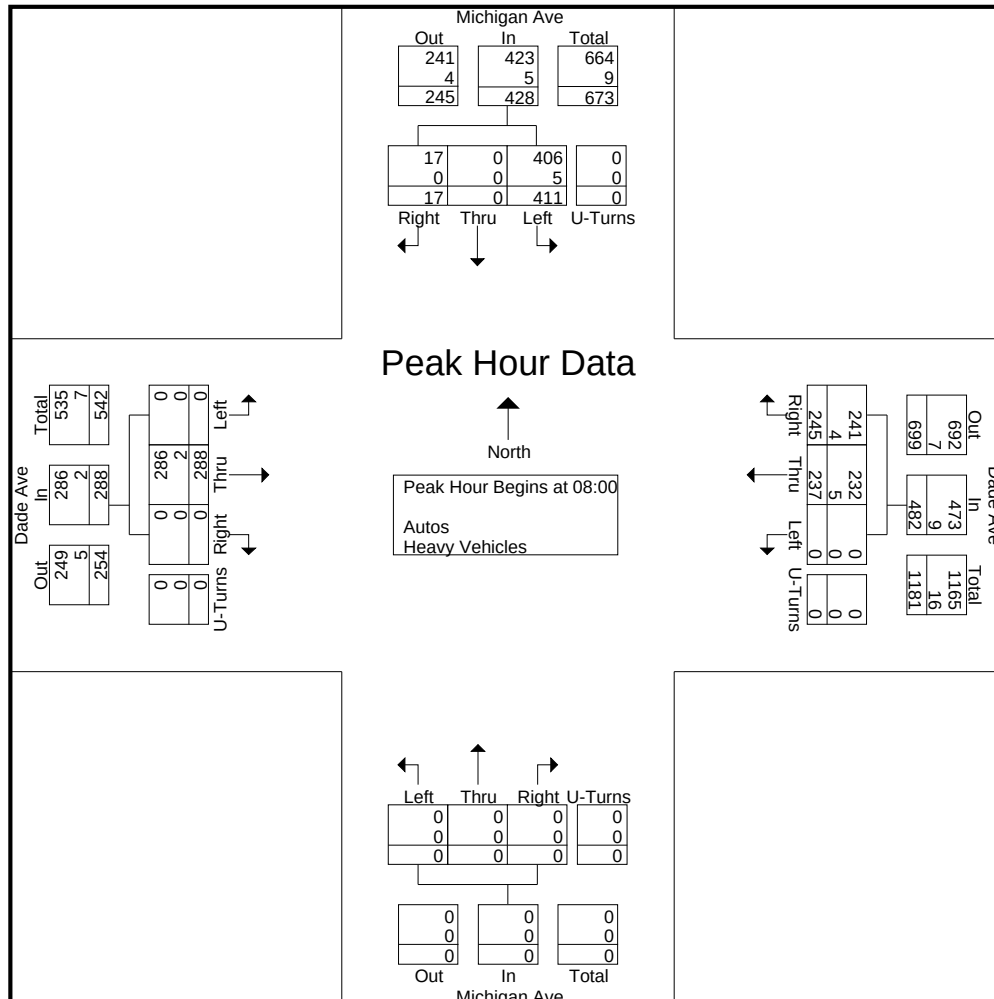
File Name : 5-Michigan Ave & Dade Ave

Site Code : 00000000

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|                                                      | Michigan Ave<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Michigan Ave<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 07:00 to 08:45 - Peak 1 of 1 |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 08:00    |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| 08:00                                                | 4                          | 0    | 84   | 0       | 88         | 64                    | 47   | 0    | 0       | 111        | 0                          | 0    | 0    | 0       | 0          | 0                     | 75   | 0    | 0       | 75         | 274        |
| 08:15                                                | 4                          | 0    | 99   | 0       | 103        | 65                    | 55   | 0    | 0       | 120        | 0                          | 0    | 0    | 0       | 0          | 0                     | 60   | 0    | 0       | 60         | 283        |
| 08:30                                                | 2                          | 0    | 105  | 0       | 107        | 48                    | 50   | 0    | 0       | 98         | 0                          | 0    | 0    | 0       | 0          | 0                     | 73   | 0    | 0       | 73         | 278        |
| 08:45                                                | 7                          | 0    | 123  | 0       | 130        | 68                    | 85   | 0    | 0       | 153        | 0                          | 0    | 0    | 0       | 0          | 0                     | 80   | 0    | 0       | 80         | 363        |
| Total Volume                                         | 17                         | 0    | 411  | 0       | 428        | 245                   | 237  | 0    | 0       | 482        | 0                          | 0    | 0    | 0       | 0          | 0                     | 288  | 0    | 0       | 288        | 1198       |
| % App. Total                                         | 4                          | 0    | 96   | 0       |            | 50.8                  | 49.2 | 0    | 0       |            | 0                          | 0    | 0    | 0       |            | 0                     | 100  | 0    | 0       |            |            |
| PHF                                                  | .607                       | .000 | .835 | .000    | .823       | .901                  | .697 | .000 | .000    | .788       | .000                       | .000 | .000 | .000    | .000       | .000                  | .900 | .000 | .000    | .900       | .825       |
| Autos                                                | 17                         | 0    | 406  | 0       | 423        | 241                   | 232  | 0    | 0       | 473        | 0                          | 0    | 0    | 0       | 0          | 0                     | 286  | 0    | 0       | 286        | 1182       |
| % Autos                                              | 100                        | 0    | 98.8 | 0       | 98.8       | 98.4                  | 97.9 | 0    | 0       | 98.1       | 0                          | 0    | 0    | 0       | 0          | 0                     | 99.3 | 0    | 0       | 99.3       | 98.7       |
| Heavy Vehicles                                       |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                          | 0    | 1.2  | 0       | 1.2        | 1.6                   | 2.1  | 0    | 0       | 1.9        | 0                          | 0    | 0    | 0       | 0          | 0                     | 0.7  | 0    | 0       | 0.7        | 1.3        |



# Traf Tech Engineering Inc.

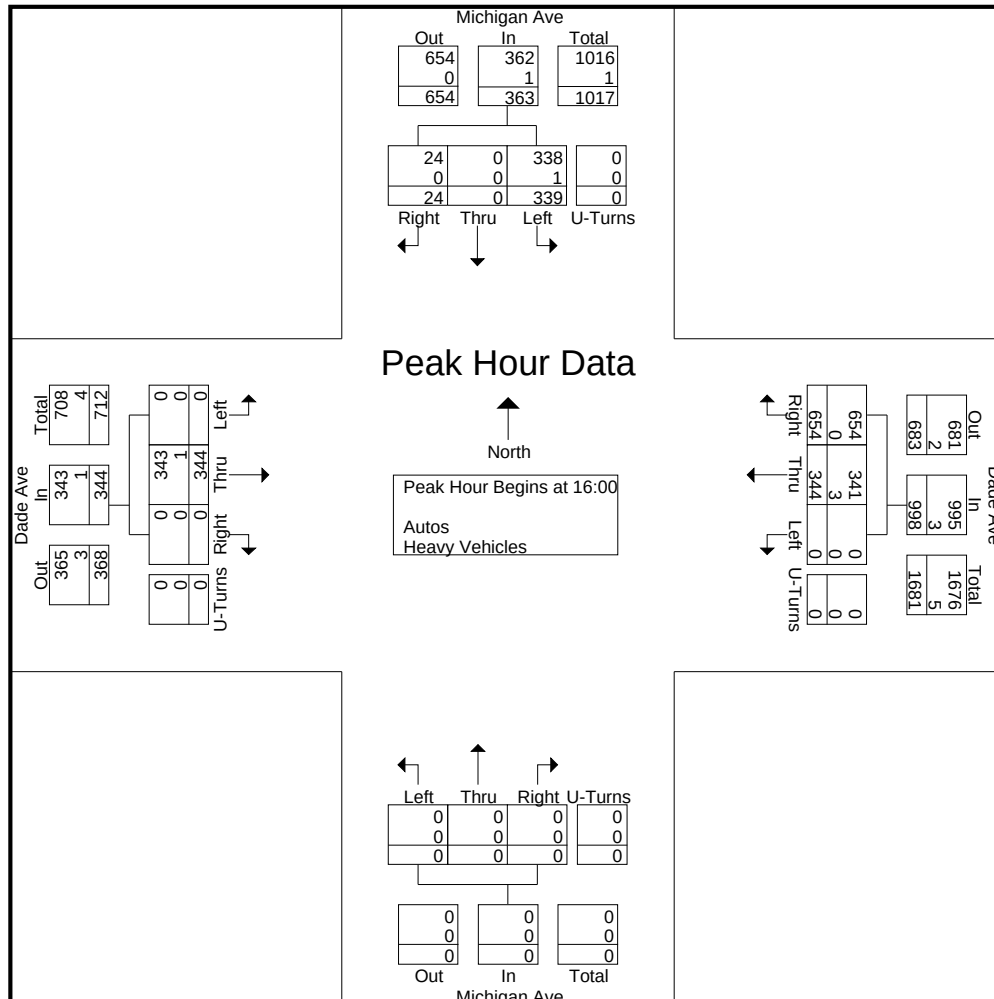
File Name : 5-Michigan Ave & Dade Ave

Site Code : 00000000

Start Date : 8/9/2023

Page No : 5

|                                                      | Michigan Ave<br>From North |      |      |         |            | Dade Ave<br>From East |      |      |         |            | Michigan Ave<br>From South |      |      |         |            | Dade Ave<br>From West |      |      |         |            |            |
|------------------------------------------------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|----------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time                                           | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Right                      | Thru | Left | U-Turns | App. Total | Right                 | Thru | Left | U-Turns | App. Total | Int. Total |
| Peak Hour Analysis From 16:00 to 17:45 - Peak 1 of 1 |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| Peak Hour for Entire Intersection Begins at 16:00    |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| 16:00                                                | 9                          | 0    | 104  | 0       | 113        | 206                   | 78   | 0    | 0       | 284        | 0                          | 0    | 0    | 0       | 0          | 0                     | 71   | 0    | 0       | 71         | 468        |
| 16:15                                                | 7                          | 0    | 56   | 0       | 63         | 147                   | 86   | 0    | 0       | 233        | 0                          | 0    | 0    | 0       | 0          | 0                     | 76   | 0    | 0       | 76         | 372        |
| 16:30                                                | 7                          | 0    | 95   | 0       | 102        | 159                   | 91   | 0    | 0       | 250        | 0                          | 0    | 0    | 0       | 0          | 0                     | 89   | 0    | 0       | 89         | 441        |
| 16:45                                                | 1                          | 0    | 84   | 0       | 85         | 142                   | 89   | 0    | 0       | 231        | 0                          | 0    | 0    | 0       | 0          | 0                     | 108  | 0    | 0       | 108        | 424        |
| Total Volume                                         | 24                         | 0    | 339  | 0       | 363        | 654                   | 344  | 0    | 0       | 998        | 0                          | 0    | 0    | 0       | 0          | 0                     | 344  | 0    | 0       | 344        | 1705       |
| % App. Total                                         | 6.6                        | 0    | 93.4 | 0       |            | 65.5                  | 34.5 | 0    | 0       |            | 0                          | 0    | 0    | 0       |            | 0                     | 100  | 0    | 0       |            |            |
| PHF                                                  | .667                       | .000 | .815 | .000    | .803       | .794                  | .945 | .000 | .000    | .879       | .000                       | .000 | .000 | .000    | .000       | .000                  | .796 | .000 | .000    | .796       | .911       |
| Autos                                                | 24                         | 0    | 338  | 0       | 362        | 654                   | 341  | 0    | 0       | 995        | 0                          | 0    | 0    | 0       | 0          | 0                     | 343  | 0    | 0       | 343        | 1700       |
| % Autos                                              | 100                        | 0    | 99.7 | 0       | 99.7       | 100                   | 99.1 | 0    | 0       | 99.7       | 0                          | 0    | 0    | 0       | 0          | 0                     | 99.7 | 0    | 0       | 99.7       | 99.7       |
| Heavy Vehicles                                       |                            |      |      |         |            |                       |      |      |         |            |                            |      |      |         |            |                       |      |      |         |            |            |
| % Heavy Vehicles                                     | 0                          | 0    | 0.3  | 0       | 0.3        | 0                     | 0.9  | 0    | 0       | 0.3        | 0                          | 0    | 0    | 0       | 0          | 0                     | 0.3  | 0    | 0       | 0.3        | 0.3        |



## **APPENDIX C**

**Signal Timing, PSCF, Historical Data,  
Growth Rate, and Directional Trip  
Distribution Reports**

**TOD Schedule Report**  
for 2648: Alton Rd&Dade Blvd

Print Date:  
10/4/2021

Print Time:  
3:11 PM

| <u>Asset</u> | <u>Intersection</u> | <u>TOD Schedule</u> | <u>Op Mode</u> | <u>Plan #</u>    | <u>Cycle</u> | <u>Offset</u> | <u>TOD Setting</u> | <u>Active PhaseBank</u> | <u>Active Maximum</u> |
|--------------|---------------------|---------------------|----------------|------------------|--------------|---------------|--------------------|-------------------------|-----------------------|
| 2648         | Alton Rd&Dade Blvd  | DOW-2               | TOD            | [10] PRE-PM PEAK | 150          | 24            | N/A                | 1                       | Max 2                 |

**Splits**

| <u>PH 1</u>                                                                      | <u>PH 2</u>                                                                       | <u>PH 3</u>                                                                       | <u>PH 4</u>                                                                       | <u>PH 5</u>                                                                       | <u>PH 6</u>                                                                       | <u>PH 7</u>                                                                       | <u>PH 8</u>                                                                        |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| NBL                                                                              | SBT                                                                               | NEL                                                                               | SWT                                                                               | SBL                                                                               | NBT                                                                               | SWL                                                                               | NET                                                                                |
| 11                                                                               | 70                                                                                | 10                                                                                | 34                                                                                | 11                                                                                | 70                                                                                | 14                                                                                | 31                                                                                 |
|  |  |  |  |  |  |  |  |

Active Phase Bank: Phase Bank 1

| <u>Phase</u> | <u>Walk</u>       |   |       | <u>Don't Walk</u> |   |         | <u>Min Initial</u> |   |       | <u>Veh Ext</u> |   |           | <u>Max Limit</u> |   |         | <u>Max 2</u> |   |         | <u>Yellow</u> | <u>Red</u> |
|--------------|-------------------|---|-------|-------------------|---|---------|--------------------|---|-------|----------------|---|-----------|------------------|---|---------|--------------|---|---------|---------------|------------|
|              | <u>Phase Bank</u> |   |       |                   |   |         |                    |   |       |                |   |           |                  |   |         |              |   |         |               |            |
|              | 1                 | 2 | 3     | 1                 | 2 | 3       | 1                  | 2 | 3     | 1              | 2 | 3         | 1                | 2 | 3       | 1            | 2 | 3       |               |            |
| 1 NBL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5 | 2              | - | 2 - 2     | 10               | - | 7 - 8   | 23           | - | 5 - 12  | 3.7           | 2          |
| 2 SBT        | 4                 | - | 4 - 4 | 19                | - | 19 - 19 | 4                  | - | 7 - 7 | 1              | - | 1 - 1     | 30               | - | 45 - 30 | 0            | - | 30 - 30 | 4             | 2          |
| 3 NEL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5 | 2              | - | 2 - 2     | 7                | - | 5 - 8   | 22           | - | 5 - 12  | 3.7           | 2          |
| 4 SWT        | 4                 | - | 4 - 4 | 27                | - | 27 - 27 | 7                  | - | 7 - 7 | 2.5            | - | 2.5 - 2.5 | 12               | - | 22 - 20 | 40           | - | 22 - 25 | 4             | 2          |
| 5 SBL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5 | 2              | - | 2 - 2     | 10               | - | 7 - 8   | 23           | - | 5 - 12  | 3.7           | 2          |
| 6 NBT        | 4                 | - | 4 - 4 | 19                | - | 19 - 19 | 4                  | - | 7 - 7 | 1              | - | 1 - 1     | 30               | - | 45 - 30 | 0            | - | 30 - 30 | 4             | 2          |
| 7 SWL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5 | 2              | - | 2 - 2     | 8                | - | 5 - 8   | 22           | - | 5 - 12  | 3.7           | 2          |
| 8 NET        | 4                 | - | 4 - 4 | 27                | - | 27 - 27 | 7                  | - | 7 - 7 | 2.5            | - | 2.5 - 2.5 | 12               | - | 22 - 20 | 40           | - | 22 - 25 | 4             | 2          |

Last In Service Date: unknown

**Permitted Phases**

**12345678**

Default 12345678  
External Permit 0 -2-456-8  
External Permit 1 -2-456-8  
External Permit 2 -2-456-8

**TOD Schedule Report**  
for 2648: Alton Rd&Dade Blvd

Print Date:  
10/4/2021

Print Time:  
3:11 PM

| Current<br>TOD Schedule | Plan | Cycle | Green Time |          |          |          |          |          |          |          | Ring Offset | Offset |
|-------------------------|------|-------|------------|----------|----------|----------|----------|----------|----------|----------|-------------|--------|
|                         |      |       | 1<br>NBL   | 2<br>SBT | 3<br>NEL | 4<br>SWT | 5<br>SBL | 6<br>NBT | 7<br>SWL | 8<br>NET |             |        |
| 1                       |      | 100   | 10         | 23       | 11       | 32       | 10       | 23       | 9        | 34       | 0           | 15     |
| 3                       |      | 120   | 9          | 42       | 11       | 34       | 9        | 42       | 11       | 34       | 0           | 75     |
| 5                       |      | 150   | 11         | 70       | 10       | 34       | 11       | 70       | 14       | 31       | 0           | 25     |
| 10                      |      | 150   | 11         | 70       | 10       | 34       | 11       | 70       | 14       | 31       | 0           | 24     |
| 13                      |      | 130   | 8          | 50       | 11       | 37       | 8        | 50       | 11       | 37       | 0           | 50     |
| 19                      |      | 120   | 9          | 42       | 11       | 34       | 9        | 42       | 11       | 34       | 0           | 35     |
| 20                      |      | 140   | 9          | 62       | 11       | 34       | 9        | 62       | 11       | 34       | 0           | 105    |
| 21                      |      | 140   | 5          | 73       | 5        | 33       | 5        | 73       | 5        | 33       | 0           | 97     |
| 22                      |      | 120   | 9          | 42       | 11       | 34       | 9        | 42       | 11       | 34       | 0           | 25     |
| 25                      |      | 140   | 7          | 60       | 16       | 33       | 7        | 60       | 11       | 34       | 0           | 9      |
| 26                      |      | 200   | 19         | 105      | 21       | 31       | 19       | 105      | 21       | 31       | 0           | 168    |
| 27                      |      | 180   | 9          | 102      | 11       | 34       | 9        | 102      | 11       | 34       | 0           | 118    |

| Local TOD Schedule |      |                 |
|--------------------|------|-----------------|
| Time               | Plan | DOW             |
| 0000               | 1    | Su M T W Th F S |
| 0600               | 3    | Su M T W Th F S |
| 0800               | 5    | M T W Th F      |
| 0800               | 19   | Su S            |
| 1000               | 20   | Su S            |
| 1300               | 10   | M T W Th F      |
| 1900               | 13   | Su M T W Th F S |
| 2000               | 22   | Su S            |

| Current Time of Day Function |                   |            |               |
|------------------------------|-------------------|------------|---------------|
| Time                         | Function          | Settings * | Day of Week   |
| 0000                         | TOD OUTPUTS       | -----      | SuM T W ThF S |
| 0000                         | TOD LOCAL MULTIFU | ---4---    | SuM T W ThF S |
| 0500                         | TOD LOCAL MULTIFU | -----      | SuM T W ThF S |

| Local Time of Day Function |                      |            |               |
|----------------------------|----------------------|------------|---------------|
| Time                       | Function             | Settings * | Day of Week   |
| 0000                       | TOD OUTPUTS          | -----      | SuM T W ThF S |
| 0000                       | TOD LOCAL MULTIFUNCT | ---4---    | SuM T W ThF S |
| 0500                       | TOD LOCAL MULTIFUNCT | -----      | SuM T W ThF S |

| * Settings                         |
|------------------------------------|
| Blank - FREE - Phase Bank 1, Max 1 |
| Blank - Plan - Phase Bank 1, Max 2 |
| 1 - Phase Bank 2, Max 1            |
| 2 - Phase Bank 2, Max 2            |
| 3 - Phase Bank 3, Max 1            |
| 4 - Phase Bank 3, Max 2            |
| 5 - EXTERNAL PERMIT 1              |
| 6 - EXTERNAL PERMIT 2              |
| 7 - X-PED OMIT                     |
| 8 - TBA                            |

**No Calendar Defined/Enabled**

**TOD Schedule Report**  
for 3276: Alton Rd&20 St

Print Date:  
10/4/2021

Print Time:  
4:20 PM

| <u>Asset</u> | <u>Intersection</u> | <u>TOD Schedule</u> | <u>Op Mode</u> | <u>Plan #</u>    | <u>Cycle</u> | <u>Offset</u> | <u>TOD Setting</u> | <u>Active PhaseBank</u> | <u>Active Maximum</u> |
|--------------|---------------------|---------------------|----------------|------------------|--------------|---------------|--------------------|-------------------------|-----------------------|
| 3276         | Alton Rd&20 St      | DOW-2               | TOD            | [10] PRE-PM PEAK | 150          | 129           | N/A                | 1                       | Max 2                 |

**Splits**

| <u>PH 1</u>                                                                      | <u>PH 2</u>                                                                       | <u>PH 3</u>                                                                       | <u>PH 4</u>                                                                       | <u>PH 5</u> | <u>PH 6</u>                                                                       | <u>PH 7</u> | <u>PH 8</u> |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------|-------------|-------------|
| NBL                                                                              | SBT                                                                               | EBT                                                                               | WBT                                                                               | -           | NBT                                                                               | -           | -           |
| 6                                                                                | 80                                                                                | 27                                                                                | 12                                                                                | 0           | 92                                                                                | 0           | 0           |
|  |  |  |  |             |  |             |             |

Active Phase Bank: Phase Bank 1

| <u>Phase</u> | <u>Walk</u>       |   |   | <u>Don't Walk</u> |    |   | <u>Min Initial</u> |   |   | <u>Veh Ext</u> |   |     | <u>Max Limit</u> |     |   | <u>Max 2</u> |   |    | <u>Yellow</u> | <u>Red</u> |
|--------------|-------------------|---|---|-------------------|----|---|--------------------|---|---|----------------|---|-----|------------------|-----|---|--------------|---|----|---------------|------------|
|              | <u>Phase Bank</u> |   |   |                   |    |   |                    |   |   |                |   |     |                  |     |   |              |   |    |               |            |
|              | 1                 | 2 | 3 | 1                 | 2  | 3 | 1                  | 2 | 3 | 1              | 2 | 3   | 1                | 2   | 3 | 1            | 2 | 3  |               |            |
| 1 NBL        | 0                 | - | 0 | 0                 | 0  | 0 | 5                  | - | 5 | -              | 5 | 2   | -                | 2   | - | 5            | - | 5  | 12            | 2          |
| 2 SBT        | 5                 | - | 4 | 5                 | 29 | - | 7                  | - | 7 | -              | 7 | 1   | -                | 1   | - | 30           | - | 30 | 0             | 3.3        |
| 3 EBT        | 5                 | - | 4 | 5                 | 21 | - | 7                  | - | 7 | -              | 7 | 2.5 | -                | 2.5 | - | 12           | - | 12 | 16            | 2          |
| 4 WBT        | 0                 | - | 0 | 0                 | 0  | 0 | 7                  | - | 7 | -              | 7 | 2.5 | -                | 2.5 | - | 7            | - | 9  | 15            | 2.3        |
| 5 -          | 0                 | - | 0 | 0                 | 0  | 0 | 0                  | - | 0 | -              | 0 | 0   | -                | 0   | - | 0            | - | 0  | 0             | 0          |
| 6 NBT        | 5                 | - | 4 | 5                 | 29 | - | 7                  | - | 7 | -              | 7 | 1   | -                | 1   | - | 30           | - | 30 | 0             | 3.3        |
| 7 -          | 0                 | - | 0 | 0                 | 0  | 0 | 0                  | - | 0 | -              | 0 | 0   | -                | 0   | - | 0            | - | 0  | 0             | 0          |
| 8 -          | 0                 | - | 0 | 0                 | 0  | 0 | 0                  | - | 0 | -              | 0 | 0   | -                | 0   | - | 0            | - | 0  | 0             | 0          |

Last In Service Date: unknown

**Permitted Phases**

**12345678**

Default 1234-6--  
External Permit 0 -23--6--  
External Permit 1 -23--6--  
External Permit 2 -23--6--

**TOD Schedule Report**  
for 3276: Alton Rd&20 St

Print Date:  
10/4/2021

Print Time:  
4:20 PM

| Current<br>TOD Schedule | Plan | Cycle | Green Time |          |          |          |        |          |        |        | Ring Offset | Offset |
|-------------------------|------|-------|------------|----------|----------|----------|--------|----------|--------|--------|-------------|--------|
|                         |      |       | 1<br>NBL   | 2<br>SBT | 3<br>EBT | 4<br>WBT | 5<br>- | 6<br>NBT | 7<br>- | 8<br>- |             |        |
| 1                       |      | 100   | 6          | 34       | 27       | 8        | 0      | 46       | 0      | 0      | 0           | 11     |
| 3                       |      | 120   | 10         | 50       | 27       | 8        | 0      | 66       | 0      | 0      | 0           | 77     |
| 5                       |      | 150   | 9          | 80       | 27       | 9        | 0      | 95       | 0      | 0      | 0           | 23     |
| 10                      |      | 150   | 6          | 80       | 27       | 12       | 0      | 92       | 0      | 0      | 0           | 129    |
| 13                      |      | 130   | 10         | 60       | 27       | 8        | 0      | 76       | 0      | 0      | 0           | 53     |
| 19                      |      | 120   | 9          | 50       | 27       | 9        | 0      | 65       | 0      | 0      | 0           | 94     |
| 20                      |      | 140   | 9          | 70       | 27       | 9        | 0      | 85       | 0      | 0      | 0           | 104    |
| 21                      |      | 140   | 6          | 74       | 27       | 8        | 0      | 86       | 0      | 0      | 0           | 97     |
| 22                      |      | 120   | 9          | 50       | 27       | 9        | 0      | 65       | 0      | 0      | 0           | 94     |
| 25                      |      | 140   | 6          | 73       | 27       | 9        | 0      | 85       | 0      | 0      | 0           | 0      |
| 26                      |      | 200   | 6          | 133      | 27       | 9        | 0      | 145      | 0      | 0      | 0           | 178    |
| 27                      |      | 180   | 6          | 113      | 27       | 9        | 0      | 125      | 0      | 0      | 0           | 131    |

**Local TOD Schedule**

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | 1    | Su M T W Th F S |
| 0600 | 3    | Su M T W Th F S |
| 0800 | 5    | M T W Th F      |
| 0800 | 19   | Su S            |
| 1000 | 20   | Su S            |
| 1300 | 10   | M T W Th F      |
| 1900 | 13   | Su M T W Th F S |
| 2000 | 22   | Su S            |

**Current Time of Day Function**

| Time | Function          | Settings * | Day of Week   |
|------|-------------------|------------|---------------|
| 0000 | TOD OUTPUTS       | 8-----     | SuM T W ThF S |
| 0000 | TOD LOCAL MULTIFU | ---4---    | SuM T W ThF S |
| 0500 | TOD LOCAL MULTIFU | -----      | SuM T W ThF S |
| 0600 | TOD OUTPUTS       | -----      | M T W ThF     |
| 2000 | TOD OUTPUTS       | 8-----     | M T W ThF     |

**Local Time of Day Function**

| Time | Function             | Settings * | Day of Week   |
|------|----------------------|------------|---------------|
| 0000 | TOD OUTPUTS          | 8-----     | SuM T W ThF S |
| 0000 | TOD LOCAL MULTIFUNCT | ---4---    | SuM T W ThF S |
| 0500 | TOD LOCAL MULTIFUNCT | -----      | SuM T W ThF S |
| 0600 | TOD OUTPUTS          | -----      | M T W ThF     |
| 0700 | TOD OUTPUTS          | -----      | Su S          |
| 2000 | TOD OUTPUTS          | 8-----     | M T W ThF     |
| 2200 | TOD OUTPUTS          | 8-----     | Su S          |

**\* Settings**

Blank - FREE - Phase Bank 1, Max 1  
Blank - Plan - Phase Bank 1, Max 2  
1 - Phase Bank 2, Max 1  
2 - Phase Bank 2, Max 2  
3 - Phase Bank 3, Max 1  
4 - Phase Bank 3, Max 2  
5 - EXTERNAL PERMIT 1  
6 - EXTERNAL PERMIT 2  
7 - X-PED OMIT  
8 - TBA

**No Calendar Defined/Enabled**

# TOD Schedule Report

for 3391: Dade Blvd&Michigan Av N

Print Date:  
10/4/2021

Print Time:  
4:32 PM

| <u>Asset</u> | <u>Intersection</u>     | <u>TOD Schedule</u> | <u>Op Mode</u> | <u>Plan #</u>      | <u>Cycle</u> | <u>Offset</u> | <u>TOD Setting</u> | <u>Active PhaseBank</u> | <u>Active Maximum</u> |
|--------------|-------------------------|---------------------|----------------|--------------------|--------------|---------------|--------------------|-------------------------|-----------------------|
| 3391         | Dade Blvd&Michigan Av N | DOW-2               | TOD            | [04] HEAVY AM PEAK | 110          | 86            | N/A                | 1                       | Max 2                 |

## Splits

| <u>PH 1</u> | <u>PH 2</u> | <u>PH 3</u> | <u>PH 4</u> | <u>PH 5</u> | <u>PH 6</u> | <u>PH 7</u> | <u>PH 8</u> |
|-------------|-------------|-------------|-------------|-------------|-------------|-------------|-------------|
| -           | SWT         | PED         | SET         | -           | NET         | -           | -           |
| 0           | 28          | 27          | 43          | 0           | 28          | 0           | 0           |



N/A



Active Phase Bank: Phase Bank 1

| <u>Phase</u> | <u>Walk</u>       |   |       | <u>Don't Walk</u> |   |         | <u>Min Initial</u> |   |         | <u>Veh Ext</u> |   |           | <u>Max Limit</u> |   |         | <u>Max 2</u> |   |         | <u>Yellow</u> | <u>Red</u> |
|--------------|-------------------|---|-------|-------------------|---|---------|--------------------|---|---------|----------------|---|-----------|------------------|---|---------|--------------|---|---------|---------------|------------|
|              | <u>Phase Bank</u> |   |       |                   |   |         |                    |   |         |                |   |           |                  |   |         |              |   |         |               |            |
|              | 1                 | 2 | 3     | 1                 | 2 | 3       | 1                  | 2 | 3       | 1              | 2 | 3         | 1                | 2 | 3       | 1            | 2 | 3       |               |            |
| 1 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0   | 0             | 0          |
| 2 SWT        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 14                 | - | 14 - 14 | 1              | - | 1 - 1     | 25               | - | 21 - 25 | 0            | - | 21 - 25 | 4             | 2          |
| 3 PED        | 4                 | - | 4 - 4 | 23                | - | 23 - 23 | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0   | 0             | 0          |
| 4 SET        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 7                  | - | 7 - 7   | 3.5            | - | 2.5 - 2.5 | 12               | - | 12 - 15 | 50           | - | 45 - 45 | 4             | 2          |
| 5 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0   | 0             | 0          |
| 6 NET        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 14                 | - | 14 - 14 | 1              | - | 1 - 1     | 25               | - | 21 - 25 | 0            | - | 21 - 25 | 4             | 2          |
| 7 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0   | 0             | 0          |
| 8 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0   | 0             | 0          |

Last In Service Date: unknown

## Permitted Phases

**12345678**

Default -234-6--  
External Permit 0 -234-6--  
External Permit 1 --3-----  
External Permit 2 -234-6--



# TOD Schedule Report

for 3391: Dade Blvd&Michigan Av N

Print Date:  
10/4/2021

Print Time:  
4:32 PM

| Current<br>TOD Schedule | Plan | Cycle | Green Time |          |          |          |        |          |        |        | Ring Offset | Offset |
|-------------------------|------|-------|------------|----------|----------|----------|--------|----------|--------|--------|-------------|--------|
|                         |      |       | 1<br>-     | 2<br>SWT | 3<br>PED | 4<br>SET | 5<br>- | 6<br>NET | 7<br>- | 8<br>- |             |        |
| 2                       |      | 110   | 0          | 30       | 27       | 41       | 0      | 30       | 0      | 0      | 0           | 53     |
| 3                       |      | 100   | 0          | 37       | 27       | 24       | 0      | 37       | 0      | 0      | 0           | 8      |
| 4                       |      | 110   | 0          | 28       | 27       | 43       | 0      | 28       | 0      | 0      | 0           | 86     |
| 5                       |      | 80    | 0          | 17       | 27       | 24       | 0      | 17       | 0      | 0      | 0           | 57     |
| 6                       |      | 120   | 0          | 33       | 27       | 48       | 0      | 33       | 0      | 0      | 0           | 1      |
| 9                       |      | 90    | 0          | 23       | 27       | 28       | 0      | 23       | 0      | 0      | 0           | 65     |
| 10                      |      | 80    | 0          | 22       | 27       | 19       | 0      | 22       | 0      | 0      | 0           | 12     |
| 11                      |      | 80    | 0          | 29       | 27       | 12       | 0      | 29       | 0      | 0      | 0           | 27     |
| 13                      |      | 100   | 0          | 23       | 27       | 38       | 0      | 23       | 0      | 0      | 0           | 32     |
| 14                      |      | 120   | 0          | 33       | 27       | 48       | 0      | 33       | 0      | 0      | 0           | 117    |
| 15                      |      | 90    | 0          | 14       | 27       | 37       | 0      | 14       | 0      | 0      | 0           | 65     |
| 23                      |      | 80    | 0          | 27       | 27       | 14       | 0      | 27       | 0      | 0      | 0           | 57     |

## Local TOD Schedule

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | Free | Su M T W Th F S |
| 0600 | 13   | M T W Th F      |
| 0700 | 2    | M T W Th F      |
| 0700 | 13   | Su S            |
| 0830 | 14   | M T W Th F      |
| 1000 | 13   | Su S            |
| 1315 | 14   | M T W Th F      |
| 1500 | 4    | F               |
| 1600 | 4    | M T W Th        |
| 1830 | 13   | M T W Th F      |
| 2000 | 14   | Su F S          |
| 2200 | Free | M T W Th        |

## Current Time of Day Function

| Time | Function          | Settings * | Day of Week   |
|------|-------------------|------------|---------------|
| 0000 | TOD OUTPUTS       | -----1     | SuM T W ThF S |
| 0000 | TOD LOCAL MULTIFU | ---4---    | SuM T W ThF S |
| 0100 | TOD OUTPUTS       | -----      | SuM T W ThF S |
| 0500 | TOD LOCAL MULTIFU | -----      | SuM T W ThF S |
| 2200 | TOD OUTPUTS       | -----1     | M T W ThF S   |

## Local Time of Day Function

| Time | Function             | Settings * | Day of Week   |
|------|----------------------|------------|---------------|
| 0000 | TOD OUTPUTS          | -----1     | SuM T W ThF S |
| 0000 | TOD LOCAL MULTIFUNCT | ---4---    | SuM T W ThF S |
| 0100 | TOD OUTPUTS          | -----      | SuM T W ThF S |
| 0500 | TOD LOCAL MULTIFUNCT | -----      | SuM T W ThF S |
| 0700 | TOD OUTPUTS          | -----1     | Su S          |
| 1000 | TOD OUTPUTS          | -----      | Su S          |
| 2000 | TOD OUTPUTS          | -----1     | Su S          |
| 2200 | TOD OUTPUTS          | -----1     | M T W ThF S   |

## \* Settings

Blank - FREE - Phase Bank 1, Max 1  
Blank - Plan - Phase Bank 1, Max 2  
1 - Phase Bank 2, Max 1  
2 - Phase Bank 2, Max 2  
3 - Phase Bank 3, Max 1  
4 - Phase Bank 3, Max 2  
5 - EXTERNAL PERMIT 1  
6 - EXTERNAL PERMIT 2  
7 - X-PED OMIT  
8 - TBA

No Calendar Defined/Enabled

**TOD Schedule Report**  
for 3392: Alton Rd&Michigan Av

Print Date:  
10/4/2021

Print Time:  
4:33 PM

| <u>Asset</u> | <u>Intersection</u>  | <u>TOD Schedule</u> | <u>Op Mode</u> | <u>Plan #</u>    | <u>Cycle</u> | <u>Offset</u> | <u>TOD Setting</u> | <u>Active PhaseBank</u> | <u>Active Maximum</u> |
|--------------|----------------------|---------------------|----------------|------------------|--------------|---------------|--------------------|-------------------------|-----------------------|
| 3392         | Alton Rd&Michigan Av | DOW-2               | TOD            | [10] PRE-PM PEAK | 150          | 118           | N/A                | 1                       | Max 2                 |

**Splits**

| <u>PH 1</u>                                                                      | <u>PH 2</u>                                                                       | <u>PH 3</u> | <u>PH 4</u>                                                                       | <u>PH 5</u>                                                                       | <u>PH 6</u>                                                                       | <u>PH 7</u> | <u>PH 8</u>                                                                        |
|----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------|------------------------------------------------------------------------------------|
| NBL                                                                              | SBT                                                                               | -           | WBT                                                                               | SBL                                                                               | NBT                                                                               | -           | EBT                                                                                |
| 43                                                                               | 59                                                                                | 0           | 30                                                                                | 43                                                                                | 59                                                                                | 0           | 30                                                                                 |
|  |  |             |  |  |  |             |  |

Active Phase Bank: Phase Bank 1

| <u>Phase</u> | <u>Walk</u>       |   |       | <u>Don't Walk</u> |   |         | <u>Min Initial</u> |   |         | <u>Veh Ext</u> |   |           | <u>Max Limit</u> |   |         | <u>Max 2</u> |   |          | <u>Yellow</u> | <u>Red</u> |
|--------------|-------------------|---|-------|-------------------|---|---------|--------------------|---|---------|----------------|---|-----------|------------------|---|---------|--------------|---|----------|---------------|------------|
|              | <u>Phase Bank</u> |   |       |                   |   |         |                    |   |         |                |   |           |                  |   |         |              |   |          |               |            |
|              | 1                 | 2 | 3     | 1                 | 2 | 3       | 1                  | 2 | 3       | 1              | 2 | 3         | 1                | 2 | 3       | 1            | 2 | 3        |               |            |
| 1 NBL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5   | 6              | - | 6 - 6     | 12               | - | 12 - 12 | 100          | - | 100 - 10 | 3.7           | 2          |
| 2 SBT        | 7                 | - | 7 - 7 | 12                | - | 12 - 12 | 14                 | - | 14 - 14 | 1              | - | 1 - 1     | 20               | - | 20 - 20 | 0            | - | 0 - 0    | 4             | 2          |
| 3 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0    | 0             | 0          |
| 4 WBT        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 7                  | - | 7 - 7   | 2.5            | - | 2.5 - 2.5 | 12               | - | 12 - 12 | 50           | - | 50 - 50  | 4             | 2.3        |
| 5 SBL        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 5                  | - | 5 - 5   | 6              | - | 6 - 6     | 12               | - | 12 - 12 | 100          | - | 100 - 10 | 3.7           | 2          |
| 6 NBT        | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 14                 | - | 14 - 14 | 1              | - | 1 - 1     | 20               | - | 20 - 20 | 0            | - | 0 - 0    | 4             | 2          |
| 7 -          | 0                 | - | 0 - 0 | 0                 | - | 0 - 0   | 0                  | - | 0 - 0   | 0              | - | 0 - 0     | 0                | - | 0 - 0   | 0            | - | 0 - 0    | 0             | 0          |
| 8 EBT        | 7                 | - | 7 - 7 | 23                | - | 23 - 23 | 7                  | - | 7 - 7   | 2.5            | - | 2.5 - 2.5 | 12               | - | 12 - 12 | 50           | - | 50 - 50  | 4             | 2.3        |

Last In Service Date: unknown

**Permitted Phases**

**12345678**

Default 12-456-8  
External Permit 0 12-456-8  
External Permit 1 12-456-8  
External Permit 2 12-456-8

## TOD Schedule Report

for 3392: Alton Rd&Michigan Av

Print Date:  
10/4/2021

Print Time:  
4:33 PM

| Current<br>TOD Schedule | Plan | Cycle | Green Time |          |        |          |          |          |        |          | Ring Offset | Offset |
|-------------------------|------|-------|------------|----------|--------|----------|----------|----------|--------|----------|-------------|--------|
|                         |      |       | 1<br>NBL   | 2<br>SBT | 3<br>- | 4<br>WBT | 5<br>SBL | 6<br>NBT | 7<br>- | 8<br>EBT |             |        |
| 1                       |      | 100   | 15         | 39       | 0      | 28       | 15       | 39       | 0      | 28       | 0           | 8      |
| 3                       |      | 120   | 15         | 57       | 0      | 30       | 15       | 57       | 0      | 30       | 0           | 81     |
| 5                       |      | 150   | 33         | 69       | 0      | 30       | 33       | 69       | 0      | 30       | 0           | 6      |
| 6                       |      | 160   | 45         | 69       | 0      | 28       | 45       | 69       | 0      | 28       | 0           | 8      |
| 10                      |      | 150   | 43         | 59       | 0      | 30       | 43       | 59       | 0      | 30       | 0           | 118    |
| 13                      |      | 130   | 23         | 59       | 0      | 30       | 23       | 59       | 0      | 30       | 0           | 45     |
| 19                      |      | 120   | 14         | 58       | 0      | 30       | 14       | 58       | 0      | 30       | 0           | 50     |
| 20                      |      | 140   | 23         | 69       | 0      | 30       | 23       | 69       | 0      | 30       | 0           | 96     |
| 21                      |      | 140   | 17         | 75       | 0      | 30       | 17       | 75       | 0      | 30       | 0           | 0      |
| 22                      |      | 120   | 7          | 65       | 0      | 30       | 7        | 65       | 0      | 30       | 0           | 42     |
| 25                      |      | 140   | 45         | 49       | 0      | 28       | 45       | 49       | 0      | 28       | 0           | 5      |
| 26                      |      | 200   | 50         | 104      | 0      | 28       | 50       | 104      | 0      | 28       | 0           | 13     |
| 27                      |      | 180   | 45         | 89       | 0      | 28       | 45       | 89       | 0      | 28       | 0           | 141    |

### Local TOD Schedule

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | 1    | Su M T W Th F S |
| 0600 | 3    | Su M T W Th F S |
| 0800 | 5    | M T W Th F      |
| 0800 | 19   | Su S            |
| 1000 | 20   | Su S            |
| 1300 | 10   | M T W Th F      |
| 1900 | 13   | Su M T W Th F S |
| 2000 | 22   | Su S            |

### Current Time of Day Function

| Time | Function          | Settings * | Day of Week     |
|------|-------------------|------------|-----------------|
| 0000 | TOD OUTPUTS       | -----      | Su M T W Th F S |
| 0000 | TOD LOCAL MULTIFU | ---4---    | Su M T W Th F S |
| 0500 | TOD LOCAL MULTIFU | -----      | Su M T W Th F S |

### Local Time of Day Function

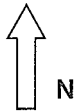
| Time | Function             | Settings * | Day of Week     |
|------|----------------------|------------|-----------------|
| 0000 | TOD OUTPUTS          | -----      | Su M T W Th F S |
| 0000 | TOD LOCAL MULTIFUNCT | ---4---    | Su M T W Th F S |
| 0500 | TOD LOCAL MULTIFUNCT | -----      | Su M T W Th F S |

### \* Settings

Blank - FREE - Phase Bank 1, Max 1  
Blank - Plan - Phase Bank 1, Max 2  
1 - Phase Bank 2, Max 1  
2 - Phase Bank 2, Max 2  
3 - Phase Bank 3, Max 1  
4 - Phase Bank 3, Max 2  
5 - EXTERNAL PERMIT 1  
6 - EXTERNAL PERMIT 2  
7 - X-PED OMIT  
8 - TBA

**No Calendar Defined/Enabled**

# SIGNAL OPERATING PLAN



|                                              | Direction | NB   |    | SB  |    |      | EB   |    | WB   |    | Ped Heads |     |     |     | Movements/Display/Actuation |
|----------------------------------------------|-----------|------|----|-----|----|------|------|----|------|----|-----------|-----|-----|-----|-----------------------------|
| Timing Phases                                | Head No.  | 1/6  | 6  | 5   | 2  | 2R   | 3/8  | 8  | 7/4  | 4  | P2        | P6  | P4  | P8  |                             |
| (1+5)<br>N/SBLT<br>Alton Rd<br>(ACTUATED)    | Dwell     | R/<G | R  | <G  | R  | R    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+6)     | R/<G | R  | <Y  | R  | R    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+5)     | R/<Y | R  | <G  | R  | R    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R/<Y | R  | <Y  | R  | R    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
| (2+5)<br>NB<br>Alton Rd<br>(ACTUATED)        | Dwell     | R    | R  | <G  | G  | G    | R    | R  | R    | R  | W/F       | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R    | R  | <Y  | G  | G    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              |           |      |    |     |    |      |      |    |      |    |           |     |     |     |                             |
|                                              |           |      |    |     |    |      |      |    |      |    |           |     |     |     |                             |
| (1+6)<br>Alton Rd<br>US-1<br>(ACTUATED)      | Dwell     | <G/G | G  | <R  | R  | R    | R    | R  | R    | R  | DW        | W/F | DW  | DW  |                             |
|                                              | (2+6)     | <Y/G | G  | <R  | R  | R    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              |           |      |    |     |    |      |      |    |      |    |           |     |     |     |                             |
|                                              |           |      |    |     |    |      |      |    |      |    |           |     |     |     |                             |
| (2+6)<br>N/SB<br>Alton Rd<br>(RECALL)        | Dwell     | G    | G  | <R  | G  | G    | R    | R  | R    | R  | W/F       | W/F | DW  | DW  |                             |
|                                              | (3+7)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (3+8)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (7+4)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (4+8)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+5)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+5)     | Y    | Y  | <R  | Y  | Y    | R    | R  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              |           |      |    |     |    |      |      |    |      |    |           |     |     |     |                             |
| (3+7)<br>NE/SWBLT<br>Dade Blvd<br>(ACTUATED) | Dwell     | R    | R  | <R  | R  | R/G> | R/<G | R  | R/<G | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (3+8)     | R    | R  | <R  | R  | R/G> | R/<G | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (7+4)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<G | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (4+8)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+5)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+5)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+6)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R    | R  | <R  | R  | R/Y> | R/<Y | R  | R/<Y | R  | DW        | DW  | DW  | DW  |                             |
| (3+8)<br>NEB<br>Dade Blvd<br>(ACTUATED)      | Dwell     | R    | R  | <R  | R  | R/G> | <G/G | G  | R    | R  | DW        | DW  | DW  | W/F |                             |
|                                              | (4+8)     | R    | R  | <R  | R  | R/Y> | <Y/G | G  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+5)     | R    | R  | <R  | R  | R/Y> | Y/<Y | Y  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+5)     | R    | R  | <R  | R  | R/Y> | Y/<Y | Y  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+6)     | R    | R  | <R  | R  | R/Y> | Y/<Y | Y  | R    | R  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R    | R  | <R  | R  | R/Y> | Y/<Y | Y  | R    | R  | DW        | DW  | DW  | DW  |                             |
| (7+4)<br>SWB<br>Dade Blvd<br>(ACTUATED)      | Dwell     | R    | R  | <R  | R  | R    | R    | R  | <G/G | G  | DW        | DW  | W/F | DW  |                             |
|                                              | (4+8)     | R    | R  | <R  | R  | R    | R    | R  | <Y/G | G  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+5)     | R    | R  | <R  | R  | R    | R    | R  | Y/<Y | Y  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+6)     | R    | R  | <R  | R  | R    | R    | R  | Y/<Y | Y  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+5)     | R    | R  | <R  | R  | R    | R    | R  | Y/<Y | Y  | DW        | DW  | DW  | DW  |                             |
| (4+8)<br>NE/SWB<br>Dade Blvd<br>(ACTUATED)   | Dwell     | R    | R  | <R  | R  | R    | G    | G  | G    | G  | DW        | DW  | W/F | W/F |                             |
|                                              | (1+5)     | R    | R  | <R  | R  | R    | Y    | Y  | Y    | Y  | DW        | DW  | DW  | DW  |                             |
|                                              | (1+6)     | R    | R  | <R  | R  | R    | Y    | Y  | Y    | Y  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R    | R  | <R  | R  | R    | Y    | Y  | Y    | Y  | DW        | DW  | DW  | DW  |                             |
|                                              | (2+6)     | R    | R  | <R  | R  | R    | Y    | Y  | Y    | Y  | DW        | DW  | DW  | DW  |                             |
| Flashing Operation                           |           | FY   | FY | F<R | FY | FY   | FR   | FR | FR   | FR |           |     |     |     | Page 1 of 1                 |

Miami-Dade County Public Works Department

|                             |                   |                                          |  |                  |                      |
|-----------------------------|-------------------|------------------------------------------|--|------------------|----------------------|
| Drawn<br>WILLIAM RIVERA PAZ | Date<br>6/16/2015 | Alton Rd & Dade Blvd                     |  |                  |                      |
| Checked<br>H. HERNANDEZ     | Date<br>6/16/15   | Placed in Service<br>Date 7/27/15 By ENT |  | Phasing No.<br>8 | Asset Number<br>2648 |

# SIGNAL OPERATING PLAN



|                                                  |          | Direction        |    | NB                                |    | SB |      | EB        |    | WB               |     | Ped Heads                   |  |  |
|--------------------------------------------------|----------|------------------|----|-----------------------------------|----|----|------|-----------|----|------------------|-----|-----------------------------|--|--|
| Timing Phases                                    | Head No. | 1/6              | 6  |                                   | 2  | 3  | 3/8  | 7/4       | 4  | P2               | P8  | Movements/Display/Actuation |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| (1+6)                                            | Dwell    | <G/G             | G  |                                   | R  | R  | R    | R         | R  | DW               | DW  |                             |  |  |
| SB<br>ALTON RD<br>(RECALL)                       | (2+6)    | <Y/G             | G  |                                   | R  | R  | R    | R         | R  | DW               | DW  |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| (2+6)                                            | Dwell    | G                | G  |                                   | G  | R  | R    | R         | R  | W/F              | DW  |                             |  |  |
| N/SB<br>ALTON RD<br>(RECALL)                     | (3)      | Y                | Y  |                                   | Y  | R  | R    | R         | R  | DW               | DW  |                             |  |  |
|                                                  | (4)      | Y                | Y  |                                   | Y  | R  | R    | R         | R  | DW               | DW  |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| (3)                                              | Dwell    | R                | R  |                                   | R  | <G | <G/G | R         | R  | DW               | W/F |                             |  |  |
| EB<br>20 Street<br>(ACTUATED)                    | (4)      | R                | R  |                                   | R  | Y  | Y    | R         | R  | DW               | DW  |                             |  |  |
|                                                  | (1+6)    | R                | R  |                                   | R  | Y  | Y    | R         | R  | DW               | DW  |                             |  |  |
|                                                  | (2+6)    | R                | R  |                                   | R  | Y  | Y    | R         | R  | DW               | DW  |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| (4)                                              | Dwell    | R                | R  |                                   | R  | R  | R    | <G/G      | G  | DW               | DW  |                             |  |  |
| WB<br>20 Street<br>(ACTUATED)                    | (1+6)    | R                | R  |                                   | R  | R  | R    | Y         | Y  | DW               | DW  |                             |  |  |
|                                                  | (2+6)    | R                | R  |                                   | R  | R  | R    | Y         | Y  | DW               | DW  |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
|                                                  |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| Flashing Operation                               |          | FY               | FY |                                   | FY | FR | FR   | FR        | FR |                  |     | Page 1 of 1                 |  |  |
| <b>Miami-Dade County Public Works Department</b> |          |                  |    |                                   |    |    |      |           |    |                  |     |                             |  |  |
| Drawn<br>WILLIAM RIVERA PAZ                      |          | Date<br>2/3/2015 |    | <b>ALTON RD &amp; 20 ST</b>       |    |    |      |           |    |                  |     |                             |  |  |
| Checked<br>H. Hernandez-DT2                      |          | Date<br>2/12/15  |    | Placed in Service<br>Date 2/27/15 |    |    |      | By<br>EEC |    | Phasing No.<br>7 |     | Asset Number<br>3276        |  |  |

# SIGNAL OPERATING PLAN



| SIGNAL OPERATING PLAN        |           |     |    |    |   |    |    |  |  |  | Ped Heads |    |  | Movements/Display/Actuation |  |
|------------------------------|-----------|-----|----|----|---|----|----|--|--|--|-----------|----|--|-----------------------------|--|
| ing Phases                   | Direction | WB  | 2A | EB | 6 | 8  | 8A |  |  |  | P2        |    |  |                             |  |
| +6<br>/W<br>DE BLVD<br>RECAL | Head No.  | 2   | 2A | 6  | 8 | 8A |    |  |  |  | P2        |    |  | 2A ←<br><br>2 ←<br><br>→ 6  |  |
|                              | Dwell     | G   | →  | G  | R | R  |    |  |  |  | DW        |    |  |                             |  |
|                              | Clear to  | 3   | G  | →  | G | R  | R  |  |  |  |           | DW |  |                             |  |
|                              |           | 4   | Y  | →  | Y | R  | R  |  |  |  |           | DW |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
| 3<br>ED<br>CROSS E/W         | Dwell     | G   | R  | G  | R | R  |    |  |  |  | W/F       |    |  | P2<br>2 ←<br><br>→ 6        |  |
|                              | Clear to  | 4   | Y  | R  | Y | R  | R  |  |  |  |           | DW |  |                             |  |
|                              |           | 2+6 | G  | R  | G | R  | R  |  |  |  |           | DW |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
| TUATED                       | Dwell     | R   | →  | R  | G | G  |    |  |  |  | DW        |    |  | 2A ←<br>8A ↓<br>8 ↓         |  |
|                              | Clear to  | 2+6 | R  | →  | R | Y  | Y  |  |  |  |           | DW |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
| TUATED                       | Dwell     |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              | Clear to  |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              | Dwell     |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              | Clear to  |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              | Dwell     |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              | Clear to  |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |
|                              |           |     |    |    |   |    |    |  |  |  |           |    |  |                             |  |

Page 1 of 1

|                                           |      |         |                      |    |             |  |              |  |  |             |
|-------------------------------------------|------|---------|----------------------|----|-------------|--|--------------|--|--|-------------|
| ing Operation                             | FY   | FY      | FY                   | FR | FR          |  |              |  |  | Page 1 of 1 |
| Miami-Dade County Public Works Department |      |         |                      |    |             |  |              |  |  |             |
| DABE BLVD & MICHIGAN AV                   |      |         |                      |    |             |  |              |  |  |             |
| ANCILLON                                  | Date | 7/29/04 | Placed in Service    |    | Phasing No. |  | Asset Number |  |  |             |
|                                           | Date | 7/29/04 | Date 7/29/04 By SHOP |    | 4           |  | 3391         |  |  |             |

# Miami-Dade County Public Works Department

## Signalization Operation Definition and Timing Report

Location: Alton Rd & Michigan Av

Asset Number: 3392

Page Name Last Change

Section: 274 Alton / Dade Blvd & 1<sup>st</sup> Movements

Preemption Device: No

Type HW/SW

Equipment Type: BI233DA

Cabinet Type: 552

Addresses

Drop: 5

Phone Number: -

Preemption

EV (Local): RR(Local): Route (remote): Bridge:

Comments

Zone Assignments

| Zone Category   | Zone                   |
|-----------------|------------------------|
| Engineering     | 03 - (MH) SE Miami     |
| Maintenance     | 1 - Maint-M Beach/ DTA |
| Systems         | Sys-Central            |
| Electronic Shop | Shop-Dade County       |

Last Updated by: e300974

Last Update:

|                                       |                                               |
|---------------------------------------|-----------------------------------------------|
| Approved by: <u><i>E. Espinal</i></u> | Approval Date/Time: <u>11/8/19 3:18:20 PM</u> |
| In Service Date: _____                | ATMS Migration Date: <u>5/12/2008</u>         |
| SOP/Phasing No.: <u>4</u>             |                                               |

|                                   |                 |
|-----------------------------------|-----------------|
| Assignable Inputs DA              | 11/6/2019 12:38 |
| Assignable Outputs DA             | 11/6/2019 12:38 |
| Assignable Outputs Plans DA       | 11/6/2019 12:38 |
| Basic Timing Phase Bank 1         | 11/6/2019 14:52 |
| Basic Timing Phase Bank 2         | 11/6/2019 14:52 |
| Basic Timing Phase Bank 3         | 11/6/2019 14:52 |
| Configuration Parameters DA       | 11/6/2019 14:53 |
| Configuration Setup               | 11/6/2019 14:54 |
| Configuration Timers DA           | 11/6/2019 12:38 |
| Coordination All Plans DA         | 11/6/2019 14:50 |
| Coordination Parameters           | 11/6/2019 12:38 |
| Coordination Settings             | 11/6/2019 12:38 |
| Coordination Timing               | 11/6/2019 14:47 |
| Daylight Savings                  | 11/6/2019 12:38 |
| Detector Parameters               | 11/6/2019 12:38 |
| Detectors                         | 11/6/2019 14:36 |
| Holiday Dates DA                  | 11/6/2019 12:38 |
| Holiday Events DA                 | 11/6/2019 12:38 |
| Holiday TOD Functions DA          | 11/6/2019 12:38 |
| Overlaps DA                       | 11/6/2019 12:38 |
| Preemption Parameters             | 11/6/2019 12:38 |
| Preemption Special Events Table 1 | 11/6/2019 12:38 |
| Preemption Special Events Table 2 | 11/6/2019 12:38 |
| Redirect Outputs DA               | 11/6/2019 12:38 |
| TOD Functions                     | 11/6/2019 12:38 |
| TOD Schedule                      | 11/6/2019 12:38 |

# SIGNAL OPERATING PLAN

| Signal Operating Plan |  |       |  |       |  |       |  |       |  | Timing Phases |  |                    |  |       |  |       |  |       |  |       |  |           |  |
|-----------------------|--|-------|--|-------|--|-------|--|-------|--|---------------|--|--------------------|--|-------|--|-------|--|-------|--|-------|--|-----------|--|
| Direction             |  | SB    |  | NB    |  | WB    |  | EB    |  | Ped Heads     |  | Direction          |  | SB    |  | NB    |  | WB    |  | EB    |  | Ped Heads |  |
| Head No.              |  | 5     |  | 2     |  | 1     |  | 6     |  | 8             |  | Head No.           |  | 5     |  | 2     |  | 1     |  | 6     |  | P2        |  |
| Dwell                 |  | <G    |  | R     |  | <G    |  | R     |  | R             |  | Dwell              |  | <G    |  | R     |  | <G    |  | R     |  | R         |  |
| Clear To              |  | <Y    |  | R     |  | <Y    |  | R     |  | R             |  | Clear To           |  | <Y    |  | R     |  | <Y    |  | R     |  | R         |  |
| (1+6)                 |  | <Y    |  | R     |  | <Y    |  | R     |  | R             |  | (1+6)              |  | <Y    |  | R     |  | <Y    |  | R     |  | R         |  |
| (2+5)                 |  | <G    |  | R     |  | <G    |  | R     |  | R             |  | (2+5)              |  | <G    |  | R     |  | <G    |  | R     |  | R         |  |
| (2+6)                 |  | <Y    |  | R     |  | <Y    |  | R     |  | R             |  | (2+6)              |  | <Y    |  | R     |  | <Y    |  | R     |  | R         |  |
| Clear To              |  | <R    |  | R     |  | <R    |  | R     |  | R             |  | Clear To           |  | <R    |  | R     |  | <R    |  | R     |  | R         |  |
| SBLT+NBLT             |  | <R    |  | R     |  | <R    |  | R     |  | R             |  | SBLT+NBLT          |  | <R    |  | R     |  | <R    |  | R     |  | R         |  |
| Alton Rd              |  | <R    |  | R     |  | <R    |  | R     |  | R             |  | Alton Rd           |  | <R    |  | R     |  | <R    |  | R     |  | R         |  |
| ACTUATED              |  | (1+6) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+5)         |  | ACTUATED           |  | (1+6) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+5)     |  |
| Dwell                 |  | <G    |  | G     |  | <R    |  | G     |  | R             |  | Dwell              |  | <G    |  | G     |  | <R    |  | G     |  | W/F       |  |
| Clear To              |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | Clear To           |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| (2+5)                 |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | (2+5)              |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| SBLT+SBT              |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | SBLT+SBT           |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| Alton Rd              |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | Alton Rd           |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| ACTUATED              |  | (2+6) |  | (1+6) |  | (2+5) |  | (4+8) |  | (1+5)         |  | ACTUATED           |  | (2+6) |  | (1+6) |  | (2+5) |  | (4+8) |  | (1+5)     |  |
| Dwell                 |  | <G    |  | G     |  | <R    |  | G     |  | R             |  | Dwell              |  | <G    |  | G     |  | <R    |  | G     |  | W/F       |  |
| Clear To              |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | Clear To           |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| (2+6)                 |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | (2+6)              |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| SBT+NBT               |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | SBT+NBT            |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| Alton Rd              |  | <Y    |  | G     |  | <R    |  | R     |  | R             |  | Alton Rd           |  | <Y    |  | G     |  | <R    |  | R     |  | DW        |  |
| RECALL                |  | (1+5) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+6)         |  | RECALL             |  | (1+5) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+6)     |  |
| Dwell                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Dwell              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| Clear To              |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Clear To           |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| (1+5)                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | (1+5)              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| (2+5)                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | (2+5)              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| WBT+EBT               |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | WBT+EBT            |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| Michigan Ave          |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Michigan Ave       |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| ACTUATED              |  | (1+5) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+6)         |  | ACTUATED           |  | (1+5) |  | (2+5) |  | (2+6) |  | (4+8) |  | (1+6)     |  |
| Dwell                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Dwell              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| Clear To              |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Clear To           |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| (1+5)                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | (1+5)              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| (2+5)                 |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | (2+5)              |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| Flashing Operation    |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | Flashing Operation |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  | G             |  | F<R                |  | <R    |  | R     |  | <R    |  | G     |  | DW        |  |
| F<R                   |  | <R    |  | R     |  | <R    |  | R     |  |               |  |                    |  |       |  |       |  |       |  |       |  |           |  |



# DETECTION RACK CONNECTION STANDARDIZATION FORM FOR LOOPS DETECTION FOR MIAMI-DADE COUNTY TRAFFIC SIGNALS 552 & 660 CABINETS

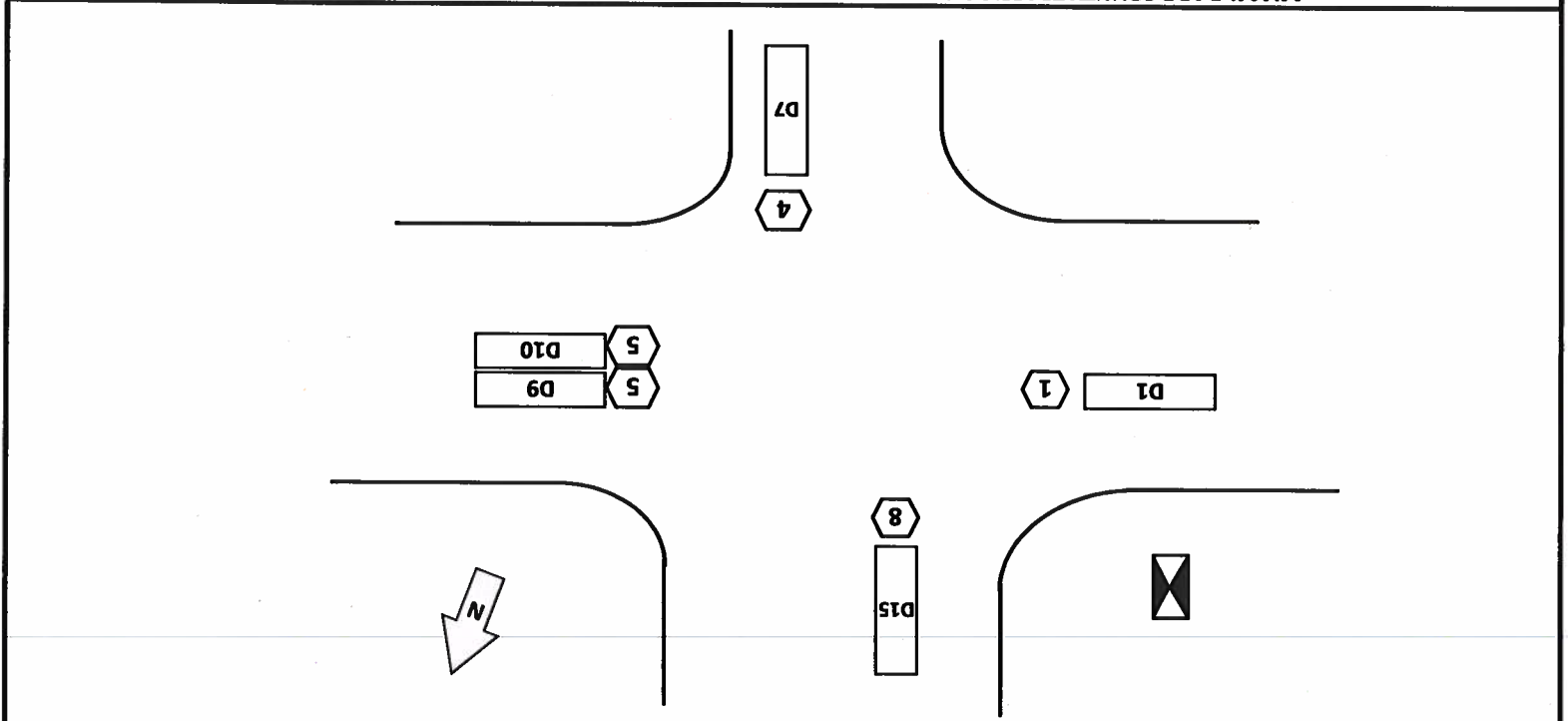
Loop Detection Sheet - Rev. 1/2019

|                |                                  |
|----------------|----------------------------------|
| ASSET ID: 3392 | LOCATION: ALTON RD & MICHIGAN AV |
|----------------|----------------------------------|

## MIAMI-DADE COUNTY 552 & 660 DETECTOR ASSIGNMENTS

| DETECTOR | DIRECTION | PHASE / MOVEMENT | DECT. RACK SLOT | LOOP NO. | LOOP LABEL | TERMINALS    | REMARKS:                                                                                                                                                                                                                                                                                                            |
|----------|-----------|------------------|-----------------|----------|------------|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D1       | NBL       | 1                | 1               | 5        | L-1        | TBA4-(1,3)   | * This chart shall be used to achieve a standard connection for loops for each cabinet detection rack.<br>* All data shown is based on signal plan, field survey, or controller cabinet schematics.<br>* Loops are numbered clockwise beginning at the controller site and shall be label separate from each other. |
| D2       |           |                  |                 |          |            | TBA4-(4,6)   |                                                                                                                                                                                                                                                                                                                     |
| D3       |           |                  | 2               |          |            | TBA4-(7,9)   |                                                                                                                                                                                                                                                                                                                     |
| D4       |           |                  |                 |          |            | TBA4-(10,12) |                                                                                                                                                                                                                                                                                                                     |
| D5       |           |                  |                 |          |            | TBA4-(13,15) |                                                                                                                                                                                                                                                                                                                     |
| D6       |           |                  | 3               |          |            | TBA4-(16,18) |                                                                                                                                                                                                                                                                                                                     |
| D7       | WBT       | 4                | 4               | 4        | L-4        | TBA3-(1,3)   |                                                                                                                                                                                                                                                                                                                     |
| D8       |           |                  |                 |          |            | TBA3-(4,6)   |                                                                                                                                                                                                                                                                                                                     |
| D9       | SBL       | 5                | 5               | 2        | L5         | TBA3-(7,9)   |                                                                                                                                                                                                                                                                                                                     |
| D10      | SBL       | 5                | 5               | 3        | L-5        | TBA3-(10,12) |                                                                                                                                                                                                                                                                                                                     |
| D11      |           |                  | 6               |          |            | TBA3-(13,15) |                                                                                                                                                                                                                                                                                                                     |
| D12      |           |                  |                 |          |            | TBA3-(16,18) |                                                                                                                                                                                                                                                                                                                     |
| D13      |           |                  | 7               |          |            | TBA2-(1,3)   |                                                                                                                                                                                                                                                                                                                     |
| D14      |           |                  |                 |          |            | TBA2-(4,6)   |                                                                                                                                                                                                                                                                                                                     |
| D15      | EBT       | 8                | 8               | 1        | L-8        | TBA2-(7,9)   |                                                                                                                                                                                                                                                                                                                     |
| D16      |           |                  |                 |          |            | TBA2-(10,12) |                                                                                                                                                                                                                                                                                                                     |
| D17      |           |                  | 9               |          |            | TBA2-(13,15) |                                                                                                                                                                                                                                                                                                                     |
| D18      |           |                  |                 |          |            | TBA2-(16,18) |                                                                                                                                                                                                                                                                                                                     |

## INTERSECTION DETECTION DRAWING



## MIAMI-DADE COUNTY TRAFFIC SIGNAL CABINETS 552 & 660 DETECTOR RACK CHANNEL ASSIGNMENTS

| MOVEMENT | DECT. SLOT | CHANNEL # | CHANNEL # |
|----------|------------|-----------|-----------|
| (1)      | (1)        | (1)       | (1)       |
| 2        | 2          | 3         | 4         |
| (3)      | 3          | (5)       | 6         |
| (4)      | (4)        | (7)       | 8         |
| (5)      | (5)        | (9)       | 10        |
| 6        | 6          | 11        | 12        |
| 7        | 7          | 13        | 14        |
| (8)      | (8)        | (15)      | 16        |
| SS1/SS2  | 9          | 17        | 18        |

NOTES:

2022 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 8700 MIAMI-DADE NORTH

| WEEK | DATES                   | SF   | MOCF: 0.96<br>PSCF |
|------|-------------------------|------|--------------------|
| 1    | 01/01/2022 - 01/01/2022 | 1.06 | 1.10               |
| 2    | 01/02/2022 - 01/08/2022 | 1.04 | 1.08               |
| 3    | 01/09/2022 - 01/15/2022 | 1.02 | 1.06               |
| 4    | 01/16/2022 - 01/22/2022 | 1.01 | 1.05               |
| 5    | 01/23/2022 - 01/29/2022 | 1.00 | 1.04               |
| 6    | 01/30/2022 - 02/05/2022 | 0.98 | 1.02               |
| 7    | 02/06/2022 - 02/12/2022 | 0.97 | 1.01               |
| * 8  | 02/13/2022 - 02/19/2022 | 0.96 | 1.00               |
| * 9  | 02/20/2022 - 02/26/2022 | 0.96 | 1.00               |
| *10  | 02/27/2022 - 03/05/2022 | 0.96 | 1.00               |
| *11  | 03/06/2022 - 03/12/2022 | 0.96 | 1.00               |
| *12  | 03/13/2022 - 03/19/2022 | 0.96 | 1.00               |
| *13  | 03/20/2022 - 03/26/2022 | 0.96 | 1.00               |
| *14  | 03/27/2022 - 04/02/2022 | 0.96 | 1.00               |
| *15  | 04/03/2022 - 04/09/2022 | 0.96 | 1.00               |
| *16  | 04/10/2022 - 04/16/2022 | 0.95 | 0.99               |
| *17  | 04/17/2022 - 04/23/2022 | 0.96 | 1.00               |
| *18  | 04/24/2022 - 04/30/2022 | 0.96 | 1.00               |
| *19  | 05/01/2022 - 05/07/2022 | 0.97 | 1.01               |
| *20  | 05/08/2022 - 05/14/2022 | 0.97 | 1.01               |
| 21   | 05/15/2022 - 05/21/2022 | 0.98 | 1.02               |
| 22   | 05/22/2022 - 05/28/2022 | 0.99 | 1.03               |
| 23   | 05/29/2022 - 06/04/2022 | 0.99 | 1.03               |
| 24   | 06/05/2022 - 06/11/2022 | 1.00 | 1.04               |
| 25   | 06/12/2022 - 06/18/2022 | 1.01 | 1.05               |
| 26   | 06/19/2022 - 06/25/2022 | 1.01 | 1.05               |
| 27   | 06/26/2022 - 07/02/2022 | 1.01 | 1.05               |
| 28   | 07/03/2022 - 07/09/2022 | 1.02 | 1.06               |
| 29   | 07/10/2022 - 07/16/2022 | 1.02 | 1.06               |
| 30   | 07/17/2022 - 07/23/2022 | 1.02 | 1.06               |
| 31   | 07/24/2022 - 07/30/2022 | 1.02 | 1.06               |
| 32   | 07/31/2022 - 08/06/2022 | 1.01 | 1.05               |
| 33   | 08/07/2022 - 08/13/2022 | 1.01 | 1.05               |
| 34   | 08/14/2022 - 08/20/2022 | 1.01 | 1.05               |
| 35   | 08/21/2022 - 08/27/2022 | 1.03 | 1.07               |
| 36   | 08/28/2022 - 09/03/2022 | 1.04 | 1.08               |
| 37   | 09/04/2022 - 09/10/2022 | 1.05 | 1.09               |
| 38   | 09/11/2022 - 09/17/2022 | 1.07 | 1.11               |
| 39   | 09/18/2022 - 09/24/2022 | 1.05 | 1.09               |
| 40   | 09/25/2022 - 10/01/2022 | 1.03 | 1.07               |
| 41   | 10/02/2022 - 10/08/2022 | 1.01 | 1.05               |
| 42   | 10/09/2022 - 10/15/2022 | 0.99 | 1.03               |
| 43   | 10/16/2022 - 10/22/2022 | 1.00 | 1.04               |
| 44   | 10/23/2022 - 10/29/2022 | 1.01 | 1.05               |
| 45   | 10/30/2022 - 11/05/2022 | 1.01 | 1.05               |
| 46   | 11/06/2022 - 11/12/2022 | 1.02 | 1.06               |
| 47   | 11/13/2022 - 11/19/2022 | 1.03 | 1.07               |
| 48   | 11/20/2022 - 11/26/2022 | 1.04 | 1.08               |
| 49   | 11/27/2022 - 12/03/2022 | 1.05 | 1.09               |
| 50   | 12/04/2022 - 12/10/2022 | 1.05 | 1.09               |
| 51   | 12/11/2022 - 12/17/2022 | 1.06 | 1.10               |
| 52   | 12/18/2022 - 12/24/2022 | 1.04 | 1.08               |
| 53   | 12/25/2022 - 12/31/2022 | 1.02 | 1.06               |

\* PEAK SEASON

23-FEB-2023 09:11:23

830UPD

6\_8700\_PKSEASON.TXT

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION STATISTICS OFFICE  
2022 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0012 - SR 907/ALTON RD, 200' N OF 20 ST (MIAMI BEACH)

| YEAR | AADT  |   | DIRECTION 1 |  | DIRECTION 2 | *K FACTOR | D FACTOR | T FACTOR |
|------|-------|---|-------------|--|-------------|-----------|----------|----------|
| ---- | ----- |   | -----       |  | -----       | -----     | -----    | -----    |
| 2022 | 44500 | C | N 21500     |  | S 23000     | 9.00      | 54.70    | 2.80     |
| 2021 | 49000 | C | N 24000     |  | S 25000     | 9.00      | 54.30    | 5.40     |
| 2020 | 36500 | C | N 17000     |  | S 19500     | 9.00      | 54.20    | 2.70     |
| 2019 | 43000 | C | N 23000     |  | S 20000     | 9.00      | 54.60    | 3.40     |
| 2018 | 49500 | C | N 24500     |  | S 25000     | 9.00      | 54.30    | 4.80     |
| 2017 | 47000 | C | N 22500     |  | S 24500     | 9.00      | 55.00    | 3.00     |
| 2016 | 46000 | C | N 22500     |  | S 23500     | 9.00      | 54.50    | 3.70     |
| 2015 | 46000 | C | N 22500     |  | S 23500     | 9.00      | 54.70    | 3.20     |
| 2014 | 47500 | S | N 22000     |  | S 25500     | 9.00      | 54.50    | 2.50     |
| 2013 | 47500 | F | N 22000     |  | S 25500     | 9.00      | 52.40    | 2.50     |
| 2012 | 48500 | C | N 22500     |  | S 26000     | 9.00      | 55.70    | 2.50     |
| 2011 | 47000 | C | N 22500     |  | S 24500     | 9.00      | 55.10    | 3.50     |
| 2010 | 46000 | C | N 23000     |  | S 23000     | 8.98      | 54.08    | 3.50     |
| 2009 | 47000 | C | N 23500     |  | S 23500     | 8.99      | 53.24    | 3.90     |
| 2008 | 46500 | C | N 23000     |  | S 23500     | 9.09      | 55.75    | 2.10     |
| 2007 | 47500 | C | N 23000     |  | S 24500     | 8.01      | 54.34    | 2.20     |

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
\*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION STATISTICS OFFICE  
2022 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 2542 - SR 907/ALTON RD, 200' S OF VENETIAN CSWY

| YEAR | AADT  |   | DIRECTION 1 | DIRECTION 2 | *K FACTOR | D FACTOR | T FACTOR |
|------|-------|---|-------------|-------------|-----------|----------|----------|
| ---- | ----- |   | -----       | -----       | -----     | -----    | -----    |
| 2022 | 26000 | C | N 13000     | S 13000     | 9.00      | 54.70    | 4.80     |
| 2021 | 32500 | C | N 13500     | S 19000     | 9.00      | 54.30    | 2.90     |
| 2020 | 27500 | C | N 14000     | S 13500     | 9.00      | 54.20    | 5.60     |
| 2019 | 35000 | F | N 17500     | S 17500     | 9.00      | 54.60    | 3.50     |
| 2018 | 35000 | C | N 17500     | S 17500     | 9.00      | 54.30    | 3.50     |
| 2017 | 33000 | C | N 16500     | S 16500     | 9.00      | 55.00    | 2.80     |
| 2016 | 30000 | C | N 15000     | S 15000     | 9.00      | 54.50    | 5.90     |
| 2015 | 41000 | C | N 21000     | S 20000     | 9.00      | 54.70    | 1.60     |
| 2014 | 30500 | F | N 14000     | S 16500     | 9.00      | 54.50    | 7.60     |
| 2013 | 30500 | C | N 14000     | S 16500     | 9.00      | 52.40    | 7.60     |
| 2012 | 37000 | C | N 19000     | S 18000     | 9.00      | 55.70    | 7.50     |
| 2011 | 39500 | C | N 19000     | S 20500     | 9.00      | 55.10    | 1.50     |
| 2010 | 39000 | C | N 20000     | S 19000     | 8.98      | 54.08    | 1.50     |
| 2009 | 38500 | C | N 19000     | S 19500     | 8.99      | 53.24    | 6.20     |
| 2008 | 37500 | C | N 17500     | S 20000     | 9.09      | 55.75    | 4.80     |
| 2007 | 39500 | C | N 18500     | S 21000     | 8.01      | 54.34    | 5.20     |

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
\*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

FLORIDA DEPARTMENT OF TRANSPORTATION  
TRANSPORTATION STATISTICS OFFICE  
2022 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8350 - VENETIAN CSWY, 200' EAST OF WEST AVENUE

| YEAR | AADT  |   | DIRECTION 1 |  | DIRECTION 2 | *K FACTOR | D FACTOR | T FACTOR |
|------|-------|---|-------------|--|-------------|-----------|----------|----------|
| ---- | ----- |   | -----       |  | -----       | -----     | -----    | -----    |
| 2022 | 9700  | C | E 3100      |  | W 6600      | 9.00      | 54.70    | 2.20     |
| 2021 | 12000 | C | E 5600      |  | W 6400      | 9.00      | 54.30    | 1.90     |
| 2020 | 11600 | C | E 5200      |  | W 6400      | 9.00      | 54.20    | 1.60     |
| 2019 | 14000 | C | E 6900      |  | W 7100      | 9.00      | 54.60    | 2.90     |
| 2018 | 12400 | C | E 5900      |  | W 6500      | 9.00      | 54.30    | 2.60     |
| 2017 | 13300 | F | E 6600      |  | W 6700      | 9.00      | 55.00    | 2.40     |
| 2016 | 12900 | C | E 6400      |  | W 6500      | 9.00      | 54.50    | 2.40     |
| 2015 | 14400 | C | E 6200      |  | W 8200      | 9.00      | 54.70    | 12.80    |
| 2014 | 5100  | F | E 2100      |  | W 3000      | 9.00      | 54.50    | 11.70    |
| 2013 | 5100  | C | E 2100      |  | W 3000      | 9.00      | 52.40    | 16.20    |
| 2012 | 5400  | F | E 2500      |  | W 2900      | 9.00      | 55.70    | 16.00    |
| 2011 | 5400  | C | E 2500      |  | W 2900      | 9.00      | 55.10    | 14.70    |

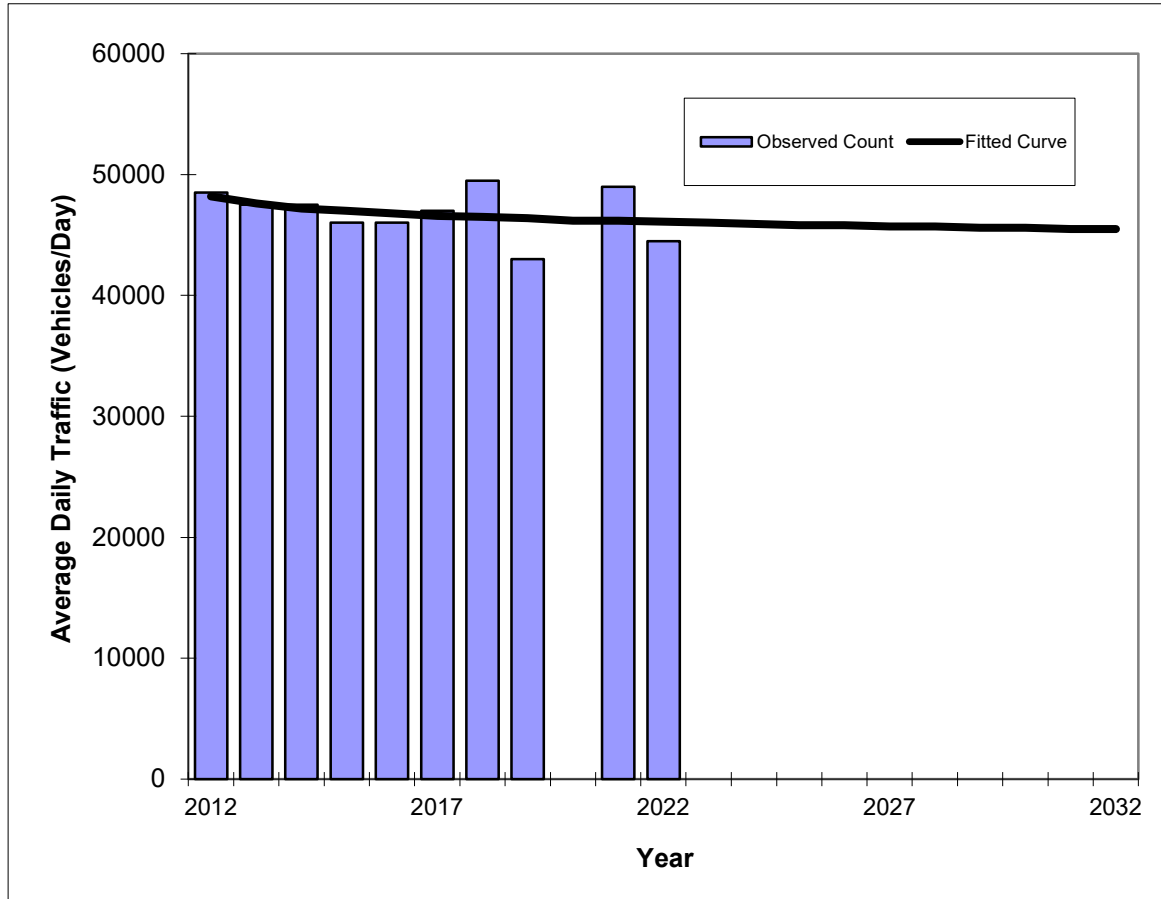
AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE  
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; R = FOURTH YEAR ESTIMATE  
V = FIFTH YEAR ESTIMATE; 6 = SIXTH YEAR ESTIMATE; X = UNKNOWN  
\*K FACTOR: STARTING WITH YEAR 2011 IS STANDARDK, PRIOR YEARS ARE K30 VALUES

## Traffic Trends - V03.a

**SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)**

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 48500              | 48200   |
| 2013                      | 47500              | 47600   |
| 2014                      | 47500              | 47200   |
| 2015                      | 46000              | 47000   |
| 2016                      | 46000              | 46800   |
| 2017                      | 47000              | 46600   |
| 2018                      | 49500              | 46500   |
| 2019                      | 43000              | 46400   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46200   |
| 2022                      | 44500              | 46100   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 46000   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45900   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 45800   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 11.33%    |
| Compounded Annual Historic Growth Rate:       | -0.44%    |
| Compounded Growth Rate (2022 to Design Year): | -0.16%    |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

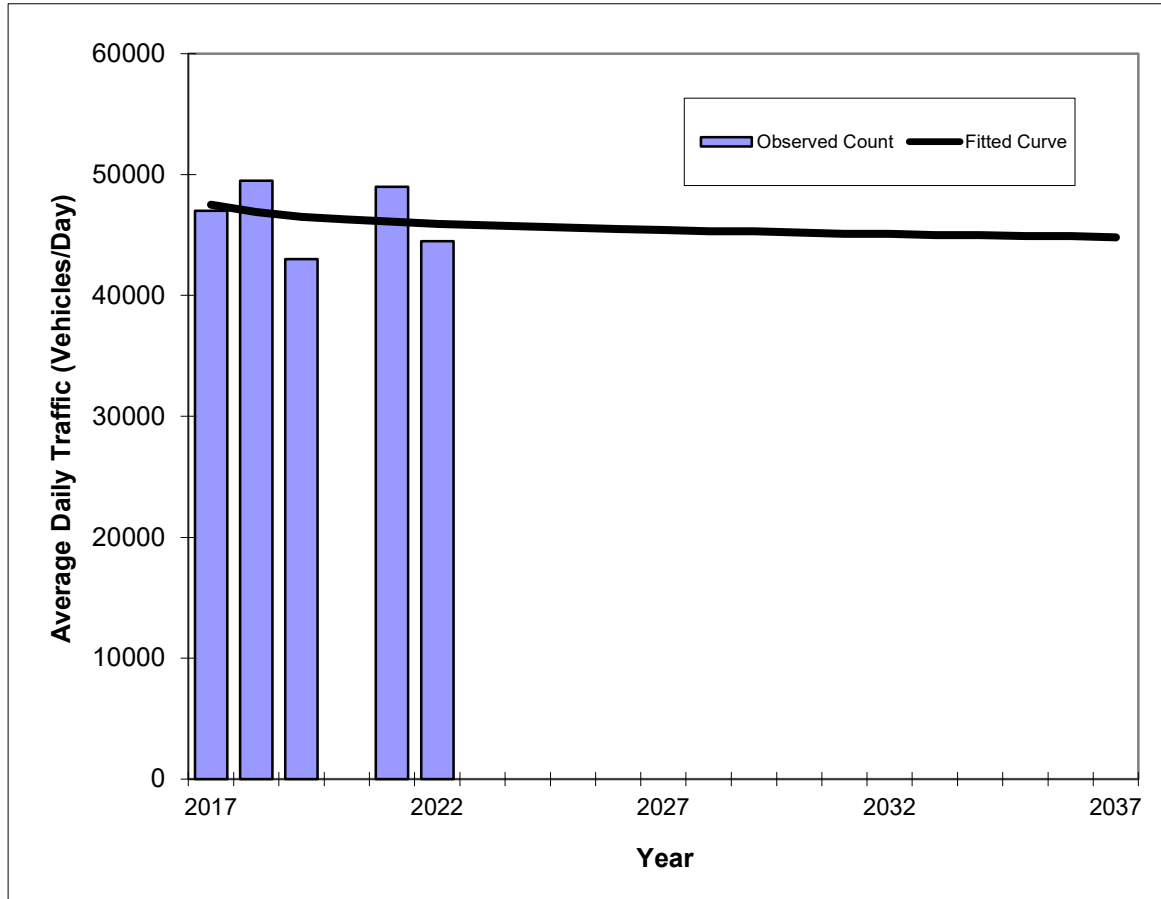
\*Axle-Adjusted

# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 47000              | 47500   |
| 2018                      | 49500              | 46900   |
| 2019                      | 43000              | 46500   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46100   |
| 2022                      | 44500              | 45900   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 45800   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 45500   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 5.13%     |
| Compounded Annual Historic Growth Rate:       | -0.68%    |
| Compounded Growth Rate (2022 to Design Year): | -0.22%    |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

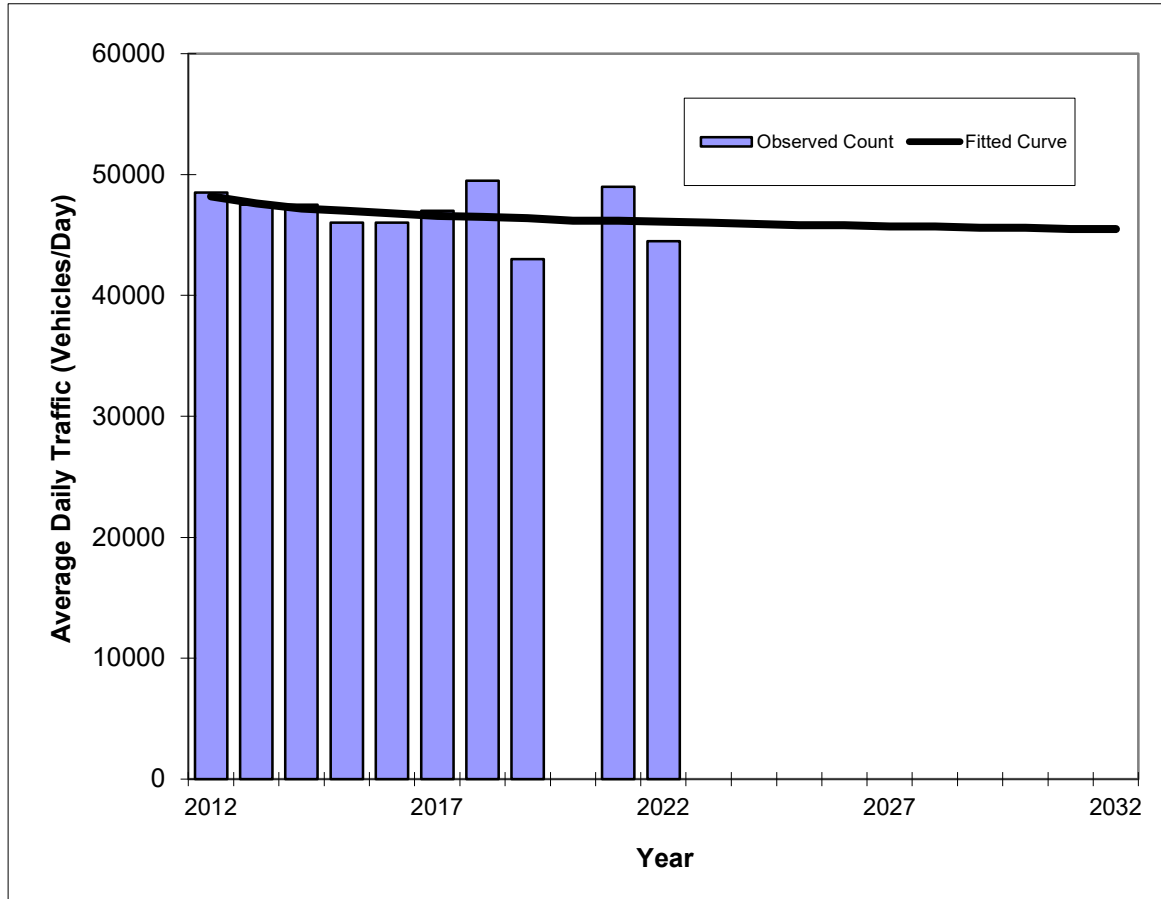
\*Axle-Adjusted

## Traffic Trends - V03.a

**SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)**

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 48500              | 48200   |
| 2013                      | 47500              | 47600   |
| 2014                      | 47500              | 47200   |
| 2015                      | 46000              | 47000   |
| 2016                      | 46000              | 46800   |
| 2017                      | 47000              | 46600   |
| 2018                      | 49500              | 46500   |
| 2019                      | 43000              | 46400   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46200   |
| 2022                      | 44500              | 46100   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 46000   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45900   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 45800   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 9.78%     |
| Compounded Annual Historic Growth Rate:       | -0.44%    |
| Compounded Growth Rate (2022 to Design Year): | -0.16%    |
| Printed:                                      | 26-Aug-23 |
| <b>Exponential Growth Option</b>              |           |

\*Axle-Adjusted

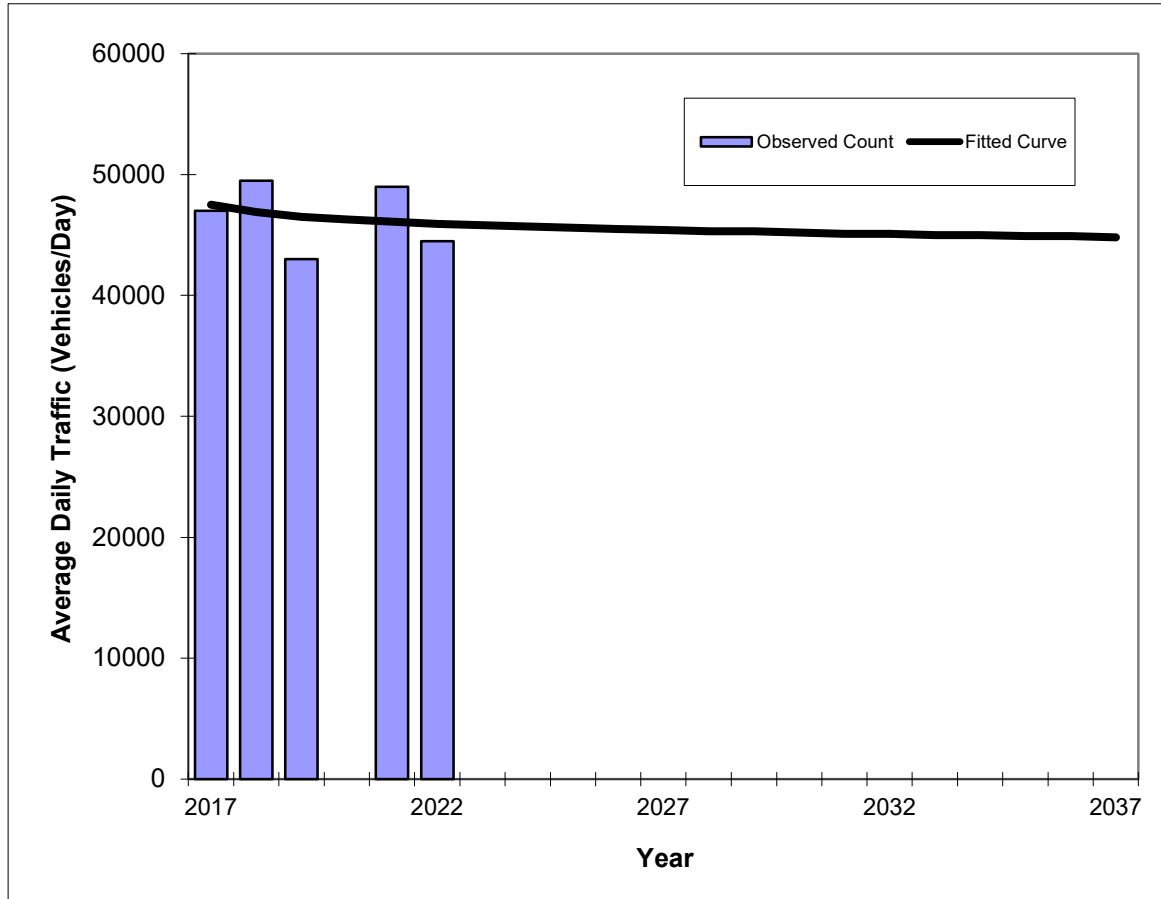


# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 47000              | 47500   |
| 2018                      | 49500              | 46900   |
| 2019                      | 43000              | 46500   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46100   |
| 2022                      | 44500              | 45900   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 45800   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 45500   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 4.96%     |
| Compounded Annual Historic Growth Rate:       | -0.68%    |
| Compounded Growth Rate (2022 to Design Year): | -0.22%    |
| Printed:                                      | 26-Aug-23 |
| Exponential Growth Option                     |           |

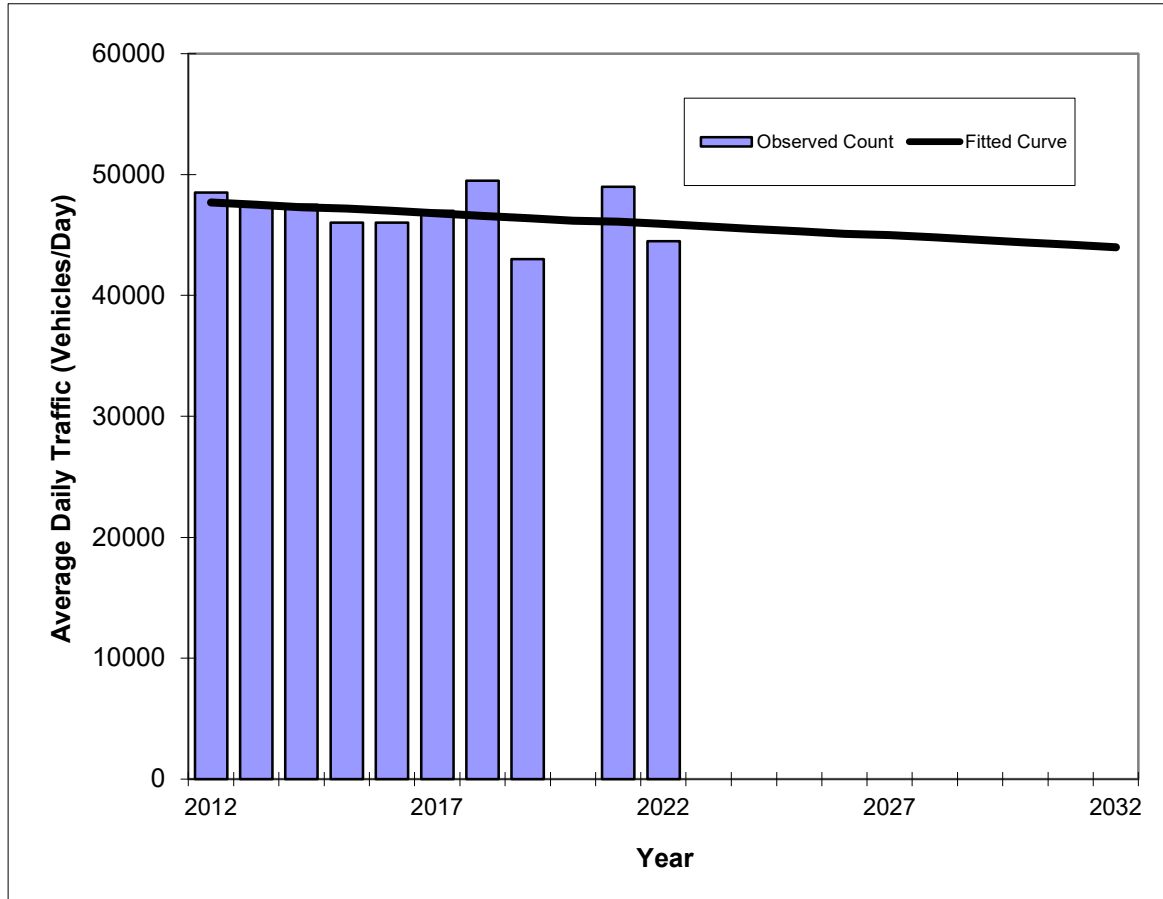
\*Axle-Adjusted

## Traffic Trends - V03.a

SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 48500              | 47700   |
| 2013                      | 47500              | 47500   |
| 2014                      | 47500              | 47300   |
| 2015                      | 46000              | 47200   |
| 2016                      | 46000              | 47000   |
| 2017                      | 47000              | 46800   |
| 2018                      | 49500              | 46600   |
| 2019                      | 43000              | 46400   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46100   |
| 2022                      | 44500              | 45900   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 45700   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45500   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 45100   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -184      |
| Trend R-squared:                         | 9.18%     |
| Trend Annual Historic Growth Rate:       | -0.38%    |
| Trend Growth Rate (2022 to Design Year): | -0.44%    |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

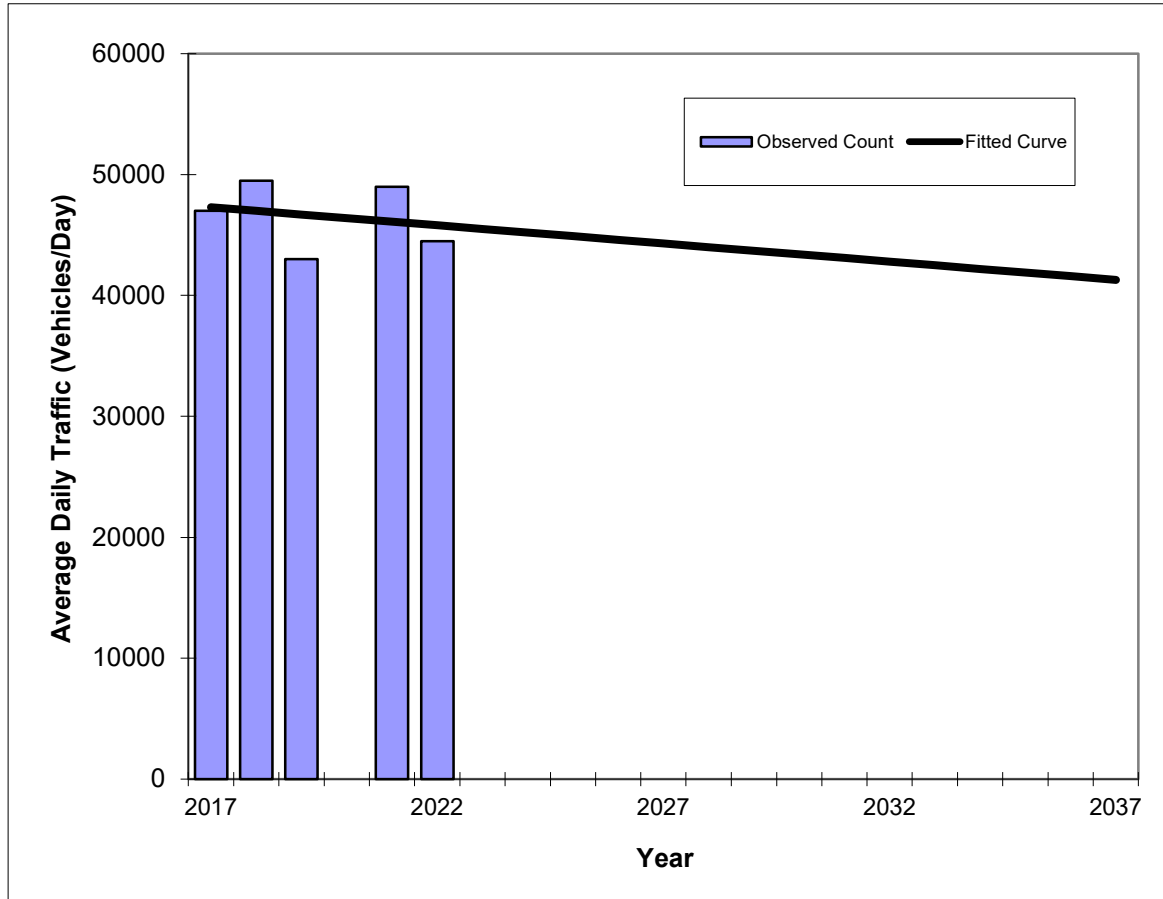
\*Axle-Adjusted

## Traffic Trends - V03.a

SR 907/ALTON RD -- 200' N OF 20 ST (MIAMI BEACH)

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 47000              | 47300   |
| 2018                      | 49500              | 47000   |
| 2019                      | 43000              | 46700   |
| 2020                      | N/A                | N/A     |
| 2021                      | 49000              | 46100   |
| 2022                      | 44500              | 45800   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 45500   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 45200   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 44600   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -302      |
| Trend R-squared:                         | 4.96%     |
| Trend Annual Historic Growth Rate:       | -0.63%    |
| Trend Growth Rate (2022 to Design Year): | -0.66%    |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

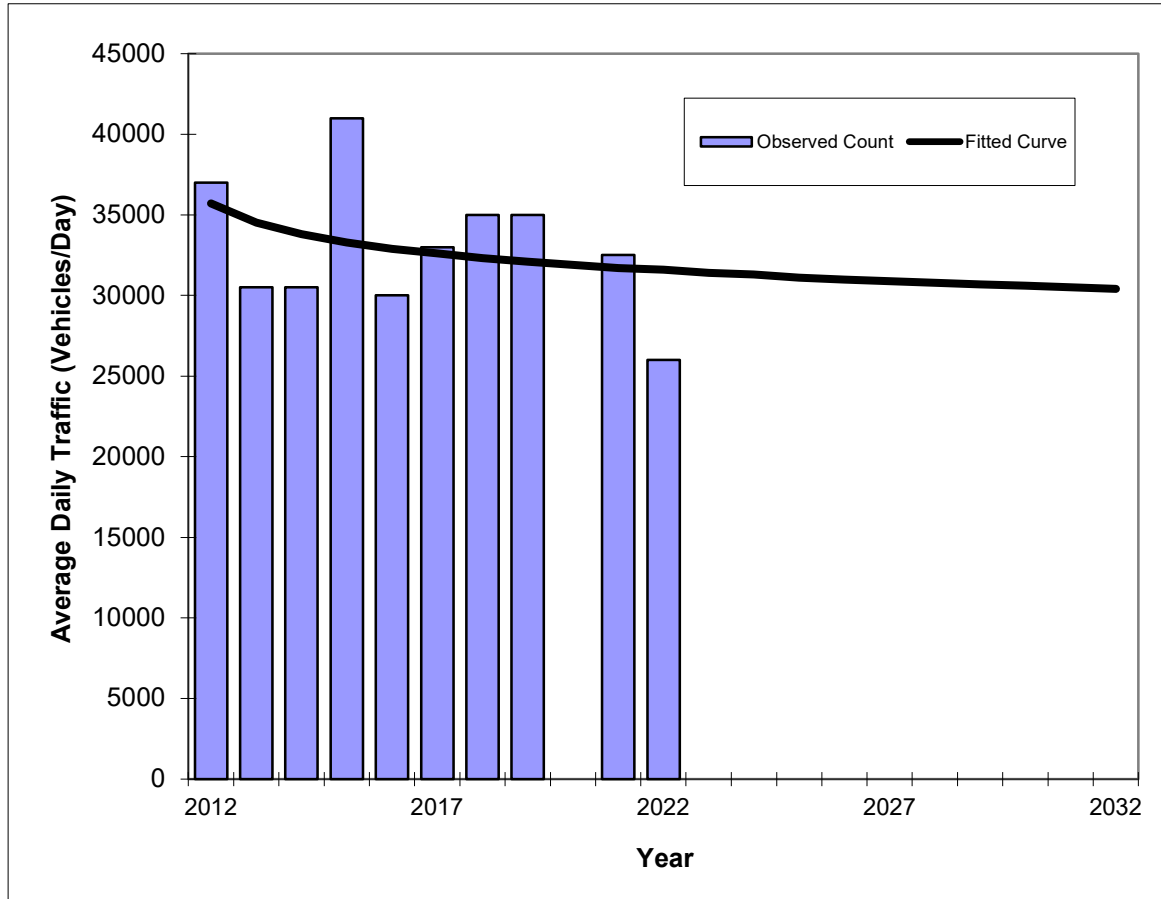
\*Axle-Adjusted

# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' S OF VENETIAN CSWY

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 2 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 37000              | 35700   |
| 2013                      | 30500              | 34500   |
| 2014                      | 30500              | 33800   |
| 2015                      | 41000              | 33300   |
| 2016                      | 30000              | 32900   |
| 2017                      | 33000              | 32600   |
| 2018                      | 35000              | 32300   |
| 2019                      | 35000              | 32100   |
| 2020                      | N/A                | N/A     |
| 2021                      | 32500              | 31700   |
| 2022                      | 26000              | 31600   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 31400   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 31300   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 31000   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 9.63%     |
| Compounded Annual Historic Growth Rate:       | -1.21%    |
| Compounded Growth Rate (2022 to Design Year): | -0.48%    |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

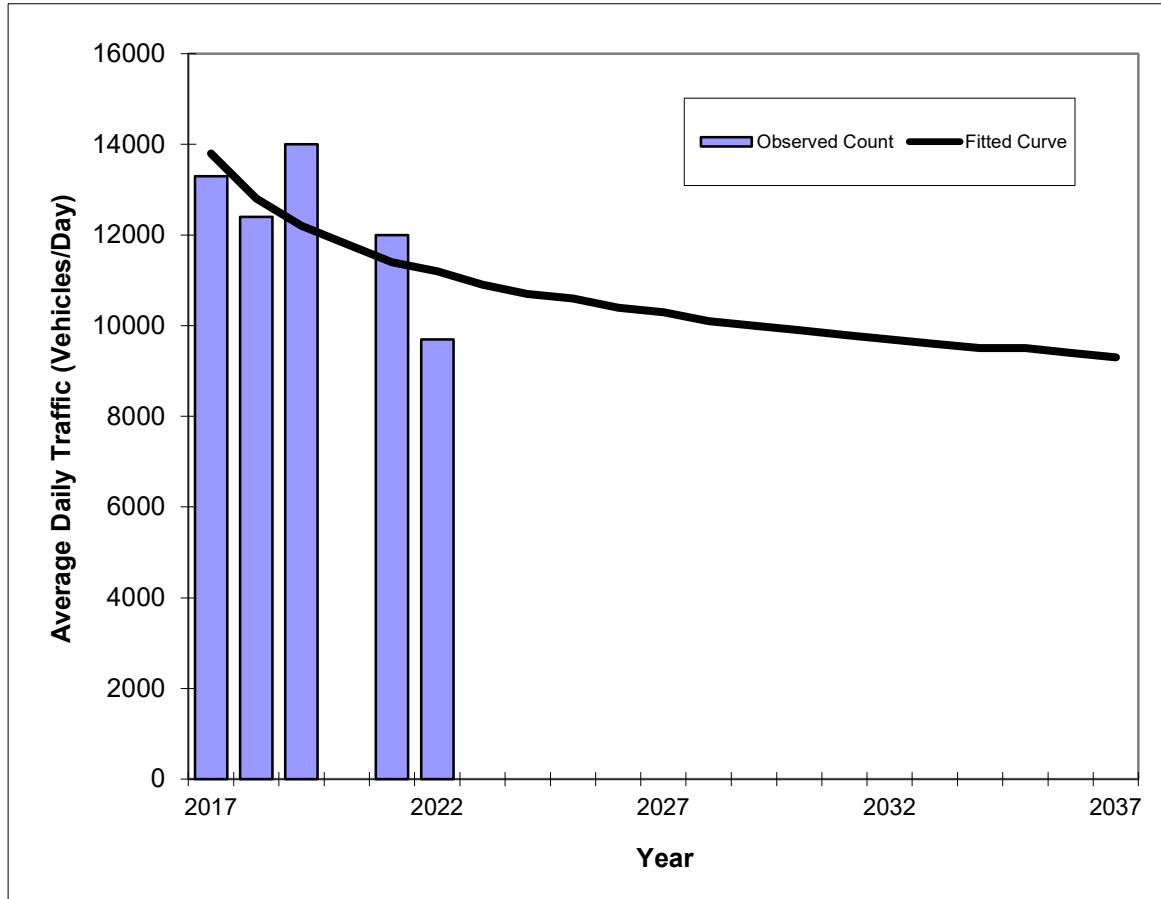
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 13300              | 13800   |
| 2018                      | 12400              | 12800   |
| 2019                      | 14000              | 12200   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 11400   |
| 2022                      | 9700               | 11200   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 10900   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 10700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 10400   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

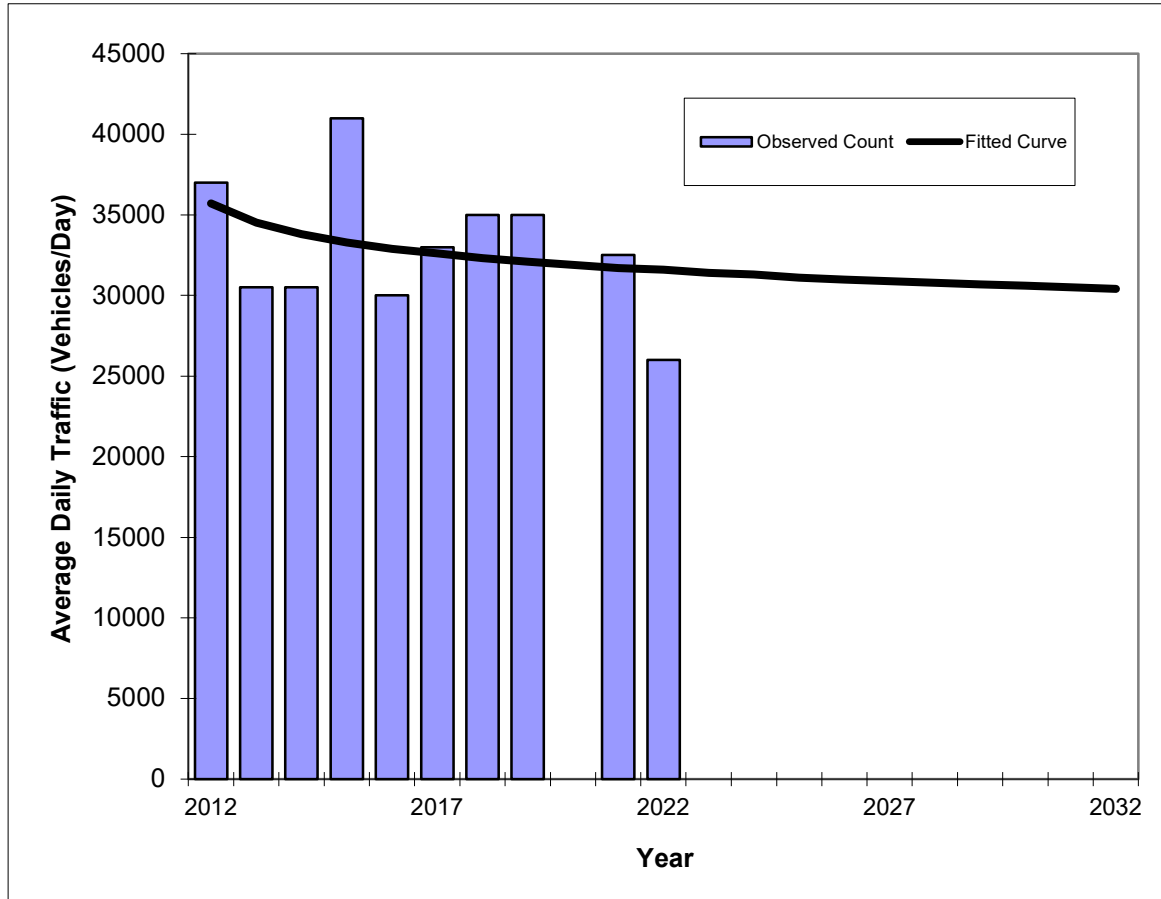
|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 42.70%    |
| Compounded Annual Historic Growth Rate:       | -4.09%    |
| Compounded Growth Rate (2022 to Design Year): | -1.84%    |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

\*Axle-Adjusted

# **Traffic Trends - V03.a** **SR 907/ALTON RD -- 200' S OF VENETIAN CSWY**

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 2 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 37000              | 35700   |
| 2013                      | 30500              | 34500   |
| 2014                      | 30500              | 33800   |
| 2015                      | 41000              | 33300   |
| 2016                      | 30000              | 32900   |
| 2017                      | 33000              | 32600   |
| 2018                      | 35000              | 32300   |
| 2019                      | 35000              | 32100   |
| 2020                      | N/A                | N/A     |
| 2021                      | 32500              | 31700   |
| 2022                      | 26000              | 31600   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 31400   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 31300   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 31000   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 14.51%    |
| Compounded Annual Historic Growth Rate:       | -1.21%    |
| Compounded Growth Rate (2022 to Design Year): | -0.48%    |
| Printed:                                      | 26-Aug-23 |
| <b>Exponential Growth Option</b>              |           |

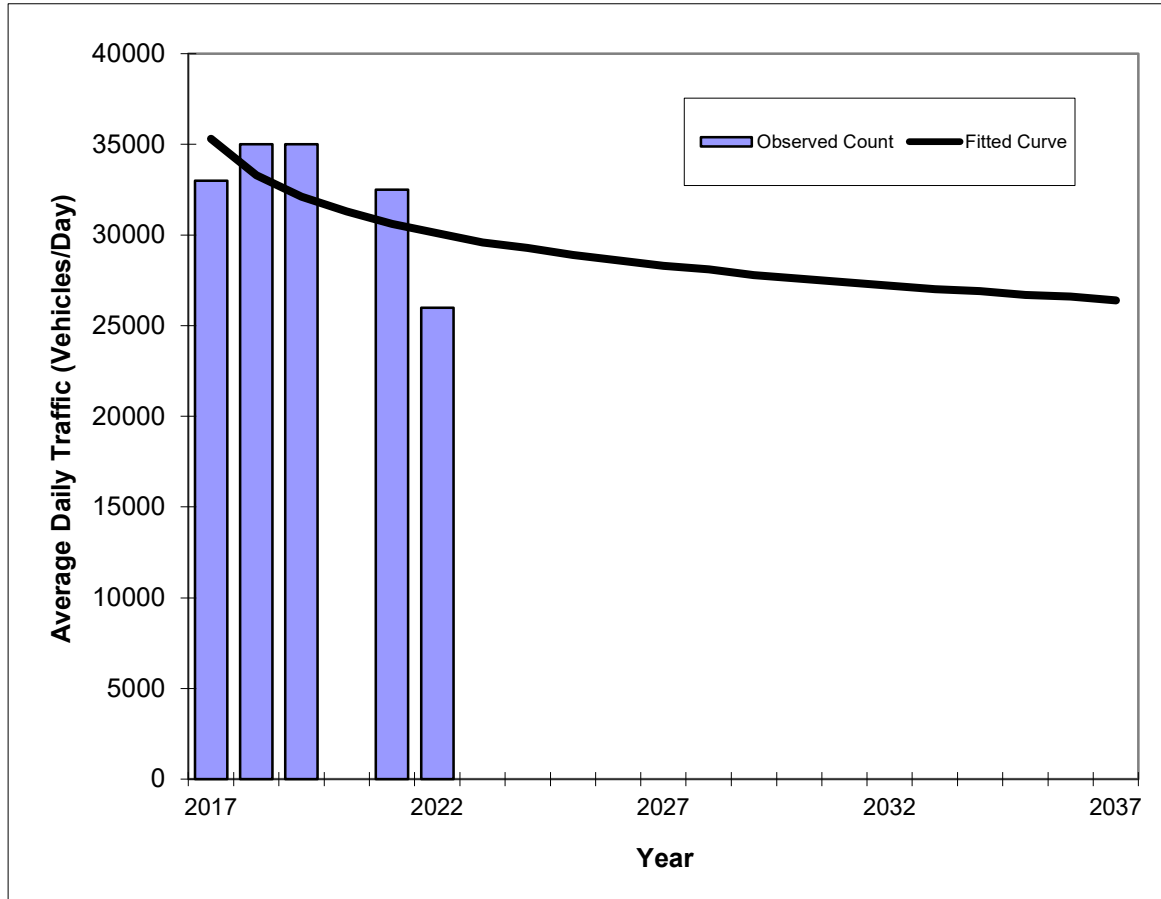
\*Axle-Adjusted

# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' S OF VENETIAN CSWY

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 2 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 33000              | 35300   |
| 2018                      | 35000              | 33300   |
| 2019                      | 35000              | 32100   |
| 2020                      | N/A                | N/A     |
| 2021                      | 32500              | 30600   |
| 2022                      | 26000              | 30100   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 29600   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 29300   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 28600   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 54.27%    |
| Compounded Annual Historic Growth Rate:       | -3.14%    |
| Compounded Growth Rate (2022 to Design Year): | -1.27%    |
| Printed:                                      | 26-Aug-23 |
| Exponential Growth Option                     |           |

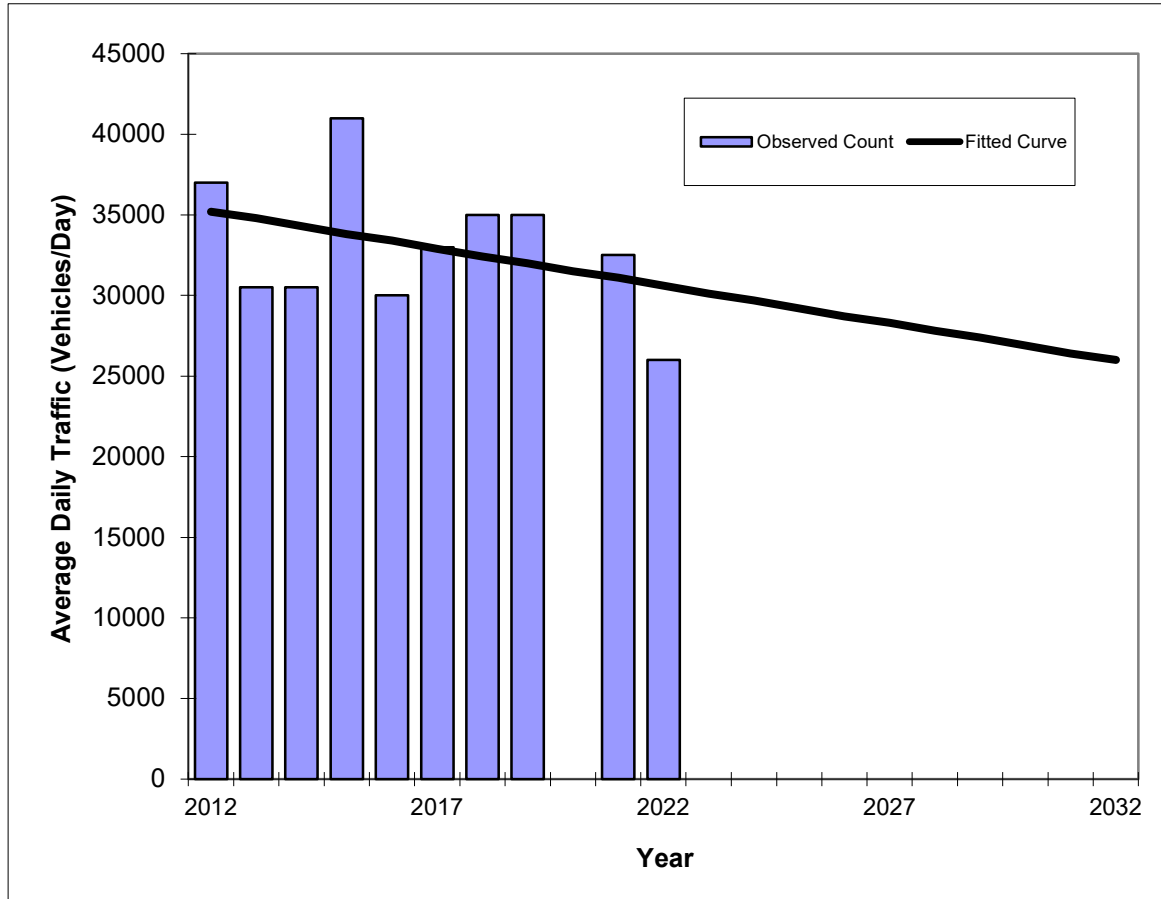
\*Axle-Adjusted

# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' S OF VENETIAN CSWY

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 2 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 37000              | 35200   |
| 2013                      | 30500              | 34800   |
| 2014                      | 30500              | 34300   |
| 2015                      | 41000              | 33800   |
| 2016                      | 30000              | 33400   |
| 2017                      | 33000              | 32900   |
| 2018                      | 35000              | 32400   |
| 2019                      | 35000              | 32000   |
| 2020                      | N/A                | N/A     |
| 2021                      | 32500              | 31100   |
| 2022                      | 26000              | 30600   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 30100   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 29700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 28700   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -463      |
| Trend R-squared:                         | 13.52%    |
| Trend Annual Historic Growth Rate:       | -1.31%    |
| Trend Growth Rate (2022 to Design Year): | -1.55%    |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

\*Axle-Adjusted

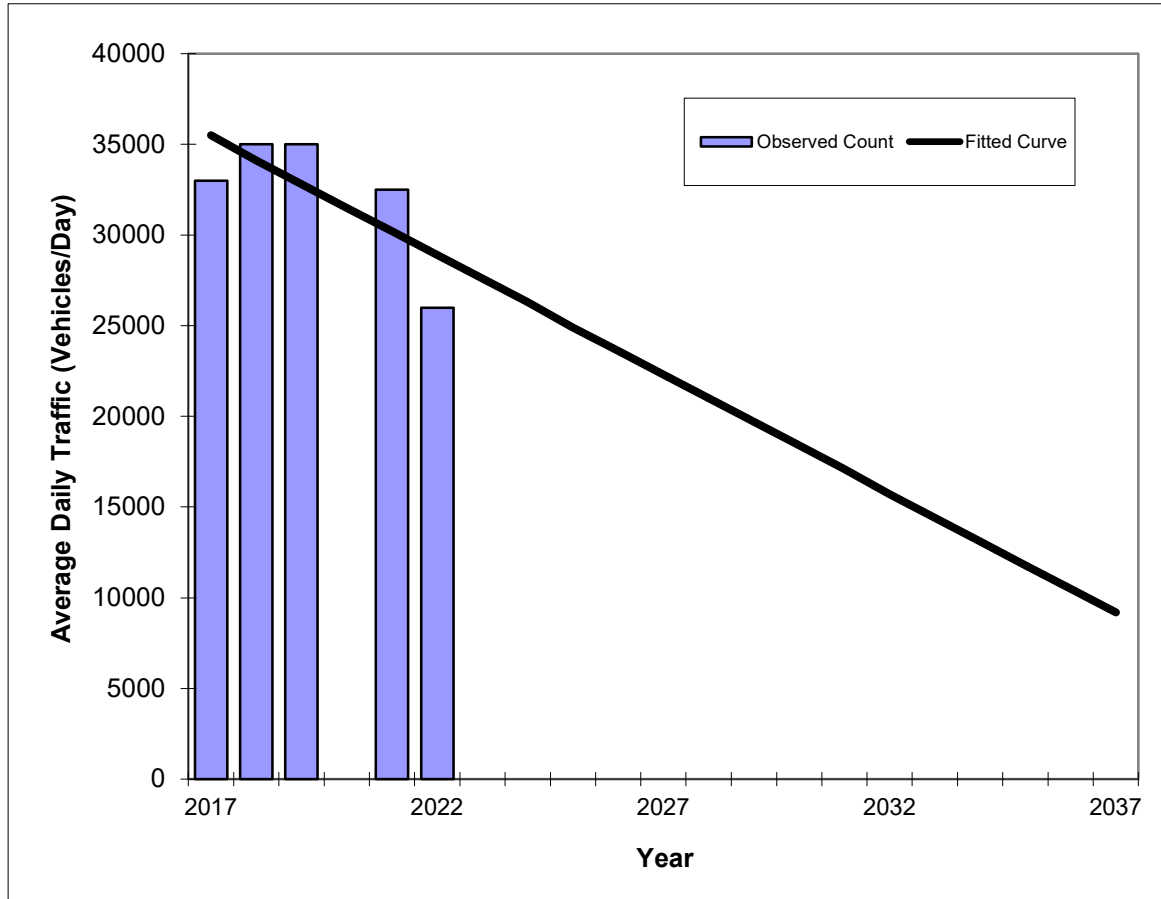


# Traffic Trends - V03.a

## SR 907/ALTON RD -- 200' S OF VENETIAN CSWY

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 2 |

|            |                 |
|------------|-----------------|
| County:    | MIAMI-DADE      |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 33000              | 35500   |
| 2018                      | 35000              | 34100   |
| 2019                      | 35000              | 32800   |
| 2020                      | N/A                | N/A     |
| 2021                      | 32500              | 30200   |
| 2022                      | 26000              | 28900   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 27600   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 26300   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 23600   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -1,314    |
| Trend R-squared:                         | 54.19%    |
| Trend Annual Historic Growth Rate:       | -3.72%    |
| Trend Growth Rate (2022 to Design Year): | -4.58%    |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

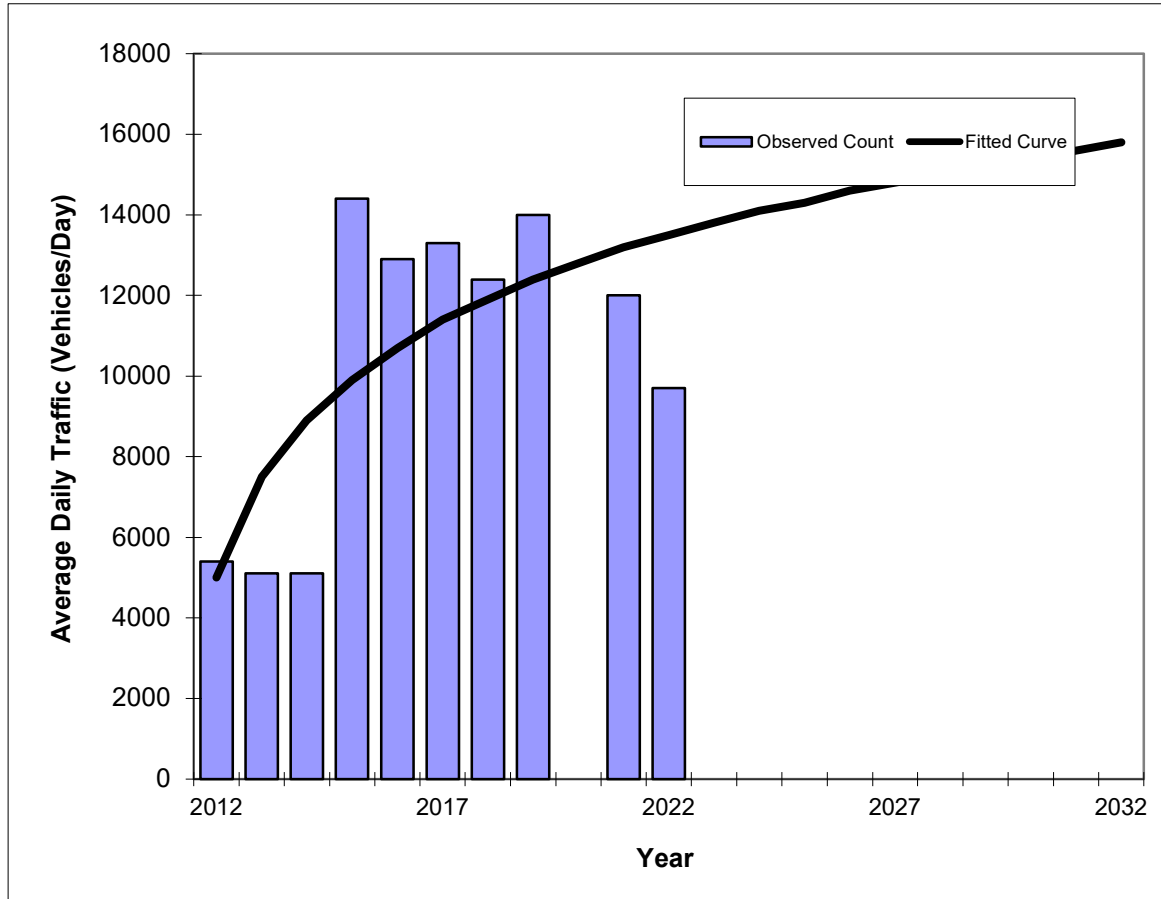
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 5400               | 5000    |
| 2013                      | 5100               | 7500    |
| 2014                      | 5100               | 8900    |
| 2015                      | 14400              | 9900    |
| 2016                      | 12900              | 10700   |
| 2017                      | 13300              | 11400   |
| 2018                      | 12400              | 11900   |
| 2019                      | 14000              | 12400   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 13200   |
| 2022                      | 9700               | 13500   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 13800   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 14100   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 14600   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 48.77%    |
| Compounded Annual Historic Growth Rate:       | 10.44%    |
| Compounded Growth Rate (2022 to Design Year): | 1.98%     |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

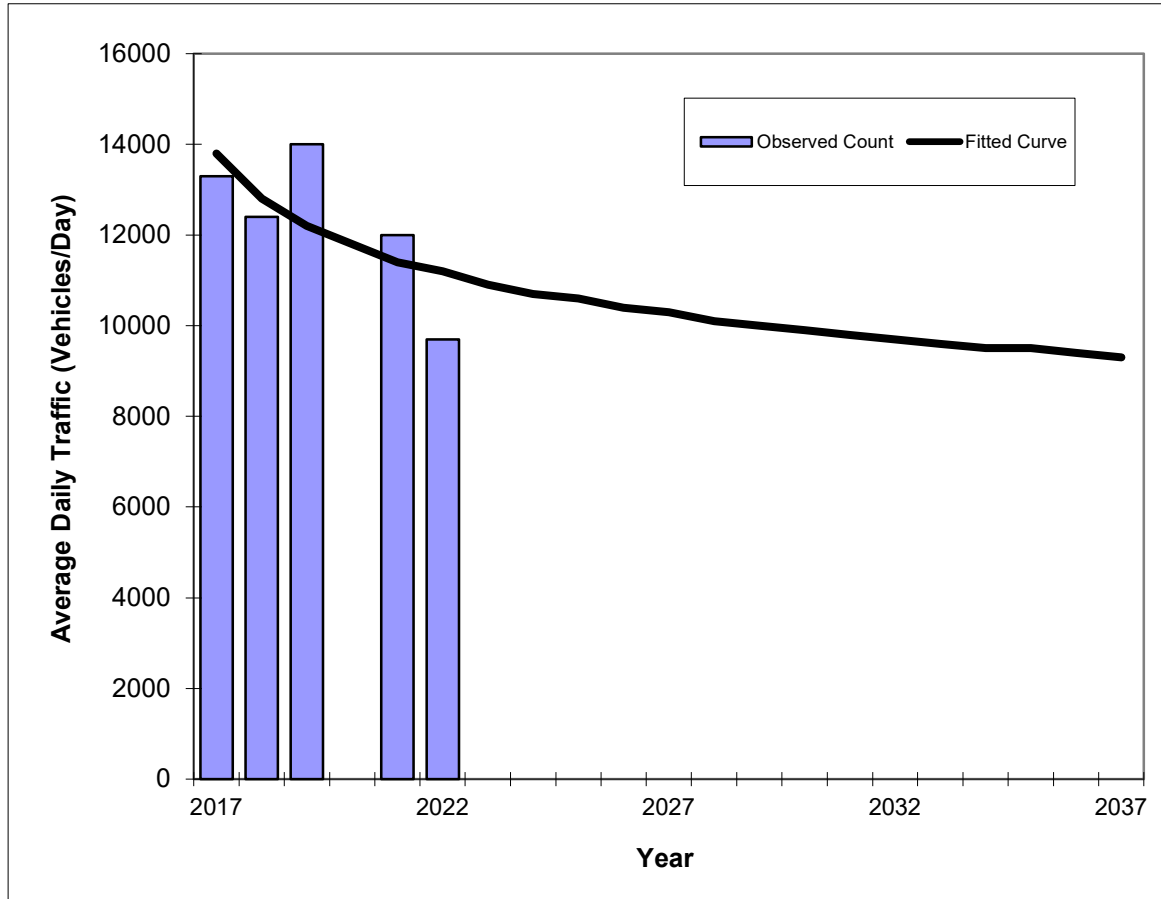
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 13300              | 13800   |
| 2018                      | 12400              | 12800   |
| 2019                      | 14000              | 12200   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 11400   |
| 2022                      | 9700               | 11200   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 10900   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 10700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 10400   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 42.70%    |
| Compounded Annual Historic Growth Rate:       | -4.09%    |
| Compounded Growth Rate (2022 to Design Year): | -1.84%    |
| Printed:                                      | 26-Aug-23 |
| Decaying Exponential Growth Option            |           |

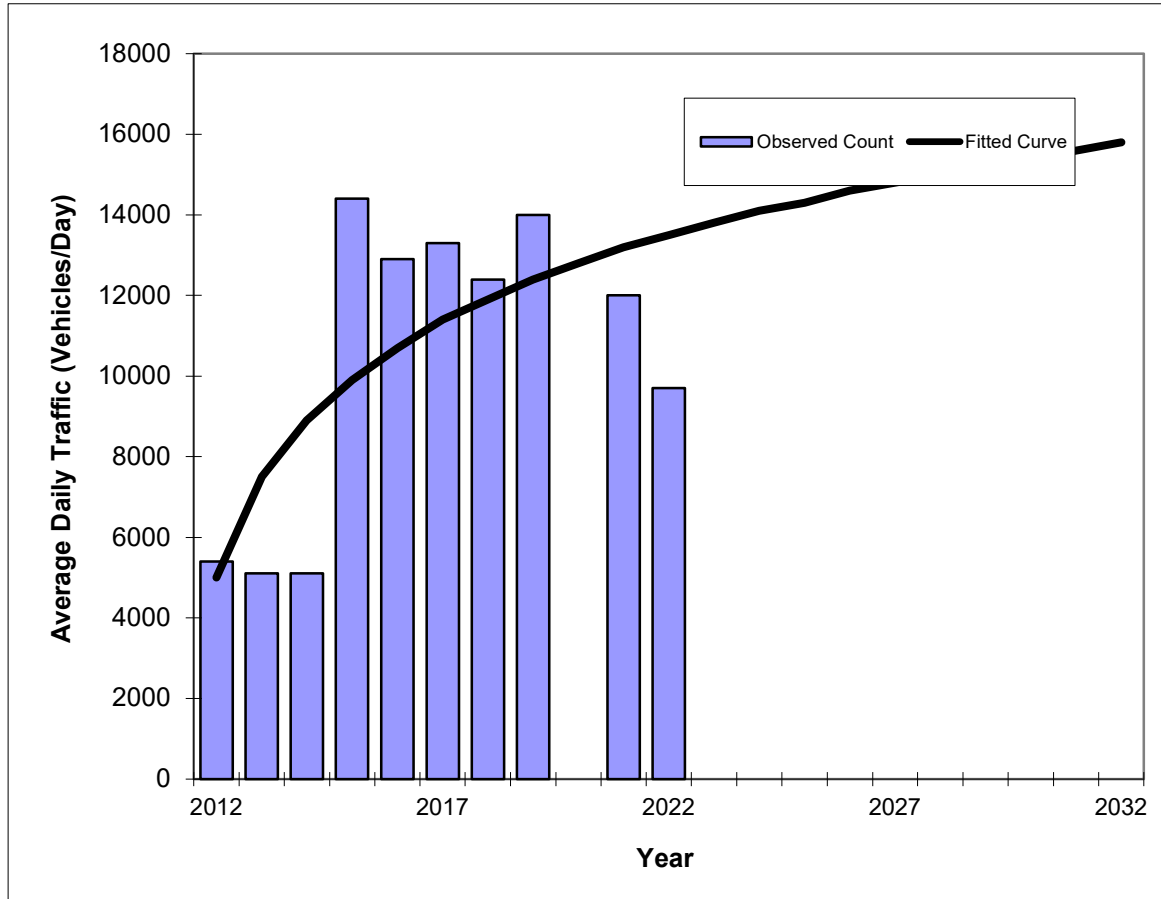
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 5400               | 5000    |
| 2013                      | 5100               | 7500    |
| 2014                      | 5100               | 8900    |
| 2015                      | 14400              | 9900    |
| 2016                      | 12900              | 10700   |
| 2017                      | 13300              | 11400   |
| 2018                      | 12400              | 11900   |
| 2019                      | 14000              | 12400   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 13200   |
| 2022                      | 9700               | 13500   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 13800   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 14100   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 14600   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 38.17%    |
| Compounded Annual Historic Growth Rate:       | 10.44%    |
| Compounded Growth Rate (2022 to Design Year): | 1.98%     |
| Printed:                                      | 26-Aug-23 |
| Exponential Growth Option                     |           |

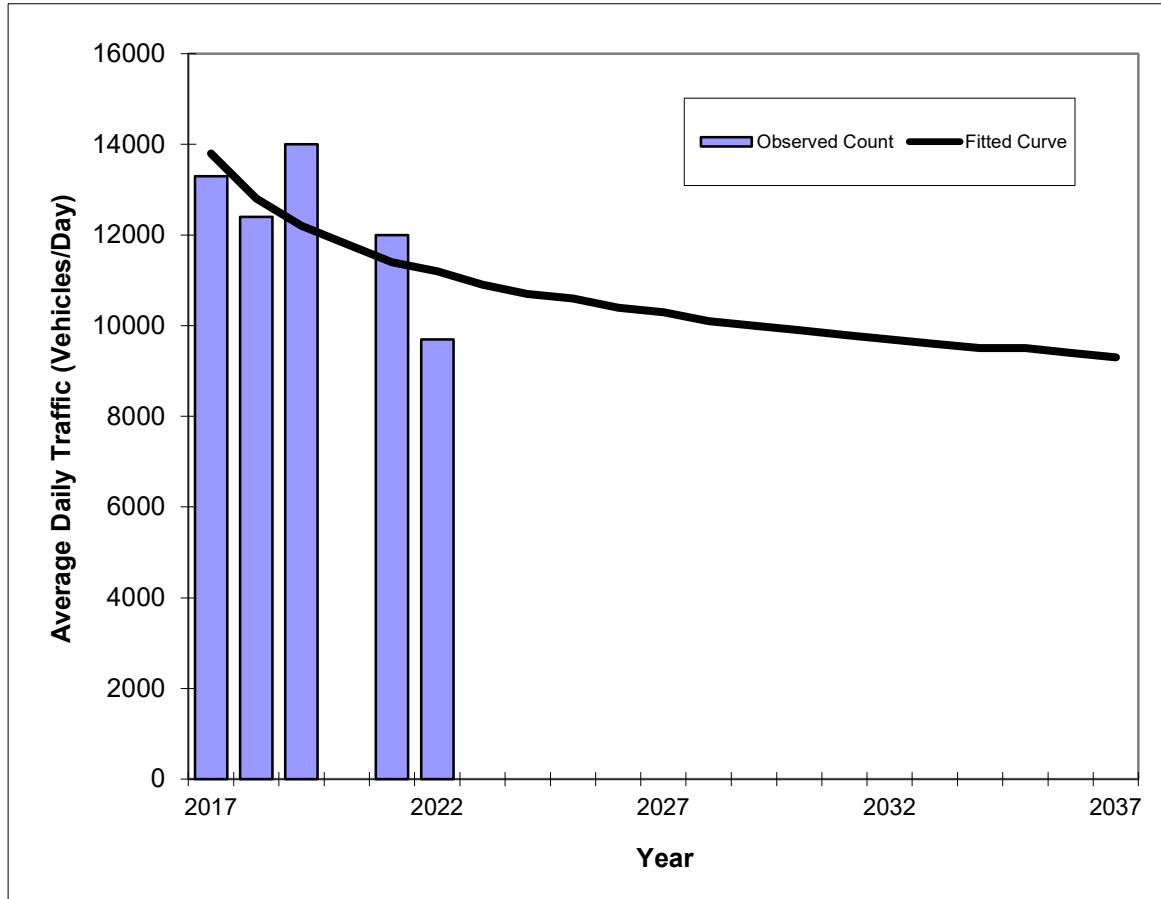
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 13300              | 13800   |
| 2018                      | 12400              | 12800   |
| 2019                      | 14000              | 12200   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 11400   |
| 2022                      | 9700               | 11200   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 10900   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 10700   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 10400   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                               |           |
|-----------------------------------------------|-----------|
| Trend R-squared:                              | 60.24%    |
| Compounded Annual Historic Growth Rate:       | -4.09%    |
| Compounded Growth Rate (2022 to Design Year): | -1.84%    |
| Printed:                                      | 26-Aug-23 |
| Exponential Growth Option                     |           |

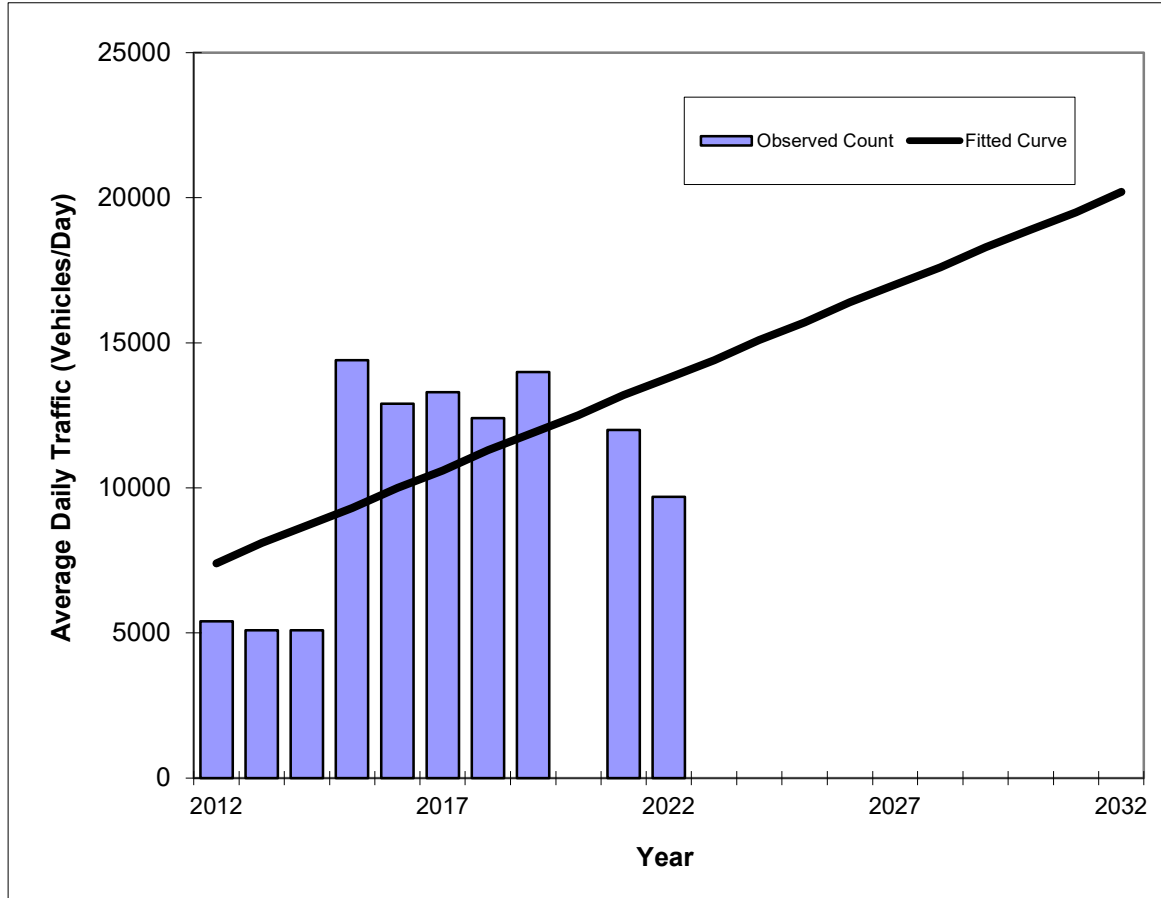
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2012                      | 5400               | 7400    |
| 2013                      | 5100               | 8100    |
| 2014                      | 5100               | 8700    |
| 2015                      | 14400              | 9300    |
| 2016                      | 12900              | 10000   |
| 2017                      | 13300              | 10600   |
| 2018                      | 12400              | 11300   |
| 2019                      | 14000              | 11900   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 13200   |
| 2022                      | 9700               | 13800   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 14400   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 15100   |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 16400   |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | 637       |
| Trend R-squared:                         | 30.83%    |
| Trend Annual Historic Growth Rate:       | 8.65%     |
| Trend Growth Rate (2022 to Design Year): | 4.71%     |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

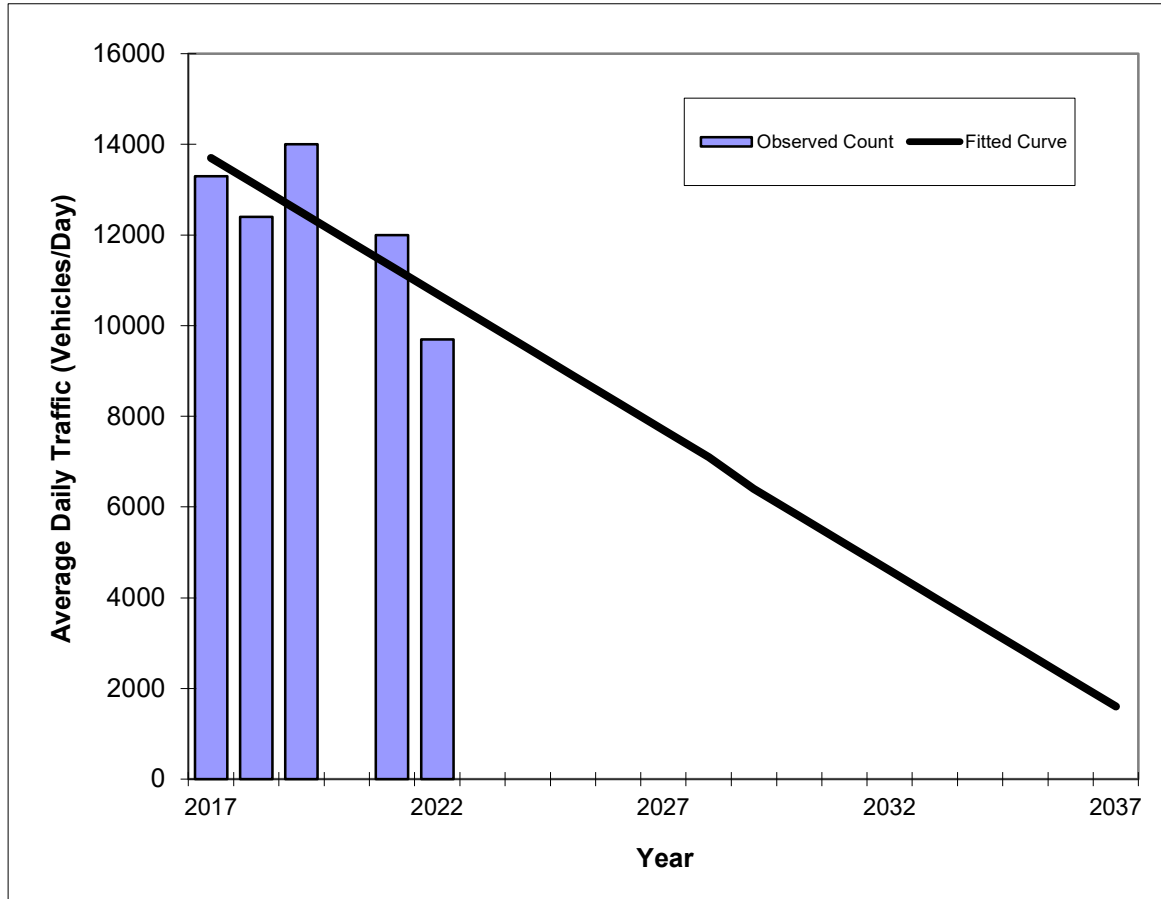
\*Axle-Adjusted

# Traffic Trends - V03.a

## VENETIAN CSWY -- 200' EAST OF WEST AVENUE

|          |   |
|----------|---|
| FIN#     | 0 |
| Location | 3 |

|            |               |
|------------|---------------|
| County:    | MIAMI-DADE    |
| Station #: | 8350          |
| Highway:   | VENETIAN CSWY |



| Year                      | Traffic (ADT/AADT) |         |
|---------------------------|--------------------|---------|
|                           | Count*             | Trend** |
| 2017                      | 13300              | 13700   |
| 2018                      | 12400              | 13100   |
| 2019                      | 14000              | 12500   |
| 2020                      | N/A                | N/A     |
| 2021                      | 12000              | 11300   |
| 2022                      | 9700               | 10700   |
| 2023 Opening Year Trend   |                    |         |
| 2023                      | N/A                | 10100   |
| 2024 Mid-Year Trend       |                    |         |
| 2024                      | N/A                | 9500    |
| 2026 Design Year Trend    |                    |         |
| 2026                      | N/A                | 8300    |
| TRANPLAN Forecasts/Trends |                    |         |
|                           |                    |         |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -608      |
| Trend R-squared:                         | 59.18%    |
| Trend Annual Historic Growth Rate:       | -4.38%    |
| Trend Growth Rate (2022 to Design Year): | -5.61%    |
| Printed:                                 | 26-Aug-23 |
| Straight Line Growth Option              |           |

\*Axle-Adjusted

| Growth Rate Trend Analysis Calculations - 5 Years              |                           |             |                      |        |             |                      |        |             |                      |
|----------------------------------------------------------------|---------------------------|-------------|----------------------|--------|-------------|----------------------|--------|-------------|----------------------|
| Description                                                    | FDOT Historical AADT Data |             |                      |        |             |                      |        |             |                      |
|                                                                | 0012                      |             |                      | 2542   |             |                      | 8350   |             |                      |
| Option                                                         | Linear                    | Exponential | Decaying Exponential | Linear | Exponential | Decaying Exponential | Linear | Exponential | Decaying Exponential |
| Trend Growth Rate 5 years                                      | -0.63                     | -0.68       | -0.68                | -3.72  | -3.14       | -4.09                | -4.38  | -4.09       | -4.09                |
| Trend R-squared 5 years                                        | 4.96                      | 4.96        | 5.13                 | 54.19  | 54.27       | 42.70                | 59.18  | 60.24       | 42.70                |
| Average Growth Rate (5-year) Linear all stations               | -2.91                     |             |                      |        |             |                      |        |             |                      |
| Average Growth Rate (5-year) Exponential all stations          | -2.64                     |             |                      |        |             |                      |        |             |                      |
| Average Growth Rate (5-year) Decaying Exponential all stations | -2.95                     |             |                      |        |             |                      |        |             |                      |
| Highest R-Square                                               | 60.24                     |             |                      |        |             |                      |        |             |                      |
| Growth Rate (5-year) with the highest R- Square                | -2.95                     |             |                      |        |             |                      |        |             |                      |

| Growth Rate Trend Analysis Calculations - 10 Years              |                           |             |                      |        |             |                      |        |             |                      |
|-----------------------------------------------------------------|---------------------------|-------------|----------------------|--------|-------------|----------------------|--------|-------------|----------------------|
| Description                                                     | FDOT Historical AADT Data |             |                      |        |             |                      |        |             |                      |
|                                                                 | 0012                      |             |                      | 2542   |             |                      | 8350   |             |                      |
| Option                                                          | Linear                    | Exponential | Decaying Exponential | Linear | Exponential | Decaying Exponential | Linear | Exponential | Decaying Exponential |
| Trend Growth Rate 10 years                                      | -0.38                     | -0.44       | -0.44                | -1.31  | -1.21       | -1.21                | 8.65   | 10.44       | 10.44                |
| Trend R-squared 10 years                                        | 9.18                      | 9.78        | 11.33                | 13.52  | 14.51       | 9.63                 | 30.83  | 38.17       | 48.77                |
| Average Growth Rate (10-year) Linear all stations               | 2.32                      |             |                      |        |             |                      |        |             |                      |
| Average Growth Rate (10-year) Exponential all stations          | 2.93                      |             |                      |        |             |                      |        |             |                      |
| Average Growth Rate (10-year) Decaying Exponential all stations | 2.93                      |             |                      |        |             |                      |        |             |                      |
| Highest R-Square                                                | 48.77                     |             |                      |        |             |                      |        |             |                      |
| Growth Rate (10-year) with highest R- Square                    | 2.93                      |             |                      |        |             |                      |        |             |                      |

Notes:

#### What Is R-squared?

R-squared is a statistical measure of how close the data are to the fitted regression line. It is also known as the coefficient of determination, or the coefficient of multiple determination for multiple regression.

The definition of R-squared is fairly straight-forward; it is the percentage of the response variable variation that is explained by a linear model. Or:

$R\text{-squared} = \text{Explained variation} / \text{Total variation}$

R-squared is always between 0 and 100%:

0% indicates that the model explains none of the variability of the response data around its mean.

100% indicates that the model explains all the variability of the response data around its mean.

In general, the higher the R-squared, the better the model fits your data. However, there are important conditions for this guideline that I'll talk about both in this post and my next post.



| Miami-Dade 2015 Base Year Direction Trip Distribution Summary |              |                 |                     |       |      |       |       |       |       |       |             |
|---------------------------------------------------------------|--------------|-----------------|---------------------|-------|------|-------|-------|-------|-------|-------|-------------|
| TAZ of Origin                                                 |              | Trips / Percent | Cardinal Directions |       |      |       |       |       |       |       | Total Trips |
| County TAZ                                                    | Regional TAZ |                 | NNE                 | ENE   | ESE  | SSE   | SSW   | WSW   | WNW   | NNW   |             |
| 625                                                           | 3525         | Trips           | 610                 | 160   | -    | 557   | 431   | 1,317 | 679   | 1,035 | 4,961       |
| 625                                                           | 3525         | Percent         | 12.7                | 3.3   | -    | 11.6  | 9.0   | 27.5  | 14.2  | 21.6  |             |
| 626                                                           | 3526         | Trips           | 122                 | -     | -    | -     | 2,090 | 2,277 | 1,198 | 2,942 | 9,399       |
| 626                                                           | 3526         | Percent         | 1.4                 | -     | -    | -     | 24.2  | 26.4  | 13.9  | 34.1  |             |
| 627                                                           | 3527         | Trips           | 279                 | -     | -    | -     | 2,051 | 2,578 | 845   | 1,965 | 8,061       |
| 627                                                           | 3527         | Percent         | 3.6                 | -     | -    | -     | 26.6  | 33.4  | 11.0  | 25.5  |             |
| 628                                                           | 3528         | Trips           | 298                 | -     | 49   | 79    | 984   | 902   | 332   | 679   | 3,579       |
| 628                                                           | 3528         | Percent         | 9.0                 | -     | 1.5  | 2.4   | 29.6  | 27.2  | 10.0  | 20.5  |             |
| 629                                                           | 3529         | Trips           | 1,374               | 549   | 344  | 1,656 | 1,708 | 3,707 | 1,668 | 2,101 | 14,261      |
| 629                                                           | 3529         | Percent         | 10.5                | 4.2   | 2.6  | 12.6  | 13.0  | 28.3  | 12.7  | 16.0  |             |
| 630                                                           | 3530         | Trips           | 952                 | -     | 210  | 347   | 1,696 | 2,375 | 794   | 1,114 | 8,135       |
| 630                                                           | 3530         | Percent         | 12.7                | -     | 2.8  | 4.6   | 22.7  | 31.7  | 10.6  | 14.9  |             |
| 631                                                           | 3531         | Trips           | 255                 | -     | -    | -     | 1,215 | 1,471 | 440   | 1,030 | 4,651       |
| 631                                                           | 3531         | Percent         | 5.8                 | -     | -    | -     | 27.6  | 33.4  | 10.0  | 23.4  |             |
| 632                                                           | 3532         | Trips           | 309                 | -     | -    | -     | 1,242 | 1,751 | 750   | 635   | 4,880       |
| 632                                                           | 3532         | Percent         | 6.6                 | -     | -    | -     | 26.5  | 37.4  | 16.0  | 13.5  |             |
| 633                                                           | 3533         | Trips           | 310                 | -     | -    | -     | 1,181 | 1,428 | 750   | 730   | 4,590       |
| 633                                                           | 3533         | Percent         | 7.0                 | -     | -    | -     | 26.9  | 32.5  | 17.1  | 16.6  |             |
| 634                                                           | 3534         | Trips           | 1,502               | 112   | 240  | 837   | 1,718 | 1,928 | 976   | 1,727 | 9,998       |
| 634                                                           | 3534         | Percent         | 16.6                | 1.2   | 2.7  | 9.3   | 19.0  | 21.3  | 10.8  | 19.1  |             |
| 635                                                           | 3535         | Trips           | 779                 | -     | -    | -     | 2,021 | 1,994 | 952   | 1,411 | 8,010       |
| 635                                                           | 3535         | Percent         | 10.9                | -     | -    | -     | 28.2  | 27.9  | 13.3  | 19.7  |             |
| 636                                                           | 3536         | Trips           | 1,041               | -     | -    | 686   | 1,152 | 2,072 | 911   | 1,071 | 7,384       |
| 636                                                           | 3536         | Percent         | 15.0                | -     | -    | 9.9   | 16.6  | 29.9  | 13.1  | 15.4  |             |
| 637                                                           | 3537         | Trips           | 323                 | 31    | 87   | 217   | 126   | 601   | 303   | 290   | 1,987       |
| 637                                                           | 3537         | Percent         | 16.4                | 1.6   | 4.4  | 11.0  | 6.4   | 30.4  | 15.3  | 14.7  |             |
| 638                                                           | 3538         | Trips           | 152                 | 35    | 87   | 86    | 114   | 218   | 162   | 126   | 999         |
| 638                                                           | 3538         | Percent         | 15.5                | 3.6   | 8.9  | 8.7   | 11.6  | 22.3  | 16.5  | 12.9  |             |
| 639                                                           | 3539         | Trips           | 825                 | 281   | 277  | 1,089 | 131   | 1,364 | 796   | 599   | 5,721       |
| 639                                                           | 3539         | Percent         | 15.4                | 5.2   | 5.2  | 20.3  | 2.4   | 25.4  | 14.9  | 11.2  |             |
| 640                                                           | 3540         | Trips           | 344                 | 247   | 868  | 104   | 43    | 685   | 405   | 274   | 3,053       |
| 640                                                           | 3540         | Percent         | 11.6                | 8.3   | 29.2 | 3.5   | 1.5   | 23.1  | 13.6  | 9.2   |             |
| 641                                                           | 3541         | Trips           | 1,051               | 1,714 | 291  | 723   | 309   | 1,572 | 1,188 | 916   | 8,356       |
| 641                                                           | 3541         | Percent         | 13.5                | 22.1  | 3.7  | 9.3   | 4.0   | 20.3  | 15.3  | 11.8  |             |
| 642                                                           | 3542         | Trips           | 1,849               | 1,404 | 115  | 1,263 | 457   | 2,697 | 1,962 | 1,518 | 12,299      |
| 642                                                           | 3542         | Percent         | 16.4                | 12.5  | 1.0  | 11.2  | 4.1   | 23.9  | 17.4  | 13.5  |             |
| 643                                                           | 3543         | Trips           | 1,747               | 551   | -    | 965   | 479   | 2,595 | 1,554 | 1,715 | 10,383      |
| 643                                                           | 3543         | Percent         | 18.2                | 5.7   | -    | 10.1  | 5.0   | 27.0  | 16.2  | 17.9  |             |
| 644                                                           | 3544         | Trips           | 2,022               | -     | -    | -     | 2,250 | 4,141 | 2,585 | 2,646 | 15,224      |
| 644                                                           | 3544         | Percent         | 14.8                | -     | -    | -     | 16.5  | 30.4  | 19.0  | 19.4  |             |
| 645                                                           | 3545         | Trips           | 1,268               | -     | -    | -     | 907   | 1,498 | 1,720 | 1,351 | 7,018       |
| 645                                                           | 3545         | Percent         | 18.8                | -     | -    | -     | 13.5  | 22.2  | 25.5  | 20.0  |             |
| 646                                                           | 3546         | Trips           | 986                 | -     | 156  | 520   | 250   | 1,081 | 1,094 | 1,181 | 5,470       |
| 646                                                           | 3546         | Percent         | 18.7                | -     | 3.0  | 9.9   | 4.7   | 20.5  | 20.8  | 22.4  |             |
| 647                                                           | 3547         | Trips           | 350                 | 103   | 114  | 165   | 66    | 354   | 359   | 408   | 1,979       |
| 647                                                           | 3547         | Percent         | 18.2                | 5.4   | 5.9  | 8.6   | 3.5   | 18.5  | 18.7  | 21.2  |             |
| 648                                                           | 3548         | Trips           | 1,027               | 434   | 254  | 401   | 48    | 903   | 1,001 | 514   | 4,747       |
| 648                                                           | 3548         | Percent         | 22.4                | 9.5   | 5.5  | 8.8   | 1.0   | 19.7  | 21.9  | 11.2  |             |
| 649                                                           | 3549         | Trips           | 754                 | 192   | 184  | 230   | 41    | 612   | 743   | 427   | 3,320       |
| 649                                                           | 3549         | Percent         | 23.7                | 6.0   | 5.8  | 7.2   | 1.3   | 19.2  | 23.3  | 13.4  |             |
| 650                                                           | 3550         | Trips           | 45                  | 80    | 104  | 0     | 14    | 155   | 304   | 133   | 850         |
| 650                                                           | 3550         | Percent         | 5.4                 | 9.6   | 12.4 | 0.0   | 1.6   | 18.5  | 36.5  | 16.0  |             |

| Miami-Dade 2045 Cost Feasible Plan Direction Trip Distribution Summary |              |                 |                     |       |      |       |       |       |       |       |             |
|------------------------------------------------------------------------|--------------|-----------------|---------------------|-------|------|-------|-------|-------|-------|-------|-------------|
| TAZ of Origin                                                          |              | Trips / Percent | Cardinal Directions |       |      |       |       |       |       |       | Total Trips |
| County TAZ                                                             | Regional TAZ |                 | NNE                 | ENE   | ESE  | SSE   | SSW   | WSW   | WNW   | NNW   |             |
| 625                                                                    | 3525         | Trips           | 515                 | 114   | -    | 541   | 802   | 1,791 | 829   | 1,096 | 5,972       |
| 625                                                                    | 3525         | Percent         | 9.1                 | 2.0   | -    | 9.5   | 14.1  | 31.5  | 14.6  | 19.3  |             |
| 626                                                                    | 3526         | Trips           | 66                  | -     | -    | -     | 2,417 | 3,260 | 1,417 | 2,993 | 11,237      |
| 626                                                                    | 3526         | Percent         | 0.7                 | -     | -    | -     | 23.8  | 32.1  | 14.0  | 29.5  |             |
| 627                                                                    | 3527         | Trips           | 174                 | -     | -    | -     | 2,276 | 3,212 | 1,138 | 1,885 | 9,055       |
| 627                                                                    | 3527         | Percent         | 2.0                 | -     | -    | -     | 26.2  | 37.0  | 13.1  | 21.7  |             |
| 628                                                                    | 3528         | Trips           | 238                 | -     | 23   | 101   | 1,053 | 1,266 | 390   | 660   | 4,028       |
| 628                                                                    | 3528         | Percent         | 6.4                 | -     | 0.6  | 2.7   | 28.2  | 33.9  | 10.5  | 17.7  |             |
| 629                                                                    | 3529         | Trips           | 1,686               | 621   | 373  | 1,692 | 1,801 | 6,032 | 2,362 | 2,490 | 18,425      |
| 629                                                                    | 3529         | Percent         | 9.9                 | 3.6   | 2.2  | 9.9   | 10.6  | 35.4  | 13.9  | 14.6  |             |
| 630                                                                    | 3530         | Trips           | 888                 | -     | 326  | 303   | 1,717 | 3,876 | 1,515 | 1,553 | 11,277      |
| 630                                                                    | 3530         | Percent         | 8.7                 | -     | 3.2  | 3.0   | 16.9  | 38.1  | 14.9  | 15.3  |             |
| 631                                                                    | 3531         | Trips           | 296                 | -     | -    | -     | 1,351 | 2,360 | 838   | 1,324 | 6,591       |
| 631                                                                    | 3531         | Percent         | 4.8                 | -     | -    | -     | 21.9  | 38.3  | 13.6  | 21.5  |             |
| 632                                                                    | 3532         | Trips           | 343                 | -     | -    | -     | 1,500 | 2,647 | 1,390 | 1,098 | 7,499       |
| 632                                                                    | 3532         | Percent         | 4.9                 | -     | -    | -     | 21.5  | 37.9  | 19.9  | 15.7  |             |
| 633                                                                    | 3533         | Trips           | 368                 | -     | -    | -     | 1,052 | 1,986 | 859   | 841   | 5,391       |
| 633                                                                    | 3533         | Percent         | 7.2                 | -     | -    | -     | 20.6  | 38.9  | 16.8  | 16.5  |             |
| 634                                                                    | 3534         | Trips           | 1,404               | 80    | 149  | 773   | 1,637 | 2,733 | 1,332 | 1,712 | 10,593      |
| 634                                                                    | 3534         | Percent         | 14.3                | 0.8   | 1.5  | 7.9   | 16.7  | 27.8  | 13.6  | 17.4  |             |
| 635                                                                    | 3535         | Trips           | 566                 | -     | -    | -     | 1,311 | 2,266 | 1,228 | 1,254 | 7,246       |
| 635                                                                    | 3535         | Percent         | 8.5                 | -     | -    | -     | 19.8  | 34.2  | 18.5  | 18.9  |             |
| 636                                                                    | 3536         | Trips           | 1,066               | -     | -    | 607   | 978   | 3,045 | 1,398 | 1,193 | 8,805       |
| 636                                                                    | 3536         | Percent         | 12.9                | -     | -    | 7.3   | 11.8  | 36.8  | 16.9  | 14.4  |             |
| 637                                                                    | 3537         | Trips           | 468                 | 44    | 144  | 315   | 198   | 868   | 501   | 309   | 2,865       |
| 637                                                                    | 3537         | Percent         | 16.5                | 1.6   | 5.1  | 11.1  | 6.9   | 30.5  | 17.6  | 10.9  |             |
| 638                                                                    | 3538         | Trips           | 127                 | 33    | 78   | 94    | 79    | 401   | 285   | 185   | 1,342       |
| 638                                                                    | 3538         | Percent         | 9.9                 | 2.6   | 6.1  | 7.3   | 6.2   | 31.3  | 22.2  | 14.5  |             |
| 639                                                                    | 3539         | Trips           | 944                 | 303   | 253  | 1,068 | 176   | 2,395 | 1,085 | 905   | 7,569       |
| 639                                                                    | 3539         | Percent         | 13.2                | 4.3   | 3.6  | 15.0  | 2.5   | 33.6  | 15.2  | 12.7  |             |
| 640                                                                    | 3540         | Trips           | 119                 | 74    | 216  | 10    | 30    | 177   | 136   | 147   | 1,166       |
| 640                                                                    | 3540         | Percent         | 13.1                | 8.2   | 23.7 | 1.1   | 3.4   | 19.4  | 14.9  | 16.2  |             |
| 641                                                                    | 3541         | Trips           | 1,145               | 1,056 | 206  | 569   | 242   | 2,378 | 1,724 | 1,142 | 9,066       |
| 641                                                                    | 3541         | Percent         | 13.5                | 12.5  | 2.4  | 6.7   | 2.9   | 28.1  | 20.4  | 13.5  |             |
| 642                                                                    | 3542         | Trips           | 1,701               | 1,196 | 113  | 964   | 433   | 3,470 | 2,140 | 1,631 | 12,324      |
| 642                                                                    | 3542         | Percent         | 14.6                | 10.3  | 1.0  | 8.3   | 3.7   | 29.8  | 18.4  | 14.0  |             |
| 643                                                                    | 3543         | Trips           | 1,884               | 580   | -    | 1,133 | 631   | 3,768 | 2,190 | 2,157 | 13,183      |
| 643                                                                    | 3543         | Percent         | 15.3                | 4.7   | -    | 9.2   | 5.1   | 30.5  | 17.7  | 17.5  |             |
| 644                                                                    | 3544         | Trips           | 1,948               | -     | -    | -     | 2,227 | 5,534 | 3,264 | 3,082 | 17,780      |
| 644                                                                    | 3544         | Percent         | 12.1                | -     | -    | -     | 13.9  | 34.5  | 20.3  | 19.2  |             |
| 645                                                                    | 3545         | Trips           | 1,314               | -     | -    | -     | 844   | 1,661 | 2,170 | 1,703 | 8,075       |
| 645                                                                    | 3545         | Percent         | 17.1                | -     | -    | -     | 11.0  | 21.6  | 28.2  | 22.1  |             |
| 646                                                                    | 3546         | Trips           | 1,025               | -     | 125  | 496   | 263   | 1,741 | 1,656 | 1,299 | 6,976       |
| 646                                                                    | 3546         | Percent         | 15.5                | -     | 1.9  | 7.5   | 4.0   | 26.4  | 25.1  | 19.7  |             |
| 647                                                                    | 3547         | Trips           | 296                 | 122   | 96   | 109   | 79    | 582   | 661   | 405   | 2,490       |
| 647                                                                    | 3547         | Percent         | 12.6                | 5.2   | 4.1  | 4.6   | 3.4   | 24.8  | 28.1  | 17.3  |             |
| 648                                                                    | 3548         | Trips           | 943                 | 278   | 128  | 313   | 73    | 1,525 | 1,351 | 576   | 5,397       |
| 648                                                                    | 3548         | Percent         | 18.2                | 5.4   | 2.5  | 6.0   | 1.4   | 29.4  | 26.0  | 11.1  |             |
| 649                                                                    | 3549         | Trips           | 643                 | 120   | 121  | 216   | 43    | 873   | 952   | 508   | 3,661       |
| 649                                                                    | 3549         | Percent         | 18.5                | 3.4   | 3.5  | 6.2   | 1.3   | 25.1  | 27.4  | 14.6  |             |
| 650                                                                    | 3550         | Trips           | 60                  | 71    | 65   | 8     | 14    | 279   | 312   | 136   | 969         |
| 650                                                                    | 3550         | Percent         | 6.4                 | 7.5   | 6.9  | 0.9   | 1.5   | 29.5  | 33.0  | 14.4  |             |

## **APPENDIX D**

### **Future Turning Movement Volumes and Committed Developments Information**

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and Michigan Avenue AM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Michigan Avenue Eastbound |         |       | Michigan Avenue Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|---------------------------|---------|-------|---------------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                      | Through | Right | Left                      | Through | Right |
| Existing Traffic (8/9/2023)               | 7                     | 616     | 30    | 392                   | 1,247   | 18    | 13                        | 8       | 6     | 17                        | 3       | 218   |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                      | 1.05    | 1.05  | 1.05                      | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 7                     | 647     | 32    | 412                   | 1,309   | 19    | 14                        | 8       | 6     | 18                        | 3       | 229   |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                      | 2.9%    | 2.9%  | 2.9%                      | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       |         |       |                       |         |       |                           |         |       |                           |         |       |
| 2026 Background Traffic                   | 8                     | 705     | 34    | 449                   | 1,428   | 21    | 15                        | 9       | 7     | 19                        | 3       | 250   |
| 1901 Alton                                | 1                     | 2       | 1     | 5                     |         |       |                           | 1       |       |                           |         |       |
| 2026 Total Traffic                        | 9                     | 707     | 35    | 454                   | 1,428   | 21    | 15                        | 10      | 7     | 19                        | 3       | 250   |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and Michigan Avenue PM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Michigan Avenue Eastbound |         |       | Michigan Avenue Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|---------------------------|---------|-------|---------------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                      | Through | Right | Left                      | Through | Right |
| Existing Traffic (8/9/2023)               | 5                     | 1,121   | 23    | 274                   | 880     | 5     | 13                        | 11      | 2     | 23                        | 14      | 597   |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                      | 1.05    | 1.05  | 1.05                      | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 5                     | 1,177   | 24    | 288                   | 924     | 5     | 14                        | 12      | 2     | 24                        | 15      | 627   |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                      | 2.9%    | 2.9%  | 2.9%                      | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       |         |       |                       |         |       |                           |         |       |                           |         |       |
| 2026 Background Traffic                   | 6                     | 1,284   | 26    | 314                   | 1,008   | 6     | 15                        | 13      | 2     | 26                        | 16      | 684   |
| 1901 Alton                                | 7                     | 20      | 6     | 20                    |         |       |                           | 7       |       |                           |         |       |
| 2026 Total Traffic                        | 13                    | 1,304   | 32    | 334                   | 1,008   | 6     | 15                        | 20      | 2     | 26                        | 16      | 684   |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and 20th Street AM Peak Hour

| Description                               | Alton Road<br>Northbound |         |       | Alton Road<br>Southbound |         |       | 20th Street<br>Eastbound |         |       | 20th Street<br>Westbound |         |       |
|-------------------------------------------|--------------------------|---------|-------|--------------------------|---------|-------|--------------------------|---------|-------|--------------------------|---------|-------|
|                                           | Left                     | Through | Right | Left                     | Through | Right | Left                     | Through | Right | Left                     | Through | Right |
| Existing Traffic (8/9/2023)               | 95                       | 513     | 10    | 25                       | 1,050   | 233   | 126                      | 3       | 13    | 2                        | 3       | 5     |
| Season Adjustment Factor                  | 1.05                     | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 100                      | 539     | 11    | 26                       | 1,103   | 245   | 132                      | 3       | 14    | 2                        | 3       | 5     |
| Annual Growth Rate                        | 2.9%                     | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road | 9                        |         |       |                          |         | 4     |                          |         |       |                          |         |       |
| 2026 Background Traffic                   | 118                      | 587     | 11    | 29                       | 1,202   | 271   | 144                      | 3       | 15    | 2                        | 3       | 6     |
| 1901 Alton                                | 1                        | 3       |       |                          |         |       | 1                        |         |       |                          |         |       |
| 2026 Total Traffic                        | 119                      | 590     | 11    | 29                       | 1,202   | 271   | 145                      | 3       | 15    | 2                        | 3       | 6     |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and 20th Street PM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | 20th Street Eastbound |         |       | 20th Street Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 79                    | 979     | 4     | 5                     | 737     | 178   | 165                   | 7       | 21    |                       |         | 11    |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 83                    | 1,028   | 4     | 5                     | 774     | 187   | 173                   | 7       | 22    | 0                     | 0       | 12    |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road | 2                     |         |       |                       |         | 1     | 5                     |         | 10    |                       |         |       |
| 2026 Background Traffic                   | 92                    | 1,121   | 5     | 6                     | 844     | 205   | 194                   | 8       | 34    | 0                     | 0       | 13    |
| 1901 Alton                                | 7                     | 27      |       |                       |         | 6     |                       |         |       |                       |         |       |
| 2026 Total Traffic                        | 99                    | 1,148   | 5     | 6                     | 844     | 211   | 194                   | 8       | 34    | 0                     | 0       | 13    |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and 19th Street AM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 0                     | 600     | 20    | 0                     | 1,027   |       | 0                     | 0       |       | 0                     | 0       | 33    |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0                     | 630     | 21    | 0                     | 1,078   | 0     | 0                     | 0       | 0     | 0                     | 0       | 35    |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       | 9       |       |                       |         |       |                       |         |       |                       |         |       |
| 2026 Background Traffic                   | 0                     | 696     | 23    | 0                     | 1,176   | 0     | 0                     | 0       | 0     | 0                     | 0       | 38    |
| 1901 Alton                                |                       |         | 15    |                       |         |       |                       |         |       |                       |         | 4     |
| 2026 Total Traffic                        | 0                     | 696     | 38    | 0                     | 1,176   | 0     | 0                     | 0       | 0     | 0                     | 0       | 42    |



## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and 19th Street PM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 0                     | 1,033   | 33    | 0                     | 762     | 0     | 0                     | 0       |       | 0                     | 0       | 30    |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0                     | 1,085   | 35    | 0                     | 800     | 0     | 0                     | 0       | 0     | 0                     | 0       | 32    |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       | 2       |       |                       | 10      |       |                       |         |       |                       |         |       |
| 2026 Background Traffic                   | 0                     | 1,185   | 38    | 0                     | 883     | 0     | 0                     | 0       | 0     | 0                     | 0       | 34    |
| 1901 Alton                                |                       |         | 75    |                       |         |       |                       |         |       |                       |         | 34    |
| 2026 Total Traffic                        | 0                     | 1,185   | 113   | 0                     | 883     | 0     | 0                     | 0       | 0     | 0                     | 0       | 68    |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and Dade Avenue AM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Dade Avenue Eastbound |         |       | Dade Avenue Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 61                    | 413     | 154   | 39                    | 868     | 149   | 177                   | 122     | 8     | 123                   | 95      | 37    |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 64                    | 434     | 162   | 41                    | 911     | 156   | 186                   | 128     | 8     | 129                   | 100     | 39    |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       | 7       |       |                       |         |       |                       |         |       |                       |         | 2     |
| 2026 Background Traffic                   | 70                    | 480     | 176   | 45                    | 994     | 171   | 203                   | 140     | 9     | 141                   | 109     | 44    |
| 1901 Alton                                |                       | 6       |       |                       |         |       | 5                     |         |       | 3                     | 3       | 4     |
| 2026 Total Traffic                        | 70                    | 486     | 176   | 45                    | 994     | 171   | 208                   | 140     | 9     | 144                   | 112     | 48    |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Alton Road and Dade Avenue PM Peak Hour

| Description                               | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Dade Avenue Eastbound |         |       | Dade Avenue Westbound |         |       |
|-------------------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 67                    | 783     | 182   | 46                    | 703     | 90    | 199                   | 142     | 18    | 160                   | 166     | 43    |
| Season Adjustment Factor                  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 70                    | 822     | 191   | 48                    | 738     | 95    | 209                   | 149     | 19    | 168                   | 174     | 45    |
| Annual Growth Rate                        | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                       | 2       |       | 2                     | 8       |       |                       |         |       |                       |         |       |
| 2026 Background Traffic                   | 77                    | 899     | 208   | 55                    | 813     | 103   | 228                   | 163     | 21    | 183                   | 190     | 49    |
| 1901 Alton                                |                       | 31      |       |                       |         |       | 28                    |         |       | 30                    | 27      | 24    |
| 2026 Total Traffic                        | 77                    | 930     | 208   | 55                    | 813     | 103   | 256                   | 163     | 21    | 213                   | 217     | 73    |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Michigan Avenue and Dave Avenue AM Peak Hour

| Description                               | Michigan Avenue<br>Northbound |         |       | Michigan Avenue<br>Southbound |         |       | 19th Street<br>Eastbound |         |       | Dade Avenue<br>Westbound |         |       |
|-------------------------------------------|-------------------------------|---------|-------|-------------------------------|---------|-------|--------------------------|---------|-------|--------------------------|---------|-------|
|                                           | Left                          | Through | Right | Left                          | Through | Right | Left                     | Through | Right | Left                     | Through | Right |
| Existing Traffic (8/9/2023)               | 0                             | 288     | 0     | 411                           | 0       | 17    | 0                        | 0       | 0     | 0                        | 237     | 245   |
| Season Adjustment Factor                  | 1.05                          | 1.05    | 1.05  | 1.05                          | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0                             | 302     | 0     | 432                           | 0       | 18    | 0                        | 0       | 0     | 0                        | 249     | 257   |
| Annual Growth Rate                        | 2.9%                          | 2.9%    | 2.9%  | 2.9%                          | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                               |         |       |                               |         |       |                          |         |       |                          |         |       |
| 2026 Background Traffic                   | 0                             | 330     | 0     | 471                           | 0       | 19    | 0                        | 0       | 0     | 0                        | 271     | 281   |
| 1901 Alton                                |                               |         |       | 3                             |         | 6     |                          |         |       |                          | 4       |       |
| 2026 Total Traffic                        | 0                             | 330     | 0     | 474                           | 0       | 25    | 0                        | 0       | 0     | 0                        | 275     | 281   |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Michigan Avenue and Dave Avenue PM Peak Hour

| Description                               | Michigan Avenue<br>Northbound |         |       | Michigan Avenue<br>Southbound |         |       | 19th Street<br>Eastbound |         |       | Dade Avenue<br>Westbound |         |       |
|-------------------------------------------|-------------------------------|---------|-------|-------------------------------|---------|-------|--------------------------|---------|-------|--------------------------|---------|-------|
|                                           | Left                          | Through | Right | Left                          | Through | Right | Left                     | Through | Right | Left                     | Through | Right |
| Existing Traffic (8/9/2023)               | 0                             | 344     | 0     | 339                           | 0       | 24    | 0                        | 0       | 0     | 0                        | 344     | 654   |
| Season Adjustment Factor                  | 1.05                          | 1.05    | 1.05  | 1.05                          | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  | 1.05                     | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0                             | 361     | 0     | 356                           | 0       | 25    | 0                        | 0       | 0     | 0                        | 361     | 687   |
| Annual Growth Rate                        | 2.9%                          | 2.9%    | 2.9%  | 2.9%                          | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  | 2.9%                     | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |                               |         |       |                               |         |       |                          |         |       |                          |         |       |
| 2026 Background Traffic                   | 0                             | 394     | 0     | 388                           | 0       | 27    | 0                        | 0       | 0     | 0                        | 394     | 749   |
| 1901 Alton                                |                               |         |       | 24                            |         | 57    |                          |         |       |                          | 24      |       |
| 2026 Total Traffic                        | 0                             | 394     | 0     | 412                           | 0       | 84    | 0                        | 0       | 0     | 0                        | 418     | 749   |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Driveway and 19th Street AM Peak Hour

| Description                               | Northbound |         |       | Driveway Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|-------------------------------------------|------------|---------|-------|---------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left       | Through | Right | Left                | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 0          | 0       | 0     | 0                   | 0       |       | 0                     | 20      |       | 0                     | 33      |       |
| Season Adjustment Factor                  | 1.05       | 1.05    | 1.05  | 1.05                | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 21      | 0     | 0                     | 35      | 0     |
| Annual Growth Rate                        | 2.9%       | 2.9%    | 2.9%  | 2.9%                | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |            |         |       |                     |         |       |                       |         |       |                       |         |       |
| 2026 Background Traffic                   | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 23      | 0     | 0                     | 38      | 0     |
| 1901 Alton                                |            |         | 0     | 29                  |         | 12    | 41                    |         |       |                       |         | 19    |
| 2026 Total Traffic                        | 0          | 0       | 0     | 29                  | 0       | 12    | 41                    | 23      | 0     | 0                     | 38      | 19    |

## FUTURE TURNING MOVEMENT VOLUME ANALYSIS

### Driveway and 19th Street PM Peak Hour

| Description                               | Northbound |         |       | Driveway Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|-------------------------------------------|------------|---------|-------|---------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                                           | Left       | Through | Right | Left                | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (8/9/2023)               | 0          |         |       | 0                   |         | 0     | 0                     | 33      |       | 0                     | 30      | 0     |
| Season Adjustment Factor                  | 1.05       | 1.05    | 1.05  | 1.05                | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  | 1.05                  | 1.05    | 1.05  |
| 2023 Peak Season Traffic                  | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 35      | 0     | 0                     | 32      | 0     |
| Annual Growth Rate                        | 2.9%       | 2.9%    | 2.9%  | 2.9%                | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  | 2.9%                  | 2.9%    | 2.9%  |
| Committed Developments<br>1920 Alton Road |            |         |       |                     |         |       |                       |         |       |                       |         |       |
| 2026 Background Traffic                   | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 38      | 0     | 0                     | 34      | 0     |
| 1901 Alton                                |            |         |       | 129                 |         | 55    | 124                   |         |       |                       |         | 54    |
| 2026 Total Traffic                        | 0          | 0       | 0     | 129                 | 0       | 55    | 124                   | 38      | 0     | 0                     | 34      | 54    |



NOT TO SCALE

**Legend**

- Study Roadway
- Study Intersection
- XX A.M. Peak Hour Trip Assignment
- (XX) P.M. Peak Hour Trip Assignment

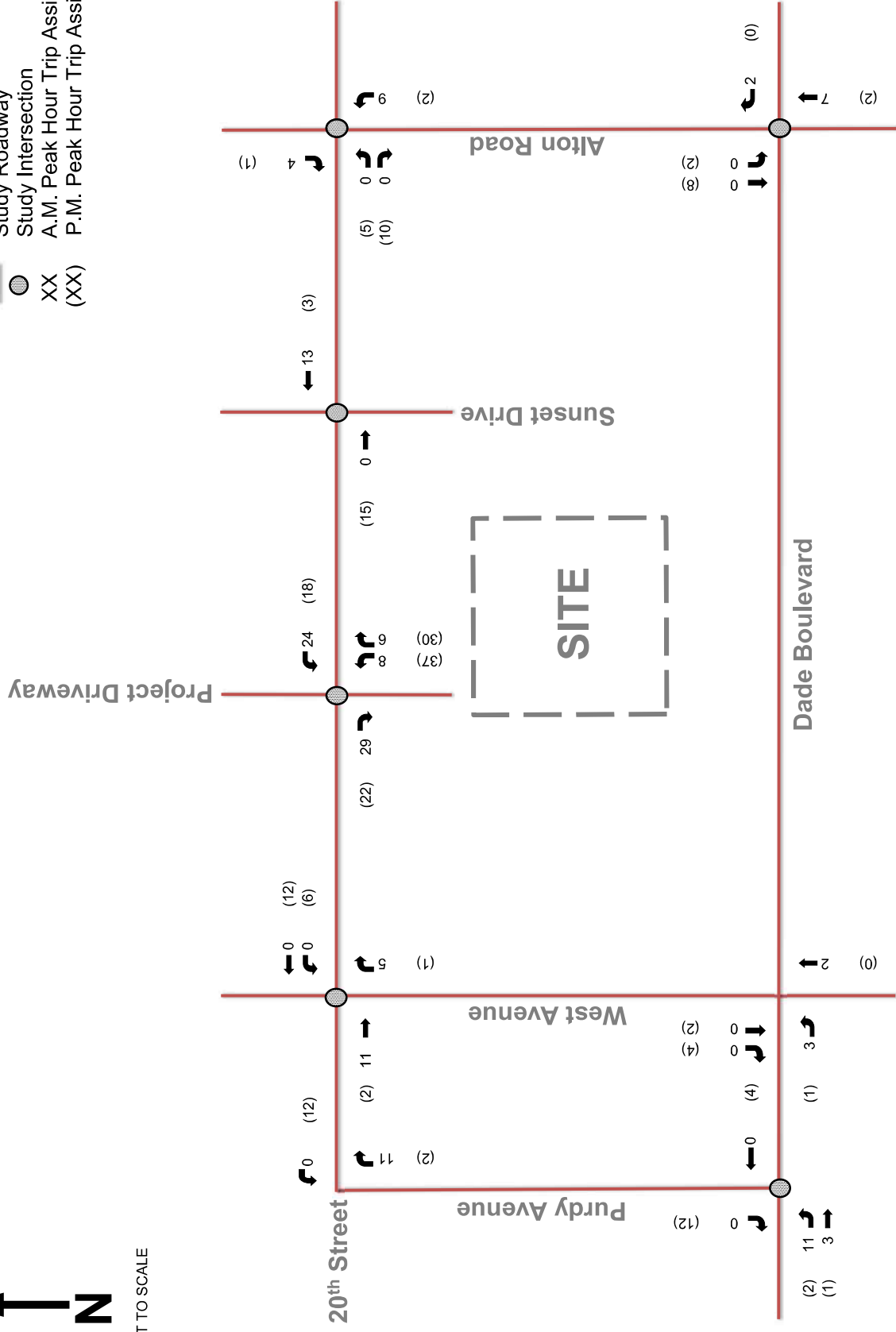


Figure 5  
Peak Hour Project Trip Assignment  
1920 Alton Road  
Miami Beach, Florida



# **APPENDIX E**

## **SYNCHRO Analyses**

# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 14                                                                                | 8                                                                                 | 18                                                                                | 3                                                                                 | 229                                                                               | 7                                                                                 | 647                                                                                 | 412                                                                                 | 1309                                                                                |
| Future Volume (vph)  | 14                                                                                | 8                                                                                 | 18                                                                                | 3                                                                                 | 229                                                                               | 7                                                                                 | 647                                                                                 | 412                                                                                 | 1309                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 38.7                                                                              | 75.0                                                                                | 38.7                                                                                | 75.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 25.8%                                                                             | 50.0%                                                                               | 25.8%                                                                               | 50.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 9.3                                                                               |                                                                                   | 9.3                                                                               | 150.0                                                                             | 10.4                                                                              | 99.3                                                                                | 29.7                                                                                | 133.2                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.06                                                                              |                                                                                   | 0.06                                                                              | 1.00                                                                              | 0.07                                                                              | 0.66                                                                                | 0.20                                                                                | 0.89                                                                                |
| v/c Ratio            |                                                                                   | 0.35                                                                              |                                                                                   | 0.26                                                                              | 0.18                                                                              | 0.07                                                                              | 0.35                                                                                | 0.74                                                                                | 0.52                                                                                |
| Control Delay        |                                                                                   | 65.6                                                                              |                                                                                   | 73.8                                                                              | 0.3                                                                               | 79.6                                                                              | 12.9                                                                                | 63.9                                                                                | 4.7                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                                 | 0.0                                                                                 | 0.1                                                                                 |
| Total Delay          |                                                                                   | 65.6                                                                              |                                                                                   | 73.8                                                                              | 0.3                                                                               | 79.6                                                                              | 13.2                                                                                | 63.9                                                                                | 4.8                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | E                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 65.6                                                                              |                                                                                   | 6.5                                                                               |                                                                                   |                                                                                   | 13.9                                                                                |                                                                                     | 18.8                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 6 (4%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.74

Intersection Signal Delay: 16.9

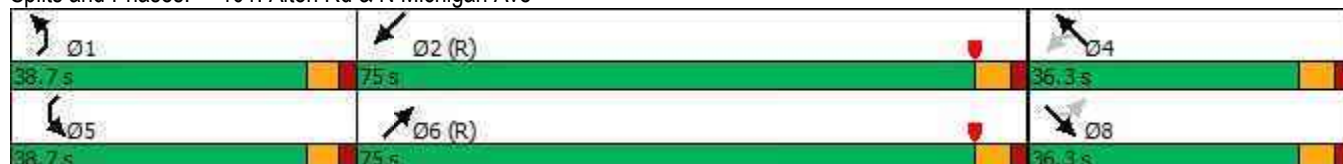
Intersection LOS: B

Intersection Capacity Utilization 68.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave



## Queues

### 101: Alton Rd & N Michigan Ave



| Lane Group              | SET  | NWT  | NWR  | NEL  | NET  | SWL  | SWT  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 31   | 23   | 249  | 8    | 738  | 448  | 1444 |
| v/c Ratio               | 0.35 | 0.26 | 0.18 | 0.07 | 0.35 | 0.74 | 0.52 |
| Control Delay           | 65.6 | 73.8 | 0.3  | 79.6 | 12.9 | 63.9 | 4.7  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.3  | 0.0  | 0.1  |
| Total Delay             | 65.6 | 73.8 | 0.3  | 79.6 | 13.2 | 63.9 | 4.8  |
| Queue Length 50th (ft)  | 23   | 22   | 0    | 8    | 228  | 214  | 144  |
| Queue Length 95th (ft)  | 59   | 53   | 0    | m27  | 312  | 261  | 402  |
| Internal Link Dist (ft) | 247  | 552  |      |      | 268  |      | 227  |
| Turn Bay Length (ft)    |      |      |      | 100  |      | 265  |      |
| Base Capacity (vph)     | 282  | 295  | 1411 | 357  | 2108 | 675  | 2795 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 763  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 401  |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.11 | 0.08 | 0.18 | 0.02 | 0.55 | 0.66 | 0.60 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM 6th Signalized Intersection Summary 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |       |      |       |       |       |      |       |      |      |      |      |
|----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------|------|-------|-------|-------|------|-------|------|------|------|------|
| Movement                                                                                                 | SEL                                                                                | SET   | SER  | NWL   | NWT   | NWR   | NEL  | NET   | NER  | SWL  | SWT  | SWR  |
| Lane Configurations                                                                                      |                                                                                    | ↔     |      |       | ↔     | ↔     | ↔    | ↔     |      | ↔    | ↔    |      |
| Traffic Volume (veh/h)                                                                                   | 14                                                                                 | 8     | 6    | 18    | 3     | 229   | 7    | 647   | 32   | 412  | 1309 | 19   |
| Future Volume (veh/h)                                                                                    | 14                                                                                 | 8     | 6    | 18    | 3     | 229   | 7    | 647   | 32   | 412  | 1309 | 19   |
| Initial Q (Qb), veh                                                                                      | 0                                                                                  | 0     | 0    | 0     | 0     | 0     | 0    | 0     | 0    | 0    | 0    | 0    |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                               |       | 0.97 | 0.99  |       | 1.00  | 1.00 |       | 0.99 | 1.00 |      | 0.97 |
| Parking Bus, Adj                                                                                         | 1.00                                                                               | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 1.00 | 1.00  | 1.00 | 1.00 | 1.00 | 1.00 |
| Work Zone On Approach                                                                                    |                                                                                    | No    |      |       | No    |       |      | No    |      |      | No   |      |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                               | 1670  | 1670 | 1670  | 1670  | 1670  | 1670 | 1670  | 1670 | 1670 | 1670 | 1670 |
| Adj Flow Rate, veh/h                                                                                     | 15                                                                                 | 9     | 7    | 20    | 3     | 0     | 8    | 703   | 35   | 448  | 1423 | 21   |
| Peak Hour Factor                                                                                         | 0.92                                                                               | 0.92  | 0.92 | 0.92  | 0.92  | 0.92  | 0.92 | 0.92  | 0.92 | 0.92 | 0.92 | 0.92 |
| Percent Heavy Veh, %                                                                                     | 3                                                                                  | 3     | 3    | 3     | 3     | 3     | 3    | 3     | 3    | 3    | 3    | 3    |
| Cap, veh/h                                                                                               | 68                                                                                 | 36    | 20   | 116   | 14    |       | 26   | 2015  | 100  | 524  | 2589 | 38   |
| Arrive On Green                                                                                          | 0.06                                                                               | 0.06  | 0.05 | 0.06  | 0.06  | 0.00  | 0.03 | 1.00  | 1.00 | 0.17 | 0.81 | 0.82 |
| Sat Flow, veh/h                                                                                          | 520                                                                                | 584   | 322  | 1154  | 228   | 1415  | 1590 | 3074  | 153  | 3086 | 3199 | 47   |
| Grp Volume(v), veh/h                                                                                     | 31                                                                                 | 0     | 0    | 23    | 0     | 0     | 8    | 363   | 375  | 448  | 705  | 739  |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1427                                                                               | 0     | 0    | 1381  | 0     | 1415  | 1590 | 1586  | 1640 | 1543 | 1586 | 1660 |
| Q Serve(g_s), s                                                                                          | 0.9                                                                                | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.7  | 0.0   | 0.0  | 21.2 | 22.9 | 22.9 |
| Cycle Q Clear(g_c), s                                                                                    | 2.9                                                                                | 0.0   | 0.0  | 2.1   | 0.0   | 0.0   | 0.7  | 0.0   | 0.0  | 21.2 | 22.9 | 22.9 |
| Prop In Lane                                                                                             | 0.48                                                                               |       | 0.23 | 0.87  |       | 1.00  | 1.00 |       | 0.09 | 1.00 |      | 0.03 |
| Lane Grp Cap(c), veh/h                                                                                   | 123                                                                                | 0     | 0    | 130   | 0     |       | 26   | 1040  | 1075 | 524  | 1284 | 1343 |
| V/C Ratio(X)                                                                                             | 0.25                                                                               | 0.00  | 0.00 | 0.18  | 0.00  |       | 0.31 | 0.35  | 0.35 | 0.85 | 0.55 | 0.55 |
| Avail Cap(c_a), veh/h                                                                                    | 324                                                                                | 0     | 0    | 316   | 0     |       | 361  | 1040  | 1075 | 658  | 1284 | 1343 |
| HCM Platoon Ratio                                                                                        | 1.00                                                                               | 1.00  | 1.00 | 1.00  | 1.00  | 1.00  | 2.00 | 2.00  | 2.00 | 1.00 | 1.00 | 1.00 |
| Upstream Filter(I)                                                                                       | 1.00                                                                               | 0.00  | 0.00 | 1.00  | 0.00  | 0.00  | 0.97 | 0.97  | 0.97 | 1.00 | 1.00 | 1.00 |
| Uniform Delay (d), s/veh                                                                                 | 67.5                                                                               | 0.0   | 0.0  | 67.0  | 0.0   | 0.0   | 71.8 | 0.0   | 0.0  | 60.5 | 4.9  | 4.9  |
| Incr Delay (d2), s/veh                                                                                   | 0.8                                                                                | 0.0   | 0.0  | 0.5   | 0.0   | 0.0   | 22.7 | 0.9   | 0.9  | 14.3 | 1.7  | 1.6  |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                                | 0.0   | 0.0  | 0.0   | 0.0   | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.2                                                                                | 0.0   | 0.0  | 0.9   | 0.0   | 0.0   | 0.5  | 0.3   | 0.3  | 9.3  | 6.8  | 7.1  |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                    |       |      |       |       |       |      |       |      |      |      |      |
| LnGrp Delay(d),s/veh                                                                                     | 68.3                                                                               | 0.0   | 0.0  | 67.5  | 0.0   | 0.0   | 94.4 | 0.9   | 0.9  | 74.8 | 6.6  | 6.5  |
| LnGrp LOS                                                                                                | E                                                                                  | A     | A    | E     | A     |       | F    | A     | A    | E    | A    | A    |
| Approach Vol, veh/h                                                                                      |                                                                                    | 31    |      |       | 23    |       |      | 746   |      |      | 1892 |      |
| Approach Delay, s/veh                                                                                    |                                                                                    | 68.3  |      |       | 67.5  |       |      | 1.9   |      |      | 22.7 |      |
| Approach LOS                                                                                             |                                                                                    | E     |      |       | E     |       |      | A     |      |      | C    |      |
| Timer - Assigned Phs                                                                                     | 1                                                                                  | 2     |      | 4     | 5     | 6     |      | 8     |      |      |      |      |
| Phs Duration (G+Y+Rc), s                                                                                 | 7.1                                                                                | 128.4 |      | 14.5  | 32.2  | 103.3 |      | 14.5  |      |      |      |      |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                              | 6.0   |      | * 6.3 | * 5.7 | 6.0   |      | * 6.3 |      |      |      |      |
| Max Green Setting (Gmax), s                                                                              | * 33                                                                               | 69.0  |      | * 30  | * 33  | 69.0  |      | * 30  |      |      |      |      |
| Max Q Clear Time (g_c+I1), s                                                                             | 2.7                                                                                | 24.9  |      | 4.1   | 23.2  | 2.0   |      | 4.9   |      |      |      |      |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                                | 1.3   |      | 0.0   | 3.3   | 0.6   |      | 0.1   |      |      |      |      |
| <b>Intersection Summary</b>                                                                              |                                                                                    |       |      |       |       |       |      |       |      |      |      |      |
| HCM 6th Ctrl Delay                                                                                       |                                                                                    |       | 17.9 |       |       |       |      |       |      |      |      |      |
| HCM 6th LOS                                                                                              |                                                                                    |       | B    |       |       |       |      |       |      |      |      |      |
| <b>Notes</b>                                                                                             |                                                                                    |       |      |       |       |       |      |       |      |      |      |      |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                    |       |      |       |       |       |      |       |      |      |      |      |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                    |       |      |       |       |       |      |       |      |      |      |      |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |   |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 132                                                                               | 3                                                                                 | 14                                                                                | 3                                                                                 | 100                                                                               | 539                                                                               | 26                                                                                  | 1103                                                                                | 245                                                                                 |
| Future Volume (vph)  | 132                                                                               | 3                                                                                 | 14                                                                                | 3                                                                                 | 100                                                                               | 539                                                                               | 26                                                                                  | 1103                                                                                | 245                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                                | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 15.0                                                                              | 15.0                                                                              | 102.0                                                                             | 87.0                                                                                | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 10.0%                                                                             | 10.0%                                                                             | 68.0%                                                                             | 58.0%                                                                               | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                 | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                                | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                 | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 13.8                                                                              | 12.5                                                                              | 13.8                                                                              | 8.4                                                                               | 118.7                                                                             | 117.4                                                                             | 106.3                                                                               | 106.3                                                                               | 106.3                                                                               |
| Actuated g/C Ratio   | 0.09                                                                              | 0.08                                                                              | 0.09                                                                              | 0.06                                                                              | 0.79                                                                              | 0.78                                                                              | 0.71                                                                                | 0.71                                                                                | 0.71                                                                                |
| v/c Ratio            | 0.55                                                                              | 0.62                                                                              | 0.07                                                                              | 0.12                                                                              | 0.42                                                                              | 0.25                                                                              | 0.06                                                                                | 0.56                                                                                | 0.28                                                                                |
| Control Delay        | 79.3                                                                              | 85.9                                                                              | 0.6                                                                               | 49.5                                                                              | 9.6                                                                               | 5.7                                                                               | 9.2                                                                                 | 15.0                                                                                | 7.2                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.5                                                                                 | 0.8                                                                                 |
| Total Delay          | 79.3                                                                              | 85.9                                                                              | 0.6                                                                               | 49.5                                                                              | 9.6                                                                               | 5.7                                                                               | 9.2                                                                                 | 15.4                                                                                | 8.0                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | A                                                                                 | A                                                                                 | A                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 74.8                                                                              |                                                                                   | 49.5                                                                              |                                                                                   | 6.3                                                                               |                                                                                     | 14.0                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | D                                                                                 |                                                                                   | A                                                                                 |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 23 (15%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.62

Intersection Signal Delay: 16.0

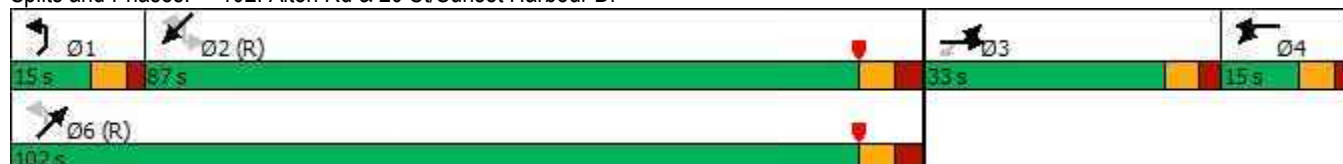
Intersection LOS: B

Intersection Capacity Utilization 66.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 76   | 77   | 16   | 11   | 114  | 626  | 30   | 1253 | 278  |
| v/c Ratio               | 0.55 | 0.62 | 0.07 | 0.12 | 0.42 | 0.25 | 0.06 | 0.56 | 0.28 |
| Control Delay           | 79.3 | 85.9 | 0.6  | 49.5 | 9.6  | 5.7  | 9.2  | 15.0 | 7.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.5  | 0.8  |
| Total Delay             | 79.3 | 85.9 | 0.6  | 49.5 | 9.6  | 5.7  | 9.2  | 15.4 | 8.0  |
| Queue Length 50th (ft)  | 75   | 77   | 0    | 5    | 17   | 60   | 9    | 320  | 69   |
| Queue Length 95th (ft)  | 127  | 130  | 0    | 26   | 54   | 139  | m25  | 571  | 178  |
| Internal Link Dist (ft) |      | 175  |      | 136  |      | 403  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 279  | 267  | 358  | 107  | 289  | 2463 | 486  | 2234 | 1007 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 499  | 454  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 73   | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.27 | 0.29 | 0.04 | 0.10 | 0.39 | 0.26 | 0.06 | 0.72 | 0.50 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 132                                                                               | 3                                                                                 | 14                                                                                | 2                                                                                 | 3                                                                                 | 5                                                                                 | 100                                                                                 | 539                                                                                 | 11                                                                                  | 26                                                                                  | 1103                                                                                | 245                                                                                 |
| Future Volume (vph)               | 132                                                                               | 3                                                                                 | 14                                                                                | 2                                                                                 | 3                                                                                 | 5                                                                                 | 100                                                                                 | 539                                                                                 | 11                                                                                  | 26                                                                                  | 1103                                                                                | 245                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.97                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.93                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1524                                                                              |                                                                                   | 1577                                                                                | 3145                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1372                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.16                                                                                | 1.00                                                                                |                                                                                     | 0.41                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1524                                                                              |                                                                                   | 270                                                                                 | 3145                                                                                |                                                                                     | 688                                                                                 | 3154                                                                                | 1372                                                                                |
| Peak-hour factor, PHF             | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |
| Adj. Flow (vph)                   | 150                                                                               | 3                                                                                 | 16                                                                                | 2                                                                                 | 3                                                                                 | 6                                                                                 | 114                                                                                 | 612                                                                                 | 12                                                                                  | 30                                                                                  | 1253                                                                                | 278                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 15                                                                                | 0                                                                                 | 6                                                                                 | 0                                                                                 | 0                                                                                   | 1                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 41                                                                                  |
| Lane Group Flow (vph)             | 76                                                                                | 77                                                                                | 1                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 114                                                                                 | 625                                                                                 | 0                                                                                   | 30                                                                                  | 1253                                                                                | 237                                                                                 |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 10                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              | Split                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 12.5                                                                              | 12.5                                                                              | 12.5                                                                              |                                                                                   | 2.9                                                                               |                                                                                   | 114.7                                                                               | 114.7                                                                               |                                                                                     | 101.0                                                                               | 101.0                                                                               | 101.0                                                                               |
| Effective Green, g (s)            | 13.8                                                                              | 12.5                                                                              | 13.8                                                                              |                                                                                   | 4.2                                                                               |                                                                                   | 113.7                                                                               | 113.7                                                                               |                                                                                     | 102.5                                                                               | 102.5                                                                               | 102.5                                                                               |
| Actuated g/C Ratio                | 0.09                                                                              | 0.08                                                                              | 0.09                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.76                                                                                | 0.76                                                                                |                                                                                     | 0.68                                                                                | 0.68                                                                                | 0.68                                                                                |
| Clearance Time (s)                | 6.3                                                                               | 6.3                                                                               | 6.3                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 137                                                                               | 125                                                                               | 127                                                                               |                                                                                   | 42                                                                                |                                                                                   | 263                                                                                 | 2383                                                                                |                                                                                     | 470                                                                                 | 2155                                                                                | 937                                                                                 |
| v/s Ratio Prot                    | 0.05                                                                              | c0.05                                                                             |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | c0.02                                                                               | 0.20                                                                                |                                                                                     |                                                                                     | c0.40                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.31                                                                                |                                                                                     |                                                                                     | 0.04                                                                                |                                                                                     | 0.17                                                                                |
| v/c Ratio                         | 0.55                                                                              | 0.62                                                                              | 0.01                                                                              |                                                                                   | 0.12                                                                              |                                                                                   | 0.43                                                                                | 0.26                                                                                |                                                                                     | 0.06                                                                                | 0.58                                                                                | 0.25                                                                                |
| Uniform Delay, d1                 | 65.2                                                                              | 66.4                                                                              | 61.9                                                                              |                                                                                   | 71.1                                                                              |                                                                                   | 8.7                                                                                 | 5.5                                                                                 |                                                                                     | 7.9                                                                                 | 12.5                                                                                | 9.1                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.88                                                                                | 1.09                                                                                | 1.18                                                                                |
| Incremental Delay, d2             | 3.9                                                                               | 7.5                                                                               | 0.0                                                                               |                                                                                   | 1.0                                                                               |                                                                                   | 0.4                                                                                 | 0.3                                                                                 |                                                                                     | 0.2                                                                                 | 1.0                                                                                 | 0.6                                                                                 |
| Delay (s)                         | 69.0                                                                              | 73.9                                                                              | 61.9                                                                              |                                                                                   | 72.1                                                                              |                                                                                   | 9.1                                                                                 | 5.8                                                                                 |                                                                                     | 7.2                                                                                 | 14.7                                                                                | 11.3                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 70.6                                                                              |                                                                                   |                                                                                   | 72.1                                                                              |                                                                                   |                                                                                     | 6.3                                                                                 |                                                                                     |                                                                                     | 13.9                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 15.8                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.56                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.1                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.8%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.



HCM 6th TWSC  
103: Alton Rd & 19 St

| Intersection             |        |                                                                                   |                                                                                   |        |      |                                                                                   |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 0.2    |                                                                                   |                                                                                   |        |      |                                                                                   |
| Movement                 | WBL    | WBR                                                                               | NBT                                                                               | NBR    | SBL  | SBT                                                                               |
| Lane Configurations      |        |  |  |        |      |  |
| Traffic Vol, veh/h       | 0      | 35                                                                                | 630                                                                               | 21     | 0    | 1078                                                                              |
| Future Vol, veh/h        | 0      | 35                                                                                | 630                                                                               | 21     | 0    | 1078                                                                              |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Sign Control             | Stop   | Stop                                                                              | Free                                                                              | Free   | Free | Free                                                                              |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -    | None                                                                              |
| Storage Length           | -      | 0                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Veh in Median Storage, # | 0      | -                                                                                 | 0                                                                                 | -      | -    | 0                                                                                 |
| Grade, %                 | 0      | -                                                                                 | 0                                                                                 | -      | -    | 0                                                                                 |
| Peak Hour Factor         | 92     | 92                                                                                | 92                                                                                | 92     | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3      | 3                                                                                 | 3                                                                                 | 3      | 3    | 3                                                                                 |
| Mvmt Flow                | 0      | 38                                                                                | 685                                                                               | 23     | 0    | 1172                                                                              |
| Major/Minor              | Minor1 | Major1                                                                            |                                                                                   | Major2 |      |                                                                                   |
| Conflicting Flow All     | -      | 354                                                                               | 0                                                                                 | 0      | -    | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy            | -      | 4.5                                                                               | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Follow-up Hdwy           | -      | 3                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Pot Cap-1 Maneuver       | 0      | 890                                                                               | -                                                                                 | -      | 0    | -                                                                                 |
| Stage 1                  | 0      | -                                                                                 | -                                                                                 | -      | 0    | -                                                                                 |
| Stage 2                  | 0      | -                                                                                 | -                                                                                 | -      | 0    | -                                                                                 |
| Platoon blocked, %       |        |                                                                                   | -                                                                                 | -      |      | -                                                                                 |
| Mov Cap-1 Maneuver       | -      | 890                                                                               | -                                                                                 | -      | -    | -                                                                                 |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Approach                 | WB     | NB                                                                                |                                                                                   | SB     |      |                                                                                   |
| HCM Control Delay, s     | 9.2    | 0                                                                                 |                                                                                   | 0      |      |                                                                                   |
| HCM LOS                  | A      |                                                                                   |                                                                                   |        |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1                                                                          |                                                                                   | SBT    |      |                                                                                   |
| Capacity (veh/h)         | -      | 890                                                                               |                                                                                   | -      |      |                                                                                   |
| HCM Lane V/C Ratio       | -      | 0.043                                                                             |                                                                                   | -      |      |                                                                                   |
| HCM Control Delay (s)    | -      | 9.2                                                                               |                                                                                   | -      |      |                                                                                   |
| HCM Lane LOS             | -      | A                                                                                 |                                                                                   | -      |      |                                                                                   |
| HCM 95th %tile Q(veh)    | -      | 0.1                                                                               |                                                                                   | -      |      |                                                                                   |

# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 186                                                                               | 128                                                                               | 129                                                                               | 100                                                                               | 39                                                                                | 64                                                                                | 434                                                                                | 41                                                                                  | 911                                                                                 | 156                                                                                 |
| Future Volume (vph)  | 186                                                                               | 128                                                                               | 129                                                                               | 100                                                                               | 39                                                                                | 64                                                                                | 434                                                                                | 41                                                                                  | 911                                                                                 | 156                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                 | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                               | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                               | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                              | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                              | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 22.5                                                                              | 11.9                                                                              | 28.7                                                                              | 15.0                                                                              | 15.0                                                                              | 100.6                                                                             | 94.7                                                                               | 8.7                                                                                 | 96.9                                                                                | 107.5                                                                               |
| Actuated g/C Ratio   | 0.15                                                                              | 0.08                                                                              | 0.19                                                                              | 0.10                                                                              | 0.10                                                                              | 0.67                                                                              | 0.63                                                                               | 0.06                                                                                | 0.65                                                                                | 0.72                                                                                |
| v/c Ratio            | 1.02                                                                              | 0.60                                                                              | 0.63                                                                              | 0.35                                                                              | 0.19                                                                              | 0.22                                                                              | 0.34                                                                               | 0.49                                                                                | 0.49                                                                                | 0.17                                                                                |
| Control Delay        | 125.4                                                                             | 74.6                                                                              | 64.0                                                                              | 64.9                                                                              | 1.8                                                                               | 9.0                                                                               | 13.8                                                                               | 85.4                                                                                | 16.0                                                                                | 4.5                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 125.4                                                                             | 74.6                                                                              | 64.0                                                                              | 64.9                                                                              | 1.8                                                                               | 9.0                                                                               | 13.8                                                                               | 85.4                                                                                | 16.0                                                                                | 4.5                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | B                                                                                  | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 103.9                                                                             |                                                                                   | 55.3                                                                              |                                                                                   |                                                                                   | 13.3                                                                               |                                                                                     | 16.9                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                  |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 25 (17%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.02

Intersection Signal Delay: 32.2

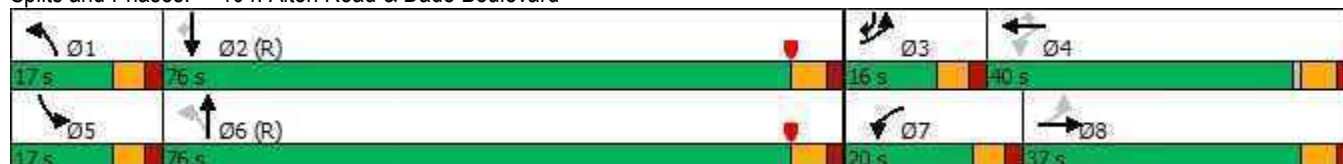
Intersection LOS: C

Intersection Capacity Utilization 70.2%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 204   | 150  | 142  | 110  | 43   | 70   | 655  | 45   | 1001 | 171  |
| v/c Ratio               | 1.02  | 0.60 | 0.63 | 0.35 | 0.19 | 0.22 | 0.34 | 0.49 | 0.49 | 0.17 |
| Control Delay           | 125.4 | 74.6 | 64.0 | 64.9 | 1.8  | 9.0  | 13.8 | 85.4 | 16.0 | 4.5  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 125.4 | 74.6 | 64.0 | 64.9 | 1.8  | 9.0  | 13.8 | 85.4 | 16.0 | 4.5  |
| Queue Length 50th (ft)  | ~186  | 74   | 121  | 53   | 0    | 19   | 147  | 44   | 268  | 27   |
| Queue Length 95th (ft)  | #335  | 111  | 186  | 84   | 0    | 38   | 213  | 86   | 359  | 58   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 200   | 647  | 235  | 735  | 400  | 363  | 1906 | 121  | 2036 | 1001 |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.02  | 0.23 | 0.60 | 0.15 | 0.11 | 0.19 | 0.34 | 0.37 | 0.49 | 0.17 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                        | 186                                                                               | 128                                                                               | 8                                                                                 | 129                                                                               | 100                                                                               | 39                                                                                | 64                                                                                 | 434                                                                                 | 162                                                                                 | 41                                                                                  | 911                                                                                 | 156                                                                                 |
| Future Volume (veh/h)                                                                                         | 186                                                                               | 128                                                                               | 8                                                                                 | 129                                                                               | 100                                                                               | 39                                                                                | 64                                                                                 | 434                                                                                 | 162                                                                                 | 41                                                                                  | 911                                                                                 | 156                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.98                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 204                                                                               | 141                                                                               | 0                                                                                 | 142                                                                               | 110                                                                               | 0                                                                                 | 70                                                                                 | 477                                                                                 | 178                                                                                 | 45                                                                                  | 1001                                                                                | 171                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                                    | 254                                                                               | 295                                                                               |                                                                                   | 252                                                                               | 372                                                                               |                                                                                   | 292                                                                                | 1403                                                                                | 520                                                                                 | 56                                                                                  | 1988                                                                                | 965                                                                                 |
| Arrive On Green                                                                                               | 0.07                                                                              | 0.09                                                                              | 0.00                                                                              | 0.09                                                                              | 0.12                                                                              | 0.00                                                                              | 0.03                                                                               | 0.62                                                                                | 0.62                                                                                | 0.04                                                                                | 0.63                                                                                | 0.63                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                               | 2252                                                                                | 834                                                                                 | 1590                                                                                | 3173                                                                                | 1385                                                                                |
| Grp Volume(v), veh/h                                                                                          | 204                                                                               | 141                                                                               | 0                                                                                 | 142                                                                               | 110                                                                               | 0                                                                                 | 70                                                                                 | 335                                                                                 | 320                                                                                 | 45                                                                                  | 1001                                                                                | 171                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1500                                                                                | 1590                                                                                | 1586                                                                                | 1385                                                                                |
| Q Serve(g_s), s                                                                                               | 10.3                                                                              | 6.3                                                                               | 0.0                                                                               | 12.0                                                                              | 4.8                                                                               | 0.0                                                                               | 2.4                                                                                | 15.1                                                                                | 15.3                                                                                | 4.2                                                                                 | 25.8                                                                                | 6.4                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 10.3                                                                              | 6.3                                                                               | 0.0                                                                               | 12.0                                                                              | 4.8                                                                               | 0.0                                                                               | 2.4                                                                                | 15.1                                                                                | 15.3                                                                                | 4.2                                                                                 | 25.8                                                                                | 6.4                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.56                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 254                                                                               | 295                                                                               |                                                                                   | 252                                                                               | 372                                                                               |                                                                                   | 292                                                                                | 988                                                                                 | 935                                                                                 | 56                                                                                  | 1988                                                                                | 965                                                                                 |
| V/C Ratio(X)                                                                                                  | 0.80                                                                              | 0.48                                                                              |                                                                                   | 0.56                                                                              | 0.30                                                                              |                                                                                   | 0.24                                                                               | 0.34                                                                                | 0.34                                                                                | 0.81                                                                                | 0.50                                                                                | 0.18                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 254                                                                               | 656                                                                               |                                                                                   | 255                                                                               | 719                                                                               |                                                                                   | 362                                                                                | 988                                                                                 | 935                                                                                 | 120                                                                                 | 1988                                                                                | 965                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 61.8                                                                              | 64.6                                                                              | 0.0                                                                               | 54.7                                                                              | 60.6                                                                              | 0.0                                                                               | 11.9                                                                               | 13.5                                                                                | 13.5                                                                                | 71.9                                                                                | 15.3                                                                                | 7.9                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 15.9                                                                              | 0.9                                                                               | 0.0                                                                               | 1.7                                                                               | 0.3                                                                               | 0.0                                                                               | 0.2                                                                                | 0.9                                                                                 | 1.0                                                                                 | 9.6                                                                                 | 0.9                                                                                 | 0.4                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 4.3                                                                               | 2.6                                                                               | 0.0                                                                               | 4.9                                                                               | 1.9                                                                               | 0.0                                                                               | 0.9                                                                                | 5.7                                                                                 | 5.5                                                                                 | 1.9                                                                                 | 9.5                                                                                 | 2.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 77.6                                                                              | 65.5                                                                              | 0.0                                                                               | 56.4                                                                              | 60.9                                                                              | 0.0                                                                               | 12.1                                                                               | 14.4                                                                                | 14.5                                                                                | 81.5                                                                                | 16.2                                                                                | 8.3                                                                                 |
| LnGrp LOS                                                                                                     | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                  | B                                                                                   | B                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                           |                                                                                   | 345                                                                               |                                                                                   |                                                                                   | 252                                                                               |                                                                                   |                                                                                    | 725                                                                                 |                                                                                     |                                                                                     | 1217                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 72.7                                                                              |                                                                                   |                                                                                   | 58.4                                                                              |                                                                                   |                                                                                    | 14.3                                                                                |                                                                                     |                                                                                     | 17.5                                                                                |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 10.4                                                                              | 100.0                                                                             | 16.0                                                                              | 23.6                                                                              | 11.0                                                                              | 99.5                                                                              | 19.6                                                                               | 19.9                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 11                                                                              | 70.0                                                                              | * 10                                                                              | 34.0                                                                              | * 11                                                                              | 70.0                                                                              | * 14                                                                               | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 4.4                                                                               | 27.8                                                                              | 12.3                                                                              | 6.8                                                                               | 6.2                                                                               | 17.3                                                                              | 14.0                                                                               | 8.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 3.1                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 1.5                                                                               | 0.0                                                                                | 0.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 28.1                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 302   | 249   | 257   | 432   | 18    |      |
| Future Volume (vph)  | 302   | 249   | 257   | 432   | 18    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 81.9  | 81.9  | 120.0 | 26.1  | 26.1  |      |
| Actuated g/C Ratio   | 0.68  | 0.68  | 1.00  | 0.22  | 0.22  |      |
| v/c Ratio            | 0.15  | 0.13  | 0.20  | 0.71  | 0.06  |      |
| Control Delay        | 7.5   | 7.4   | 0.3   | 48.7  | 12.8  |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 7.5   | 7.4   | 0.3   | 48.7  | 12.8  |      |
| LOS                  | A     | A     | A     | D     | B     |      |
| Approach Delay       | 7.5   | 3.8   |       | 47.3  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.71

Intersection Signal Delay: 20.2

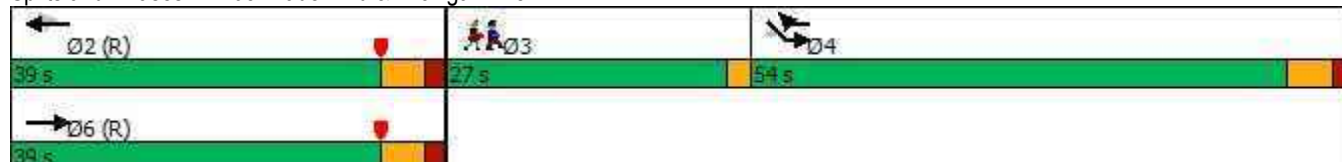
Intersection LOS: C

Intersection Capacity Utilization 34.0%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 368  | 304  | 313  | 527  | 22   |
| v/c Ratio               | 0.15 | 0.13 | 0.20 | 0.71 | 0.06 |
| Control Delay           | 7.5  | 7.4  | 0.3  | 48.7 | 12.8 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 7.5  | 7.4  | 0.3  | 48.7 | 12.8 |
| Queue Length 50th (ft)  | 48   | 39   | 0    | 195  | 0    |
| Queue Length 95th (ft)  | 72   | 60   | 0    | 212  | 17   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2392 | 2392 | 1568 | 1360 | 640  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.15 | 0.13 | 0.20 | 0.39 | 0.03 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT  | WBT   | WBR   | SEL                       | SER  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|
| Lane Configurations               |      | ↑↑   | ↑↑    | ↑     | ↑↑                        | ↑    |
| Traffic Volume (vph)              | 0    | 302  | 249   | 257   | 432                       | 18   |
| Future Volume (vph)               | 0    | 302  | 249   | 257   | 432                       | 18   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Lane Util. Factor                 |      | 0.95 | 0.95  | 1.00  | 0.97                      | 1.00 |
| Frpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Flpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Frt                               |      | 1.00 | 1.00  | 0.85  | 1.00                      | 0.85 |
| Flt Protected                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (prot)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Flt Permitted                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (perm)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Peak-hour factor, PHF             | 0.82 | 0.82 | 0.82  | 0.82  | 0.82                      | 0.82 |
| Adj. Flow (vph)                   | 0    | 368  | 304   | 313   | 527                       | 22   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 31    | 0                         | 17   |
| Lane Group Flow (vph)             | 0    | 368  | 304   | 282   | 527                       | 5    |
| Confl. Peds. (#/hr)               | 4    |      |       |       |                           |      |
| Turn Type                         |      | NA   | NA    | pm+ov | Prot                      | Perm |
| Protected Phases                  |      | 6    | 2     | 4     | 4                         |      |
| Permitted Phases                  |      |      |       | 2     |                           | 4    |
| Actuated Green, G (s)             |      | 81.9 | 81.9  | 108.0 | 26.1                      | 26.1 |
| Effective Green, g (s)            |      | 81.9 | 81.9  | 108.0 | 26.1                      | 26.1 |
| Actuated g/C Ratio                |      | 0.68 | 0.68  | 0.90  | 0.22                      | 0.22 |
| Clearance Time (s)                |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Vehicle Extension (s)             |      | 1.0  | 1.0   | 3.5   | 3.5                       | 3.5  |
| Lane Grp Cap (vph)                |      | 2392 | 2392  | 1568  | 739                       | 341  |
| v/s Ratio Prot                    |      | 0.10 | 0.09  | c0.04 | c0.16                     |      |
| v/s Ratio Perm                    |      |      |       | 0.14  |                           | 0.00 |
| v/c Ratio                         |      | 0.15 | 0.13  | 0.18  | 0.71                      | 0.01 |
| Uniform Delay, d1                 |      | 6.8  | 6.6   | 0.7   | 43.5                      | 36.9 |
| Progression Factor                |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Incremental Delay, d2             |      | 0.1  | 0.1   | 0.1   | 3.4                       | 0.0  |
| Delay (s)                         |      | 6.9  | 6.7   | 0.8   | 46.9                      | 36.9 |
| Level of Service                  |      | A    | A     | A     | D                         | D    |
| Approach Delay (s)                |      | 6.9  | 3.7   |       | 46.5                      |      |
| Approach LOS                      |      | A    | A     |       | D                         |      |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |
| HCM 2000 Control Delay            |      |      | 19.8  |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |      | 0.32  |       |                           |      |
| Actuated Cycle Length (s)         |      |      | 120.0 |       | Sum of lost time (s)      | 14.0 |
| Intersection Capacity Utilization |      |      | 34.0% |       | ICU Level of Service      | A    |
| Analysis Period (min)             |      |      | 15    |       |                           |      |
| c Critical Lane Group             |      |      |       |       |                           |      |

## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.



# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 15                                                                                | 9                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 8                                                                                 | 705                                                                                 | 449                                                                                 | 1428                                                                                |
| Future Volume (vph)  | 15                                                                                | 9                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 8                                                                                 | 705                                                                                 | 449                                                                                 | 1428                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 38.7                                                                              | 75.0                                                                                | 38.7                                                                                | 75.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 25.8%                                                                             | 50.0%                                                                               | 25.8%                                                                               | 50.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 9.5                                                                               |                                                                                   | 9.5                                                                               | 150.0                                                                             | 10.5                                                                              | 94.5                                                                                | 31.7                                                                                | 128.9                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.06                                                                              |                                                                                   | 0.06                                                                              | 1.00                                                                              | 0.07                                                                              | 0.63                                                                                | 0.21                                                                                | 0.86                                                                                |
| v/c Ratio            |                                                                                   | 0.37                                                                              |                                                                                   | 0.28                                                                              | 0.19                                                                              | 0.08                                                                              | 0.40                                                                                | 0.76                                                                                | 0.58                                                                                |
| Control Delay        |                                                                                   | 65.5                                                                              |                                                                                   | 74.2                                                                              | 0.3                                                                               | 78.6                                                                              | 15.9                                                                                | 63.1                                                                                | 5.9                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                                 | 0.0                                                                                 | 0.4                                                                                 |
| Total Delay          |                                                                                   | 65.5                                                                              |                                                                                   | 74.2                                                                              | 0.3                                                                               | 78.6                                                                              | 16.3                                                                                | 63.1                                                                                | 6.3                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | E                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 65.5                                                                              |                                                                                   | 6.3                                                                               |                                                                                   |                                                                                   | 17.0                                                                                |                                                                                     | 19.7                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 6 (4%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 18.3

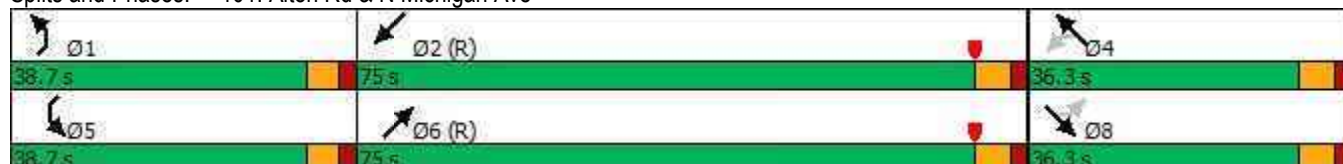
Intersection LOS: B

Intersection Capacity Utilization 72.6%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave



## Queues

### 101: Alton Rd & N Michigan Ave

|                                                                   |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                                                        | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                 |
| Lane Group Flow (vph)                                             | 34                                                                                | 24                                                                                | 272                                                                               | 9                                                                                 | 803                                                                               | 488                                                                               | 1575                                                                                |
| v/c Ratio                                                         | 0.37                                                                              | 0.28                                                                              | 0.19                                                                              | 0.08                                                                              | 0.40                                                                              | 0.76                                                                              | 0.58                                                                                |
| Control Delay                                                     | 65.5                                                                              | 74.2                                                                              | 0.3                                                                               | 78.6                                                                              | 15.9                                                                              | 63.1                                                                              | 5.9                                                                                 |
| Queue Delay                                                       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.4                                                                                 |
| Total Delay                                                       | 65.5                                                                              | 74.2                                                                              | 0.3                                                                               | 78.6                                                                              | 16.3                                                                              | 63.1                                                                              | 6.3                                                                                 |
| Queue Length 50th (ft)                                            | 25                                                                                | 23                                                                                | 0                                                                                 | 9                                                                                 | 261                                                                               | 232                                                                               | 173                                                                                 |
| Queue Length 95th (ft)                                            | 62                                                                                | 54                                                                                | 0                                                                                 | m29                                                                               | 352                                                                               | 279                                                                               | 483                                                                                 |
| Internal Link Dist (ft)                                           | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                 |
| Turn Bay Length (ft)                                              |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 265                                                                               |                                                                                     |
| Base Capacity (vph)                                               | 283                                                                               | 287                                                                               | 1411                                                                              | 357                                                                               | 2006                                                                              | 691                                                                               | 2705                                                                                |
| Starvation Cap Reductn                                            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 670                                                                               | 0                                                                                 | 0                                                                                   |
| Spillback Cap Reductn                                             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 542                                                                                 |
| Storage Cap Reductn                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |
| Reduced v/c Ratio                                                 | 0.12                                                                              | 0.08                                                                              | 0.19                                                                              | 0.03                                                                              | 0.60                                                                              | 0.71                                                                              | 0.73                                                                                |
| <b>Intersection Summary</b>                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| m Volume for 95th percentile queue is metered by upstream signal. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |

# HCM 6th Signalized Intersection Summary

## 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations                                                                                      |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 15                                                                                | 9                                                                                 | 7                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 8                                                                                  | 705                                                                                 | 34                                                                                  | 449                                                                                 | 1428                                                                                | 21                                                                                  |
| Future Volume (veh/h)                                                                                    | 15                                                                                | 9                                                                                 | 7                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 8                                                                                  | 705                                                                                 | 34                                                                                  | 449                                                                                 | 1428                                                                                | 21                                                                                  |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                              |                                                                                   | 0.97                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 0.97                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 16                                                                                | 10                                                                                | 8                                                                                 | 21                                                                                | 3                                                                                 | 0                                                                                 | 9                                                                                  | 766                                                                                 | 37                                                                                  | 488                                                                                 | 1552                                                                                | 23                                                                                  |
| Peak Hour Factor                                                                                         | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                     | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                               | 66                                                                                | 37                                                                                | 21                                                                                | 118                                                                               | 14                                                                                |                                                                                   | 27                                                                                 | 1981                                                                                | 96                                                                                  | 559                                                                                 | 2583                                                                                | 38                                                                                  |
| Arrive On Green                                                                                          | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.00                                                                              | 0.03                                                                               | 1.00                                                                                | 1.00                                                                                | 0.18                                                                                | 0.81                                                                                | 0.81                                                                                |
| Sat Flow, veh/h                                                                                          | 501                                                                               | 592                                                                               | 336                                                                               | 1169                                                                              | 218                                                                               | 1415                                                                              | 1590                                                                               | 3079                                                                                | 149                                                                                 | 3086                                                                                | 3199                                                                                | 47                                                                                  |
| Grp Volume(v), veh/h                                                                                     | 34                                                                                | 0                                                                                 | 0                                                                                 | 24                                                                                | 0                                                                                 | 0                                                                                 | 9                                                                                  | 395                                                                                 | 408                                                                                 | 488                                                                                 | 769                                                                                 | 806                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1430                                                                              | 0                                                                                 | 0                                                                                 | 1388                                                                              | 0                                                                                 | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1641                                                                                | 1543                                                                                | 1586                                                                                | 1660                                                                                |
| Q Serve(g_s), s                                                                                          | 1.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 23.1                                                                                | 27.1                                                                                | 27.2                                                                                |
| Cycle Q Clear(g_c), s                                                                                    | 3.2                                                                               | 0.0                                                                               | 0.0                                                                               | 2.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                                | 0.0                                                                                 | 0.0                                                                                 | 23.1                                                                                | 27.1                                                                                | 27.2                                                                                |
| Prop In Lane                                                                                             | 0.47                                                                              |                                                                                   | 0.24                                                                              | 0.87                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.09                                                                                | 1.00                                                                                |                                                                                     | 0.03                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 124                                                                               | 0                                                                                 | 0                                                                                 | 131                                                                               | 0                                                                                 |                                                                                   | 27                                                                                 | 1021                                                                                | 1056                                                                                | 559                                                                                 | 1281                                                                                | 1340                                                                                |
| V/C Ratio(X)                                                                                             | 0.27                                                                              | 0.00                                                                              | 0.00                                                                              | 0.18                                                                              | 0.00                                                                              |                                                                                   | 0.33                                                                               | 0.39                                                                                | 0.39                                                                                | 0.87                                                                                | 0.60                                                                                | 0.60                                                                                |
| Avail Cap(c_a), veh/h                                                                                    | 324                                                                               | 0                                                                                 | 0                                                                                 | 316                                                                               | 0                                                                                 |                                                                                   | 361                                                                                | 1021                                                                                | 1056                                                                                | 658                                                                                 | 1281                                                                                | 1340                                                                                |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                               | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 0.96                                                                               | 0.96                                                                                | 0.96                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 67.6                                                                              | 0.0                                                                               | 0.0                                                                               | 67.0                                                                              | 0.0                                                                               | 0.0                                                                               | 71.6                                                                               | 0.0                                                                                 | 0.0                                                                                 | 59.7                                                                                | 5.4                                                                                 | 5.4                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 23.0                                                                               | 1.1                                                                                 | 1.0                                                                                 | 15.5                                                                                | 2.1                                                                                 | 2.0                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                                | 0.3                                                                                 | 0.3                                                                                 | 10.2                                                                                | 8.1                                                                                 | 8.4                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 68.4                                                                              | 0.0                                                                               | 0.0                                                                               | 67.5                                                                              | 0.0                                                                               | 0.0                                                                               | 94.6                                                                               | 1.1                                                                                 | 1.0                                                                                 | 75.3                                                                                | 7.5                                                                                 | 7.4                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                  | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                      |                                                                                   | 34                                                                                |                                                                                   |                                                                                   | 24                                                                                |                                                                                   |                                                                                    | 812                                                                                 |                                                                                     |                                                                                     | 2063                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                    |                                                                                   | 68.4                                                                              |                                                                                   |                                                                                   | 67.5                                                                              |                                                                                   |                                                                                    | 2.1                                                                                 |                                                                                     |                                                                                     | 23.5                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 7.3                                                                               | 128.1                                                                             |                                                                                   | 14.6                                                                              | 33.9                                                                              | 101.5                                                                             |                                                                                    | 14.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                             | 6.0                                                                               |                                                                                   | * 6.3                                                                             | * 5.7                                                                             | 6.0                                                                               |                                                                                    | * 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | * 33                                                                              | 69.0                                                                              |                                                                                   | * 30                                                                              | * 33                                                                              | 69.0                                                                              |                                                                                    | * 30                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 2.8                                                                               | 29.2                                                                              |                                                                                   | 4.1                                                                               | 25.1                                                                              | 2.0                                                                               |                                                                                    | 5.2                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                               | 1.5                                                                               |                                                                                   | 0.0                                                                               | 3.1                                                                               | 0.7                                                                               |                                                                                    | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                   |                                                                                   | 18.4                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |   |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 144                                                                               | 3                                                                                 | 15                                                                                | 3                                                                                 | 118                                                                               | 587                                                                               | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Future Volume (vph)  | 144                                                                               | 3                                                                                 | 15                                                                                | 3                                                                                 | 118                                                                               | 587                                                                               | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                                | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 15.0                                                                              | 15.0                                                                              | 102.0                                                                             | 87.0                                                                                | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 10.0%                                                                             | 10.0%                                                                             | 68.0%                                                                             | 58.0%                                                                               | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                 | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                                | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                 | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 14.6                                                                              | 13.3                                                                              | 14.6                                                                              | 8.4                                                                               | 118.0                                                                             | 116.7                                                                             | 103.3                                                                               | 103.3                                                                               | 103.3                                                                               |
| Actuated g/C Ratio   | 0.10                                                                              | 0.09                                                                              | 0.10                                                                              | 0.06                                                                              | 0.79                                                                              | 0.78                                                                              | 0.69                                                                                | 0.69                                                                                | 0.69                                                                                |
| v/c Ratio            | 0.58                                                                              | 0.62                                                                              | 0.07                                                                              | 0.13                                                                              | 0.53                                                                              | 0.28                                                                              | 0.07                                                                                | 0.63                                                                                | 0.31                                                                                |
| Control Delay        | 79.7                                                                              | 85.2                                                                              | 0.5                                                                               | 47.4                                                                              | 12.9                                                                              | 6.1                                                                               | 10.6                                                                                | 18.8                                                                                | 8.9                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.9                                                                                 | 1.0                                                                                 |
| Total Delay          | 79.7                                                                              | 85.2                                                                              | 0.5                                                                               | 47.4                                                                              | 12.9                                                                              | 6.1                                                                               | 10.6                                                                                | 19.7                                                                                | 9.8                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 | A                                                                                 | B                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 74.8                                                                              |                                                                                   | 47.4                                                                              |                                                                                   | 7.2                                                                               |                                                                                     | 17.8                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | D                                                                                 |                                                                                   | A                                                                                 |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 23 (15%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 18.6

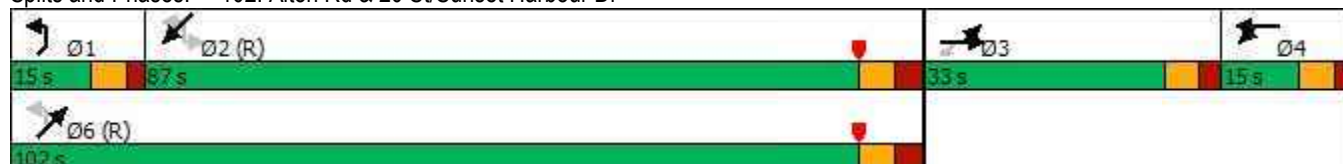
Intersection LOS: B

Intersection Capacity Utilization 71.3%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 84   | 83   | 17   | 12   | 134  | 680  | 33   | 1366 | 308  |
| v/c Ratio               | 0.58 | 0.62 | 0.07 | 0.13 | 0.53 | 0.28 | 0.07 | 0.63 | 0.31 |
| Control Delay           | 79.7 | 85.2 | 0.5  | 47.4 | 12.9 | 6.1  | 10.6 | 18.8 | 8.9  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.9  | 1.0  |
| Total Delay             | 79.7 | 85.2 | 0.5  | 47.4 | 12.9 | 6.1  | 10.6 | 19.7 | 9.8  |
| Queue Length 50th (ft)  | 84   | 84   | 0    | 5    | 21   | 69   | 11   | 397  | 86   |
| Queue Length 95th (ft)  | 138  | 137  | 0    | 27   | 64   | 157  | m26  | 704  | 207  |
| Internal Link Dist (ft) |      | 175  |      | 136  |      | 403  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 279  | 267  | 358  | 107  | 261  | 2446 | 448  | 2171 | 983  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 482  | 431  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 162  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.30 | 0.31 | 0.05 | 0.11 | 0.51 | 0.30 | 0.07 | 0.81 | 0.56 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 144                                                                               | 3                                                                                 | 15                                                                                | 2                                                                                 | 3                                                                                 | 6                                                                                 | 118                                                                                 | 587                                                                                 | 11                                                                                  | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Future Volume (vph)               | 144                                                                               | 3                                                                                 | 15                                                                                | 2                                                                                 | 3                                                                                 | 6                                                                                 | 118                                                                                 | 587                                                                                 | 11                                                                                  | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.97                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.92                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1517                                                                              |                                                                                   | 1577                                                                                | 3145                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1372                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.13                                                                                | 1.00                                                                                |                                                                                     | 0.39                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1517                                                                              |                                                                                   | 219                                                                                 | 3145                                                                                |                                                                                     | 653                                                                                 | 3154                                                                                | 1372                                                                                |
| Peak-hour factor, PHF             | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |
| Adj. Flow (vph)                   | 164                                                                               | 3                                                                                 | 17                                                                                | 2                                                                                 | 3                                                                                 | 7                                                                                 | 134                                                                                 | 667                                                                                 | 12                                                                                  | 33                                                                                  | 1366                                                                                | 308                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 15                                                                                | 0                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 44                                                                                  |
| Lane Group Flow (vph)             | 84                                                                                | 83                                                                                | 2                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 134                                                                                 | 680                                                                                 | 0                                                                                   | 33                                                                                  | 1366                                                                                | 264                                                                                 |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 10                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              | Split                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              |                                                                                   | 2.9                                                                               |                                                                                   | 113.9                                                                               | 113.9                                                                               |                                                                                     | 98.0                                                                                | 98.0                                                                                | 98.0                                                                                |
| Effective Green, g (s)            | 14.6                                                                              | 13.3                                                                              | 14.6                                                                              |                                                                                   | 4.2                                                                               |                                                                                   | 112.9                                                                               | 112.9                                                                               |                                                                                     | 99.5                                                                                | 99.5                                                                                | 99.5                                                                                |
| Actuated g/C Ratio                | 0.10                                                                              | 0.09                                                                              | 0.10                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.75                                                                                | 0.75                                                                                |                                                                                     | 0.66                                                                                | 0.66                                                                                | 0.66                                                                                |
| Clearance Time (s)                | 6.3                                                                               | 6.3                                                                               | 6.3                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 145                                                                               | 133                                                                               | 135                                                                               |                                                                                   | 42                                                                                |                                                                                   | 245                                                                                 | 2367                                                                                |                                                                                     | 433                                                                                 | 2092                                                                                | 910                                                                                 |
| v/s Ratio Prot                    | c0.06                                                                             | 0.06                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | c0.03                                                                               | 0.22                                                                                |                                                                                     |                                                                                     | c0.43                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.38                                                                                |                                                                                     |                                                                                     | 0.05                                                                                |                                                                                     | 0.19                                                                                |
| v/c Ratio                         | 0.58                                                                              | 0.62                                                                              | 0.01                                                                              |                                                                                   | 0.12                                                                              |                                                                                   | 0.55                                                                                | 0.29                                                                                |                                                                                     | 0.08                                                                                | 0.65                                                                                | 0.29                                                                                |
| Uniform Delay, d1                 | 64.8                                                                              | 65.9                                                                              | 61.2                                                                              |                                                                                   | 71.1                                                                              |                                                                                   | 11.8                                                                                | 5.9                                                                                 |                                                                                     | 9.0                                                                                 | 15.0                                                                                | 10.5                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.87                                                                                | 1.12                                                                                | 1.18                                                                                |
| Incremental Delay, d2             | 4.5                                                                               | 7.7                                                                               | 0.0                                                                               |                                                                                   | 1.0                                                                               |                                                                                   | 1.3                                                                                 | 0.3                                                                                 |                                                                                     | 0.3                                                                                 | 1.4                                                                                 | 0.7                                                                                 |
| Delay (s)                         | 69.3                                                                              | 73.6                                                                              | 61.2                                                                              |                                                                                   | 72.1                                                                              |                                                                                   | 13.1                                                                                | 6.2                                                                                 |                                                                                     | 8.1                                                                                 | 18.2                                                                                | 13.1                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | B                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 70.5                                                                              |                                                                                   |                                                                                   | 72.1                                                                              |                                                                                   |                                                                                     | 7.3                                                                                 |                                                                                     |                                                                                     | 17.1                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 18.0                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.63                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.1                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 71.3%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.

HCM 6th TWSC  
103: Alton Rd & 19 St

Intersection

Int Delay, s/veh 0.2

| Movement                 | WBL  | WBR                                                                               | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |      |  |  |      |      |  |
| Traffic Vol, veh/h       | 0    | 38                                                                                | 696                                                                               | 23   | 0    | 1176                                                                              |
| Future Vol, veh/h        | 0    | 38                                                                                | 696                                                                               | 23   | 0    | 1176                                                                              |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop | Stop                                                                              | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -    | None                                                                              | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | -    | 0                                                                                 | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92   | 92                                                                                | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3    | 3                                                                                 | 3                                                                                 | 3    | 3    | 3                                                                                 |
| Mvmt Flow                | 0    | 41                                                                                | 757                                                                               | 25   | 0    | 1278                                                                              |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | 391    | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | 4.5    | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | 3      | -      |
| Pot Cap-1 Maneuver   | 0      | 862    | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 0      | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | -      | 862    | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 9.4 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBT |
|-----------------------|-----|----------|-----|
| Capacity (veh/h)      | -   | - 862    | -   |
| HCM Lane V/C Ratio    | -   | - 0.048  | -   |
| HCM Control Delay (s) | -   | - 9.4    | -   |
| HCM Lane LOS          | -   | - A      | -   |
| HCM 95th %tile Q(veh) | -   | - 0.2    | -   |



# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 203                                                                               | 140                                                                               | 141                                                                               | 109                                                                               | 44                                                                                | 70                                                                                | 480                                                                                | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Future Volume (vph)  | 203                                                                               | 140                                                                               | 141                                                                               | 109                                                                               | 44                                                                                | 70                                                                                | 480                                                                                | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                 | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                               | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                               | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                              | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                              | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 23.2                                                                              | 12.6                                                                              | 29.8                                                                              | 15.9                                                                              | 15.9                                                                              | 99.6                                                                              | 93.4                                                                               | 9.1                                                                                 | 93.6                                                                                | 104.2                                                                               |
| Actuated g/C Ratio   | 0.15                                                                              | 0.08                                                                              | 0.20                                                                              | 0.11                                                                              | 0.11                                                                              | 0.66                                                                              | 0.62                                                                               | 0.06                                                                                | 0.62                                                                                | 0.69                                                                                |
| v/c Ratio            | 1.09                                                                              | 0.62                                                                              | 0.68                                                                              | 0.36                                                                              | 0.20                                                                              | 0.27                                                                              | 0.38                                                                               | 0.52                                                                                | 0.56                                                                                | 0.19                                                                                |
| Control Delay        | 142.3                                                                             | 74.7                                                                              | 66.6                                                                              | 64.3                                                                              | 1.9                                                                               | 10.1                                                                              | 15.0                                                                               | 86.2                                                                                | 18.3                                                                                | 5.1                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 142.3                                                                             | 74.7                                                                              | 66.6                                                                              | 64.3                                                                              | 1.9                                                                               | 10.1                                                                              | 15.0                                                                               | 86.2                                                                                | 18.3                                                                                | 5.1                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | B                                                                                  | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 113.7                                                                             |                                                                                   | 56.1                                                                              |                                                                                   |                                                                                   | 14.5                                                                               |                                                                                     | 18.9                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                  |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 25 (17%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.09

Intersection Signal Delay: 34.8

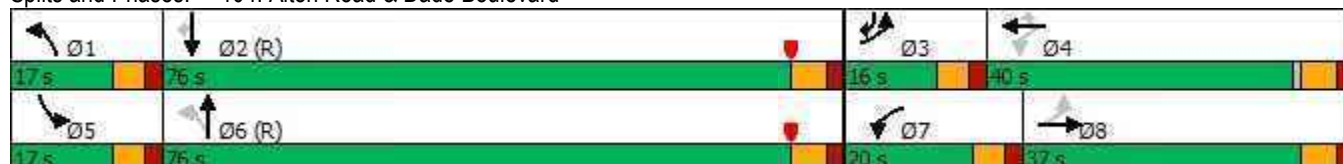
Intersection LOS: C

Intersection Capacity Utilization 74.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 223   | 164  | 155  | 120  | 48   | 77   | 720  | 49   | 1092 | 188  |
| v/c Ratio               | 1.09  | 0.62 | 0.68 | 0.36 | 0.20 | 0.27 | 0.38 | 0.52 | 0.56 | 0.19 |
| Control Delay           | 142.3 | 74.7 | 66.6 | 64.3 | 1.9  | 10.1 | 15.0 | 86.2 | 18.3 | 5.1  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 142.3 | 74.7 | 66.6 | 64.3 | 1.9  | 10.1 | 15.0 | 86.2 | 18.3 | 5.1  |
| Queue Length 50th (ft)  | ~222  | 81   | 133  | 57   | 0    | 22   | 171  | 47   | 311  | 33   |
| Queue Length 95th (ft)  | #380  | 118  | 201  | 90   | 0    | 43   | 246  | 92   | 415  | 68   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 204   | 647  | 235  | 735  | 400  | 328  | 1884 | 122  | 1967 | 973  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.09  | 0.25 | 0.66 | 0.16 | 0.12 | 0.23 | 0.38 | 0.40 | 0.56 | 0.19 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                        | 203                                                                               | 140                                                                               | 9                                                                                 | 141                                                                               | 109                                                                               | 44                                                                                | 70                                                                                 | 480                                                                                 | 176                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Future Volume (veh/h)                                                                                         | 203                                                                               | 140                                                                               | 9                                                                                 | 141                                                                               | 109                                                                               | 44                                                                                | 70                                                                                 | 480                                                                                 | 176                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.98                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 223                                                                               | 154                                                                               | 0                                                                                 | 155                                                                               | 120                                                                               | 0                                                                                 | 77                                                                                 | 527                                                                                 | 193                                                                                 | 49                                                                                  | 1092                                                                                | 188                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                                    | 256                                                                               | 305                                                                               |                                                                                   | 254                                                                               | 390                                                                               |                                                                                   | 261                                                                                | 1390                                                                                | 507                                                                                 | 61                                                                                  | 1969                                                                                | 957                                                                                 |
| Arrive On Green                                                                                               | 0.07                                                                              | 0.10                                                                              | 0.00                                                                              | 0.10                                                                              | 0.12                                                                              | 0.00                                                                              | 0.03                                                                               | 0.61                                                                                | 0.61                                                                                | 0.04                                                                                | 0.62                                                                                | 0.62                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                               | 2263                                                                                | 825                                                                                 | 1590                                                                                | 3173                                                                                | 1385                                                                                |
| Grp Volume(v), veh/h                                                                                          | 223                                                                               | 154                                                                               | 0                                                                                 | 155                                                                               | 120                                                                               | 0                                                                                 | 77                                                                                 | 369                                                                                 | 351                                                                                 | 49                                                                                  | 1092                                                                                | 188                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1502                                                                                | 1590                                                                                | 1586                                                                                | 1385                                                                                |
| Q Serve(g_s), s                                                                                               | 10.3                                                                              | 6.9                                                                               | 0.0                                                                               | 13.1                                                                              | 5.2                                                                               | 0.0                                                                               | 2.7                                                                                | 17.5                                                                                | 17.7                                                                                | 4.6                                                                                 | 29.9                                                                                | 7.3                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 10.3                                                                              | 6.9                                                                               | 0.0                                                                               | 13.1                                                                              | 5.2                                                                               | 0.0                                                                               | 2.7                                                                                | 17.5                                                                                | 17.7                                                                                | 4.6                                                                                 | 29.9                                                                                | 7.3                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.55                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 256                                                                               | 305                                                                               |                                                                                   | 254                                                                               | 390                                                                               |                                                                                   | 261                                                                                | 974                                                                                 | 922                                                                                 | 61                                                                                  | 1969                                                                                | 957                                                                                 |
| V/C Ratio(X)                                                                                                  | 0.87                                                                              | 0.50                                                                              |                                                                                   | 0.61                                                                              | 0.31                                                                              |                                                                                   | 0.29                                                                               | 0.38                                                                                | 0.38                                                                                | 0.80                                                                                | 0.55                                                                                | 0.20                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 256                                                                               | 656                                                                               |                                                                                   | 254                                                                               | 719                                                                               |                                                                                   | 330                                                                                | 974                                                                                 | 922                                                                                 | 120                                                                                 | 1969                                                                                | 957                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 62.5                                                                              | 64.4                                                                              | 0.0                                                                               | 54.2                                                                              | 60.0                                                                              | 0.0                                                                               | 13.4                                                                               | 14.5                                                                                | 14.6                                                                                | 71.6                                                                                | 16.5                                                                                | 8.4                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 25.2                                                                              | 1.0                                                                               | 0.0                                                                               | 3.1                                                                               | 0.3                                                                               | 0.0                                                                               | 0.2                                                                                | 1.1                                                                                 | 1.2                                                                                 | 8.9                                                                                 | 1.1                                                                                 | 0.5                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 5.9                                                                               | 2.9                                                                               | 0.0                                                                               | 5.5                                                                               | 2.1                                                                               | 0.0                                                                               | 1.0                                                                                | 6.6                                                                                 | 6.4                                                                                 | 2.0                                                                                 | 11.1                                                                                | 2.3                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 87.6                                                                              | 65.3                                                                              | 0.0                                                                               | 57.3                                                                              | 60.3                                                                              | 0.0                                                                               | 13.6                                                                               | 15.7                                                                                | 15.8                                                                                | 80.5                                                                                | 17.6                                                                                | 8.8                                                                                 |
| LnGrp LOS                                                                                                     | F                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                  | B                                                                                   | B                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                           |                                                                                   | 377                                                                               |                                                                                   |                                                                                   | 275                                                                               |                                                                                   |                                                                                    | 797                                                                                 |                                                                                     |                                                                                     | 1329                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 78.5                                                                              |                                                                                   |                                                                                   | 58.6                                                                              |                                                                                   |                                                                                    | 15.5                                                                                |                                                                                     |                                                                                     | 18.7                                                                                |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | B                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 10.5                                                                              | 99.1                                                                              | 16.0                                                                              | 24.4                                                                              | 11.4                                                                              | 98.1                                                                              | 20.0                                                                               | 20.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 11                                                                              | 70.0                                                                              | * 10                                                                              | 34.0                                                                              | * 11                                                                              | 70.0                                                                              | * 14                                                                               | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 4.7                                                                               | 31.9                                                                              | 12.3                                                                              | 7.2                                                                               | 6.6                                                                               | 19.7                                                                              | 15.1                                                                               | 8.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 1.7                                                                               | 0.0                                                                                | 0.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 29.8                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 330   | 271   | 281   | 471   | 19    |      |
| Future Volume (vph)  | 330   | 271   | 281   | 471   | 19    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 79.9  | 79.9  | 120.0 | 28.1  | 28.1  |      |
| Actuated g/C Ratio   | 0.67  | 0.67  | 1.00  | 0.23  | 0.23  |      |
| v/c Ratio            | 0.17  | 0.14  | 0.22  | 0.72  | 0.06  |      |
| Control Delay        | 8.4   | 8.3   | 0.3   | 47.4  | 12.2  |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 8.4   | 8.3   | 0.3   | 47.4  | 12.2  |      |
| LOS                  | A     | A     | A     | D     | B     |      |
| Approach Delay       | 8.4   | 4.2   |       | 46.0  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 20.2

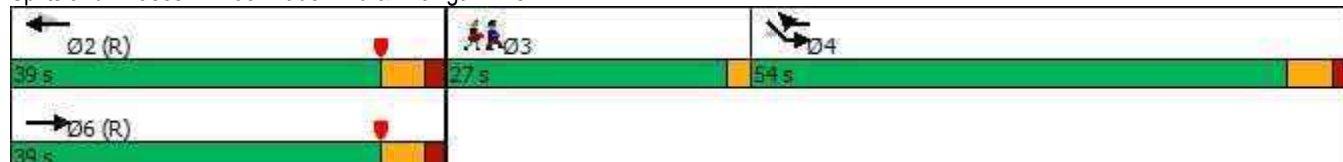
Intersection LOS: C

Intersection Capacity Utilization 35.1%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 402  | 330  | 343  | 574  | 23   |
| v/c Ratio               | 0.17 | 0.14 | 0.22 | 0.72 | 0.06 |
| Control Delay           | 8.4  | 8.3  | 0.3  | 47.4 | 12.2 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 8.4  | 8.3  | 0.3  | 47.4 | 12.2 |
| Queue Length 50th (ft)  | 56   | 45   | 0    | 212  | 0    |
| Queue Length 95th (ft)  | 84   | 69   | 0    | 224  | 17   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2334 | 2334 | 1568 | 1360 | 641  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.17 | 0.14 | 0.22 | 0.42 | 0.04 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT  | WBT   | WBR   | SEL                       | SER  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|
| Lane Configurations               |      | ↑↑   | ↑↑    | ↑     | ↑↑                        | ↑    |
| Traffic Volume (vph)              | 0    | 330  | 271   | 281   | 471                       | 19   |
| Future Volume (vph)               | 0    | 330  | 271   | 281   | 471                       | 19   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Lane Util. Factor                 |      | 0.95 | 0.95  | 1.00  | 0.97                      | 1.00 |
| Frpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Flpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Frt                               |      | 1.00 | 1.00  | 0.85  | 1.00                      | 0.85 |
| Flt Protected                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (prot)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Flt Permitted                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (perm)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Peak-hour factor, PHF             | 0.82 | 0.82 | 0.82  | 0.82  | 0.82                      | 0.82 |
| Adj. Flow (vph)                   | 0    | 402  | 330   | 343   | 574                       | 23   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 34    | 0                         | 18   |
| Lane Group Flow (vph)             | 0    | 402  | 330   | 309   | 574                       | 5    |
| Confl. Peds. (#/hr)               | 4    |      |       |       |                           |      |
| Turn Type                         |      | NA   | NA    | pm+ov | Prot                      | Perm |
| Protected Phases                  |      | 6    | 2     | 4     | 4                         |      |
| Permitted Phases                  |      |      |       | 2     |                           | 4    |
| Actuated Green, G (s)             |      | 79.9 | 79.9  | 108.0 | 28.1                      | 28.1 |
| Effective Green, g (s)            |      | 79.9 | 79.9  | 108.0 | 28.1                      | 28.1 |
| Actuated g/C Ratio                |      | 0.67 | 0.67  | 0.90  | 0.23                      | 0.23 |
| Clearance Time (s)                |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Vehicle Extension (s)             |      | 1.0  | 1.0   | 3.5   | 3.5                       | 3.5  |
| Lane Grp Cap (vph)                |      | 2333 | 2333  | 1568  | 796                       | 367  |
| v/s Ratio Prot                    |      | 0.11 | 0.09  | c0.05 | c0.17                     |      |
| v/s Ratio Perm                    |      |      |       | 0.15  |                           | 0.00 |
| v/c Ratio                         |      | 0.17 | 0.14  | 0.20  | 0.72                      | 0.01 |
| Uniform Delay, d1                 |      | 7.6  | 7.4   | 0.7   | 42.3                      | 35.3 |
| Progression Factor                |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Incremental Delay, d2             |      | 0.2  | 0.1   | 0.1   | 3.3                       | 0.0  |
| Delay (s)                         |      | 7.7  | 7.5   | 0.8   | 45.7                      | 35.3 |
| Level of Service                  |      | A    | A     | A     | D                         | D    |
| Approach Delay (s)                |      | 7.7  | 4.1   |       | 45.3                      |      |
| Approach LOS                      |      | A    | A     |       | D                         |      |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |
| HCM 2000 Control Delay            |      |      | 19.7  |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |      | 0.35  |       |                           |      |
| Actuated Cycle Length (s)         |      |      | 120.0 |       | Sum of lost time (s)      | 14.0 |
| Intersection Capacity Utilization |      |      | 35.1% |       | ICU Level of Service      | A    |
| Analysis Period (min)             |      |      | 15    |       |                           |      |
| c Critical Lane Group             |      |      |       |       |                           |      |

## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.

# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 15                                                                                | 10                                                                                | 19                                                                                | 3                                                                                 | 250                                                                               | 9                                                                                 | 707                                                                                 | 454                                                                                 | 1428                                                                                |
| Future Volume (vph)  | 15                                                                                | 10                                                                                | 19                                                                                | 3                                                                                 | 250                                                                               | 9                                                                                 | 707                                                                                 | 454                                                                                 | 1428                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 38.7                                                                              | 75.0                                                                                | 38.7                                                                                | 75.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 25.8%                                                                             | 50.0%                                                                               | 25.8%                                                                               | 50.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 9.5                                                                               |                                                                                   | 9.5                                                                               | 150.0                                                                             | 10.6                                                                              | 94.3                                                                                | 31.9                                                                                | 125.7                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.06                                                                              |                                                                                   | 0.06                                                                              | 1.00                                                                              | 0.07                                                                              | 0.63                                                                                | 0.21                                                                                | 0.84                                                                                |
| v/c Ratio            |                                                                                   | 0.38                                                                              |                                                                                   | 0.27                                                                              | 0.19                                                                              | 0.09                                                                              | 0.40                                                                                | 0.76                                                                                | 0.60                                                                                |
| Control Delay        |                                                                                   | 66.0                                                                              |                                                                                   | 74.0                                                                              | 0.3                                                                               | 79.9                                                                              | 16.1                                                                                | 63.1                                                                                | 7.5                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                                 | 0.0                                                                                 | 0.5                                                                                 |
| Total Delay          |                                                                                   | 66.0                                                                              |                                                                                   | 74.0                                                                              | 0.3                                                                               | 79.9                                                                              | 16.5                                                                                | 63.1                                                                                | 8.0                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | E                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 66.0                                                                              |                                                                                   | 6.3                                                                               |                                                                                   |                                                                                   | 17.3                                                                                |                                                                                     | 21.1                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | C                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 6 (4%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.76

Intersection Signal Delay: 19.3

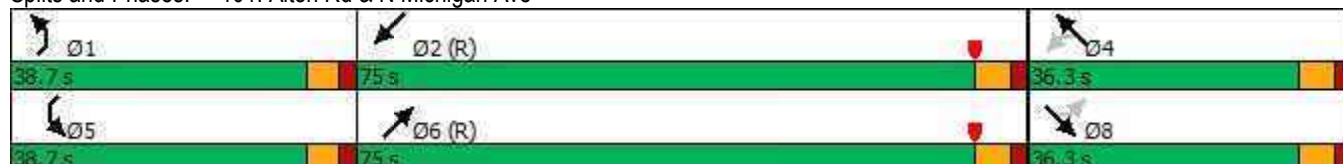
Intersection LOS: B

Intersection Capacity Utilization 72.7%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave





## Queues

### 101: Alton Rd & N Michigan Ave

|                                                                   |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Lane Group                                                        | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                |
| Lane Group Flow (vph)                                             | 35                                                                                | 24                                                                                | 272                                                                               | 10                                                                                | 806                                                                               | 493                                                                               | 1575                                                                               |
| v/c Ratio                                                         | 0.38                                                                              | 0.27                                                                              | 0.19                                                                              | 0.09                                                                              | 0.40                                                                              | 0.76                                                                              | 0.60                                                                               |
| Control Delay                                                     | 66.0                                                                              | 74.0                                                                              | 0.3                                                                               | 79.9                                                                              | 16.1                                                                              | 63.1                                                                              | 7.5                                                                                |
| Queue Delay                                                       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.4                                                                               | 0.0                                                                               | 0.5                                                                                |
| Total Delay                                                       | 66.0                                                                              | 74.0                                                                              | 0.3                                                                               | 79.9                                                                              | 16.5                                                                              | 63.1                                                                              | 8.0                                                                                |
| Queue Length 50th (ft)                                            | 26                                                                                | 23                                                                                | 0                                                                                 | 10                                                                                | 263                                                                               | 235                                                                               | 174                                                                                |
| Queue Length 95th (ft)                                            | 64                                                                                | 54                                                                                | 0                                                                                 | m30                                                                               | 355                                                                               | 282                                                                               | 487                                                                                |
| Internal Link Dist (ft)                                           | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                |
| Turn Bay Length (ft)                                              |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 265                                                                               |                                                                                    |
| Base Capacity (vph)                                               | 285                                                                               | 286                                                                               | 1411                                                                              | 357                                                                               | 2001                                                                              | 694                                                                               | 2637                                                                               |
| Starvation Cap Reductn                                            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 665                                                                               | 0                                                                                 | 0                                                                                  |
| Spillback Cap Reductn                                             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 543                                                                                |
| Storage Cap Reductn                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Reduced v/c Ratio                                                 | 0.12                                                                              | 0.08                                                                              | 0.19                                                                              | 0.03                                                                              | 0.60                                                                              | 0.71                                                                              | 0.75                                                                               |
| <b>Intersection Summary</b>                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |
| m Volume for 95th percentile queue is metered by upstream signal. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |

# HCM 6th Signalized Intersection Summary

## 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations                                                                                      |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 15                                                                                | 10                                                                                | 7                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 9                                                                                  | 707                                                                                 | 35                                                                                  | 454                                                                                 | 1428                                                                                | 21                                                                                  |
| Future Volume (veh/h)                                                                                    | 15                                                                                | 10                                                                                | 7                                                                                 | 19                                                                                | 3                                                                                 | 250                                                                               | 9                                                                                  | 707                                                                                 | 35                                                                                  | 454                                                                                 | 1428                                                                                | 21                                                                                  |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                              |                                                                                   | 0.97                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.99                                                                                | 1.00                                                                                |                                                                                     | 0.97                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 16                                                                                | 11                                                                                | 8                                                                                 | 21                                                                                | 3                                                                                 | 0                                                                                 | 10                                                                                 | 768                                                                                 | 38                                                                                  | 493                                                                                 | 1552                                                                                | 23                                                                                  |
| Peak Hour Factor                                                                                         | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                              | 0.92                                                                               | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                | 0.92                                                                                |
| Percent Heavy Veh, %                                                                                     | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                               | 65                                                                                | 39                                                                                | 20                                                                                | 118                                                                               | 14                                                                                |                                                                                   | 29                                                                                 | 1974                                                                                | 98                                                                                  | 563                                                                                 | 2580                                                                                | 38                                                                                  |
| Arrive On Green                                                                                          | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.06                                                                              | 0.00                                                                              | 0.04                                                                               | 1.00                                                                                | 1.00                                                                                | 0.18                                                                                | 0.81                                                                                | 0.81                                                                                |
| Sat Flow, veh/h                                                                                          | 483                                                                               | 626                                                                               | 329                                                                               | 1171                                                                              | 218                                                                               | 1415                                                                              | 1590                                                                               | 3075                                                                                | 152                                                                                 | 3086                                                                                | 3199                                                                                | 47                                                                                  |
| Grp Volume(v), veh/h                                                                                     | 35                                                                                | 0                                                                                 | 0                                                                                 | 24                                                                                | 0                                                                                 | 0                                                                                 | 10                                                                                 | 396                                                                                 | 410                                                                                 | 493                                                                                 | 769                                                                                 | 806                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1437                                                                              | 0                                                                                 | 0                                                                                 | 1390                                                                              | 0                                                                                 | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1640                                                                                | 1543                                                                                | 1586                                                                                | 1660                                                                                |
| Q Serve(g_s), s                                                                                          | 1.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 23.3                                                                                | 27.3                                                                                | 27.4                                                                                |
| Cycle Q Clear(g_c), s                                                                                    | 3.3                                                                               | 0.0                                                                               | 0.0                                                                               | 2.1                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                                | 0.0                                                                                 | 0.0                                                                                 | 23.3                                                                                | 27.3                                                                                | 27.4                                                                                |
| Prop In Lane                                                                                             | 0.46                                                                              |                                                                                   | 0.23                                                                              | 0.87                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.09                                                                                | 1.00                                                                                |                                                                                     | 0.03                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 124                                                                               | 0                                                                                 | 0                                                                                 | 131                                                                               | 0                                                                                 |                                                                                   | 29                                                                                 | 1019                                                                                | 1053                                                                                | 563                                                                                 | 1279                                                                                | 1339                                                                                |
| V/C Ratio(X)                                                                                             | 0.28                                                                              | 0.00                                                                              | 0.00                                                                              | 0.18                                                                              | 0.00                                                                              |                                                                                   | 0.35                                                                               | 0.39                                                                                | 0.39                                                                                | 0.88                                                                                | 0.60                                                                                | 0.60                                                                                |
| Avail Cap(c_a), veh/h                                                                                    | 325                                                                               | 0                                                                                 | 0                                                                                 | 316                                                                               | 0                                                                                 |                                                                                   | 361                                                                                | 1019                                                                                | 1053                                                                                | 658                                                                                 | 1279                                                                                | 1339                                                                                |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                               | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 0.96                                                                               | 0.96                                                                                | 0.96                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 67.6                                                                              | 0.0                                                                               | 0.0                                                                               | 67.0                                                                              | 0.0                                                                               | 0.0                                                                               | 71.4                                                                               | 0.0                                                                                 | 0.0                                                                                 | 59.7                                                                                | 5.4                                                                                 | 5.5                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 23.5                                                                               | 1.1                                                                                 | 1.0                                                                                 | 15.7                                                                                | 2.1                                                                                 | 2.0                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.9                                                                               | 0.0                                                                               | 0.0                                                                               | 0.6                                                                                | 0.3                                                                                 | 0.3                                                                                 | 10.3                                                                                | 8.2                                                                                 | 8.5                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 68.5                                                                              | 0.0                                                                               | 0.0                                                                               | 67.5                                                                              | 0.0                                                                               | 0.0                                                                               | 94.9                                                                               | 1.1                                                                                 | 1.0                                                                                 | 75.4                                                                                | 7.5                                                                                 | 7.5                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                  | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                      |                                                                                   | 35                                                                                |                                                                                   |                                                                                   | 24                                                                                |                                                                                   |                                                                                    | 816                                                                                 |                                                                                     |                                                                                     | 2068                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                    |                                                                                   | 68.5                                                                              |                                                                                   |                                                                                   | 67.5                                                                              |                                                                                   |                                                                                    | 2.2                                                                                 |                                                                                     |                                                                                     | 23.7                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 7.4                                                                               | 128.0                                                                             |                                                                                   | 14.6                                                                              | 34.1                                                                              | 101.3                                                                             |                                                                                    | 14.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                             | 6.0                                                                               |                                                                                   | * 6.3                                                                             | * 5.7                                                                             | 6.0                                                                               |                                                                                    | * 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | * 33                                                                              | 69.0                                                                              |                                                                                   | * 30                                                                              | * 33                                                                              | 69.0                                                                              |                                                                                    | * 30                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 2.9                                                                               | 29.4                                                                              |                                                                                   | 4.1                                                                               | 25.3                                                                              | 2.0                                                                               |                                                                                    | 5.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                               | 1.5                                                                               |                                                                                   | 0.0                                                                               | 3.0                                                                               | 0.7                                                                               |                                                                                    | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                   |                                                                                   | 18.6                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |   |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 145                                                                               | 3                                                                                 | 15                                                                                | 3                                                                                 | 119                                                                               | 590                                                                               | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Future Volume (vph)  | 145                                                                               | 3                                                                                 | 15                                                                                | 3                                                                                 | 119                                                                               | 590                                                                               | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                   |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                                | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 15.0                                                                              | 15.0                                                                              | 102.0                                                                             | 87.0                                                                                | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 10.0%                                                                             | 10.0%                                                                             | 68.0%                                                                             | 58.0%                                                                               | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                 | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                                | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                 | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 14.6                                                                              | 13.3                                                                              | 14.6                                                                              | 8.4                                                                               | 118.0                                                                             | 116.7                                                                             | 103.2                                                                               | 103.2                                                                               | 103.2                                                                               |
| Actuated g/C Ratio   | 0.10                                                                              | 0.09                                                                              | 0.10                                                                              | 0.06                                                                              | 0.79                                                                              | 0.78                                                                              | 0.69                                                                                | 0.69                                                                                | 0.69                                                                                |
| v/c Ratio            | 0.58                                                                              | 0.63                                                                              | 0.07                                                                              | 0.13                                                                              | 0.53                                                                              | 0.28                                                                              | 0.07                                                                                | 0.63                                                                                | 0.31                                                                                |
| Control Delay        | 79.7                                                                              | 85.8                                                                              | 0.5                                                                               | 47.4                                                                              | 12.9                                                                              | 6.1                                                                               | 8.8                                                                                 | 17.5                                                                                | 7.8                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.9                                                                                 | 1.0                                                                                 |
| Total Delay          | 79.7                                                                              | 85.8                                                                              | 0.5                                                                               | 47.4                                                                              | 12.9                                                                              | 6.1                                                                               | 8.8                                                                                 | 18.4                                                                                | 8.8                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | D                                                                                 | B                                                                                 | A                                                                                 | A                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 75.2                                                                              |                                                                                   | 47.4                                                                              |                                                                                   | 7.2                                                                               |                                                                                     | 16.5                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | D                                                                                 |                                                                                   | A                                                                                 |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 23 (15%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.63

Intersection Signal Delay: 17.8

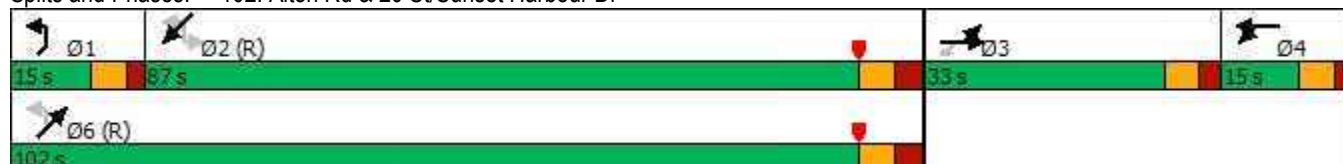
Intersection LOS: B

Intersection Capacity Utilization 71.4%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 84   | 84   | 17   | 12   | 135  | 683  | 33   | 1366 | 308  |
| v/c Ratio               | 0.58 | 0.63 | 0.07 | 0.13 | 0.53 | 0.28 | 0.07 | 0.63 | 0.31 |
| Control Delay           | 79.7 | 85.8 | 0.5  | 47.4 | 12.9 | 6.1  | 8.8  | 17.5 | 7.8  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.9  | 1.0  |
| Total Delay             | 79.7 | 85.8 | 0.5  | 47.4 | 12.9 | 6.1  | 8.8  | 18.4 | 8.8  |
| Queue Length 50th (ft)  | 84   | 85   | 0    | 5    | 21   | 69   | 11   | 400  | 86   |
| Queue Length 95th (ft)  | 138  | 140  | 0    | 27   | 65   | 158  | m24  | 705  | 206  |
| Internal Link Dist (ft) |      | 175  |      | 136  |      | 403  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 279  | 267  | 358  | 107  | 261  | 2446 | 447  | 2169 | 982  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 481  | 431  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 175  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.30 | 0.31 | 0.05 | 0.11 | 0.52 | 0.30 | 0.07 | 0.81 | 0.56 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 145                                                                               | 3                                                                                 | 15                                                                                | 2                                                                                 | 3                                                                                 | 6                                                                                 | 119                                                                                 | 590                                                                                 | 11                                                                                  | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Future Volume (vph)               | 145                                                                               | 3                                                                                 | 15                                                                                | 2                                                                                 | 3                                                                                 | 6                                                                                 | 119                                                                                 | 590                                                                                 | 11                                                                                  | 29                                                                                  | 1202                                                                                | 271                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 5.0                                                                               | 6.3                                                                               | 5.0                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.97                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.92                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1517                                                                              |                                                                                   | 1577                                                                                | 3145                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1372                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 0.99                                                                              |                                                                                   | 0.13                                                                                | 1.00                                                                                |                                                                                     | 0.39                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1505                                                                              | 1390                                                                              |                                                                                   | 1517                                                                              |                                                                                   | 219                                                                                 | 3145                                                                                |                                                                                     | 651                                                                                 | 3154                                                                                | 1372                                                                                |
| Peak-hour factor, PHF             | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                | 0.88                                                                                |
| Adj. Flow (vph)                   | 165                                                                               | 3                                                                                 | 17                                                                                | 2                                                                                 | 3                                                                                 | 7                                                                                 | 135                                                                                 | 670                                                                                 | 12                                                                                  | 33                                                                                  | 1366                                                                                | 308                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 15                                                                                | 0                                                                                 | 7                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 44                                                                                  |
| Lane Group Flow (vph)             | 84                                                                                | 84                                                                                | 2                                                                                 | 0                                                                                 | 5                                                                                 | 0                                                                                 | 135                                                                                 | 683                                                                                 | 0                                                                                   | 33                                                                                  | 1366                                                                                | 264                                                                                 |
| Confl. Peds. (#/hr)               |                                                                                   |                                                                                   | 1                                                                                 | 1                                                                                 |                                                                                   |                                                                                   | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 10                                                                                  |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              | Split                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 13.3                                                                              | 13.3                                                                              | 13.3                                                                              |                                                                                   | 2.9                                                                               |                                                                                   | 113.9                                                                               | 113.9                                                                               |                                                                                     | 97.9                                                                                | 97.9                                                                                | 97.9                                                                                |
| Effective Green, g (s)            | 14.6                                                                              | 13.3                                                                              | 14.6                                                                              |                                                                                   | 4.2                                                                               |                                                                                   | 112.9                                                                               | 112.9                                                                               |                                                                                     | 99.4                                                                                | 99.4                                                                                | 99.4                                                                                |
| Actuated g/C Ratio                | 0.10                                                                              | 0.09                                                                              | 0.10                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.75                                                                                | 0.75                                                                                |                                                                                     | 0.66                                                                                | 0.66                                                                                | 0.66                                                                                |
| Clearance Time (s)                | 6.3                                                                               | 6.3                                                                               | 6.3                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 145                                                                               | 133                                                                               | 135                                                                               |                                                                                   | 42                                                                                |                                                                                   | 246                                                                                 | 2367                                                                                |                                                                                     | 431                                                                                 | 2090                                                                                | 909                                                                                 |
| v/s Ratio Prot                    | c0.06                                                                             | 0.06                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | c0.03                                                                               | 0.22                                                                                |                                                                                     |                                                                                     | c0.43                                                                               |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.38                                                                                |                                                                                     |                                                                                     | 0.05                                                                                |                                                                                     | 0.19                                                                                |
| v/c Ratio                         | 0.58                                                                              | 0.63                                                                              | 0.01                                                                              |                                                                                   | 0.12                                                                              |                                                                                   | 0.55                                                                                | 0.29                                                                                |                                                                                     | 0.08                                                                                | 0.65                                                                                | 0.29                                                                                |
| Uniform Delay, d1                 | 64.8                                                                              | 66.0                                                                              | 61.2                                                                              |                                                                                   | 71.1                                                                              |                                                                                   | 11.9                                                                                | 5.9                                                                                 |                                                                                     | 9.0                                                                                 | 15.1                                                                                | 10.6                                                                                |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.72                                                                                | 1.04                                                                                | 1.03                                                                                |
| Incremental Delay, d2             | 4.5                                                                               | 8.3                                                                               | 0.0                                                                               |                                                                                   | 1.0                                                                               |                                                                                   | 1.3                                                                                 | 0.3                                                                                 |                                                                                     | 0.3                                                                                 | 1.4                                                                                 | 0.7                                                                                 |
| Delay (s)                         | 69.3                                                                              | 74.2                                                                              | 61.2                                                                              |                                                                                   | 72.1                                                                              |                                                                                   | 13.2                                                                                | 6.2                                                                                 |                                                                                     | 6.7                                                                                 | 17.0                                                                                | 11.5                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | B                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 70.8                                                                              |                                                                                   |                                                                                   | 72.1                                                                              |                                                                                   |                                                                                     | 7.3                                                                                 |                                                                                     |                                                                                     | 15.8                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 17.2                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.63                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 24.1                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 71.4%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.

HCM 6th TWSC  
103: Alton Rd & 19 St

Intersection

Int Delay, s/veh 0.2

| Movement                 | WBL  | WBR                                                                               | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |      |  |  |      |      |  |
| Traffic Vol, veh/h       | 0    | 42                                                                                | 696                                                                               | 38   | 0    | 1176                                                                              |
| Future Vol, veh/h        | 0    | 42                                                                                | 696                                                                               | 38   | 0    | 1176                                                                              |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop | Stop                                                                              | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -    | None                                                                              | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | -    | 0                                                                                 | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92   | 92                                                                                | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3    | 3                                                                                 | 3                                                                                 | 3    | 3    | 3                                                                                 |
| Mvmt Flow                | 0    | 46                                                                                | 757                                                                               | 41   | 0    | 1278                                                                              |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | 399    | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | 4.5    | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | 3      | -      |
| Pot Cap-1 Maneuver   | 0      | 857    | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 0      | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | -      | 857    | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB  | NB | SB |
|----------------------|-----|----|----|
| HCM Control Delay, s | 9.4 | 0  | 0  |
| HCM LOS              | A   |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBT |
|-----------------------|-----|----------|-----|
| Capacity (veh/h)      | -   | - 857    | -   |
| HCM Lane V/C Ratio    | -   | - 0.053  | -   |
| HCM Control Delay (s) | -   | - 9.4    | -   |
| HCM Lane LOS          | -   | - A      | -   |
| HCM 95th %tile Q(veh) | -   | - 0.2    | -   |

# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |   |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 208                                                                               | 140                                                                               | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                | 486                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Future Volume (vph)  | 208                                                                               | 140                                                                               | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                | 486                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                  | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                                | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                                | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                               | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                 | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 23.2                                                                              | 12.6                                                                              | 29.9                                                                              | 16.0                                                                              | 16.0                                                                              | 99.5                                                                              | 93.4                                                                                | 9.1                                                                                 | 93.5                                                                                | 104.1                                                                               |
| Actuated g/C Ratio   | 0.15                                                                              | 0.08                                                                              | 0.20                                                                              | 0.11                                                                              | 0.11                                                                              | 0.66                                                                              | 0.62                                                                                | 0.06                                                                                | 0.62                                                                                | 0.69                                                                                |
| v/c Ratio            | 1.12                                                                              | 0.62                                                                              | 0.69                                                                              | 0.37                                                                              | 0.22                                                                              | 0.27                                                                              | 0.39                                                                                | 0.52                                                                                | 0.56                                                                                | 0.19                                                                                |
| Control Delay        | 151.2                                                                             | 74.7                                                                              | 67.6                                                                              | 64.5                                                                              | 2.1                                                                               | 10.1                                                                              | 15.1                                                                                | 86.2                                                                                | 18.3                                                                                | 5.1                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 151.2                                                                             | 74.7                                                                              | 67.6                                                                              | 64.5                                                                              | 2.1                                                                               | 10.1                                                                              | 15.1                                                                                | 86.2                                                                                | 18.3                                                                                | 5.1                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | B                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 119.2                                                                             |                                                                                   | 56.0                                                                              |                                                                                   |                                                                                   | 14.6                                                                                |                                                                                     | 18.9                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 25 (17%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.12

Intersection Signal Delay: 35.8

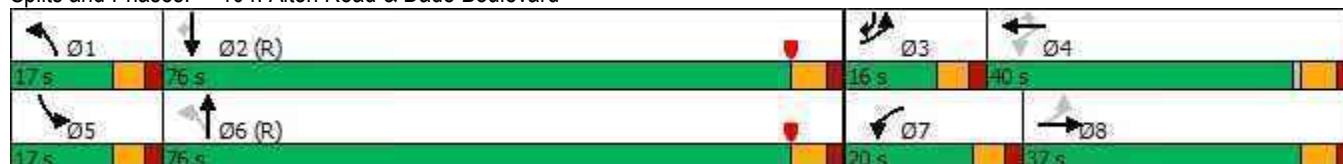
Intersection LOS: D

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

### Splits and Phases: 104: Alton Road & Dade Boulevard





## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 229   | 164  | 158  | 123  | 53   | 77   | 727  | 49   | 1092 | 188  |
| v/c Ratio               | 1.12  | 0.62 | 0.69 | 0.37 | 0.22 | 0.27 | 0.39 | 0.52 | 0.56 | 0.19 |
| Control Delay           | 151.2 | 74.7 | 67.6 | 64.5 | 2.1  | 10.1 | 15.1 | 86.2 | 18.3 | 5.1  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 151.2 | 74.7 | 67.6 | 64.5 | 2.1  | 10.1 | 15.1 | 86.2 | 18.3 | 5.1  |
| Queue Length 50th (ft)  | ~235  | 81   | 135  | 59   | 0    | 22   | 174  | 47   | 311  | 33   |
| Queue Length 95th (ft)  | #405  | 118  | 204  | 91   | 0    | 43   | 250  | 92   | 415  | 68   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 204   | 647  | 234  | 735  | 400  | 328  | 1882 | 122  | 1966 | 972  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.12  | 0.25 | 0.68 | 0.17 | 0.13 | 0.23 | 0.39 | 0.40 | 0.56 | 0.19 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                              |  |                                                                                    |  |  |                                                                                    |  |  |                                                                                      |  |  |                                                                                      |  |
|------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                                                                                                                 | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                 | WBR                                                                               | NBL                                                                                | NBT                                                                                                                                                                     | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                     | SBR                                                                                 |
| Lane Configurations          |  |   |                                                                                   |  |   |  |  |   |                                                                                     |  |   |  |
| Traffic Volume (veh/h)       | 208                                                                               | 140                                                                                                                                                                 | 9                                                                                 | 144                                                                               | 112                                                                                                                                                                 | 48                                                                                | 70                                                                                 | 486                                                                                                                                                                     | 176                                                                                 | 45                                                                                  | 994                                                                                                                                                                     | 171                                                                                 |
| Future Volume (veh/h)        | 208                                                                               | 140                                                                                                                                                                 | 9                                                                                 | 144                                                                               | 112                                                                                                                                                                 | 48                                                                                | 70                                                                                 | 486                                                                                                                                                                     | 176                                                                                 | 45                                                                                  | 994                                                                                                                                                                     | 171                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                   | 0                                                                                 | 0                                                                                  | 0                                                                                                                                                                       | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                       | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 0.98                                                                              |                                                                                                                                                                     | 1.00                                                                              | 0.99                                                                              |                                                                                                                                                                     | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.98                                                                                | 1.00                                                                                |                                                                                                                                                                         | 0.98                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                                                                                                     |                                                                                   | No                                                                                |                                                                                                                                                                     |                                                                                   | No                                                                                 |                                                                                                                                                                         |                                                                                     | No                                                                                  |                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1670                                                                              | 1670                                                                                                                                                                | 1670                                                                              | 1670                                                                              | 1670                                                                                                                                                                | 1670                                                                              | 1670                                                                               | 1670                                                                                                                                                                    | 1670                                                                                | 1670                                                                                | 1670                                                                                                                                                                    | 1670                                                                                |
| Adj Flow Rate, veh/h         | 229                                                                               | 154                                                                                                                                                                 | 0                                                                                 | 158                                                                               | 123                                                                                                                                                                 | 0                                                                                 | 77                                                                                 | 534                                                                                                                                                                     | 193                                                                                 | 49                                                                                  | 1092                                                                                                                                                                    | 188                                                                                 |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                                                                                                                | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                                                                                                    | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                                                                                                    | 0.91                                                                                |
| Percent Heavy Veh, %         | 3                                                                                 | 3                                                                                                                                                                   | 3                                                                                 | 3                                                                                 | 3                                                                                                                                                                   | 3                                                                                 | 3                                                                                  | 3                                                                                                                                                                       | 3                                                                                   | 3                                                                                   | 3                                                                                                                                                                       | 3                                                                                   |
| Cap, veh/h                   | 255                                                                               | 305                                                                                                                                                                 |                                                                                   | 254                                                                               | 390                                                                                                                                                                 |                                                                                   | 261                                                                                | 1395                                                                                                                                                                    | 502                                                                                 | 61                                                                                  | 1969                                                                                                                                                                    | 957                                                                                 |
| Arrive On Green              | 0.07                                                                              | 0.10                                                                                                                                                                | 0.00                                                                              | 0.10                                                                              | 0.12                                                                                                                                                                | 0.00                                                                              | 0.03                                                                               | 0.61                                                                                                                                                                    | 0.61                                                                                | 0.04                                                                                | 0.62                                                                                                                                                                    | 0.62                                                                                |
| Sat Flow, veh/h              | 1590                                                                              | 3256                                                                                                                                                                | 0                                                                                 | 1590                                                                              | 3173                                                                                                                                                                | 1415                                                                              | 1590                                                                               | 2272                                                                                                                                                                    | 818                                                                                 | 1590                                                                                | 3173                                                                                                                                                                    | 1385                                                                                |
| Grp Volume(v), veh/h         | 229                                                                               | 154                                                                                                                                                                 | 0                                                                                 | 158                                                                               | 123                                                                                                                                                                 | 0                                                                                 | 77                                                                                 | 372                                                                                                                                                                     | 355                                                                                 | 49                                                                                  | 1092                                                                                                                                                                    | 188                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1590                                                                              | 1586                                                                                                                                                                | 0                                                                                 | 1590                                                                              | 1586                                                                                                                                                                | 1415                                                                              | 1590                                                                               | 1586                                                                                                                                                                    | 1503                                                                                | 1590                                                                                | 1586                                                                                                                                                                    | 1385                                                                                |
| Q Serve(g_s), s              | 10.3                                                                              | 6.9                                                                                                                                                                 | 0.0                                                                               | 13.3                                                                              | 5.3                                                                                                                                                                 | 0.0                                                                               | 2.7                                                                                | 17.7                                                                                                                                                                    | 17.9                                                                                | 4.6                                                                                 | 29.9                                                                                                                                                                    | 7.3                                                                                 |
| Cycle Q Clear(g_c), s        | 10.3                                                                              | 6.9                                                                                                                                                                 | 0.0                                                                               | 13.3                                                                              | 5.3                                                                                                                                                                 | 0.0                                                                               | 2.7                                                                                | 17.7                                                                                                                                                                    | 17.9                                                                                | 4.6                                                                                 | 29.9                                                                                                                                                                    | 7.3                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                                                                                                     | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                     | 1.00                                                                              | 1.00                                                                               |                                                                                                                                                                         | 0.54                                                                                | 1.00                                                                                |                                                                                                                                                                         | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 255                                                                               | 305                                                                                                                                                                 |                                                                                   | 254                                                                               | 390                                                                                                                                                                 |                                                                                   | 261                                                                                | 974                                                                                                                                                                     | 923                                                                                 | 61                                                                                  | 1969                                                                                                                                                                    | 957                                                                                 |
| V/C Ratio(X)                 | 0.90                                                                              | 0.50                                                                                                                                                                |                                                                                   | 0.62                                                                              | 0.32                                                                                                                                                                |                                                                                   | 0.29                                                                               | 0.38                                                                                                                                                                    | 0.38                                                                                | 0.80                                                                                | 0.55                                                                                                                                                                    | 0.20                                                                                |
| Avail Cap(c_a), veh/h        | 255                                                                               | 656                                                                                                                                                                 |                                                                                   | 254                                                                               | 719                                                                                                                                                                 |                                                                                   | 330                                                                                | 974                                                                                                                                                                     | 923                                                                                 | 120                                                                                 | 1969                                                                                                                                                                    | 957                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                                                                                                                | 0.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                                                                                                    | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                    | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 62.9                                                                              | 64.4                                                                                                                                                                | 0.0                                                                               | 54.4                                                                              | 60.0                                                                                                                                                                | 0.0                                                                               | 13.4                                                                               | 14.6                                                                                                                                                                    | 14.6                                                                                | 71.6                                                                                | 16.5                                                                                                                                                                    | 8.4                                                                                 |
| Incr Delay (d2), s/veh       | 30.5                                                                              | 1.0                                                                                                                                                                 | 0.0                                                                               | 3.5                                                                               | 0.3                                                                                                                                                                 | 0.0                                                                               | 0.2                                                                                | 1.1                                                                                                                                                                     | 1.2                                                                                 | 8.9                                                                                 | 1.1                                                                                                                                                                     | 0.5                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                 | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                     | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 6.5                                                                               | 2.9                                                                                                                                                                 | 0.0                                                                               | 5.6                                                                               | 2.2                                                                                                                                                                 | 0.0                                                                               | 1.0                                                                                | 6.7                                                                                                                                                                     | 6.4                                                                                 | 2.0                                                                                 | 11.1                                                                                                                                                                    | 2.3                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| LnGrp Delay(d),s/veh         | 93.4                                                                              | 65.3                                                                                                                                                                | 0.0                                                                               | 57.8                                                                              | 60.4                                                                                                                                                                | 0.0                                                                               | 13.6                                                                               | 15.7                                                                                                                                                                    | 15.8                                                                                | 80.5                                                                                | 17.6                                                                                                                                                                    | 8.8                                                                                 |
| LnGrp LOS                    | F                                                                                 | E                                                                                                                                                                   |                                                                                   | E                                                                                 | E                                                                                                                                                                   |                                                                                   | B                                                                                  | B                                                                                                                                                                       | B                                                                                   | F                                                                                   | B                                                                                                                                                                       | A                                                                                   |
| Approach Vol, veh/h          | 383                                                                               |                                                                                                                                                                     | 281                                                                               |                                                                                   |                                                                                                                                                                     |                                                                                   | 804                                                                                |                                                                                                                                                                         | 1329                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach Delay, s/veh        | 82.1                                                                              |                                                                                                                                                                     | 58.9                                                                              |                                                                                   |                                                                                                                                                                     |                                                                                   | 15.6                                                                               |                                                                                                                                                                         | 18.7                                                                                |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                                                                                                     | E                                                                                 |                                                                                   |                                                                                                                                                                     |                                                                                   | B                                                                                  |                                                                                                                                                                         | B                                                                                   |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                                                                                                   | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                   | 6                                                                                 | 7                                                                                  | 8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.5                                                                              | 99.1                                                                                                                                                                | 16.0                                                                              | 24.4                                                                              | 11.4                                                                                                                                                                | 98.1                                                                              | 20.0                                                                               | 20.4                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Change Period (Y+Rc), s      | * 5.7                                                                             | 6.0                                                                                                                                                                 | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                                                                                                               | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Green Setting (Gmax), s  | * 11                                                                              | 70.0                                                                                                                                                                | * 10                                                                              | 34.0                                                                              | * 11                                                                                                                                                                | 70.0                                                                              | * 14                                                                               | 31.0                                                                                                                                                                    |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 4.7                                                                               | 31.9                                                                                                                                                                | 12.3                                                                              | 7.3                                                                               | 6.6                                                                                                                                                                 | 19.9                                                                              | 15.3                                                                               | 8.9                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 3.5                                                                                                                                                                 | 0.0                                                                               | 0.6                                                                               | 0.0                                                                                                                                                                 | 1.7                                                                               | 0.0                                                                                | 0.7                                                                                                                                                                     |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Intersection Summary         |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th Ctrl Delay           | 30.5                                                                              |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| HCM 6th LOS                  | C                                                                                 |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |
| Notes                        |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                   |                                                                                                                                                                     |                                                                                   |                                                                                    |                                                                                                                                                                         |                                                                                     |                                                                                     |                                                                                                                                                                         |                                                                                     |

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 330   | 275   | 281   | 474   | 25    |      |
| Future Volume (vph)  | 330   | 275   | 281   | 474   | 25    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 79.6  | 79.6  | 120.0 | 28.4  | 28.4  |      |
| Actuated g/C Ratio   | 0.66  | 0.66  | 1.00  | 0.24  | 0.24  |      |
| v/c Ratio            | 0.17  | 0.14  | 0.22  | 0.72  | 0.08  |      |
| Control Delay        | 8.5   | 8.3   | 0.3   | 47.1  | 11.0  |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 8.5   | 8.3   | 0.3   | 47.1  | 11.0  |      |
| LOS                  | A     | A     | A     | D     | B     |      |
| Approach Delay       | 8.5   | 4.3   |       | 45.3  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 20.1

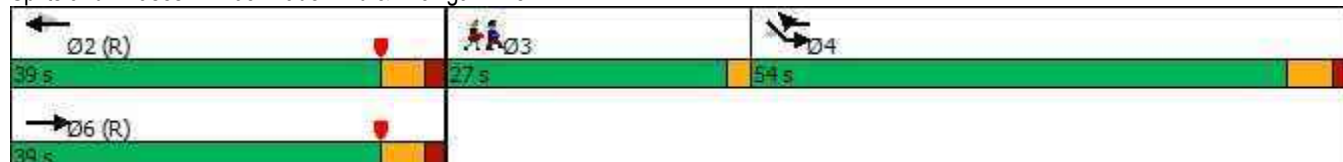
Intersection LOS: C

Intersection Capacity Utilization 35.2%

ICU Level of Service A

Analysis Period (min) 15

### Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 402  | 335  | 343  | 578  | 30   |
| v/c Ratio               | 0.17 | 0.14 | 0.22 | 0.72 | 0.08 |
| Control Delay           | 8.5  | 8.3  | 0.3  | 47.1 | 11.0 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 8.5  | 8.3  | 0.3  | 47.1 | 11.0 |
| Queue Length 50th (ft)  | 56   | 46   | 0    | 213  | 0    |
| Queue Length 95th (ft)  | 84   | 71   | 0    | 226  | 19   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2325 | 2325 | 1568 | 1360 | 645  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.17 | 0.14 | 0.22 | 0.42 | 0.05 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT  | WBT   | WBR   | SEL                       | SER  |
|-----------------------------------|------|------|-------|-------|---------------------------|------|
| Lane Configurations               |      | ↑↑   | ↑↑    | ↑     | ↑↑                        | ↑    |
| Traffic Volume (vph)              | 0    | 330  | 275   | 281   | 474                       | 25   |
| Future Volume (vph)               | 0    | 330  | 275   | 281   | 474                       | 25   |
| Ideal Flow (vphpl)                | 1900 | 1900 | 1900  | 1900  | 1900                      | 1900 |
| Total Lost time (s)               |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Lane Util. Factor                 |      | 0.95 | 0.95  | 1.00  | 0.97                      | 1.00 |
| Frpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Flpb, ped/bikes                   |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Frt                               |      | 1.00 | 1.00  | 0.85  | 1.00                      | 0.85 |
| Flt Protected                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (prot)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Flt Permitted                     |      | 1.00 | 1.00  | 1.00  | 0.95                      | 1.00 |
| Satd. Flow (perm)                 |      | 3505 | 3505  | 1568  | 3400                      | 1568 |
| Peak-hour factor, PHF             | 0.82 | 0.82 | 0.82  | 0.82  | 0.82                      | 0.82 |
| Adj. Flow (vph)                   | 0    | 402  | 335   | 343   | 578                       | 30   |
| RTOR Reduction (vph)              | 0    | 0    | 0     | 34    | 0                         | 23   |
| Lane Group Flow (vph)             | 0    | 402  | 335   | 309   | 578                       | 7    |
| Confl. Peds. (#/hr)               | 4    |      |       |       |                           |      |
| Turn Type                         |      | NA   | NA    | pm+ov | Prot                      | Perm |
| Protected Phases                  |      | 6    | 2     | 4     | 4                         |      |
| Permitted Phases                  |      |      |       | 2     |                           | 4    |
| Actuated Green, G (s)             |      | 79.6 | 79.6  | 108.0 | 28.4                      | 28.4 |
| Effective Green, g (s)            |      | 79.6 | 79.6  | 108.0 | 28.4                      | 28.4 |
| Actuated g/C Ratio                |      | 0.66 | 0.66  | 0.90  | 0.24                      | 0.24 |
| Clearance Time (s)                |      | 6.0  | 6.0   | 6.0   | 6.0                       | 6.0  |
| Vehicle Extension (s)             |      | 1.0  | 1.0   | 3.5   | 3.5                       | 3.5  |
| Lane Grp Cap (vph)                |      | 2324 | 2324  | 1568  | 804                       | 371  |
| v/s Ratio Prot                    |      | 0.11 | 0.10  | c0.05 | c0.17                     |      |
| v/s Ratio Perm                    |      |      |       | 0.15  |                           | 0.00 |
| v/c Ratio                         |      | 0.17 | 0.14  | 0.20  | 0.72                      | 0.02 |
| Uniform Delay, d1                 |      | 7.7  | 7.5   | 0.7   | 42.1                      | 35.1 |
| Progression Factor                |      | 1.00 | 1.00  | 1.00  | 1.00                      | 1.00 |
| Incremental Delay, d2             |      | 0.2  | 0.1   | 0.1   | 3.2                       | 0.0  |
| Delay (s)                         |      | 7.8  | 7.7   | 0.8   | 45.3                      | 35.1 |
| Level of Service                  |      | A    | A     | A     | D                         | D    |
| Approach Delay (s)                |      | 7.8  | 4.2   |       | 44.8                      |      |
| Approach LOS                      |      | A    | A     |       | D                         |      |
| <b>Intersection Summary</b>       |      |      |       |       |                           |      |
| HCM 2000 Control Delay            |      |      | 19.7  |       | HCM 2000 Level of Service | B    |
| HCM 2000 Volume to Capacity ratio |      |      | 0.35  |       |                           |      |
| Actuated Cycle Length (s)         |      |      | 120.0 |       | Sum of lost time (s)      | 14.0 |
| Intersection Capacity Utilization |      |      | 35.2% |       | ICU Level of Service      | A    |
| Analysis Period (min)             |      |      | 15    |       |                           |      |
| c Critical Lane Group             |      |      |       |       |                           |      |

## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC  
201: 19 St & Driveway

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|------|
| Int Delay, s/veh         | 4.1    |                                                                                   |                                                                                   |        |                                                                                   |      |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR  |
| Lane Configurations      |        |  |  |        |  |      |
| Traffic Vol, veh/h       | 41     | 23                                                                                | 38                                                                                | 19     | 29                                                                                | 12   |
| Future Vol, veh/h        | 41     | 23                                                                                | 38                                                                                | 19     | 29                                                                                | 12   |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0    |
| Sign Control             | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None |
| Storage Length           | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -    |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -    |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -    |
| Peak Hour Factor         | 92     | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92   |
| Heavy Vehicles, %        | 3      | 3                                                                                 | 3                                                                                 | 3      | 3                                                                                 | 3    |
| Mvmt Flow                | 45     | 25                                                                                | 41                                                                                | 21     | 32                                                                                | 13   |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |      |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |      |
| Conflicting Flow All     | 62     | 0                                                                                 | -                                                                                 | 0      | 167                                                                               | 52   |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 52                                                                                | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 115                                                                               | -    |
| Critical Hdwy            | 4.13   | -                                                                                 | -                                                                                 | -      | 5                                                                                 | 4.5  |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5                                                                                 | -    |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5                                                                                 | -    |
| Follow-up Hdwy           | 2.227  | -                                                                                 | -                                                                                 | -      | 3                                                                                 | 3    |
| Pot Cap-1 Maneuver       | 1535   | -                                                                                 | -                                                                                 | -      | 1019                                                                              | 1149 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1141                                                                              | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 1073                                                                              | -    |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |      |
| Mov Cap-1 Maneuver       | 1535   | -                                                                                 | -                                                                                 | -      | 988                                                                               | 1149 |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 988                                                                               | -    |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1107                                                                              | -    |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 1073                                                                              | -    |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |      |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |      |
| HCM Control Delay, s     | 4.8    | 0                                                                                 |                                                                                   | 8.7    |                                                                                   |      |
| HCM LOS                  | A      |                                                                                   |                                                                                   |        |                                                                                   |      |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |      |
|                          |        |                                                                                   |                                                                                   |        |                                                                                   |      |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |      |
| Capacity (veh/h)         | 1535   | -                                                                                 | -                                                                                 | -      | 1030                                                                              |      |
| HCM Lane V/C Ratio       | 0.029  | -                                                                                 | -                                                                                 | -      | 0.043                                                                             |      |
| HCM Control Delay (s)    | 7.4    | 0                                                                                 | -                                                                                 | -      | 8.7                                                                               |      |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | A                                                                                 |      |
| HCM 95th %tile Q(veh)    | 0.1    | -                                                                                 | -                                                                                 | -      | 0.1                                                                               |      |

# Timings

## 104: Alton Road & Dade Boulevard

09/18/2023

|                      |  |  |  |  |  |  |   |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 208                                                                               | 140                                                                               | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                | 486                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Future Volume (vph)  | 208                                                                               | 140                                                                               | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                | 486                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                  | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                                | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 19.0                                                                              | 37.0                                                                              | 20.0                                                                              | 38.0                                                                              | 38.0                                                                              | 17.0                                                                              | 76.0                                                                                | 17.0                                                                                | 76.0                                                                                | 19.0                                                                                |
| Total Split (%)      | 12.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 25.3%                                                                             | 25.3%                                                                             | 11.3%                                                                             | 50.7%                                                                               | 11.3%                                                                               | 50.7%                                                                               | 12.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                 | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 26.4                                                                              | 12.8                                                                              | 27.1                                                                              | 13.1                                                                              | 13.1                                                                              | 99.4                                                                              | 93.2                                                                                | 9.1                                                                                 | 93.4                                                                                | 107.0                                                                               |
| Actuated g/C Ratio   | 0.18                                                                              | 0.09                                                                              | 0.18                                                                              | 0.09                                                                              | 0.09                                                                              | 0.66                                                                              | 0.62                                                                                | 0.06                                                                                | 0.62                                                                                | 0.71                                                                                |
| v/c Ratio            | 0.97                                                                              | 0.61                                                                              | 0.69                                                                              | 0.45                                                                              | 0.25                                                                              | 0.27                                                                              | 0.39                                                                                | 0.52                                                                                | 0.56                                                                                | 0.19                                                                                |
| Control Delay        | 106.7                                                                             | 74.1                                                                              | 67.2                                                                              | 69.3                                                                              | 2.7                                                                               | 10.1                                                                              | 15.1                                                                                | 86.2                                                                                | 18.4                                                                                | 4.4                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 106.7                                                                             | 74.1                                                                              | 67.2                                                                              | 69.3                                                                              | 2.7                                                                               | 10.1                                                                              | 15.1                                                                                | 86.2                                                                                | 18.4                                                                                | 4.4                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | B                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 93.1                                                                              |                                                                                   | 57.8                                                                              |                                                                                   |                                                                                   | 14.6                                                                                |                                                                                     | 18.9                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 25 (17%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.97

Intersection Signal Delay: 32.4

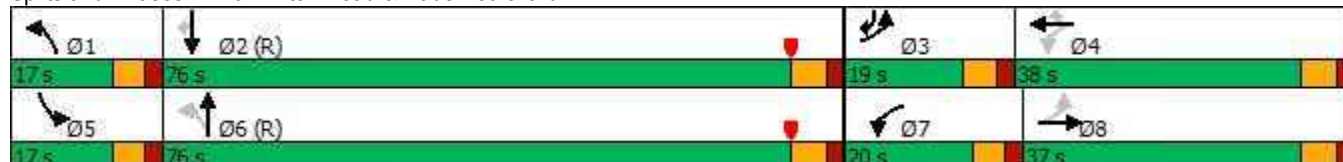
Intersection LOS: C

Intersection Capacity Utilization 74.3%

ICU Level of Service D

Analysis Period (min) 15

### Splits and Phases: 104: Alton Road & Dade Boulevard





## Queues

## 104: Alton Road &amp; Dade Boulevard

09/18/2023



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 229   | 164  | 158  | 123  | 53   | 77   | 727  | 49   | 1092 | 188  |
| v/c Ratio               | 0.97  | 0.61 | 0.69 | 0.45 | 0.25 | 0.27 | 0.39 | 0.52 | 0.56 | 0.19 |
| Control Delay           | 106.7 | 74.1 | 67.2 | 69.3 | 2.7  | 10.1 | 15.1 | 86.2 | 18.4 | 4.4  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 106.7 | 74.1 | 67.2 | 69.3 | 2.7  | 10.1 | 15.1 | 86.2 | 18.4 | 4.4  |
| Queue Length 50th (ft)  | 207   | 81   | 135  | 61   | 0    | 22   | 174  | 47   | 311  | 29   |
| Queue Length 95th (ft)  | #359  | 118  | 204  | 94   | 0    | 43   | 250  | 92   | 415  | 61   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 237   | 647  | 237  | 672  | 375  | 328  | 1879 | 122  | 1962 | 999  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.97  | 0.25 | 0.67 | 0.18 | 0.14 | 0.23 | 0.39 | 0.40 | 0.56 | 0.19 |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary

## 104: Alton Road & Dade Boulevard

09/18/2023

|                                                                                                               |  |  |  |  |  |  |  |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                        | 208                                                                               | 140                                                                               | 9                                                                                 | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                 | 486                                                                                 | 176                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Future Volume (veh/h)                                                                                         | 208                                                                               | 140                                                                               | 9                                                                                 | 144                                                                               | 112                                                                               | 48                                                                                | 70                                                                                 | 486                                                                                 | 176                                                                                 | 45                                                                                  | 994                                                                                 | 171                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 229                                                                               | 154                                                                               | 0                                                                                 | 158                                                                               | 123                                                                               | 0                                                                                 | 77                                                                                 | 534                                                                                 | 193                                                                                 | 49                                                                                  | 1092                                                                                | 188                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                                    | 264                                                                               | 305                                                                               |                                                                                   | 254                                                                               | 327                                                                               |                                                                                   | 261                                                                                | 1395                                                                                | 502                                                                                 | 61                                                                                  | 1969                                                                                | 985                                                                                 |
| Arrive On Green                                                                                               | 0.09                                                                              | 0.10                                                                              | 0.00                                                                              | 0.10                                                                              | 0.10                                                                              | 0.00                                                                              | 0.03                                                                               | 0.61                                                                                | 0.61                                                                                | 0.04                                                                                | 0.62                                                                                | 0.62                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                               | 2272                                                                                | 818                                                                                 | 1590                                                                                | 3173                                                                                | 1385                                                                                |
| Grp Volume(v), veh/h                                                                                          | 229                                                                               | 154                                                                               | 0                                                                                 | 158                                                                               | 123                                                                               | 0                                                                                 | 77                                                                                 | 372                                                                                 | 355                                                                                 | 49                                                                                  | 1092                                                                                | 188                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1503                                                                                | 1590                                                                                | 1586                                                                                | 1385                                                                                |
| Q Serve(g_s), s                                                                                               | 13.3                                                                              | 6.9                                                                               | 0.0                                                                               | 13.4                                                                              | 5.4                                                                               | 0.0                                                                               | 2.7                                                                                | 17.7                                                                                | 17.9                                                                                | 4.6                                                                                 | 29.9                                                                                | 6.9                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 13.3                                                                              | 6.9                                                                               | 0.0                                                                               | 13.4                                                                              | 5.4                                                                               | 0.0                                                                               | 2.7                                                                                | 17.7                                                                                | 17.9                                                                                | 4.6                                                                                 | 29.9                                                                                | 6.9                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.54                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 264                                                                               | 305                                                                               |                                                                                   | 254                                                                               | 327                                                                               |                                                                                   | 261                                                                                | 974                                                                                 | 923                                                                                 | 61                                                                                  | 1969                                                                                | 985                                                                                 |
| V/C Ratio(X)                                                                                                  | 0.87                                                                              | 0.50                                                                              |                                                                                   | 0.62                                                                              | 0.38                                                                              |                                                                                   | 0.29                                                                               | 0.38                                                                                | 0.38                                                                                | 0.80                                                                                | 0.55                                                                                | 0.19                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 264                                                                               | 656                                                                               |                                                                                   | 254                                                                               | 677                                                                               |                                                                                   | 330                                                                                | 974                                                                                 | 923                                                                                 | 120                                                                                 | 1969                                                                                | 985                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 60.4                                                                              | 64.4                                                                              | 0.0                                                                               | 54.6                                                                              | 62.8                                                                              | 0.0                                                                               | 13.4                                                                               | 14.6                                                                                | 14.6                                                                                | 71.6                                                                                | 16.5                                                                                | 7.3                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 24.3                                                                              | 1.0                                                                               | 0.0                                                                               | 3.5                                                                               | 0.5                                                                               | 0.0                                                                               | 0.2                                                                                | 1.1                                                                                 | 1.2                                                                                 | 8.9                                                                                 | 1.1                                                                                 | 0.4                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 4.8                                                                               | 2.9                                                                               | 0.0                                                                               | 5.6                                                                               | 2.2                                                                               | 0.0                                                                               | 1.0                                                                                | 6.7                                                                                 | 6.4                                                                                 | 2.0                                                                                 | 11.1                                                                                | 0.1                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 84.7                                                                              | 65.3                                                                              | 0.0                                                                               | 58.1                                                                              | 63.3                                                                              | 0.0                                                                               | 13.6                                                                               | 15.7                                                                                | 15.8                                                                                | 80.5                                                                                | 17.6                                                                                | 7.8                                                                                 |
| LnGrp LOS                                                                                                     | F                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                  | B                                                                                   | B                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                           | 383                                                                               |                                                                                   |                                                                                   |                                                                                   | 281                                                                               |                                                                                   |                                                                                    |                                                                                     | 804                                                                                 |                                                                                     |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         | 76.9                                                                              |                                                                                   |                                                                                   |                                                                                   | 60.4                                                                              |                                                                                   |                                                                                    |                                                                                     | 15.6                                                                                |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  | E                                                                                 |                                                                                   |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 10.5                                                                              | 99.1                                                                              | 19.0                                                                              | 21.4                                                                              | 11.4                                                                              | 98.1                                                                              | 20.0                                                                               | 20.4                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 11                                                                              | 70.0                                                                              | * 13                                                                              | 32.0                                                                              | * 11                                                                              | 70.0                                                                              | * 14                                                                               | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 4.7                                                                               | 31.9                                                                              | 15.3                                                                              | 7.4                                                                               | 6.6                                                                               | 19.9                                                                              | 15.4                                                                               | 8.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 3.5                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 1.7                                                                               | 0.0                                                                                | 0.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            | 29.9                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   | C                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 14                                                                                | 12                                                                                | 24                                                                                | 15                                                                                | 627                                                                               | 5                                                                                 | 1177                                                                                | 288                                                                                 | 924                                                                                 |
| Future Volume (vph)  | 14                                                                                | 12                                                                                | 24                                                                                | 15                                                                                | 627                                                                               | 5                                                                                 | 1177                                                                                | 288                                                                                 | 924                                                                                 |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 48.7                                                                              | 65.0                                                                                | 48.7                                                                                | 65.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 32.5%                                                                             | 43.3%                                                                               | 32.5%                                                                               | 43.3%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 10.6                                                                              |                                                                                   | 10.6                                                                              | 150.0                                                                             | 10.1                                                                              | 103.2                                                                               | 21.8                                                                                | 128.0                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.07                                                                              |                                                                                   | 0.07                                                                              | 1.00                                                                              | 0.07                                                                              | 0.69                                                                                | 0.15                                                                                | 0.85                                                                                |
| v/c Ratio            |                                                                                   | 0.29                                                                              |                                                                                   | 0.43                                                                              | 0.46                                                                              | 0.05                                                                              | 0.57                                                                                | 0.67                                                                                | 0.36                                                                                |
| Control Delay        |                                                                                   | 69.0                                                                              |                                                                                   | 80.3                                                                              | 1.1                                                                               | 72.4                                                                              | 12.9                                                                                | 67.8                                                                                | 4.2                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          |                                                                                   | 69.0                                                                              |                                                                                   | 80.3                                                                              | 1.1                                                                               | 72.4                                                                              | 13.1                                                                                | 67.8                                                                                | 4.2                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | F                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 69.0                                                                              |                                                                                   | 5.7                                                                               |                                                                                   |                                                                                   | 13.3                                                                                |                                                                                     | 19.2                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 118 (79%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.67

Intersection Signal Delay: 14.5

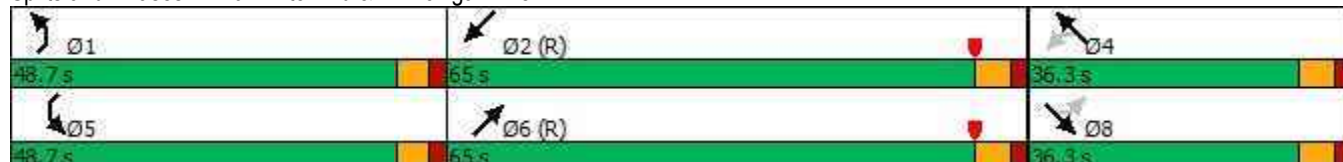
Intersection LOS: B

Intersection Capacity Utilization 70.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave



## Queues

### 101: Alton Rd & N Michigan Ave

|                                                                   |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                                                        | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                 |
| Lane Group Flow (vph)                                             | 28                                                                                | 40                                                                                | 646                                                                               | 5                                                                                 | 1238                                                                              | 297                                                                               | 958                                                                                 |
| v/c Ratio                                                         | 0.29                                                                              | 0.43                                                                              | 0.46                                                                              | 0.05                                                                              | 0.57                                                                              | 0.67                                                                              | 0.36                                                                                |
| Control Delay                                                     | 69.0                                                                              | 80.3                                                                              | 1.1                                                                               | 72.4                                                                              | 12.9                                                                              | 67.8                                                                              | 4.2                                                                                 |
| Queue Delay                                                       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                                 |
| Total Delay                                                       | 69.0                                                                              | 80.3                                                                              | 1.1                                                                               | 72.4                                                                              | 13.1                                                                              | 67.8                                                                              | 4.2                                                                                 |
| Queue Length 50th (ft)                                            | 25                                                                                | 38                                                                                | 0                                                                                 | 4                                                                                 | 395                                                                               | 143                                                                               | 83                                                                                  |
| Queue Length 95th (ft)                                            | 58                                                                                | 79                                                                                | 0                                                                                 | m11                                                                               | 533                                                                               | 187                                                                               | 222                                                                                 |
| Internal Link Dist (ft)                                           | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                 |
| Turn Bay Length (ft)                                              |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 265                                                                               |                                                                                     |
| Base Capacity (vph)                                               | 280                                                                               | 271                                                                               | 1411                                                                              | 462                                                                               | 2189                                                                              | 856                                                                               | 2688                                                                                |
| Starvation Cap Reductn                                            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 215                                                                               | 0                                                                                 | 0                                                                                   |
| Spillback Cap Reductn                                             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 130                                                                                 |
| Storage Cap Reductn                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |
| Reduced v/c Ratio                                                 | 0.10                                                                              | 0.15                                                                              | 0.46                                                                              | 0.01                                                                              | 0.63                                                                              | 0.35                                                                              | 0.37                                                                                |
| <b>Intersection Summary</b>                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| m Volume for 95th percentile queue is metered by upstream signal. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |

# HCM 6th Signalized Intersection Summary 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations                                                                                      |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 14                                                                                | 12                                                                                | 2                                                                                 | 24                                                                                | 15                                                                                | 627                                                                               | 5                                                                                  | 1177                                                                                | 24                                                                                  | 288                                                                                 | 924                                                                                 | 5                                                                                   |
| Future Volume (veh/h)                                                                                    | 14                                                                                | 12                                                                                | 2                                                                                 | 24                                                                                | 15                                                                                | 627                                                                               | 5                                                                                  | 1177                                                                                | 24                                                                                  | 288                                                                                 | 924                                                                                 | 5                                                                                   |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                              |                                                                                   | 0.98                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 14                                                                                | 12                                                                                | 2                                                                                 | 25                                                                                | 15                                                                                | 0                                                                                 | 5                                                                                  | 1213                                                                                | 25                                                                                  | 297                                                                                 | 953                                                                                 | 5                                                                                   |
| Peak Hour Factor                                                                                         | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                                                     | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                               | 81                                                                                | 58                                                                                | 8                                                                                 | 97                                                                                | 48                                                                                |                                                                                   | 21                                                                                 | 2184                                                                                | 45                                                                                  | 384                                                                                 | 2585                                                                                | 14                                                                                  |
| Arrive On Green                                                                                          | 0.07                                                                              | 0.07                                                                              | 0.07                                                                              | 0.07                                                                              | 0.07                                                                              | 0.00                                                                              | 0.03                                                                               | 1.00                                                                                | 1.00                                                                                | 0.12                                                                                | 0.80                                                                                | 0.81                                                                                |
| Sat Flow, veh/h                                                                                          | 595                                                                               | 777                                                                               | 106                                                                               | 779                                                                               | 645                                                                               | 1415                                                                              | 1590                                                                               | 3178                                                                                | 65                                                                                  | 3086                                                                                | 3236                                                                                | 17                                                                                  |
| Grp Volume(v), veh/h                                                                                     | 28                                                                                | 0                                                                                 | 0                                                                                 | 40                                                                                | 0                                                                                 | 0                                                                                 | 5                                                                                  | 605                                                                                 | 633                                                                                 | 297                                                                                 | 467                                                                                 | 491                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1477                                                                              | 0                                                                                 | 0                                                                                 | 1425                                                                              | 0                                                                                 | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1657                                                                                | 1543                                                                                | 1586                                                                                | 1666                                                                                |
| Q Serve(g_s), s                                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.3                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 14.0                                                                                | 12.6                                                                                | 12.6                                                                                |
| Cycle Q Clear(g_c), s                                                                                    | 2.4                                                                               | 0.0                                                                               | 0.0                                                                               | 3.7                                                                               | 0.0                                                                               | 0.0                                                                               | 0.5                                                                                | 0.0                                                                                 | 0.0                                                                                 | 14.0                                                                                | 12.6                                                                                | 12.6                                                                                |
| Prop In Lane                                                                                             | 0.50                                                                              |                                                                                   | 0.07                                                                              | 0.62                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.04                                                                                | 1.00                                                                                |                                                                                     | 0.01                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 147                                                                               | 0                                                                                 | 0                                                                                 | 146                                                                               | 0                                                                                 |                                                                                   | 21                                                                                 | 1090                                                                                | 1138                                                                                | 384                                                                                 | 1267                                                                                | 1331                                                                                |
| V/C Ratio(X)                                                                                             | 0.19                                                                              | 0.00                                                                              | 0.00                                                                              | 0.27                                                                              | 0.00                                                                              |                                                                                   | 0.24                                                                               | 0.56                                                                                | 0.56                                                                                | 0.77                                                                                | 0.37                                                                                | 0.37                                                                                |
| Avail Cap(c_a), veh/h                                                                                    | 331                                                                               | 0                                                                                 | 0                                                                                 | 326                                                                               | 0                                                                                 |                                                                                   | 467                                                                                | 1090                                                                                | 1138                                                                                | 864                                                                                 | 1267                                                                                | 1331                                                                                |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                               | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 0.89                                                                               | 0.89                                                                                | 0.89                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 65.3                                                                              | 0.0                                                                               | 0.0                                                                               | 65.8                                                                              | 0.0                                                                               | 0.0                                                                               | 72.3                                                                               | 0.0                                                                                 | 0.0                                                                                 | 63.6                                                                                | 4.3                                                                                 | 4.3                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 18.6                                                                               | 1.8                                                                                 | 1.7                                                                                 | 11.3                                                                                | 0.8                                                                                 | 0.8                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                                | 0.6                                                                                 | 0.6                                                                                 | 6.1                                                                                 | 3.8                                                                                 | 4.0                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 65.8                                                                              | 0.0                                                                               | 0.0                                                                               | 66.5                                                                              | 0.0                                                                               | 0.0                                                                               | 91.0                                                                               | 1.8                                                                                 | 1.7                                                                                 | 75.0                                                                                | 5.1                                                                                 | 5.1                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                  | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                      |                                                                                   | 28                                                                                |                                                                                   |                                                                                   | 40                                                                                |                                                                                   |                                                                                    | 1243                                                                                |                                                                                     |                                                                                     | 1255                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                    |                                                                                   | 65.8                                                                              |                                                                                   |                                                                                   | 66.5                                                                              |                                                                                   |                                                                                    | 2.1                                                                                 |                                                                                     |                                                                                     | 21.6                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 6.6                                                                               | 126.8                                                                             |                                                                                   | 16.5                                                                              | 25.4                                                                              | 108.1                                                                             |                                                                                    | 16.5                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                             | 6.0                                                                               |                                                                                   | * 6.3                                                                             | * 5.7                                                                             | 6.0                                                                               |                                                                                    | * 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                   | * 30                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                    | * 30                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 2.5                                                                               | 14.6                                                                              |                                                                                   | 5.7                                                                               | 16.0                                                                              | 2.0                                                                               |                                                                                    | 4.4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                               | 0.8                                                                               |                                                                                   | 0.1                                                                               | 3.7                                                                               | 1.1                                                                               |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                   |                                                                                   | 13.4                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 173                                                                               | 7                                                                                 | 22                                                                                | 0                                                                                 | 83                                                                                | 1028                                                                              | 5                                                                                  | 774                                                                                 | 187                                                                                 |
| Future Volume (vph)  | 173                                                                               | 7                                                                                 | 22                                                                                | 0                                                                                 | 83                                                                                | 1028                                                                              | 5                                                                                  | 774                                                                                 | 187                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                  |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                  | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                               | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 18.0                                                                              | 12.0                                                                              | 99.0                                                                              | 87.0                                                                               | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 12.0%                                                                             | 8.0%                                                                              | 66.0%                                                                             | 58.0%                                                                              | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                               | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                              | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 15.6                                                                              | 14.3                                                                              | 15.6                                                                              | 8.3                                                                               | 117.4                                                                             | 116.1                                                                             | 106.0                                                                              | 106.0                                                                               | 106.0                                                                               |
| Actuated g/C Ratio   | 0.10                                                                              | 0.10                                                                              | 0.10                                                                              | 0.06                                                                              | 0.78                                                                              | 0.77                                                                              | 0.71                                                                               | 0.71                                                                                | 0.71                                                                                |
| v/c Ratio            | 0.61                                                                              | 0.65                                                                              | 0.09                                                                              | 0.06                                                                              | 0.20                                                                              | 0.44                                                                              | 0.02                                                                               | 0.36                                                                                | 0.19                                                                                |
| Control Delay        | 79.9                                                                              | 85.3                                                                              | 0.7                                                                               | 0.5                                                                               | 6.4                                                                               | 7.7                                                                               | 8.8                                                                                | 10.7                                                                                | 5.2                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                                | 0.3                                                                                 | 0.5                                                                                 |
| Total Delay          | 79.9                                                                              | 85.3                                                                              | 0.7                                                                               | 0.5                                                                               | 6.4                                                                               | 7.8                                                                               | 8.8                                                                                | 11.1                                                                                | 5.7                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 73.6                                                                              |                                                                                   | 0.5                                                                               |                                                                                   | 7.7                                                                               |                                                                                    | 10.0                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                    | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 129 (86%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.65

Intersection Signal Delay: 14.4

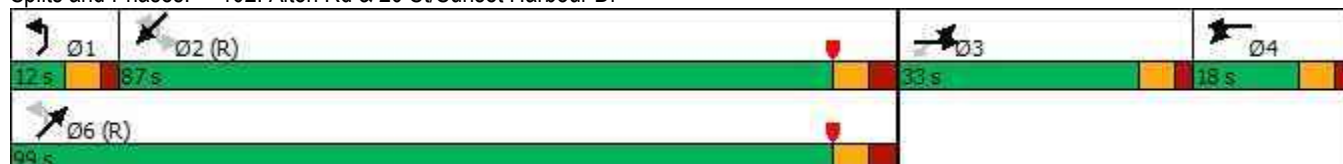
Intersection LOS: B

Intersection Capacity Utilization 66.5%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 94   | 93   | 23   | 13   | 86   | 1075 | 5    | 806  | 195  |
| v/c Ratio               | 0.61 | 0.65 | 0.09 | 0.06 | 0.20 | 0.44 | 0.02 | 0.36 | 0.19 |
| Control Delay           | 79.9 | 85.3 | 0.7  | 0.5  | 6.4  | 7.7  | 8.8  | 10.7 | 5.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.3  | 0.5  |
| Total Delay             | 79.9 | 85.3 | 0.7  | 0.5  | 6.4  | 7.8  | 8.8  | 11.1 | 5.7  |
| Queue Length 50th (ft)  | 93   | 93   | 0    | 0    | 14   | 134  | 2    | 162  | 36   |
| Queue Length 95th (ft)  | 154  | 154  | 0    | 0    | 45   | 298  | m6   | 303  | 110  |
| Internal Link Dist (ft) |      | 202  |      | 173  |      | 325  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 282  | 271  | 364  | 261  | 426  | 2439 | 312  | 2227 | 1017 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 756  | 498  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 37   | 0    | 331  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.33 | 0.34 | 0.06 | 0.06 | 0.20 | 0.51 | 0.02 | 0.55 | 0.38 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 173                                                                               | 7                                                                                 | 22                                                                                | 0                                                                                 | 0                                                                                 | 12                                                                                | 83                                                                                  | 1028                                                                                | 4                                                                                   | 5                                                                                   | 774                                                                                 | 187                                                                                 |
| Future Volume (vph)               | 173                                                                               | 7                                                                                 | 22                                                                                | 0                                                                                 | 0                                                                                 | 12                                                                                | 83                                                                                  | 1028                                                                                | 4                                                                                   | 5                                                                                   | 774                                                                                 | 187                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.86                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1507                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 1577                                                                                | 3153                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1382                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.30                                                                                | 1.00                                                                                |                                                                                     | 0.27                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1507                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 490                                                                                 | 3153                                                                                |                                                                                     | 442                                                                                 | 3154                                                                                | 1382                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 180                                                                               | 7                                                                                 | 23                                                                                | 0                                                                                 | 0                                                                                 | 12                                                                                | 86                                                                                  | 1071                                                                                | 4                                                                                   | 5                                                                                   | 806                                                                                 | 195                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 21                                                                                | 0                                                                                 | 13                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 45                                                                                  |
| Lane Group Flow (vph)             | 94                                                                                | 93                                                                                | 2                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 86                                                                                  | 1075                                                                                | 0                                                                                   | 5                                                                                   | 806                                                                                 | 150                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              |                                                                                   | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 14.3                                                                              | 14.3                                                                              | 14.3                                                                              |                                                                                   | 2.8                                                                               |                                                                                   | 113.3                                                                               | 113.3                                                                               |                                                                                     | 100.6                                                                               | 100.6                                                                               | 100.6                                                                               |
| Effective Green, g (s)            | 15.6                                                                              | 14.3                                                                              | 15.6                                                                              |                                                                                   | 4.1                                                                               |                                                                                   | 112.3                                                                               | 112.3                                                                               |                                                                                     | 102.1                                                                               | 102.1                                                                               | 102.1                                                                               |
| Actuated g/C Ratio                | 0.10                                                                              | 0.10                                                                              | 0.10                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.75                                                                                | 0.75                                                                                |                                                                                     | 0.68                                                                                | 0.68                                                                                | 0.68                                                                                |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 155                                                                               | 143                                                                               | 146                                                                               |                                                                                   | 39                                                                                |                                                                                   | 408                                                                                 | 2360                                                                                |                                                                                     | 300                                                                                 | 2146                                                                                | 940                                                                                 |
| v/s Ratio Prot                    | c0.06                                                                             | 0.06                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | 0.01                                                                                | c0.34                                                                               |                                                                                     |                                                                                     | 0.26                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.15                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |                                                                                     | 0.11                                                                                |
| v/c Ratio                         | 0.61                                                                              | 0.65                                                                              | 0.02                                                                              |                                                                                   | 0.01                                                                              |                                                                                   | 0.21                                                                                | 0.46                                                                                |                                                                                     | 0.02                                                                                | 0.38                                                                                | 0.16                                                                                |
| Uniform Delay, d1                 | 64.3                                                                              | 65.4                                                                              | 60.3                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.0                                                                                 | 7.2                                                                                 |                                                                                     | 7.7                                                                                 | 10.3                                                                                | 8.6                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.80                                                                                | 1.00                                                                                | 1.40                                                                                |
| Incremental Delay, d2             | 5.6                                                                               | 9.1                                                                               | 0.0                                                                               |                                                                                   | 0.1                                                                               |                                                                                   | 0.1                                                                                 | 0.6                                                                                 |                                                                                     | 0.1                                                                                 | 0.5                                                                                 | 0.3                                                                                 |
| Delay (s)                         | 69.8                                                                              | 74.5                                                                              | 60.3                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.1                                                                                 | 7.8                                                                                 |                                                                                     | 6.3                                                                                 | 10.7                                                                                | 12.4                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 70.9                                                                              |                                                                                   |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                     | 7.7                                                                                 |                                                                                     |                                                                                     | 11.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 15.0                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.48                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 23.8                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 66.5%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |



## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.

HCM 6th TWSC  
103: Alton Rd & 19 St

Intersection

Int Delay, s/veh 0.2

| Movement                 | WBL  | WBR                                                                               | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |      |  |  |      |      |  |
| Traffic Vol, veh/h       | 0    | 32                                                                                | 1085                                                                              | 35   | 0    | 800                                                                               |
| Future Vol, veh/h        | 0    | 32                                                                                | 1085                                                                              | 35   | 0    | 800                                                                               |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop | Stop                                                                              | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -    | None                                                                              | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | -    | 0                                                                                 | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92   | 92                                                                                | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3    | 3                                                                                 | 3                                                                                 | 3    | 3    | 3                                                                                 |
| Mvmt Flow                | 0    | 35                                                                                | 1179                                                                              | 38   | 0    | 870                                                                               |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | 609    | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | 4.5    | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | 3      | -      |
| Pot Cap-1 Maneuver   | 0      | 715    | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 0      | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | -      | 715    | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 10.3 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBT |
|-----------------------|-----|----------|-----|
| Capacity (veh/h)      | -   | - 715    | -   |
| HCM Lane V/C Ratio    | -   | - 0.049  | -   |
| HCM Control Delay (s) | -   | - 10.3   | -   |
| HCM Lane LOS          | -   | - B      | -   |
| HCM 95th %tile Q(veh) | -   | - 0.2    | -   |

# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 209                                                                               | 149                                                                               | 168                                                                               | 174                                                                               | 45                                                                                | 70                                                                                | 822                                                                                | 48                                                                                  | 738                                                                                 | 95                                                                                  |
| Future Volume (vph)  | 209                                                                               | 149                                                                               | 168                                                                               | 174                                                                               | 45                                                                                | 70                                                                                | 822                                                                                | 48                                                                                  | 738                                                                                 | 95                                                                                  |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                 | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                               | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                               | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                              | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                              | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 24.1                                                                              | 13.5                                                                              | 31.5                                                                              | 17.2                                                                              | 17.2                                                                              | 98.0                                                                              | 91.9                                                                               | 9.4                                                                                 | 92.2                                                                                | 102.8                                                                               |
| Actuated g/C Ratio   | 0.16                                                                              | 0.09                                                                              | 0.21                                                                              | 0.11                                                                              | 0.11                                                                              | 0.65                                                                              | 0.61                                                                               | 0.06                                                                                | 0.61                                                                                | 0.69                                                                                |
| v/c Ratio            | 1.13                                                                              | 0.65                                                                              | 0.80                                                                              | 0.53                                                                              | 0.19                                                                              | 0.20                                                                              | 0.59                                                                               | 0.54                                                                                | 0.42                                                                                | 0.11                                                                                |
| Control Delay        | 151.6                                                                             | 73.7                                                                              | 77.1                                                                              | 67.5                                                                              | 1.7                                                                               | 9.3                                                                               | 20.5                                                                               | 86.9                                                                                | 16.4                                                                                | 3.5                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 151.6                                                                             | 73.7                                                                              | 77.1                                                                              | 67.5                                                                              | 1.7                                                                               | 9.3                                                                               | 20.5                                                                               | 86.9                                                                                | 16.4                                                                                | 3.5                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | A                                                                                 | C                                                                                  | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       | 116.9                                                                             |                                                                                   | 64.1                                                                              |                                                                                   | 19.7                                                                              |                                                                                   | 18.9                                                                               |                                                                                     |                                                                                     |                                                                                     |
| Approach LOS         | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   | B                                                                                 |                                                                                   | B                                                                                  |                                                                                     |                                                                                     |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 24 (16%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 39.2

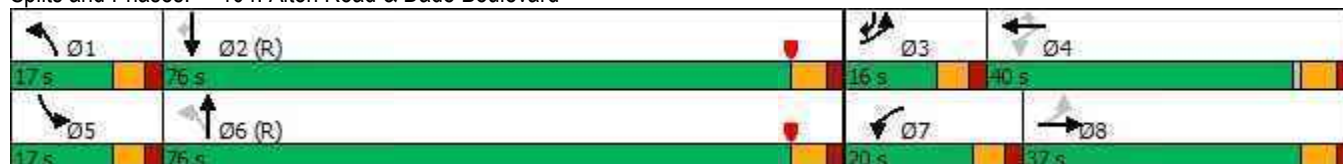
Intersection LOS: D

Intersection Capacity Utilization 80.4%

ICU Level of Service D

Analysis Period (min) 15

### Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 230   | 185  | 185  | 191  | 49   | 77   | 1113 | 53   | 811  | 104  |
| v/c Ratio               | 1.13  | 0.65 | 0.80 | 0.53 | 0.19 | 0.20 | 0.59 | 0.54 | 0.42 | 0.11 |
| Control Delay           | 151.6 | 73.7 | 77.1 | 67.5 | 1.7  | 9.3  | 20.5 | 86.9 | 16.4 | 3.5  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 151.6 | 73.7 | 77.1 | 67.5 | 1.7  | 9.3  | 20.5 | 86.9 | 16.4 | 3.5  |
| Queue Length 50th (ft)  | ~236  | 89   | 160  | 94   | 0    | 22   | 341  | 51   | 207  | 11   |
| Queue Length 95th (ft)  | #396  | 130  | #249 | 133  | 0    | 44   | 474  | 98   | 283  | 33   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 204   | 643  | 233  | 735  | 404  | 421  | 1871 | 123  | 1939 | 947  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.13  | 0.29 | 0.79 | 0.26 | 0.12 | 0.18 | 0.59 | 0.43 | 0.42 | 0.11 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                                                                                                               |  |                                                                                       |  |  |                                                                                       |  |   |                                                                                         |  |  |                                                                                         |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                                                                                                                    | EBR                                                                               | WBL                                                                               | WBT                                                                                                                                                                    | WBR                                                                               | NBL                                                                                 | NBT                                                                                                                                                                        | NBR                                                                                 | SBL                                                                                 | SBT                                                                                                                                                                        | SBR                                                                                 |
| Lane Configurations                                                                                           |  | <br> |                                                                                   |  | <br> |  |  | <br> |                                                                                     |  | <br> |  |
| Traffic Volume (veh/h)                                                                                        | 209                                                                               | 149                                                                                                                                                                    | 19                                                                                | 168                                                                               | 174                                                                                                                                                                    | 45                                                                                | 70                                                                                  | 822                                                                                                                                                                        | 191                                                                                 | 48                                                                                  | 738                                                                                                                                                                        | 95                                                                                  |
| Future Volume (veh/h)                                                                                         | 209                                                                               | 149                                                                                                                                                                    | 19                                                                                | 168                                                                               | 174                                                                                                                                                                    | 45                                                                                | 70                                                                                  | 822                                                                                                                                                                        | 191                                                                                 | 48                                                                                  | 738                                                                                                                                                                        | 95                                                                                  |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                                                                                                      | 0                                                                                 | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   | 0                                                                                   | 0                                                                                                                                                                          | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.99                                                                              |                                                                                                                                                                        | 1.00                                                                              | 0.97                                                                              |                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                            | 0.98                                                                                | 1.00                                                                                |                                                                                                                                                                            | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                                                                                                     |                                                                                   |                                                                                   | No                                                                                                                                                                     |                                                                                   |                                                                                     | No                                                                                                                                                                         |                                                                                     |                                                                                     | No                                                                                                                                                                         |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                                                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                                                                                                                   | 1670                                                                              | 1670                                                                                | 1670                                                                                                                                                                       | 1670                                                                                | 1670                                                                                | 1670                                                                                                                                                                       | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 230                                                                               | 164                                                                                                                                                                    | 0                                                                                 | 185                                                                               | 191                                                                                                                                                                    | 0                                                                                 | 77                                                                                  | 903                                                                                                                                                                        | 210                                                                                 | 53                                                                                  | 811                                                                                                                                                                        | 104                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                   | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                                                                                                   | 0.91                                                                              | 0.91                                                                                | 0.91                                                                                                                                                                       | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                                                                                                       | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                                                                                                      | 3                                                                                 | 3                                                                                 | 3                                                                                                                                                                      | 3                                                                                 | 3                                                                                   | 3                                                                                                                                                                          | 3                                                                                   | 3                                                                                   | 3                                                                                                                                                                          | 3                                                                                   |
| Cap, veh/h                                                                                                    | 253                                                                               | 377                                                                                                                                                                    |                                                                                   | 275                                                                               | 462                                                                                                                                                                    |                                                                                   | 349                                                                                 | 1496                                                                                                                                                                       | 348                                                                                 | 66                                                                                  | 1897                                                                                                                                                                       | 924                                                                                 |
| Arrive On Green                                                                                               | 0.07                                                                              | 0.12                                                                                                                                                                   | 0.00                                                                              | 0.10                                                                              | 0.15                                                                                                                                                                   | 0.00                                                                              | 0.03                                                                                | 0.59                                                                                                                                                                       | 0.59                                                                                | 0.04                                                                                | 0.60                                                                                                                                                                       | 0.60                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                                                                                                                   | 0                                                                                 | 1590                                                                              | 3173                                                                                                                                                                   | 1415                                                                              | 1590                                                                                | 2543                                                                                                                                                                       | 591                                                                                 | 1590                                                                                | 3173                                                                                                                                                                       | 1382                                                                                |
| Grp Volume(v), veh/h                                                                                          | 230                                                                               | 164                                                                                                                                                                    | 0                                                                                 | 185                                                                               | 191                                                                                                                                                                    | 0                                                                                 | 77                                                                                  | 563                                                                                                                                                                        | 550                                                                                 | 53                                                                                  | 811                                                                                                                                                                        | 104                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                                                                                                                   | 0                                                                                 | 1590                                                                              | 1586                                                                                                                                                                   | 1415                                                                              | 1590                                                                                | 1586                                                                                                                                                                       | 1547                                                                                | 1590                                                                                | 1586                                                                                                                                                                       | 1382                                                                                |
| Q Serve(g_s), s                                                                                               | 10.3                                                                              | 7.2                                                                                                                                                                    | 0.0                                                                               | 14.3                                                                              | 8.2                                                                                                                                                                    | 0.0                                                                               | 2.9                                                                                 | 34.0                                                                                                                                                                       | 34.0                                                                                | 5.0                                                                                 | 20.7                                                                                                                                                                       | 4.1                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 10.3                                                                              | 7.2                                                                                                                                                                    | 0.0                                                                               | 14.3                                                                              | 8.2                                                                                                                                                                    | 0.0                                                                               | 2.9                                                                                 | 34.0                                                                                                                                                                       | 34.0                                                                                | 5.0                                                                                 | 20.7                                                                                                                                                                       | 4.1                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                                                                                                        | 0.00                                                                              | 1.00                                                                              |                                                                                                                                                                        | 1.00                                                                              | 1.00                                                                                |                                                                                                                                                                            | 0.38                                                                                | 1.00                                                                                |                                                                                                                                                                            | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 253                                                                               | 377                                                                                                                                                                    |                                                                                   | 275                                                                               | 462                                                                                                                                                                    |                                                                                   | 349                                                                                 | 934                                                                                                                                                                        | 911                                                                                 | 66                                                                                  | 1897                                                                                                                                                                       | 924                                                                                 |
| V/C Ratio(X)                                                                                                  | 0.91                                                                              | 0.43                                                                                                                                                                   |                                                                                   | 0.67                                                                              | 0.41                                                                                                                                                                   |                                                                                   | 0.22                                                                                | 0.60                                                                                                                                                                       | 0.60                                                                                | 0.81                                                                                | 0.43                                                                                                                                                                       | 0.11                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 253                                                                               | 656                                                                                                                                                                    |                                                                                   | 275                                                                               | 719                                                                                                                                                                    |                                                                                   | 418                                                                                 | 934                                                                                                                                                                        | 911                                                                                 | 120                                                                                 | 1897                                                                                                                                                                       | 924                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                                                                                                                   | 0.00                                                                              | 1.00                                                                              | 1.00                                                                                                                                                                   | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                                                                                                       | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 61.3                                                                              | 61.4                                                                                                                                                                   | 0.0                                                                               | 52.9                                                                              | 58.3                                                                                                                                                                   | 0.0                                                                               | 12.8                                                                                | 19.7                                                                                                                                                                       | 19.7                                                                                | 71.3                                                                                | 16.3                                                                                                                                                                       | 9.0                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 33.0                                                                              | 0.6                                                                                                                                                                    | 0.0                                                                               | 5.2                                                                               | 0.4                                                                                                                                                                    | 0.0                                                                               | 0.1                                                                                 | 2.9                                                                                                                                                                        | 3.0                                                                                 | 8.3                                                                                 | 0.7                                                                                                                                                                        | 0.2                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                                                                                                                    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                                                                                                    | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                                                                                                        | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 6.7                                                                               | 3.0                                                                                                                                                                    | 0.0                                                                               | 6.6                                                                               | 3.4                                                                                                                                                                    | 0.0                                                                               | 1.1                                                                                 | 13.2                                                                                                                                                                       | 12.9                                                                                | 2.2                                                                                 | 7.7                                                                                                                                                                        | 1.3                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 94.3                                                                              | 62.0                                                                                                                                                                   | 0.0                                                                               | 58.1                                                                              | 58.7                                                                                                                                                                   | 0.0                                                                               | 12.9                                                                                | 22.6                                                                                                                                                                       | 22.7                                                                                | 79.6                                                                                | 17.0                                                                                                                                                                       | 9.3                                                                                 |
| LnGrp LOS                                                                                                     | F                                                                                 | E                                                                                                                                                                      |                                                                                   | E                                                                                 | E                                                                                                                                                                      |                                                                                   | B                                                                                   | C                                                                                                                                                                          | C                                                                                   | E                                                                                   | B                                                                                                                                                                          | A                                                                                   |
| Approach Vol, veh/h                                                                                           |                                                                                   | 394                                                                                                                                                                    |                                                                                   |                                                                                   | 376                                                                                                                                                                    |                                                                                   |                                                                                     | 1190                                                                                                                                                                       |                                                                                     |                                                                                     | 968                                                                                                                                                                        |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 80.8                                                                                                                                                                   |                                                                                   |                                                                                   | 58.4                                                                                                                                                                   |                                                                                   |                                                                                     | 22.0                                                                                                                                                                       |                                                                                     |                                                                                     | 19.6                                                                                                                                                                       |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | F                                                                                                                                                                      |                                                                                   |                                                                                   | E                                                                                                                                                                      |                                                                                   |                                                                                     | C                                                                                                                                                                          |                                                                                     |                                                                                     | B                                                                                                                                                                          |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                                                                                                      | 3                                                                                 | 4                                                                                 | 5                                                                                                                                                                      | 6                                                                                 | 7                                                                                   | 8                                                                                                                                                                          |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 10.5                                                                              | 95.7                                                                                                                                                                   | 16.0                                                                              | 27.8                                                                              | 11.9                                                                                                                                                                   | 94.3                                                                              | 20.0                                                                                | 23.8                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                                                                                                                    | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                                                                                                                  | 6.0                                                                               | * 5.7                                                                               | 6.0                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 11                                                                              | 70.0                                                                                                                                                                   | * 10                                                                              | 34.0                                                                              | * 11                                                                                                                                                                   | 70.0                                                                              | * 14                                                                                | 31.0                                                                                                                                                                       |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 4.9                                                                               | 22.7                                                                                                                                                                   | 12.3                                                                              | 10.2                                                                              | 7.0                                                                                                                                                                    | 36.0                                                                              | 16.3                                                                                | 9.2                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 2.4                                                                                                                                                                    | 0.0                                                                               | 0.9                                                                               | 0.0                                                                                                                                                                    | 2.9                                                                               | 0.0                                                                                 | 0.8                                                                                                                                                                        |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                                                                                                        | 33.8                                                                              |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                                                                                                        | C                                                                                 |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                   |                                                                                                                                                                        |                                                                                   |                                                                                     |                                                                                                                                                                            |                                                                                     |                                                                                     |                                                                                                                                                                            |                                                                                     |

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 361   | 361   | 687   | 356   | 25    |      |
| Future Volume (vph)  | 361   | 361   | 687   | 356   | 25    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 85.4  | 85.4  | 120.0 | 22.6  | 22.6  |      |
| Actuated g/C Ratio   | 0.71  | 0.71  | 1.00  | 0.19  | 0.19  |      |
| v/c Ratio            | 0.16  | 0.16  | 0.48  | 0.61  | 0.09  |      |
| Control Delay        | 6.3   | 6.3   | 1.1   | 48.3  | 13.2  |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 6.3   | 6.3   | 1.1   | 48.3  | 13.2  |      |
| LOS                  | A     | A     | A     | D     | B     |      |
| Approach Delay       | 6.3   | 2.9   |       | 46.0  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 12.7

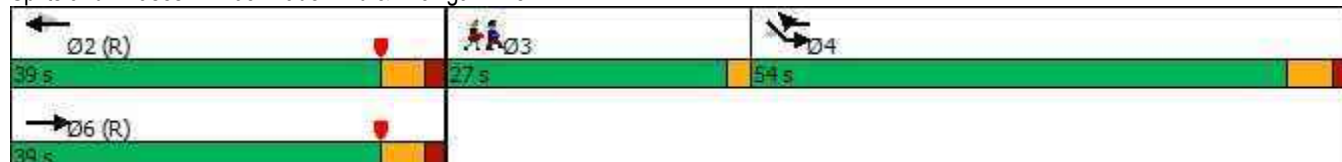
Intersection LOS: B

Intersection Capacity Utilization 47.5%

ICU Level of Service A

Analysis Period (min) 15

### Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 397  | 397  | 755  | 391  | 27   |
| v/c Ratio               | 0.16 | 0.16 | 0.48 | 0.61 | 0.09 |
| Control Delay           | 6.3  | 6.3  | 1.1  | 48.3 | 13.2 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 6.3  | 6.3  | 1.1  | 48.3 | 13.2 |
| Queue Length 50th (ft)  | 46   | 46   | 0    | 144  | 0    |
| Queue Length 95th (ft)  | 80   | 80   | 0    | 181  | 24   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2495 | 2495 | 1568 | 1360 | 635  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.16 | 0.16 | 0.48 | 0.29 | 0.04 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT   | WBT  | WBR                       | SEL   | SER  |
|-----------------------------------|------|-------|------|---------------------------|-------|------|
| Lane Configurations               |      | ↑↑    | ↑↑   | ↑                         | ↑↑    | ↑    |
| Traffic Volume (vph)              | 0    | 361   | 361  | 687                       | 356   | 25   |
| Future Volume (vph)               | 0    | 361   | 361  | 687                       | 356   | 25   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900                      | 1900  | 1900 |
| Total Lost time (s)               |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Lane Util. Factor                 |      | 0.95  | 0.95 | 1.00                      | 0.97  | 1.00 |
| Frpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 0.99 |
| Flpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Frt                               |      | 1.00  | 1.00 | 0.85                      | 1.00  | 0.85 |
| Flt Protected                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (prot)                 |      | 3505  | 3505 | 1568                      | 3400  | 1547 |
| Flt Permitted                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (perm)                 |      | 3505  | 3505 | 1568                      | 3400  | 1547 |
| Peak-hour factor, PHF             | 0.91 | 0.91  | 0.91 | 0.91                      | 0.91  | 0.91 |
| Adj. Flow (vph)                   | 0    | 397   | 397  | 755                       | 391   | 27   |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 76                        | 0     | 22   |
| Lane Group Flow (vph)             | 0    | 397   | 397  | 680                       | 391   | 5    |
| Confl. Peds. (#/hr)               | 6    |       |      |                           |       |      |
| Confl. Bikes (#/hr)               |      |       |      |                           |       | 1    |
| Turn Type                         |      | NA    | NA   | pm+ov                     | Prot  | Perm |
| Protected Phases                  |      | 6     | 2    | 4                         | 4     |      |
| Permitted Phases                  |      |       |      | 2                         |       | 4    |
| Actuated Green, G (s)             |      | 85.4  | 85.4 | 108.0                     | 22.6  | 22.6 |
| Effective Green, g (s)            |      | 85.4  | 85.4 | 108.0                     | 22.6  | 22.6 |
| Actuated g/C Ratio                |      | 0.71  | 0.71 | 0.90                      | 0.19  | 0.19 |
| Clearance Time (s)                |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Vehicle Extension (s)             |      | 1.0   | 1.0  | 3.5                       | 3.5   | 3.5  |
| Lane Grp Cap (vph)                |      | 2494  | 2494 | 1568                      | 640   | 291  |
| v/s Ratio Prot                    |      | 0.11  | 0.11 | c0.08                     | c0.12 |      |
| v/s Ratio Perm                    |      |       |      | 0.35                      |       | 0.00 |
| v/c Ratio                         |      | 0.16  | 0.16 | 0.43                      | 0.61  | 0.02 |
| Uniform Delay, d1                 |      | 5.6   | 5.6  | 1.0                       | 44.7  | 39.7 |
| Progression Factor                |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Incremental Delay, d2             |      | 0.1   | 0.1  | 0.2                       | 1.8   | 0.0  |
| Delay (s)                         |      | 5.8   | 5.8  | 1.2                       | 46.5  | 39.7 |
| Level of Service                  |      | A     | A    | A                         | D     | D    |
| Approach Delay (s)                |      | 5.8   | 2.8  |                           | 46.0  |      |
| Approach LOS                      |      | A     | A    |                           | D     |      |
| <b>Intersection Summary</b>       |      |       |      |                           |       |      |
| HCM 2000 Control Delay            |      | 12.6  |      | HCM 2000 Level of Service |       | B    |
| HCM 2000 Volume to Capacity ratio |      | 0.50  |      |                           |       |      |
| Actuated Cycle Length (s)         |      | 120.0 |      | Sum of lost time (s)      |       | 14.0 |
| Intersection Capacity Utilization |      | 47.5% |      | ICU Level of Service      |       | A    |
| Analysis Period (min)             |      | 15    |      |                           |       |      |
| c Critical Lane Group             |      |       |      |                           |       |      |



## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.

# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 15                                                                                | 13                                                                                | 26                                                                                | 16                                                                                | 684                                                                               | 6                                                                                 | 1284                                                                                | 314                                                                                 | 1008                                                                                |
| Future Volume (vph)  | 15                                                                                | 13                                                                                | 26                                                                                | 16                                                                                | 684                                                                               | 6                                                                                 | 1284                                                                                | 314                                                                                 | 1008                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 48.7                                                                              | 65.0                                                                                | 48.7                                                                                | 65.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 32.5%                                                                             | 43.3%                                                                               | 32.5%                                                                               | 43.3%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 10.9                                                                              |                                                                                   | 10.9                                                                              | 150.0                                                                             | 10.2                                                                              | 101.4                                                                               | 23.3                                                                                | 127.6                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.07                                                                              |                                                                                   | 0.07                                                                              | 1.00                                                                              | 0.07                                                                              | 0.68                                                                                | 0.16                                                                                | 0.85                                                                                |
| v/c Ratio            |                                                                                   | 0.30                                                                              |                                                                                   | 0.44                                                                              | 0.50                                                                              | 0.06                                                                              | 0.63                                                                                | 0.68                                                                                | 0.39                                                                                |
| Control Delay        |                                                                                   | 69.1                                                                              |                                                                                   | 79.5                                                                              | 1.3                                                                               | 72.2                                                                              | 15.1                                                                                | 67.0                                                                                | 4.5                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          |                                                                                   | 69.1                                                                              |                                                                                   | 79.5                                                                              | 1.3                                                                               | 72.2                                                                              | 15.2                                                                                | 67.0                                                                                | 4.5                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | E                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 69.1                                                                              |                                                                                   | 5.8                                                                               |                                                                                   |                                                                                   | 15.4                                                                                |                                                                                     | 19.3                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | B                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 118 (79%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 15.3

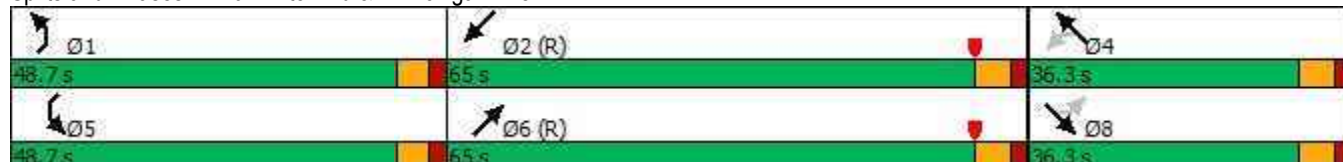
Intersection LOS: B

Intersection Capacity Utilization 75.0%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave



## Queues

### 101: Alton Rd & N Michigan Ave



| Lane Group              | SET  | NWT  | NWR  | NEL  | NET  | SWL  | SWT  |
|-------------------------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 30   | 43   | 705  | 6    | 1351 | 324  | 1045 |
| v/c Ratio               | 0.30 | 0.44 | 0.50 | 0.06 | 0.63 | 0.68 | 0.39 |
| Control Delay           | 69.1 | 79.5 | 1.3  | 72.2 | 15.1 | 67.0 | 4.5  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.0  |
| Total Delay             | 69.1 | 79.5 | 1.3  | 72.2 | 15.2 | 67.0 | 4.5  |
| Queue Length 50th (ft)  | 27   | 41   | 0    | 6    | 465  | 157  | 96   |
| Queue Length 95th (ft)  | 61   | 82   | 0    | m11  | 621  | 201  | 256  |
| Internal Link Dist (ft) | 247  | 552  |      |      | 268  |      | 227  |
| Turn Bay Length (ft)    |      |      |      | 100  |      | 265  |      |
| Base Capacity (vph)     | 279  | 279  | 1411 | 462  | 2151 | 856  | 2680 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 127  | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 0    | 158  |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.11 | 0.15 | 0.50 | 0.01 | 0.67 | 0.38 | 0.41 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM 6th Signalized Intersection Summary

## 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations                                                                                      |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 15                                                                                | 13                                                                                | 2                                                                                 | 26                                                                                | 16                                                                                | 684                                                                               | 6                                                                                  | 1284                                                                                | 26                                                                                  | 314                                                                                 | 1008                                                                                | 6                                                                                   |
| Future Volume (veh/h)                                                                                    | 15                                                                                | 13                                                                                | 2                                                                                 | 26                                                                                | 16                                                                                | 684                                                                               | 6                                                                                  | 1284                                                                                | 26                                                                                  | 314                                                                                 | 1008                                                                                | 6                                                                                   |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                              |                                                                                   | 0.98                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 15                                                                                | 13                                                                                | 2                                                                                 | 27                                                                                | 16                                                                                | 0                                                                                 | 6                                                                                  | 1324                                                                                | 27                                                                                  | 324                                                                                 | 1039                                                                                | 6                                                                                   |
| Peak Hour Factor                                                                                         | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                                                     | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                               | 81                                                                                | 59                                                                                | 7                                                                                 | 98                                                                                | 48                                                                                |                                                                                   | 22                                                                                 | 2150                                                                                | 44                                                                                  | 416                                                                                 | 2578                                                                                | 15                                                                                  |
| Arrive On Green                                                                                          | 0.08                                                                              | 0.08                                                                              | 0.07                                                                              | 0.08                                                                              | 0.08                                                                              | 0.00                                                                              | 0.03                                                                               | 1.00                                                                                | 1.00                                                                                | 0.13                                                                                | 0.80                                                                                | 0.80                                                                                |
| Sat Flow, veh/h                                                                                          | 599                                                                               | 785                                                                               | 99                                                                                | 786                                                                               | 640                                                                               | 1415                                                                              | 1590                                                                               | 3178                                                                                | 65                                                                                  | 3086                                                                                | 3234                                                                                | 19                                                                                  |
| Grp Volume(v), veh/h                                                                                     | 30                                                                                | 0                                                                                 | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 6                                                                                  | 660                                                                                 | 691                                                                                 | 324                                                                                 | 510                                                                                 | 535                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1483                                                                              | 0                                                                                 | 0                                                                                 | 1426                                                                              | 0                                                                                 | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1657                                                                                | 1543                                                                                | 1586                                                                                | 1666                                                                                |
| Q Serve(g_s), s                                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.4                                                                               | 0.0                                                                               | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 15.2                                                                                | 14.4                                                                                | 14.4                                                                                |
| Cycle Q Clear(g_c), s                                                                                    | 2.6                                                                               | 0.0                                                                               | 0.0                                                                               | 4.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.6                                                                                | 0.0                                                                                 | 0.0                                                                                 | 15.2                                                                                | 14.4                                                                                | 14.4                                                                                |
| Prop In Lane                                                                                             | 0.50                                                                              |                                                                                   | 0.07                                                                              | 0.63                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.04                                                                                | 1.00                                                                                |                                                                                     | 0.01                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 148                                                                               | 0                                                                                 | 0                                                                                 | 147                                                                               | 0                                                                                 |                                                                                   | 22                                                                                 | 1073                                                                                | 1121                                                                                | 416                                                                                 | 1265                                                                                | 1328                                                                                |
| V/C Ratio(X)                                                                                             | 0.20                                                                              | 0.00                                                                              | 0.00                                                                              | 0.29                                                                              | 0.00                                                                              |                                                                                   | 0.27                                                                               | 0.62                                                                                | 0.62                                                                                | 0.78                                                                                | 0.40                                                                                | 0.40                                                                                |
| Avail Cap(c_a), veh/h                                                                                    | 332                                                                               | 0                                                                                 | 0                                                                                 | 326                                                                               | 0                                                                                 |                                                                                   | 467                                                                                | 1073                                                                                | 1121                                                                                | 864                                                                                 | 1265                                                                                | 1328                                                                                |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                               | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 0.86                                                                               | 0.86                                                                                | 0.86                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 65.3                                                                              | 0.0                                                                               | 0.0                                                                               | 65.9                                                                              | 0.0                                                                               | 0.0                                                                               | 72.1                                                                               | 0.0                                                                                 | 0.0                                                                                 | 62.7                                                                                | 4.5                                                                                 | 4.5                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 0.5                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 18.9                                                                               | 2.3                                                                                 | 2.2                                                                                 | 10.8                                                                                | 1.0                                                                                 | 0.9                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.1                                                                               | 0.0                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.3                                                                                | 0.7                                                                                 | 0.7                                                                                 | 6.6                                                                                 | 4.4                                                                                 | 4.6                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 65.8                                                                              | 0.0                                                                               | 0.0                                                                               | 66.7                                                                              | 0.0                                                                               | 0.0                                                                               | 91.1                                                                               | 2.3                                                                                 | 2.2                                                                                 | 73.6                                                                                | 5.5                                                                                 | 5.5                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                  | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                      |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 43                                                                                |                                                                                   |                                                                                    | 1357                                                                                |                                                                                     |                                                                                     | 1369                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                    |                                                                                   | 65.8                                                                              |                                                                                   |                                                                                   | 66.7                                                                              |                                                                                   |                                                                                    | 2.6                                                                                 |                                                                                     |                                                                                     | 21.6                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 6.8                                                                               | 126.6                                                                             |                                                                                   | 16.6                                                                              | 26.9                                                                              | 106.5                                                                             |                                                                                    | 16.6                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                             | 6.0                                                                               |                                                                                   | * 6.3                                                                             | * 5.7                                                                             | 6.0                                                                               |                                                                                    | * 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                   | * 30                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                    | * 30                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 2.6                                                                               | 16.4                                                                              |                                                                                   | 6.0                                                                               | 17.2                                                                              | 2.0                                                                               |                                                                                    | 4.6                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.0                                                                               | 0.9                                                                               |                                                                                   | 0.1                                                                               | 4.0                                                                               | 1.2                                                                               |                                                                                    | 0.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                   |                                                                                   | 13.6                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 92                                                                                | 1121                                                                              | 6                                                                                  | 844                                                                                 | 205                                                                                 |
| Future Volume (vph)  | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 92                                                                                | 1121                                                                              | 6                                                                                  | 844                                                                                 | 205                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                  |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                  | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                               | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 18.0                                                                              | 12.0                                                                              | 99.0                                                                              | 87.0                                                                               | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 12.0%                                                                             | 8.0%                                                                              | 66.0%                                                                             | 58.0%                                                                              | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                               | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                              | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 16.7                                                                              | 15.4                                                                              | 16.7                                                                              | 8.3                                                                               | 116.3                                                                             | 115.0                                                                             | 104.5                                                                              | 104.5                                                                               | 104.5                                                                               |
| Actuated g/C Ratio   | 0.11                                                                              | 0.10                                                                              | 0.11                                                                              | 0.06                                                                              | 0.78                                                                              | 0.77                                                                              | 0.70                                                                               | 0.70                                                                                | 0.70                                                                                |
| v/c Ratio            | 0.63                                                                              | 0.68                                                                              | 0.13                                                                              | 0.07                                                                              | 0.25                                                                              | 0.49                                                                              | 0.02                                                                               | 0.40                                                                                | 0.21                                                                                |
| Control Delay        | 79.9                                                                              | 85.9                                                                              | 1.0                                                                               | 0.7                                                                               | 7.1                                                                               | 8.6                                                                               | 9.2                                                                                | 12.0                                                                                | 5.8                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                                | 0.3                                                                                 | 0.5                                                                                 |
| Total Delay          | 79.9                                                                              | 85.9                                                                              | 1.0                                                                               | 0.8                                                                               | 7.1                                                                               | 8.8                                                                               | 9.2                                                                                | 12.3                                                                                | 6.3                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 71.2                                                                              |                                                                                   | 0.8                                                                               |                                                                                   | 8.7                                                                               |                                                                                    | 11.1                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                    | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 129 (86%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 15.5

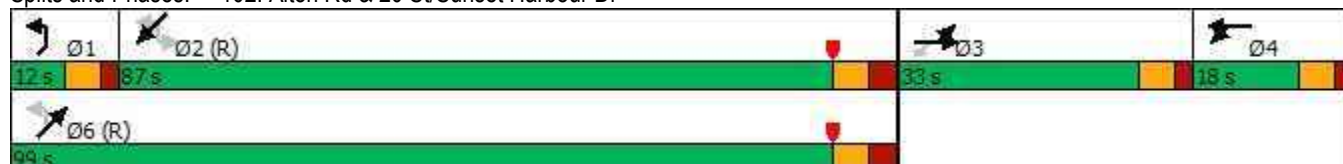
Intersection LOS: B

Intersection Capacity Utilization 70.1%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 105  | 105  | 35   | 14   | 96   | 1173 | 6    | 879  | 214  |
| v/c Ratio               | 0.63 | 0.68 | 0.13 | 0.07 | 0.25 | 0.49 | 0.02 | 0.40 | 0.21 |
| Control Delay           | 79.9 | 85.9 | 1.0  | 0.7  | 7.1  | 8.6  | 9.2  | 12.0 | 5.8  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.1  | 0.0  | 0.1  | 0.0  | 0.3  | 0.5  |
| Total Delay             | 79.9 | 85.9 | 1.0  | 0.8  | 7.1  | 8.8  | 9.2  | 12.3 | 6.3  |
| Queue Length 50th (ft)  | 105  | 106  | 0    | 0    | 16   | 162  | 2    | 188  | 42   |
| Queue Length 95th (ft)  | 168  | 170  | 0    | 0    | 51   | 352  | m0   | 348  | 127  |
| Internal Link Dist (ft) |      | 202  |      | 173  |      | 325  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 282  | 271  | 364  | 236  | 390  | 2416 | 278  | 2198 | 1005 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 656  | 467  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 45   | 0    | 375  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.37 | 0.39 | 0.10 | 0.07 | 0.25 | 0.57 | 0.02 | 0.57 | 0.40 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                | 92                                                                                  | 1121                                                                                | 5                                                                                   | 6                                                                                   | 844                                                                                 | 205                                                                                 |
| Future Volume (vph)               | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                | 92                                                                                  | 1121                                                                                | 5                                                                                   | 6                                                                                   | 844                                                                                 | 205                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.86                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1508                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 1577                                                                                | 3152                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1382                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.27                                                                                | 1.00                                                                                |                                                                                     | 0.24                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1508                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 443                                                                                 | 3152                                                                                |                                                                                     | 400                                                                                 | 3154                                                                                | 1382                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 202                                                                               | 8                                                                                 | 35                                                                                | 0                                                                                 | 0                                                                                 | 14                                                                                | 96                                                                                  | 1168                                                                                | 5                                                                                   | 6                                                                                   | 879                                                                                 | 214                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 31                                                                                | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 46                                                                                  |
| Lane Group Flow (vph)             | 105                                                                               | 105                                                                               | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 96                                                                                  | 1173                                                                                | 0                                                                                   | 6                                                                                   | 879                                                                                 | 168                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              |                                                                                   | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 15.4                                                                              | 15.4                                                                              | 15.4                                                                              |                                                                                   | 2.8                                                                               |                                                                                   | 112.2                                                                               | 112.2                                                                               |                                                                                     | 99.2                                                                                | 99.2                                                                                | 99.2                                                                                |
| Effective Green, g (s)            | 16.7                                                                              | 15.4                                                                              | 16.7                                                                              |                                                                                   | 4.1                                                                               |                                                                                   | 111.2                                                                               | 111.2                                                                               |                                                                                     | 100.7                                                                               | 100.7                                                                               | 100.7                                                                               |
| Actuated g/C Ratio                | 0.11                                                                              | 0.10                                                                              | 0.11                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.74                                                                                | 0.74                                                                                |                                                                                     | 0.67                                                                                | 0.67                                                                                | 0.67                                                                                |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 166                                                                               | 154                                                                               | 157                                                                               |                                                                                   | 39                                                                                |                                                                                   | 373                                                                                 | 2336                                                                                |                                                                                     | 268                                                                                 | 2117                                                                                | 927                                                                                 |
| v/s Ratio Prot                    | c0.07                                                                             | 0.07                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | 0.01                                                                                | c0.37                                                                               |                                                                                     |                                                                                     | 0.28                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.18                                                                                |                                                                                     |                                                                                     | 0.01                                                                                |                                                                                     | 0.12                                                                                |
| v/c Ratio                         | 0.63                                                                              | 0.68                                                                              | 0.02                                                                              |                                                                                   | 0.01                                                                              |                                                                                   | 0.26                                                                                | 0.50                                                                                |                                                                                     | 0.02                                                                                | 0.42                                                                                | 0.18                                                                                |
| Uniform Delay, d1                 | 63.7                                                                              | 64.9                                                                              | 59.4                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.7                                                                                 | 8.0                                                                                 |                                                                                     | 8.2                                                                                 | 11.2                                                                                | 9.2                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.78                                                                                | 1.01                                                                                | 1.28                                                                                |
| Incremental Delay, d2             | 6.7                                                                               | 10.8                                                                              | 0.0                                                                               |                                                                                   | 0.1                                                                               |                                                                                   | 0.1                                                                                 | 0.8                                                                                 |                                                                                     | 0.1                                                                                 | 0.6                                                                                 | 0.4                                                                                 |
| Delay (s)                         | 70.4                                                                              | 75.7                                                                              | 59.4                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.8                                                                                 | 8.8                                                                                 |                                                                                     | 6.5                                                                                 | 11.9                                                                                | 12.3                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 71.1                                                                              |                                                                                   |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                     | 8.6                                                                                 |                                                                                     |                                                                                     | 12.0                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 16.2                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.53                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 23.8                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 70.1%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.



HCM 6th TWSC  
103: Alton Rd & 19 St

| Intersection             |        |                                                                                   |                                                                                   |        |      |                                                                                   |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 0.2    |                                                                                   |                                                                                   |        |      |                                                                                   |
| Movement                 | WBL    | WBR                                                                               | NBT                                                                               | NBR    | SBL  | SBT                                                                               |
| Lane Configurations      |        |  |  |        |      |  |
| Traffic Vol, veh/h       | 0      | 34                                                                                | 1185                                                                              | 38     | 0    | 883                                                                               |
| Future Vol, veh/h        | 0      | 34                                                                                | 1185                                                                              | 38     | 0    | 883                                                                               |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0    | 0                                                                                 |
| Sign Control             | Stop   | Stop                                                                              | Free                                                                              | Free   | Free | Free                                                                              |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -    | None                                                                              |
| Storage Length           | -      | 0                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Veh in Median Storage, # | 0      | -                                                                                 | 0                                                                                 | -      | -    | 0                                                                                 |
| Grade, %                 | 0      | -                                                                                 | 0                                                                                 | -      | -    | 0                                                                                 |
| Peak Hour Factor         | 92     | 92                                                                                | 92                                                                                | 92     | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3      | 3                                                                                 | 3                                                                                 | 3      | 3    | 3                                                                                 |
| Mvmt Flow                | 0      | 37                                                                                | 1288                                                                              | 41     | 0    | 960                                                                               |
| Major/Minor              | Minor1 | Major1                                                                            |                                                                                   | Major2 |      |                                                                                   |
| Conflicting Flow All     | -      | 665                                                                               | 0                                                                                 | 0      | -    | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy            | -      | 4.5                                                                               | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Follow-up Hdwy           | -      | 3                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Pot Cap-1 Maneuver       | 0      | 681                                                                               | -                                                                                 | -      | 0    | -                                                                                 |
| Stage 1                  | 0      | -                                                                                 | -                                                                                 | -      | 0    | -                                                                                 |
| Stage 2                  | 0      | -                                                                                 | -                                                                                 | -      | 0    | -                                                                                 |
| Platoon blocked, %       |        |                                                                                   | -                                                                                 | -      |      | -                                                                                 |
| Mov Cap-1 Maneuver       | -      | 681                                                                               | -                                                                                 | -      | -    | -                                                                                 |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | -    | -                                                                                 |
| Approach                 | WB     | NB                                                                                |                                                                                   | SB     |      |                                                                                   |
| HCM Control Delay, s     | 10.6   | 0                                                                                 |                                                                                   | 0      |      |                                                                                   |
| HCM LOS                  | B      |                                                                                   |                                                                                   |        |      |                                                                                   |
| Minor Lane/Major Mvmt    | NBT    | NBRWBLn1                                                                          |                                                                                   | SBT    |      |                                                                                   |
| Capacity (veh/h)         | -      | - 681                                                                             |                                                                                   | -      |      |                                                                                   |
| HCM Lane V/C Ratio       | -      | - 0.054                                                                           |                                                                                   | -      |      |                                                                                   |
| HCM Control Delay (s)    | -      | - 10.6                                                                            |                                                                                   | -      |      |                                                                                   |
| HCM Lane LOS             | -      | - B                                                                               |                                                                                   | -      |      |                                                                                   |
| HCM 95th %tile Q(veh)    | -      | - 0.2                                                                             |                                                                                   | -      |      |                                                                                   |

# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 228                                                                               | 163                                                                               | 183                                                                               | 190                                                                               | 49                                                                                | 77                                                                                | 899                                                                                | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (vph)  | 228                                                                               | 163                                                                               | 183                                                                               | 190                                                                               | 49                                                                                | 77                                                                                | 899                                                                                | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                 | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                    |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                  | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                               | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                               | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                              | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                              | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 24.9                                                                              | 14.3                                                                              | 32.8                                                                              | 18.2                                                                              | 18.2                                                                              | 96.7                                                                              | 90.2                                                                               | 10.1                                                                                | 90.9                                                                                | 101.5                                                                               |
| Actuated g/C Ratio   | 0.17                                                                              | 0.10                                                                              | 0.22                                                                              | 0.12                                                                              | 0.12                                                                              | 0.64                                                                              | 0.60                                                                               | 0.07                                                                                | 0.61                                                                                | 0.68                                                                                |
| v/c Ratio            | 1.21                                                                              | 0.67                                                                              | 0.87                                                                              | 0.55                                                                              | 0.21                                                                              | 0.25                                                                              | 0.66                                                                               | 0.57                                                                                | 0.47                                                                                | 0.12                                                                                |
| Control Delay        | 176.1                                                                             | 73.7                                                                              | 84.7                                                                              | 67.0                                                                              | 1.8                                                                               | 10.2                                                                              | 23.3                                                                               | 87.1                                                                                | 17.9                                                                                | 4.0                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 176.1                                                                             | 73.7                                                                              | 84.7                                                                              | 67.0                                                                              | 1.8                                                                               | 10.2                                                                              | 23.3                                                                               | 87.1                                                                                | 17.9                                                                                | 4.0                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | F                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | C                                                                                  | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 130.5                                                                             |                                                                                   | 67.1                                                                              |                                                                                   |                                                                                   | 22.4                                                                               |                                                                                     | 20.3                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                  |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 24 (16%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.21

Intersection Signal Delay: 42.9

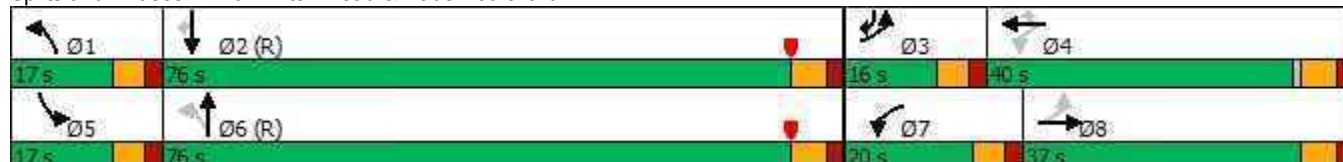
Intersection LOS: D

Intersection Capacity Utilization 84.3%

ICU Level of Service E

Analysis Period (min) 15

### Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 251   | 202  | 201  | 209  | 54   | 85   | 1217 | 60   | 893  | 113  |
| v/c Ratio               | 1.21  | 0.67 | 0.87 | 0.55 | 0.21 | 0.25 | 0.66 | 0.57 | 0.47 | 0.12 |
| Control Delay           | 176.1 | 73.7 | 84.7 | 67.0 | 1.8  | 10.2 | 23.3 | 87.1 | 17.9 | 4.0  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 176.1 | 73.7 | 84.7 | 67.0 | 1.8  | 10.2 | 23.3 | 87.1 | 17.9 | 4.0  |
| Queue Length 50th (ft)  | ~277  | 98   | 175  | 102  | 0    | 25   | 406  | 58   | 242  | 13   |
| Queue Length 95th (ft)  | #450  | 139  | #290 | 143  | 0    | 49   | 564  | 106  | 330  | 38   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 208   | 643  | 233  | 735  | 404  | 382  | 1839 | 127  | 1910 | 935  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.21  | 0.31 | 0.86 | 0.28 | 0.13 | 0.22 | 0.66 | 0.47 | 0.47 | 0.12 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                                                                                                               |  |  |  |  |  |  |   |  |  |  |  |  |
|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                        | 228                                                                               | 163                                                                               | 21                                                                                | 183                                                                               | 190                                                                               | 49                                                                                | 77                                                                                  | 899                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (veh/h)                                                                                         | 228                                                                               | 163                                                                               | 21                                                                                | 183                                                                               | 190                                                                               | 49                                                                                | 77                                                                                  | 899                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 251                                                                               | 179                                                                               | 0                                                                                 | 201                                                                               | 209                                                                               | 0                                                                                 | 85                                                                                  | 988                                                                                 | 229                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                                    | 249                                                                               | 387                                                                               |                                                                                   | 273                                                                               | 472                                                                               |                                                                                   | 319                                                                                 | 1477                                                                                | 341                                                                                 | 74                                                                                  | 1880                                                                                | 916                                                                                 |
| Arrive On Green                                                                                               | 0.07                                                                              | 0.12                                                                              | 0.00                                                                              | 0.10                                                                              | 0.15                                                                              | 0.00                                                                              | 0.03                                                                                | 0.58                                                                                | 0.58                                                                                | 0.05                                                                                | 0.59                                                                                | 0.59                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                                | 2546                                                                                | 588                                                                                 | 1590                                                                                | 3173                                                                                | 1382                                                                                |
| Grp Volume(v), veh/h                                                                                          | 251                                                                               | 179                                                                               | 0                                                                                 | 201                                                                               | 209                                                                               | 0                                                                                 | 85                                                                                  | 615                                                                                 | 602                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                                | 1586                                                                                | 1548                                                                                | 1590                                                                                | 1586                                                                                | 1382                                                                                |
| Q Serve(g_s), s                                                                                               | 10.3                                                                              | 7.9                                                                               | 0.0                                                                               | 14.3                                                                              | 9.0                                                                               | 0.0                                                                               | 3.3                                                                                 | 39.8                                                                                | 40.1                                                                                | 5.6                                                                                 | 23.9                                                                                | 4.5                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 10.3                                                                              | 7.9                                                                               | 0.0                                                                               | 14.3                                                                              | 9.0                                                                               | 0.0                                                                               | 3.3                                                                                 | 39.8                                                                                | 40.1                                                                                | 5.6                                                                                 | 23.9                                                                                | 4.5                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                                |                                                                                     | 0.38                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 249                                                                               | 387                                                                               |                                                                                   | 273                                                                               | 472                                                                               |                                                                                   | 319                                                                                 | 920                                                                                 | 898                                                                                 | 74                                                                                  | 1880                                                                                | 916                                                                                 |
| V/C Ratio(X)                                                                                                  | 1.01                                                                              | 0.46                                                                              |                                                                                   | 0.74                                                                              | 0.44                                                                              |                                                                                   | 0.27                                                                                | 0.67                                                                                | 0.67                                                                                | 0.81                                                                                | 0.48                                                                                | 0.12                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 249                                                                               | 656                                                                               |                                                                                   | 273                                                                               | 719                                                                               |                                                                                   | 384                                                                                 | 920                                                                                 | 898                                                                                 | 120                                                                                 | 1880                                                                                | 916                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 62.3                                                                              | 61.3                                                                              | 0.0                                                                               | 53.9                                                                              | 58.2                                                                              | 0.0                                                                               | 13.7                                                                                | 21.6                                                                                | 21.7                                                                                | 70.8                                                                                | 17.3                                                                                | 9.4                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 59.0                                                                              | 0.6                                                                               | 0.0                                                                               | 8.9                                                                               | 0.5                                                                               | 0.0                                                                               | 0.2                                                                                 | 3.8                                                                                 | 4.0                                                                                 | 7.7                                                                                 | 0.9                                                                                 | 0.3                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 9.2                                                                               | 3.2                                                                               | 0.0                                                                               | 1.8                                                                               | 3.7                                                                               | 0.0                                                                               | 1.2                                                                                 | 15.6                                                                                | 15.4                                                                                | 2.5                                                                                 | 9.0                                                                                 | 1.5                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 121.3                                                                             | 61.9                                                                              | 0.0                                                                               | 62.8                                                                              | 58.7                                                                              | 0.0                                                                               | 13.9                                                                                | 25.4                                                                                | 25.6                                                                                | 78.5                                                                                | 18.2                                                                                | 9.7                                                                                 |
| LnGrp LOS                                                                                                     | F                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                   | C                                                                                   | C                                                                                   | E                                                                                   | B                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                           | 430                                                                               |                                                                                   |                                                                                   | 410                                                                               |                                                                                   |                                                                                   | 1302                                                                                |                                                                                     |                                                                                     | 1066                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh                                                                                         | 96.6                                                                              |                                                                                   |                                                                                   | 60.7                                                                              |                                                                                   |                                                                                   | 24.8                                                                                |                                                                                     |                                                                                     | 20.7                                                                                |                                                                                     |                                                                                     |
| Approach LOS                                                                                                  | F                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 10.9                                                                              | 94.9                                                                              | 16.0                                                                              | 28.3                                                                              | 12.7                                                                              | 93.0                                                                              | 20.0                                                                                | 24.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                               | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 11                                                                              | 70.0                                                                              | * 10                                                                              | 34.0                                                                              | * 11                                                                              | 70.0                                                                              | * 14                                                                                | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 5.3                                                                               | 25.9                                                                              | 12.3                                                                              | 11.0                                                                              | 7.6                                                                               | 42.1                                                                              | 16.3                                                                                | 9.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 2.7                                                                               | 0.0                                                                               | 1.0                                                                               | 0.0                                                                               | 3.2                                                                               | 0.0                                                                                 | 0.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Intersection Summary                                                                                          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   |                                                                                   | 37.6                                                                              |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Notes                                                                                                         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 394   | 394   | 749   | 388   | 27    |      |
| Future Volume (vph)  | 394   | 394   | 749   | 388   | 27    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 83.3  | 83.3  | 120.0 | 24.7  | 24.7  |      |
| Actuated g/C Ratio   | 0.69  | 0.69  | 1.00  | 0.21  | 0.21  |      |
| v/c Ratio            | 0.18  | 0.18  | 0.52  | 0.61  | 0.09  |      |
| Control Delay        | 7.2   | 7.2   | 1.3   | 46.5  | 12.1  |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 7.2   | 7.2   | 1.3   | 46.5  | 12.1  |      |
| LOS                  | A     | A     | A     | D     | B     |      |
| Approach Delay       | 7.2   | 3.3   |       | 44.3  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 12.8

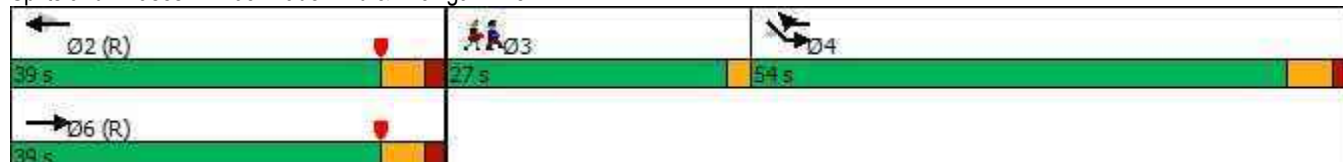
Intersection LOS: B

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 433  | 433  | 823  | 426  | 30   |
| v/c Ratio               | 0.18 | 0.18 | 0.52 | 0.61 | 0.09 |
| Control Delay           | 7.2  | 7.2  | 1.3  | 46.5 | 12.1 |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 7.2  | 7.2  | 1.3  | 46.5 | 12.1 |
| Queue Length 50th (ft)  | 55   | 55   | 0    | 156  | 0    |
| Queue Length 95th (ft)  | 92   | 92   | 0    | 193  | 24   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2434 | 2434 | 1568 | 1360 | 637  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.18 | 0.18 | 0.52 | 0.31 | 0.05 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT   | WBT  | WBR                       | SEL   | SER  |
|-----------------------------------|------|-------|------|---------------------------|-------|------|
| Lane Configurations               |      | ↑↑    | ↑↑   | ↑                         | ↑↑    | ↑    |
| Traffic Volume (vph)              | 0    | 394   | 394  | 749                       | 388   | 27   |
| Future Volume (vph)               | 0    | 394   | 394  | 749                       | 388   | 27   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900                      | 1900  | 1900 |
| Total Lost time (s)               |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Lane Util. Factor                 |      | 0.95  | 0.95 | 1.00                      | 0.97  | 1.00 |
| Frpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 0.99 |
| Flpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Frt                               |      | 1.00  | 1.00 | 0.85                      | 1.00  | 0.85 |
| Flt Protected                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (prot)                 |      | 3505  | 3505 | 1568                      | 3400  | 1547 |
| Flt Permitted                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (perm)                 |      | 3505  | 3505 | 1568                      | 3400  | 1547 |
| Peak-hour factor, PHF             | 0.91 | 0.91  | 0.91 | 0.91                      | 0.91  | 0.91 |
| Adj. Flow (vph)                   | 0    | 433   | 433  | 823                       | 426   | 30   |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 82                        | 0     | 24   |
| Lane Group Flow (vph)             | 0    | 433   | 433  | 741                       | 426   | 6    |
| Confl. Peds. (#/hr)               | 6    |       |      |                           |       |      |
| Confl. Bikes (#/hr)               |      |       |      |                           |       | 1    |
| Turn Type                         |      | NA    | NA   | pm+ov                     | Prot  | Perm |
| Protected Phases                  |      | 6     | 2    | 4                         | 4     |      |
| Permitted Phases                  |      |       |      | 2                         |       | 4    |
| Actuated Green, G (s)             |      | 83.3  | 83.3 | 108.0                     | 24.7  | 24.7 |
| Effective Green, g (s)            |      | 83.3  | 83.3 | 108.0                     | 24.7  | 24.7 |
| Actuated g/C Ratio                |      | 0.69  | 0.69 | 0.90                      | 0.21  | 0.21 |
| Clearance Time (s)                |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Vehicle Extension (s)             |      | 1.0   | 1.0  | 3.5                       | 3.5   | 3.5  |
| Lane Grp Cap (vph)                |      | 2433  | 2433 | 1568                      | 699   | 318  |
| v/s Ratio Prot                    |      | 0.12  | 0.12 | c0.10                     | c0.13 |      |
| v/s Ratio Perm                    |      |       |      | 0.38                      |       | 0.00 |
| v/c Ratio                         |      | 0.18  | 0.18 | 0.47                      | 0.61  | 0.02 |
| Uniform Delay, d1                 |      | 6.4   | 6.4  | 1.0                       | 43.3  | 38.0 |
| Progression Factor                |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Incremental Delay, d2             |      | 0.2   | 0.2  | 0.3                       | 1.6   | 0.0  |
| Delay (s)                         |      | 6.6   | 6.6  | 1.3                       | 44.9  | 38.0 |
| Level of Service                  |      | A     | A    | A                         | D     | D    |
| Approach Delay (s)                |      | 6.6   | 3.1  |                           | 44.4  |      |
| Approach LOS                      |      | A     | A    |                           | D     |      |
| <b>Intersection Summary</b>       |      |       |      |                           |       |      |
| HCM 2000 Control Delay            |      | 12.6  |      | HCM 2000 Level of Service |       | B    |
| HCM 2000 Volume to Capacity ratio |      | 0.54  |      |                           |       |      |
| Actuated Cycle Length (s)         |      | 120.0 |      | Sum of lost time (s)      |       | 14.0 |
| Intersection Capacity Utilization |      | 51.4% |      | ICU Level of Service      |       | A    |
| Analysis Period (min)             |      | 15    |      |                           |       |      |
| c Critical Lane Group             |      |       |      |                           |       |      |

## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.



# Timings

## 101: Alton Rd & N Michigan Ave

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | SEL                                                                               | SET                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | SWL                                                                                 | SWT                                                                                 |
| Lane Configurations  |                                                                                   |  |                                                                                   |  |  |  |  |  |  |
| Traffic Volume (vph) | 15                                                                                | 20                                                                                | 26                                                                                | 16                                                                                | 684                                                                               | 13                                                                                | 1304                                                                                | 334                                                                                 | 1008                                                                                |
| Future Volume (vph)  | 15                                                                                | 20                                                                                | 26                                                                                | 16                                                                                | 684                                                                               | 13                                                                                | 1304                                                                                | 334                                                                                 | 1008                                                                                |
| Turn Type            | Perm                                                                              | NA                                                                                | Perm                                                                              | NA                                                                                | Free                                                                              | Prot                                                                              | NA                                                                                  | Prot                                                                                | NA                                                                                  |
| Protected Phases     |                                                                                   | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | Free                                                                              |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase       | 8                                                                                 | 8                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 14.0                                                                                | 5.0                                                                                 | 14.0                                                                                |
| Minimum Split (s)    | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 10.7                                                                              | 27.0                                                                                | 10.7                                                                                | 27.0                                                                                |
| Total Split (s)      | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              | 36.3                                                                              |                                                                                   | 48.7                                                                              | 65.0                                                                                | 48.7                                                                                | 65.0                                                                                |
| Total Split (%)      | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             | 24.2%                                                                             |                                                                                   | 32.5%                                                                             | 43.3%                                                                               | 32.5%                                                                               | 43.3%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               |                                                                                   | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               | 2.3                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              |                                                                                   | -1.0                                                                              | -1.0                                                                                | 1.0                                                                                 | 1.0                                                                                 |
| Total Lost Time (s)  |                                                                                   | 5.3                                                                               |                                                                                   | 5.3                                                                               |                                                                                   | 4.7                                                                               | 5.0                                                                                 | 6.7                                                                                 | 7.0                                                                                 |
| Lead/Lag             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 |
| Lead-Lag Optimize?   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              |                                                                                   | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               |
| Act Effect Green (s) |                                                                                   | 10.9                                                                              |                                                                                   | 10.9                                                                              | 150.0                                                                             | 10.8                                                                              | 100.5                                                                               | 24.2                                                                                | 124.1                                                                               |
| Actuated g/C Ratio   |                                                                                   | 0.07                                                                              |                                                                                   | 0.07                                                                              | 1.00                                                                              | 0.07                                                                              | 0.67                                                                                | 0.16                                                                                | 0.83                                                                                |
| v/c Ratio            |                                                                                   | 0.37                                                                              |                                                                                   | 0.42                                                                              | 0.50                                                                              | 0.12                                                                              | 0.65                                                                                | 0.70                                                                                | 0.40                                                                                |
| Control Delay        |                                                                                   | 72.3                                                                              |                                                                                   | 78.2                                                                              | 1.3                                                                               | 70.3                                                                              | 15.9                                                                                | 66.8                                                                                | 5.9                                                                                 |
| Queue Delay          |                                                                                   | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          |                                                                                   | 72.3                                                                              |                                                                                   | 78.2                                                                              | 1.3                                                                               | 70.3                                                                              | 16.0                                                                                | 66.8                                                                                | 5.9                                                                                 |
| LOS                  |                                                                                   | E                                                                                 |                                                                                   | E                                                                                 | A                                                                                 | E                                                                                 | B                                                                                   | E                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 72.3                                                                              |                                                                                   | 5.7                                                                               |                                                                                   |                                                                                   | 16.5                                                                                |                                                                                     | 21.0                                                                                |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | B                                                                                   |                                                                                     | C                                                                                   |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 118 (79%), Referenced to phase 2:SWT and 6:NET, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.70

Intersection Signal Delay: 16.6

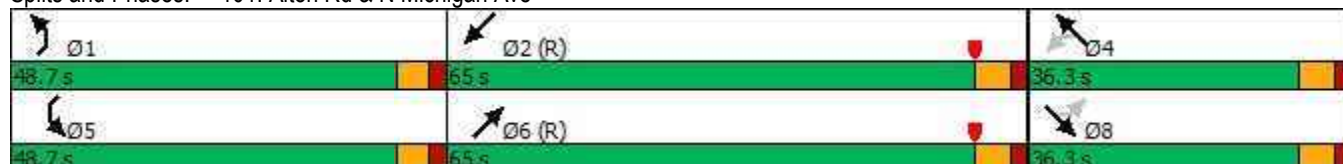
Intersection LOS: B

Intersection Capacity Utilization 76.9%

ICU Level of Service D

Analysis Period (min) 15

Splits and Phases: 101: Alton Rd & N Michigan Ave



## Queues

### 101: Alton Rd & N Michigan Ave

|                                                                   |  |  |  |  |  |  |  |
|-------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                                                        | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                 |
| Lane Group Flow (vph)                                             | 38                                                                                | 43                                                                                | 705                                                                               | 13                                                                                | 1377                                                                              | 344                                                                               | 1045                                                                                |
| v/c Ratio                                                         | 0.37                                                                              | 0.42                                                                              | 0.50                                                                              | 0.12                                                                              | 0.65                                                                              | 0.70                                                                              | 0.40                                                                                |
| Control Delay                                                     | 72.3                                                                              | 78.2                                                                              | 1.3                                                                               | 70.3                                                                              | 15.9                                                                              | 66.8                                                                              | 5.9                                                                                 |
| Queue Delay                                                       | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 0.0                                                                                 |
| Total Delay                                                       | 72.3                                                                              | 78.2                                                                              | 1.3                                                                               | 70.3                                                                              | 16.0                                                                              | 66.8                                                                              | 5.9                                                                                 |
| Queue Length 50th (ft)                                            | 34                                                                                | 41                                                                                | 0                                                                                 | 12                                                                                | 484                                                                               | 166                                                                               | 96                                                                                  |
| Queue Length 95th (ft)                                            | 73                                                                                | 82                                                                                | 0                                                                                 | m25                                                                               | 646                                                                               | 211                                                                               | 265                                                                                 |
| Internal Link Dist (ft)                                           | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                 |
| Turn Bay Length (ft)                                              |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 265                                                                               |                                                                                     |
| Base Capacity (vph)                                               | 291                                                                               | 289                                                                               | 1411                                                                              | 462                                                                               | 2132                                                                              | 856                                                                               | 2606                                                                                |
| Starvation Cap Reductn                                            | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 107                                                                               | 0                                                                                 | 0                                                                                   |
| Spillback Cap Reductn                                             | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 151                                                                                 |
| Storage Cap Reductn                                               | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |
| Reduced v/c Ratio                                                 | 0.13                                                                              | 0.15                                                                              | 0.50                                                                              | 0.03                                                                              | 0.68                                                                              | 0.40                                                                              | 0.43                                                                                |
| <b>Intersection Summary</b>                                       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |
| m Volume for 95th percentile queue is metered by upstream signal. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |

# HCM 6th Signalized Intersection Summary

## 101: Alton Rd & N Michigan Ave

|                                                                                                          |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations                                                                                      |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                   | 15                                                                                | 20                                                                                | 2                                                                                 | 26                                                                                | 16                                                                                | 684                                                                               | 13                                                                                 | 1304                                                                                | 32                                                                                  | 334                                                                                 | 1008                                                                                | 6                                                                                   |
| Future Volume (veh/h)                                                                                    | 15                                                                                | 20                                                                                | 2                                                                                 | 26                                                                                | 16                                                                                | 684                                                                               | 13                                                                                 | 1304                                                                                | 32                                                                                  | 334                                                                                 | 1008                                                                                | 6                                                                                   |
| Initial Q (Qb), veh                                                                                      | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                      | 0.99                                                                              |                                                                                   | 0.98                                                                              | 0.99                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                         | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                    |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                   | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                     | 15                                                                                | 21                                                                                | 2                                                                                 | 27                                                                                | 16                                                                                | 0                                                                                 | 13                                                                                 | 1344                                                                                | 33                                                                                  | 344                                                                                 | 1039                                                                                | 6                                                                                   |
| Peak Hour Factor                                                                                         | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                              | 0.97                                                                               | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                | 0.97                                                                                |
| Percent Heavy Veh, %                                                                                     | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                               | 66                                                                                | 76                                                                                | 6                                                                                 | 99                                                                                | 49                                                                                |                                                                                   | 33                                                                                 | 2114                                                                                | 52                                                                                  | 439                                                                                 | 2555                                                                                | 15                                                                                  |
| Arrive On Green                                                                                          | 0.08                                                                              | 0.08                                                                              | 0.07                                                                              | 0.08                                                                              | 0.08                                                                              | 0.00                                                                              | 0.04                                                                               | 1.00                                                                                | 1.00                                                                                | 0.14                                                                                | 0.79                                                                                | 0.80                                                                                |
| Sat Flow, veh/h                                                                                          | 433                                                                               | 1004                                                                              | 80                                                                                | 793                                                                               | 643                                                                               | 1415                                                                              | 1590                                                                               | 3163                                                                                | 78                                                                                  | 3086                                                                                | 3234                                                                                | 19                                                                                  |
| Grp Volume(v), veh/h                                                                                     | 38                                                                                | 0                                                                                 | 0                                                                                 | 43                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                 | 674                                                                                 | 703                                                                                 | 344                                                                                 | 510                                                                                 | 535                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                 | 1517                                                                              | 0                                                                                 | 0                                                                                 | 1436                                                                              | 0                                                                                 | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1654                                                                                | 1543                                                                                | 1586                                                                                | 1666                                                                                |
| Q Serve(g_s), s                                                                                          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.6                                                                               | 0.0                                                                               | 0.0                                                                               | 1.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 16.1                                                                                | 14.9                                                                                | 14.9                                                                                |
| Cycle Q Clear(g_c), s                                                                                    | 3.3                                                                               | 0.0                                                                               | 0.0                                                                               | 3.9                                                                               | 0.0                                                                               | 0.0                                                                               | 1.2                                                                                | 0.0                                                                                 | 0.0                                                                                 | 16.1                                                                                | 14.9                                                                                | 14.9                                                                                |
| Prop In Lane                                                                                             | 0.39                                                                              |                                                                                   | 0.05                                                                              | 0.63                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.05                                                                                | 1.00                                                                                |                                                                                     | 0.01                                                                                |
| Lane Grp Cap(c), veh/h                                                                                   | 149                                                                               | 0                                                                                 | 0                                                                                 | 148                                                                               | 0                                                                                 |                                                                                   | 33                                                                                 | 1060                                                                                | 1106                                                                                | 439                                                                                 | 1253                                                                                | 1316                                                                                |
| V/C Ratio(X)                                                                                             | 0.26                                                                              | 0.00                                                                              | 0.00                                                                              | 0.29                                                                              | 0.00                                                                              |                                                                                   | 0.40                                                                               | 0.64                                                                                | 0.64                                                                                | 0.78                                                                                | 0.41                                                                                | 0.41                                                                                |
| Avail Cap(c_a), veh/h                                                                                    | 338                                                                               | 0                                                                                 | 0                                                                                 | 326                                                                               | 0                                                                                 |                                                                                   | 467                                                                                | 1060                                                                                | 1106                                                                                | 864                                                                                 | 1253                                                                                | 1316                                                                                |
| HCM Platoon Ratio                                                                                        | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 2.00                                                                               | 2.00                                                                                | 2.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                       | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 1.00                                                                              | 0.00                                                                              | 0.00                                                                              | 0.85                                                                               | 0.85                                                                                | 0.85                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                 | 65.6                                                                              | 0.0                                                                               | 0.0                                                                               | 65.8                                                                              | 0.0                                                                               | 0.0                                                                               | 71.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 62.1                                                                                | 4.9                                                                                 | 4.9                                                                                 |
| Incr Delay (d2), s/veh                                                                                   | 0.7                                                                               | 0.0                                                                               | 0.0                                                                               | 0.8                                                                               | 0.0                                                                               | 0.0                                                                               | 22.3                                                                               | 2.5                                                                                 | 2.4                                                                                 | 10.5                                                                                | 1.0                                                                                 | 0.9                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                 | 1.4                                                                               | 0.0                                                                               | 0.0                                                                               | 1.6                                                                               | 0.0                                                                               | 0.0                                                                               | 0.7                                                                                | 0.7                                                                                 | 0.7                                                                                 | 7.0                                                                                 | 4.6                                                                                 | 4.8                                                                                 |
| Unsig. Movement Delay, s/veh                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                     | 66.2                                                                              | 0.0                                                                               | 0.0                                                                               | 66.6                                                                              | 0.0                                                                               | 0.0                                                                               | 93.3                                                                               | 2.5                                                                                 | 2.4                                                                                 | 72.6                                                                                | 5.8                                                                                 | 5.8                                                                                 |
| LnGrp LOS                                                                                                | E                                                                                 | A                                                                                 | A                                                                                 | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                  | A                                                                                   | A                                                                                   | E                                                                                   | A                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                      |                                                                                   | 38                                                                                |                                                                                   |                                                                                   | 43                                                                                |                                                                                   |                                                                                    | 1390                                                                                |                                                                                     |                                                                                     | 1389                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                    |                                                                                   | 66.2                                                                              |                                                                                   |                                                                                   | 66.6                                                                              |                                                                                   |                                                                                    | 3.3                                                                                 |                                                                                     |                                                                                     | 22.4                                                                                |                                                                                     |
| Approach LOS                                                                                             |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | A                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                     | 1                                                                                 | 2                                                                                 |                                                                                   | 4                                                                                 | 5                                                                                 | 6                                                                                 |                                                                                    | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                 | 7.8                                                                               | 125.5                                                                             |                                                                                   | 16.7                                                                              | 28.0                                                                              | 105.3                                                                             |                                                                                    | 16.7                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                  | * 5.7                                                                             | 6.0                                                                               |                                                                                   | * 6.3                                                                             | * 5.7                                                                             | 6.0                                                                               |                                                                                    | * 6.3                                                                               |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                   | * 30                                                                              | * 43                                                                              | 59.0                                                                              |                                                                                    | * 30                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                             | 3.2                                                                               | 16.9                                                                              |                                                                                   | 5.9                                                                               | 18.1                                                                              | 2.0                                                                               |                                                                                    | 5.3                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                  | 0.1                                                                               | 0.9                                                                               |                                                                                   | 0.1                                                                               | 4.2                                                                               | 1.2                                                                               |                                                                                    | 0.1                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                       |                                                                                   |                                                                                   |                                                                                   | 14.3                                                                              |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                              |                                                                                   |                                                                                   |                                                                                   | B                                                                                 |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [NWR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Timings

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                      |  |  |  |  |  |  |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBT                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                                | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 99                                                                                | 1148                                                                              | 6                                                                                  | 844                                                                                 | 211                                                                                 |
| Future Volume (vph)  | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 99                                                                                | 1148                                                                              | 6                                                                                  | 844                                                                                 | 211                                                                                 |
| Turn Type            | Split                                                                             | NA                                                                                | Perm                                                                              | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                               | NA                                                                                  | Perm                                                                                |
| Protected Phases     | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 1                                                                                 | 6                                                                                 |                                                                                    | 2                                                                                   |                                                                                     |
| Permitted Phases     |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   | 6                                                                                 |                                                                                   | 2                                                                                  |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 3                                                                                 | 3                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                 | 2                                                                                  | 2                                                                                   | 2                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                                | 7.0                                                                                 | 7.0                                                                                 |
| Minimum Split (s)    | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 13.3                                                                              | 11.0                                                                              | 43.3                                                                              | 43.3                                                                               | 43.3                                                                                | 43.3                                                                                |
| Total Split (s)      | 33.0                                                                              | 33.0                                                                              | 33.0                                                                              | 18.0                                                                              | 12.0                                                                              | 99.0                                                                              | 87.0                                                                               | 87.0                                                                                | 87.0                                                                                |
| Total Split (%)      | 22.0%                                                                             | 22.0%                                                                             | 22.0%                                                                             | 12.0%                                                                             | 8.0%                                                                              | 66.0%                                                                             | 58.0%                                                                              | 58.0%                                                                               | 58.0%                                                                               |
| Yellow Time (s)      | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.3                                                                               | 2.0                                                                               | 3.3                                                                               | 3.3                                                                                | 3.3                                                                                 | 3.3                                                                                 |
| Lost Time Adjust (s) | -1.3                                                                              | 0.0                                                                               | -1.3                                                                              | -1.3                                                                              | 1.0                                                                               | 1.0                                                                               | -1.5                                                                               | -1.5                                                                                | -1.5                                                                                |
| Total Lost Time (s)  | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               | 5.0                                                                               | 7.0                                                                               | 8.3                                                                               | 5.8                                                                                | 5.8                                                                                 | 5.8                                                                                 |
| Lead/Lag             | Lead                                                                              | Lead                                                                              | Lead                                                                              | Lag                                                                               | Lead                                                                              |                                                                                   | Lag                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                                | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                              | C-Max                                                                               | C-Max                                                                               |
| Act Effect Green (s) | 16.7                                                                              | 15.4                                                                              | 16.7                                                                              | 8.3                                                                               | 116.3                                                                             | 115.0                                                                             | 104.4                                                                              | 104.4                                                                               | 104.4                                                                               |
| Actuated g/C Ratio   | 0.11                                                                              | 0.10                                                                              | 0.11                                                                              | 0.06                                                                              | 0.78                                                                              | 0.77                                                                              | 0.70                                                                               | 0.70                                                                                | 0.70                                                                                |
| v/c Ratio            | 0.63                                                                              | 0.68                                                                              | 0.13                                                                              | 0.07                                                                              | 0.26                                                                              | 0.50                                                                              | 0.02                                                                               | 0.40                                                                                | 0.22                                                                                |
| Control Delay        | 79.9                                                                              | 85.9                                                                              | 1.0                                                                               | 0.8                                                                               | 7.3                                                                               | 8.8                                                                               | 7.5                                                                                | 10.9                                                                                | 5.0                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.2                                                                               | 0.0                                                                                | 0.3                                                                                 | 0.5                                                                                 |
| Total Delay          | 79.9                                                                              | 85.9                                                                              | 1.0                                                                               | 0.8                                                                               | 7.3                                                                               | 9.0                                                                               | 7.5                                                                                | 11.2                                                                                | 5.5                                                                                 |
| LOS                  | E                                                                                 | F                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                 | A                                                                                  | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 71.2                                                                              |                                                                                   | 0.8                                                                               |                                                                                   | 8.8                                                                               |                                                                                    | 10.0                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | E                                                                                 |                                                                                   | A                                                                                 |                                                                                   | A                                                                                 |                                                                                    | B                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 129 (86%), Referenced to phase 2:SWTL and 6:NETL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.68

Intersection Signal Delay: 15.0

Intersection LOS: B

Intersection Capacity Utilization 70.9%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 102: Alton Rd & 20 St/Sunset Harbour Dr



## Queues

### 102: Alton Rd & 20 St/Sunset Harbour Dr



| Lane Group              | EBL  | EBT  | EBR  | WBT  | NEL  | NET  | SWL  | SWT  | SWR  |
|-------------------------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 105  | 105  | 35   | 14   | 103  | 1201 | 6    | 879  | 220  |
| v/c Ratio               | 0.63 | 0.68 | 0.13 | 0.07 | 0.26 | 0.50 | 0.02 | 0.40 | 0.22 |
| Control Delay           | 79.9 | 85.9 | 1.0  | 0.8  | 7.3  | 8.8  | 7.5  | 10.9 | 5.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.2  | 0.0  | 0.3  | 0.5  |
| Total Delay             | 79.9 | 85.9 | 1.0  | 0.8  | 7.3  | 9.0  | 7.5  | 11.2 | 5.5  |
| Queue Length 50th (ft)  | 105  | 106  | 0    | 0    | 17   | 168  | 2    | 188  | 44   |
| Queue Length 95th (ft)  | 168  | 170  | 0    | 0    | 54   | 365  | m0   | 350  | 133  |
| Internal Link Dist (ft) |      | 202  |      | 173  |      | 325  |      | 268  |      |
| Turn Bay Length (ft)    |      |      |      |      | 270  |      | 110  |      | 120  |
| Base Capacity (vph)     | 282  | 271  | 364  | 233  | 391  | 2416 | 269  | 2194 | 1005 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 653  | 460  |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    | 398  | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.37 | 0.39 | 0.10 | 0.06 | 0.26 | 0.60 | 0.02 | 0.57 | 0.40 |

#### Intersection Summary

m Volume for 95th percentile queue is metered by upstream signal.

# HCM Signalized Intersection Capacity Analysis

## 102: Alton Rd & 20 St/Sunset Harbour Dr

|                                   |  |  |  |  |  |  |   |  |  |  |  |  |
|-----------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                          | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations               |  |  |  |                                                                                   |  |                                                                                   |  |  |                                                                                     |  |  |  |
| Traffic Volume (vph)              | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                | 99                                                                                  | 1148                                                                                | 5                                                                                   | 6                                                                                   | 844                                                                                 | 211                                                                                 |
| Future Volume (vph)               | 194                                                                               | 8                                                                                 | 34                                                                                | 0                                                                                 | 0                                                                                 | 13                                                                                | 99                                                                                  | 1148                                                                                | 5                                                                                   | 6                                                                                   | 844                                                                                 | 211                                                                                 |
| Ideal Flow (vphpl)                | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Total Lost time (s)               | 4.7                                                                               | 6.0                                                                               | 4.7                                                                               |                                                                                   | 5.0                                                                               |                                                                                   | 7.0                                                                                 | 8.3                                                                                 |                                                                                     | 5.8                                                                                 | 5.8                                                                                 | 5.8                                                                                 |
| Lane Util. Factor                 | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 0.95                                                                                |                                                                                     | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.98                                                                                |
| Flpb, ped/bikes                   | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Frt                               | 1.00                                                                              | 1.00                                                                              | 0.85                                                                              |                                                                                   | 0.86                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                | 1.00                                                                                | 0.85                                                                                |
| Flt Protected                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.95                                                                                | 1.00                                                                                |                                                                                     | 0.95                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (prot)                 | 1498                                                                              | 1508                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 1577                                                                                | 3152                                                                                |                                                                                     | 1577                                                                                | 3154                                                                                | 1382                                                                                |
| Flt Permitted                     | 0.95                                                                              | 0.96                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 0.27                                                                                | 1.00                                                                                |                                                                                     | 0.23                                                                                | 1.00                                                                                | 1.00                                                                                |
| Satd. Flow (perm)                 | 1498                                                                              | 1508                                                                              | 1411                                                                              |                                                                                   | 1436                                                                              |                                                                                   | 443                                                                                 | 3152                                                                                |                                                                                     | 389                                                                                 | 3154                                                                                | 1382                                                                                |
| Peak-hour factor, PHF             | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                              | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                | 0.96                                                                                |
| Adj. Flow (vph)                   | 202                                                                               | 8                                                                                 | 35                                                                                | 0                                                                                 | 0                                                                                 | 14                                                                                | 103                                                                                 | 1196                                                                                | 5                                                                                   | 6                                                                                   | 879                                                                                 | 220                                                                                 |
| RTOR Reduction (vph)              | 0                                                                                 | 0                                                                                 | 31                                                                                | 0                                                                                 | 14                                                                                | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 47                                                                                  |
| Lane Group Flow (vph)             | 105                                                                               | 105                                                                               | 4                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 103                                                                                 | 1201                                                                                | 0                                                                                   | 6                                                                                   | 879                                                                                 | 173                                                                                 |
| Confl. Bikes (#/hr)               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 1                                                                                   |
| Turn Type                         | Split                                                                             | NA                                                                                | Perm                                                                              |                                                                                   | NA                                                                                |                                                                                   | pm+pt                                                                               | NA                                                                                  |                                                                                     | Perm                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases                  | 3                                                                                 | 3                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |
| Permitted Phases                  |                                                                                   |                                                                                   | 3                                                                                 |                                                                                   |                                                                                   |                                                                                   | 6                                                                                   |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     | 2                                                                                   |
| Actuated Green, G (s)             | 15.4                                                                              | 15.4                                                                              | 15.4                                                                              |                                                                                   | 2.8                                                                               |                                                                                   | 112.2                                                                               | 112.2                                                                               |                                                                                     | 99.1                                                                                | 99.1                                                                                | 99.1                                                                                |
| Effective Green, g (s)            | 16.7                                                                              | 15.4                                                                              | 16.7                                                                              |                                                                                   | 4.1                                                                               |                                                                                   | 111.2                                                                               | 111.2                                                                               |                                                                                     | 100.6                                                                               | 100.6                                                                               | 100.6                                                                               |
| Actuated g/C Ratio                | 0.11                                                                              | 0.10                                                                              | 0.11                                                                              |                                                                                   | 0.03                                                                              |                                                                                   | 0.74                                                                                | 0.74                                                                                |                                                                                     | 0.67                                                                                | 0.67                                                                                | 0.67                                                                                |
| Clearance Time (s)                | 6.0                                                                               | 6.0                                                                               | 6.0                                                                               |                                                                                   | 6.3                                                                               |                                                                                   | 6.0                                                                                 | 7.3                                                                                 |                                                                                     | 7.3                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Vehicle Extension (s)             | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               |                                                                                   | 2.0                                                                                 | 1.0                                                                                 |                                                                                     | 1.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Lane Grp Cap (vph)                | 166                                                                               | 154                                                                               | 157                                                                               |                                                                                   | 39                                                                                |                                                                                   | 374                                                                                 | 2336                                                                                |                                                                                     | 260                                                                                 | 2115                                                                                | 926                                                                                 |
| v/s Ratio Prot                    | c0.07                                                                             | 0.07                                                                              |                                                                                   |                                                                                   | c0.00                                                                             |                                                                                   | 0.01                                                                                | c0.38                                                                               |                                                                                     |                                                                                     | 0.28                                                                                |                                                                                     |
| v/s Ratio Perm                    |                                                                                   |                                                                                   | 0.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.19                                                                                |                                                                                     |                                                                                     | 0.02                                                                                |                                                                                     | 0.12                                                                                |
| v/c Ratio                         | 0.63                                                                              | 0.68                                                                              | 0.02                                                                              |                                                                                   | 0.01                                                                              |                                                                                   | 0.28                                                                                | 0.51                                                                                |                                                                                     | 0.02                                                                                | 0.42                                                                                | 0.19                                                                                |
| Uniform Delay, d1                 | 63.7                                                                              | 64.9                                                                              | 59.4                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.7                                                                                 | 8.1                                                                                 |                                                                                     | 8.3                                                                                 | 11.3                                                                                | 9.3                                                                                 |
| Progression Factor                | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              |                                                                                   | 1.00                                                                                | 1.00                                                                                |                                                                                     | 0.62                                                                                | 0.90                                                                                | 1.10                                                                                |
| Incremental Delay, d2             | 6.7                                                                               | 10.8                                                                              | 0.0                                                                               |                                                                                   | 0.1                                                                               |                                                                                   | 0.1                                                                                 | 0.8                                                                                 |                                                                                     | 0.2                                                                                 | 0.6                                                                                 | 0.4                                                                                 |
| Delay (s)                         | 70.4                                                                              | 75.7                                                                              | 59.4                                                                              |                                                                                   | 71.0                                                                              |                                                                                   | 6.9                                                                                 | 8.9                                                                                 |                                                                                     | 5.3                                                                                 | 10.8                                                                                | 10.6                                                                                |
| Level of Service                  | E                                                                                 | E                                                                                 | E                                                                                 |                                                                                   | E                                                                                 |                                                                                   | A                                                                                   | A                                                                                   |                                                                                     | A                                                                                   | B                                                                                   | B                                                                                   |
| Approach Delay (s)                |                                                                                   | 71.1                                                                              |                                                                                   |                                                                                   | 71.0                                                                              |                                                                                   |                                                                                     | 8.8                                                                                 |                                                                                     |                                                                                     | 10.7                                                                                |                                                                                     |
| Approach LOS                      |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                     | A                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |
| <b>Intersection Summary</b>       |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 2000 Control Delay            |                                                                                   |                                                                                   | 15.6                                                                              |                                                                                   |                                                                                   |                                                                                   | HCM 2000 Level of Service                                                           |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |                                                                                     |
| HCM 2000 Volume to Capacity ratio |                                                                                   |                                                                                   | 0.54                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Actuated Cycle Length (s)         |                                                                                   |                                                                                   | 150.0                                                                             |                                                                                   |                                                                                   |                                                                                   | Sum of lost time (s)                                                                |                                                                                     |                                                                                     | 23.8                                                                                |                                                                                     |                                                                                     |
| Intersection Capacity Utilization |                                                                                   |                                                                                   | 70.9%                                                                             |                                                                                   |                                                                                   |                                                                                   | ICU Level of Service                                                                |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Analysis Period (min)             |                                                                                   |                                                                                   | 15                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| c Critical Lane Group             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## HCM 6th Signalized Intersection Summary

### 102: Alton Rd & 20 St/Sunset Harbour Dr

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HCM 6th Edition methodology expects strict NEMA phasing.

HCM 6th TWSC  
103: Alton Rd & 19 St

Intersection

Int Delay, s/veh 0.3

| Movement                 | WBL  | WBR                                                                               | NBT                                                                               | NBR  | SBL  | SBT                                                                               |
|--------------------------|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------|------|-----------------------------------------------------------------------------------|
| Lane Configurations      |      |  |  |      |      |  |
| Traffic Vol, veh/h       | 0    | 68                                                                                | 1185                                                                              | 113  | 0    | 883                                                                               |
| Future Vol, veh/h        | 0    | 68                                                                                | 1185                                                                              | 113  | 0    | 883                                                                               |
| Conflicting Peds, #/hr   | 0    | 0                                                                                 | 0                                                                                 | 0    | 0    | 0                                                                                 |
| Sign Control             | Stop | Stop                                                                              | Free                                                                              | Free | Free | Free                                                                              |
| RT Channelized           | -    | None                                                                              | -                                                                                 | None | -    | None                                                                              |
| Storage Length           | -    | 0                                                                                 | -                                                                                 | -    | -    | -                                                                                 |
| Veh in Median Storage, # | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Grade, %                 | 0    | -                                                                                 | 0                                                                                 | -    | -    | 0                                                                                 |
| Peak Hour Factor         | 92   | 92                                                                                | 92                                                                                | 92   | 92   | 92                                                                                |
| Heavy Vehicles, %        | 3    | 3                                                                                 | 3                                                                                 | 3    | 3    | 3                                                                                 |
| Mvmt Flow                | 0    | 74                                                                                | 1288                                                                              | 123  | 0    | 960                                                                               |

| Major/Minor          | Minor1 | Major1 | Major2 |
|----------------------|--------|--------|--------|
| Conflicting Flow All | -      | 706    | 0      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |
| Critical Hdwy        | -      | 4.5    | -      |
| Critical Hdwy Stg 1  | -      | -      | -      |
| Critical Hdwy Stg 2  | -      | -      | -      |
| Follow-up Hdwy       | -      | 3      | -      |
| Pot Cap-1 Maneuver   | 0      | 657    | -      |
| Stage 1              | 0      | -      | -      |
| Stage 2              | 0      | -      | -      |
| Platoon blocked, %   |        | -      | -      |
| Mov Cap-1 Maneuver   | -      | 657    | -      |
| Mov Cap-2 Maneuver   | -      | -      | -      |
| Stage 1              | -      | -      | -      |
| Stage 2              | -      | -      | -      |

| Approach             | WB   | NB | SB |
|----------------------|------|----|----|
| HCM Control Delay, s | 11.2 | 0  | 0  |
| HCM LOS              | B    |    |    |

| Minor Lane/Major Mvmt | NBT | NBRWBLn1 | SBT |
|-----------------------|-----|----------|-----|
| Capacity (veh/h)      | -   | - 657    | -   |
| HCM Lane V/C Ratio    | -   | - 0.113  | -   |
| HCM Control Delay (s) | -   | - 11.2   | -   |
| HCM Lane LOS          | -   | - B      | -   |
| HCM 95th %tile Q(veh) | -   | - 0.4    | -   |



# Timings

## 104: Alton Road & Dade Boulevard

|                      |  |  |  |  |  |  |   |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 256                                                                               | 163                                                                               | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                | 930                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (vph)  | 256                                                                               | 163                                                                               | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                | 930                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                  | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                                | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 16.0                                                                              | 37.0                                                                              | 20.0                                                                              | 40.0                                                                              | 40.0                                                                              | 17.0                                                                              | 76.0                                                                                | 17.0                                                                                | 76.0                                                                                | 16.0                                                                                |
| Total Split (%)      | 10.7%                                                                             | 24.7%                                                                             | 13.3%                                                                             | 26.7%                                                                             | 26.7%                                                                             | 11.3%                                                                             | 50.7%                                                                               | 11.3%                                                                               | 50.7%                                                                               | 10.7%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                 | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 24.9                                                                              | 14.3                                                                              | 32.9                                                                              | 18.3                                                                              | 18.3                                                                              | 96.6                                                                              | 90.1                                                                                | 10.1                                                                                | 90.8                                                                                | 101.4                                                                               |
| Actuated g/C Ratio   | 0.17                                                                              | 0.10                                                                              | 0.22                                                                              | 0.12                                                                              | 0.12                                                                              | 0.64                                                                              | 0.60                                                                                | 0.07                                                                                | 0.61                                                                                | 0.68                                                                                |
| v/c Ratio            | 1.37                                                                              | 0.67                                                                              | 1.01                                                                              | 0.62                                                                              | 0.31                                                                              | 0.25                                                                              | 0.68                                                                                | 0.57                                                                                | 0.47                                                                                | 0.12                                                                                |
| Control Delay        | 235.1                                                                             | 73.7                                                                              | 114.0                                                                             | 69.4                                                                              | 7.3                                                                               | 10.2                                                                              | 23.9                                                                                | 87.1                                                                                | 17.9                                                                                | 4.0                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 235.1                                                                             | 73.7                                                                              | 114.0                                                                             | 69.4                                                                              | 7.3                                                                               | 10.2                                                                              | 23.9                                                                                | 87.1                                                                                | 17.9                                                                                | 4.0                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | F                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | C                                                                                   | F                                                                                   | B                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 167.6                                                                             |                                                                                   | 79.3                                                                              |                                                                                   |                                                                                   | 23.0                                                                                |                                                                                     | 20.3                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 24 (16%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.37

Intersection Signal Delay: 51.6

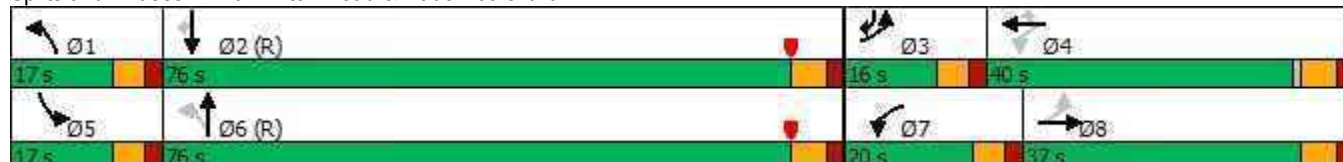
Intersection LOS: D

Intersection Capacity Utilization 87.1%

ICU Level of Service E

Analysis Period (min) 15

### Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

### 104: Alton Road & Dade Boulevard



| Lane Group              | EBL   | EBT  | WBL   | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|-------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 281   | 202  | 234   | 238  | 80   | 85   | 1251 | 60   | 893  | 113  |
| v/c Ratio               | 1.37  | 0.67 | 1.01  | 0.62 | 0.31 | 0.25 | 0.68 | 0.57 | 0.47 | 0.12 |
| Control Delay           | 235.1 | 73.7 | 114.0 | 69.4 | 7.3  | 10.2 | 23.9 | 87.1 | 17.9 | 4.0  |
| Queue Delay             | 0.0   | 0.0  | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 235.1 | 73.7 | 114.0 | 69.4 | 7.3  | 10.2 | 23.9 | 87.1 | 17.9 | 4.0  |
| Queue Length 50th (ft)  | ~261  | 98   | ~211  | 118  | 0    | 25   | 426  | 58   | 242  | 13   |
| Queue Length 95th (ft)  | #520  | 139  | #291  | 161  | 28   | 49   | 591  | 106  | 330  | 38   |
| Internal Link Dist (ft) |       | 316  |       | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185   |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 205   | 643  | 232   | 735  | 404  | 382  | 1839 | 127  | 1908 | 934  |
| Starvation Cap Reductn  | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.37  | 0.31 | 1.01  | 0.32 | 0.20 | 0.22 | 0.68 | 0.47 | 0.47 | 0.12 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary 104: Alton Road & Dade Boulevard

|                              |  |  |  |  |  |  |  |  |  |  |  |  |
|------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                     | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations          |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)       | 256                                                                               | 163                                                                               | 21                                                                                | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                 | 930                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (veh/h)        | 256                                                                               | 163                                                                               | 21                                                                                | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                 | 930                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Initial Q (Qb), veh          | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)          | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach        | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                 |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |                                                                                     |
| Adj Sat Flow, veh/h/ln       | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h         | 281                                                                               | 179                                                                               | 0                                                                                 | 234                                                                               | 238                                                                               | 0                                                                                 | 85                                                                                 | 1022                                                                                | 229                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Peak Hour Factor             | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %         | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                   | 238                                                                               | 387                                                                               |                                                                                   | 273                                                                               | 472                                                                               |                                                                                   | 319                                                                                | 1488                                                                                | 332                                                                                 | 74                                                                                  | 1880                                                                                | 916                                                                                 |
| Arrive On Green              | 0.07                                                                              | 0.12                                                                              | 0.00                                                                              | 0.10                                                                              | 0.15                                                                              | 0.00                                                                              | 0.03                                                                               | 0.58                                                                                | 0.58                                                                                | 0.05                                                                                | 0.59                                                                                | 0.59                                                                                |
| Sat Flow, veh/h              | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                               | 2565                                                                                | 573                                                                                 | 1590                                                                                | 3173                                                                                | 1382                                                                                |
| Grp Volume(v), veh/h         | 281                                                                               | 179                                                                               | 0                                                                                 | 234                                                                               | 238                                                                               | 0                                                                                 | 85                                                                                 | 631                                                                                 | 620                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Grp Sat Flow(s),veh/h/ln     | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1551                                                                                | 1590                                                                                | 1586                                                                                | 1382                                                                                |
| Q Serve(g_s), s              | 10.3                                                                              | 7.9                                                                               | 0.0                                                                               | 14.3                                                                              | 10.4                                                                              | 0.0                                                                               | 3.3                                                                                | 41.6                                                                                | 42.0                                                                                | 5.6                                                                                 | 23.9                                                                                | 4.5                                                                                 |
| Cycle Q Clear(g_c), s        | 10.3                                                                              | 7.9                                                                               | 0.0                                                                               | 14.3                                                                              | 10.4                                                                              | 0.0                                                                               | 3.3                                                                                | 41.6                                                                                | 42.0                                                                                | 5.6                                                                                 | 23.9                                                                                | 4.5                                                                                 |
| Prop In Lane                 | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.37                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h       | 238                                                                               | 387                                                                               |                                                                                   | 273                                                                               | 472                                                                               |                                                                                   | 319                                                                                | 920                                                                                 | 900                                                                                 | 74                                                                                  | 1880                                                                                | 916                                                                                 |
| V/C Ratio(X)                 | 1.18                                                                              | 0.46                                                                              |                                                                                   | 0.86                                                                              | 0.50                                                                              |                                                                                   | 0.27                                                                               | 0.69                                                                                | 0.69                                                                                | 0.81                                                                                | 0.48                                                                                | 0.12                                                                                |
| Avail Cap(c_a), veh/h        | 238                                                                               | 656                                                                               |                                                                                   | 273                                                                               | 719                                                                               |                                                                                   | 384                                                                                | 920                                                                                 | 900                                                                                 | 120                                                                                 | 1880                                                                                | 916                                                                                 |
| HCM Platoon Ratio            | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)           | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh     | 62.2                                                                              | 61.3                                                                              | 0.0                                                                               | 56.7                                                                              | 58.8                                                                              | 0.0                                                                               | 13.7                                                                               | 22.0                                                                                | 22.0                                                                                | 70.8                                                                                | 17.3                                                                                | 9.4                                                                                 |
| Incr Delay (d2), s/veh       | 116.7                                                                             | 0.6                                                                               | 0.0                                                                               | 22.0                                                                              | 0.6                                                                               | 0.0                                                                               | 0.2                                                                                | 4.1                                                                                 | 4.3                                                                                 | 7.7                                                                                 | 0.9                                                                                 | 0.3                                                                                 |
| Initial Q Delay(d3),s/veh    | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln     | 12.4                                                                              | 3.2                                                                               | 0.0                                                                               | 4.3                                                                               | 4.2                                                                               | 0.0                                                                               | 1.2                                                                                | 16.4                                                                                | 16.2                                                                                | 2.5                                                                                 | 9.0                                                                                 | 1.5                                                                                 |
| Unsig. Movement Delay, s/veh |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh         | 178.9                                                                             | 61.9                                                                              | 0.0                                                                               | 78.7                                                                              | 59.4                                                                              | 0.0                                                                               | 13.9                                                                               | 26.1                                                                                | 26.3                                                                                | 78.5                                                                                | 18.2                                                                                | 9.7                                                                                 |
| LnGrp LOS                    | F                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                  | C                                                                                   | C                                                                                   | E                                                                                   | B                                                                                   | A                                                                                   |
| Approach Vol, veh/h          | 460                                                                               |                                                                                   |                                                                                   | 472                                                                               |                                                                                   |                                                                                   | 1336                                                                               |                                                                                     |                                                                                     | 1066                                                                                |                                                                                     |                                                                                     |
| Approach Delay, s/veh        | 133.4                                                                             |                                                                                   |                                                                                   | 69.0                                                                              |                                                                                   |                                                                                   | 25.4                                                                               |                                                                                     |                                                                                     | 20.7                                                                                |                                                                                     |                                                                                     |
| Approach LOS                 | F                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                  |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |                                                                                     |
| Timer - Assigned Phs         | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s     | 10.9                                                                              | 94.9                                                                              | 16.0                                                                              | 28.3                                                                              | 12.7                                                                              | 93.0                                                                              | 20.0                                                                               | 24.3                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s      | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s  | * 11                                                                              | 70.0                                                                              | * 10                                                                              | 34.0                                                                              | * 11                                                                              | 70.0                                                                              | * 14                                                                               | 31.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s | 5.3                                                                               | 25.9                                                                              | 12.3                                                                              | 12.4                                                                              | 7.6                                                                               | 44.0                                                                              | 16.3                                                                               | 9.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s      | 0.0                                                                               | 2.7                                                                               | 0.0                                                                               | 1.2                                                                               | 0.0                                                                               | 3.4                                                                               | 0.0                                                                                | 0.8                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

## Intersection Summary

HCM 6th Ctrl Delay 45.0

HCM 6th LOS D

## Notes

\* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.

Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay.

# Timings

## 105: Dade Blvd & Michigan Ave



| Lane Group           | EBT   | WBT   | WBR   | SEL   | SER   | Ø3   |
|----------------------|-------|-------|-------|-------|-------|------|
| Lane Configurations  | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |      |
| Traffic Volume (vph) | 394   | 418   | 749   | 412   | 84    |      |
| Future Volume (vph)  | 394   | 418   | 749   | 412   | 84    |      |
| Turn Type            | NA    | NA    | pm+ov | Prot  | Perm  |      |
| Protected Phases     | 6     | 2     | 4     | 4     |       | 3    |
| Permitted Phases     |       |       | 2     |       | 4     |      |
| Detector Phase       | 6     | 2     | 4     | 4     | 4     |      |
| Switch Phase         |       |       |       |       |       |      |
| Minimum Initial (s)  | 14.0  | 14.0  | 7.0   | 7.0   | 7.0   | 1.0  |
| Minimum Split (s)    | 36.0  | 36.0  | 20.6  | 20.6  | 20.6  | 27.0 |
| Total Split (s)      | 39.0  | 39.0  | 54.0  | 54.0  | 54.0  | 27.0 |
| Total Split (%)      | 32.5% | 32.5% | 45.0% | 45.0% | 45.0% | 23%  |
| Yellow Time (s)      | 4.0   | 4.0   | 4.0   | 4.0   | 4.0   | 2.0  |
| All-Red Time (s)     | 2.0   | 2.0   | 2.0   | 2.0   | 2.0   | 0.0  |
| Lost Time Adjust (s) | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Lost Time (s)  | 6.0   | 6.0   | 6.0   | 6.0   | 6.0   |      |
| Lead/Lag             |       |       | Lag   | Lag   | Lag   | Lead |
| Lead-Lag Optimize?   |       |       | Yes   | Yes   | Yes   | Yes  |
| Recall Mode          | C-Max | C-Max | None  | None  | None  | None |
| Act Effect Green (s) | 81.8  | 81.8  | 120.0 | 26.2  | 26.2  |      |
| Actuated g/C Ratio   | 0.68  | 0.68  | 1.00  | 0.22  | 0.22  |      |
| v/c Ratio            | 0.18  | 0.19  | 0.52  | 0.61  | 0.22  |      |
| Control Delay        | 7.9   | 7.9   | 1.3   | 45.2  | 8.0   |      |
| Queue Delay          | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |      |
| Total Delay          | 7.9   | 7.9   | 1.3   | 45.2  | 8.0   |      |
| LOS                  | A     | A     | A     | D     | A     |      |
| Approach Delay       | 7.9   | 3.6   |       | 38.9  |       |      |
| Approach LOS         | A     | A     |       | D     |       |      |

### Intersection Summary

Cycle Length: 120

Actuated Cycle Length: 120

Offset: 117 (98%), Referenced to phase 2:WBT and 6:EBT, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.61

Intersection Signal Delay: 13.0

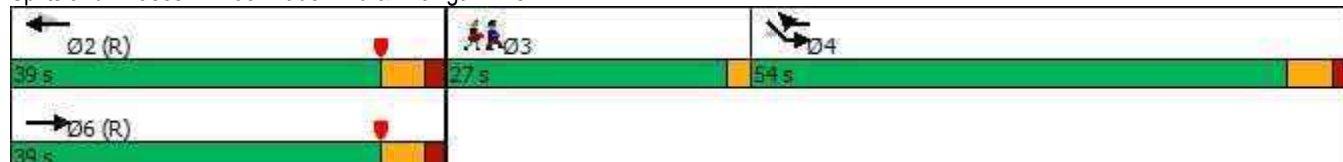
Intersection LOS: B

Intersection Capacity Utilization 51.4%

ICU Level of Service A

Analysis Period (min) 15

Splits and Phases: 105: Dade Blvd & Michigan Ave



## Queues

### 105: Dade Blvd & Michigan Ave



| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
|-------------------------|------|------|------|------|------|
| Lane Group Flow (vph)   | 433  | 459  | 823  | 453  | 92   |
| v/c Ratio               | 0.18 | 0.19 | 0.52 | 0.61 | 0.22 |
| Control Delay           | 7.9  | 7.9  | 1.3  | 45.2 | 8.0  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 7.9  | 7.9  | 1.3  | 45.2 | 8.0  |
| Queue Length 50th (ft)  | 58   | 62   | 0    | 164  | 0    |
| Queue Length 95th (ft)  | 98   | 104  | 0    | 199  | 39   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 2388 | 2388 | 1568 | 1360 | 674  |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.18 | 0.19 | 0.52 | 0.33 | 0.14 |
| Intersection Summary    |      |      |      |      |      |

# HCM Signalized Intersection Capacity Analysis

## 105: Dade Blvd & Michigan Ave



| Movement                          | EBL  | EBT   | WBT  | WBR                       | SEL   | SER  |
|-----------------------------------|------|-------|------|---------------------------|-------|------|
| Lane Configurations               |      | ↑↑    | ↑↑   | ↑                         | ↑↑    | ↑    |
| Traffic Volume (vph)              | 0    | 394   | 418  | 749                       | 412   | 84   |
| Future Volume (vph)               | 0    | 394   | 418  | 749                       | 412   | 84   |
| Ideal Flow (vphpl)                | 1900 | 1900  | 1900 | 1900                      | 1900  | 1900 |
| Total Lost time (s)               |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Lane Util. Factor                 |      | 0.95  | 0.95 | 1.00                      | 0.97  | 1.00 |
| Frpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 0.99 |
| Flpb, ped/bikes                   |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Frt                               |      | 1.00  | 1.00 | 0.85                      | 1.00  | 0.85 |
| Flt Protected                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (prot)                 |      | 3505  | 3505 | 1568                      | 3400  | 1548 |
| Flt Permitted                     |      | 1.00  | 1.00 | 1.00                      | 0.95  | 1.00 |
| Satd. Flow (perm)                 |      | 3505  | 3505 | 1568                      | 3400  | 1548 |
| Peak-hour factor, PHF             | 0.91 | 0.91  | 0.91 | 0.91                      | 0.91  | 0.91 |
| Adj. Flow (vph)                   | 0    | 433   | 459  | 823                       | 453   | 92   |
| RTOR Reduction (vph)              | 0    | 0     | 0    | 82                        | 0     | 72   |
| Lane Group Flow (vph)             | 0    | 433   | 459  | 741                       | 453   | 20   |
| Confl. Peds. (#/hr)               | 6    |       |      |                           |       |      |
| Confl. Bikes (#/hr)               |      |       |      |                           |       | 1    |
| Turn Type                         |      | NA    | NA   | pm+ov                     | Prot  | Perm |
| Protected Phases                  |      | 6     | 2    | 4                         | 4     |      |
| Permitted Phases                  |      |       |      | 2                         |       | 4    |
| Actuated Green, G (s)             |      | 81.8  | 81.8 | 108.0                     | 26.2  | 26.2 |
| Effective Green, g (s)            |      | 81.8  | 81.8 | 108.0                     | 26.2  | 26.2 |
| Actuated g/C Ratio                |      | 0.68  | 0.68 | 0.90                      | 0.22  | 0.22 |
| Clearance Time (s)                |      | 6.0   | 6.0  | 6.0                       | 6.0   | 6.0  |
| Vehicle Extension (s)             |      | 1.0   | 1.0  | 3.5                       | 3.5   | 3.5  |
| Lane Grp Cap (vph)                |      | 2389  | 2389 | 1568                      | 742   | 337  |
| v/s Ratio Prot                    |      | 0.12  | 0.13 | c0.10                     | c0.13 |      |
| v/s Ratio Perm                    |      |       |      | 0.37                      |       | 0.01 |
| v/c Ratio                         |      | 0.18  | 0.19 | 0.47                      | 0.61  | 0.06 |
| Uniform Delay, d1                 |      | 6.9   | 7.0  | 1.0                       | 42.3  | 37.1 |
| Progression Factor                |      | 1.00  | 1.00 | 1.00                      | 1.00  | 1.00 |
| Incremental Delay, d2             |      | 0.2   | 0.2  | 0.3                       | 1.6   | 0.1  |
| Delay (s)                         |      | 7.1   | 7.2  | 1.3                       | 43.9  | 37.2 |
| Level of Service                  |      | A     | A    | A                         | D     | D    |
| Approach Delay (s)                |      | 7.1   | 3.4  |                           | 42.7  |      |
| Approach LOS                      |      | A     | A    |                           | D     |      |
| <b>Intersection Summary</b>       |      |       |      |                           |       |      |
| HCM 2000 Control Delay            |      | 13.6  |      | HCM 2000 Level of Service |       | B    |
| HCM 2000 Volume to Capacity ratio |      | 0.54  |      |                           |       |      |
| Actuated Cycle Length (s)         |      | 120.0 |      | Sum of lost time (s)      |       | 14.0 |
| Intersection Capacity Utilization |      | 51.4% |      | ICU Level of Service      |       | A    |
| Analysis Period (min)             |      | 15    |      |                           |       |      |
| c Critical Lane Group             |      |       |      |                           |       |      |

## HCM 6th Signalized Intersection Summary

### 105: Dade Blvd & Michigan Ave

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HCM 6th Edition methodology does not support exclusive ped or hold phases.

HCM 6th TWSC  
201: 19 St & Driveway

| Intersection             |        |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
|--------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|--------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Int Delay, s/veh         | 6.7    |                                                                                   |                                                                                   |        |                                                                                   |                                                                                   |
| Movement                 | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBL                                                                               | SBR                                                                               |
| Lane Configurations      |        |  |  |        |  |  |
| Traffic Vol, veh/h       | 124    | 38                                                                                | 34                                                                                | 54     | 129                                                                               | 55                                                                                |
| Future Vol, veh/h        | 124    | 38                                                                                | 34                                                                                | 54     | 129                                                                               | 55                                                                                |
| Conflicting Peds, #/hr   | 0      | 0                                                                                 | 0                                                                                 | 0      | 0                                                                                 | 0                                                                                 |
| Sign Control             | Free   | Free                                                                              | Free                                                                              | Free   | Stop                                                                              | Stop                                                                              |
| RT Channelized           | -      | None                                                                              | -                                                                                 | None   | -                                                                                 | None                                                                              |
| Storage Length           | -      | -                                                                                 | -                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Veh in Median Storage, # | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Grade, %                 | -      | 0                                                                                 | 0                                                                                 | -      | 0                                                                                 | -                                                                                 |
| Peak Hour Factor         | 92     | 92                                                                                | 92                                                                                | 92     | 92                                                                                | 92                                                                                |
| Heavy Vehicles, %        | 3      | 3                                                                                 | 3                                                                                 | 3      | 3                                                                                 | 3                                                                                 |
| Mvmt Flow                | 135    | 41                                                                                | 37                                                                                | 59     | 140                                                                               | 60                                                                                |
| Major/Minor              | Major1 | Major2                                                                            |                                                                                   | Minor2 |                                                                                   |                                                                                   |
| Conflicting Flow All     | 96     | 0                                                                                 | -                                                                                 | 0      | 378                                                                               | 67                                                                                |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 67                                                                                | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 311                                                                               | -                                                                                 |
| Critical Hdwy            | 4.13   | -                                                                                 | -                                                                                 | -      | 5                                                                                 | 4.5                                                                               |
| Critical Hdwy Stg 1      | -      | -                                                                                 | -                                                                                 | -      | 5                                                                                 | -                                                                                 |
| Critical Hdwy Stg 2      | -      | -                                                                                 | -                                                                                 | -      | 5                                                                                 | -                                                                                 |
| Follow-up Hdwy           | 2.227  | -                                                                                 | -                                                                                 | -      | 3                                                                                 | 3                                                                                 |
| Pot Cap-1 Maneuver       | 1491   | -                                                                                 | -                                                                                 | -      | 828                                                                               | 1135                                                                              |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1124                                                                              | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 884                                                                               | -                                                                                 |
| Platoon blocked, %       |        | -                                                                                 | -                                                                                 | -      |                                                                                   |                                                                                   |
| Mov Cap-1 Maneuver       | 1491   | -                                                                                 | -                                                                                 | -      | 751                                                                               | 1135                                                                              |
| Mov Cap-2 Maneuver       | -      | -                                                                                 | -                                                                                 | -      | 751                                                                               | -                                                                                 |
| Stage 1                  | -      | -                                                                                 | -                                                                                 | -      | 1019                                                                              | -                                                                                 |
| Stage 2                  | -      | -                                                                                 | -                                                                                 | -      | 884                                                                               | -                                                                                 |
| Approach                 | EB     | WB                                                                                |                                                                                   | SB     |                                                                                   |                                                                                   |
| HCM Control Delay, s     | 5.9    | 0                                                                                 |                                                                                   | 10.7   |                                                                                   |                                                                                   |
| HCM LOS                  |        |                                                                                   |                                                                                   | B      |                                                                                   |                                                                                   |
| Minor Lane/Major Mvmt    | EBL    | EBT                                                                               | WBT                                                                               | WBR    | SBLn1                                                                             |                                                                                   |
| Capacity (veh/h)         | 1491   | -                                                                                 | -                                                                                 | -      | 835                                                                               |                                                                                   |
| HCM Lane V/C Ratio       | 0.09   | -                                                                                 | -                                                                                 | -      | 0.24                                                                              |                                                                                   |
| HCM Control Delay (s)    | 7.7    | 0                                                                                 | -                                                                                 | -      | 10.7                                                                              |                                                                                   |
| HCM Lane LOS             | A      | A                                                                                 | -                                                                                 | -      | B                                                                                 |                                                                                   |
| HCM 95th %tile Q(veh)    | 0.3    | -                                                                                 | -                                                                                 | -      | 0.9                                                                               |                                                                                   |



# Timings

## 104: Alton Road & Dade Boulevard

09/18/2023

|                      |  |  |  |  |  |  |   |  |  |  |
|----------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group           | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations  |  |  |  |  |  |  |  |  |  |  |
| Traffic Volume (vph) | 256                                                                               | 163                                                                               | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                | 930                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (vph)  | 256                                                                               | 163                                                                               | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                | 930                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Turn Type            | pm+pt                                                                             | NA                                                                                | pm+pt                                                                             | NA                                                                                | Perm                                                                              | pm+pt                                                                             | NA                                                                                  | Prot                                                                                | NA                                                                                  | pm+ov                                                                               |
| Protected Phases     | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases     | 8                                                                                 |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 | 6                                                                                 |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase       | 3                                                                                 | 8                                                                                 | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                 | 6                                                                                   | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Switch Phase         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)  | 5.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 4.0                                                                                 | 5.0                                                                                 | 4.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)    | 11.0                                                                              | 37.0                                                                              | 11.0                                                                              | 37.0                                                                              | 37.0                                                                              | 11.0                                                                              | 29.0                                                                                | 11.0                                                                                | 29.0                                                                                | 11.0                                                                                |
| Total Split (s)      | 23.0                                                                              | 38.0                                                                              | 22.0                                                                              | 37.0                                                                              | 37.0                                                                              | 12.0                                                                              | 76.0                                                                                | 14.0                                                                                | 78.0                                                                                | 23.0                                                                                |
| Total Split (%)      | 15.3%                                                                             | 25.3%                                                                             | 14.7%                                                                             | 24.7%                                                                             | 24.7%                                                                             | 8.0%                                                                              | 50.7%                                                                               | 9.3%                                                                                | 52.0%                                                                               | 15.3%                                                                               |
| Yellow Time (s)      | 3.7                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                               | 4.0                                                                               | 3.7                                                                               | 4.0                                                                                 | 3.7                                                                                 | 4.0                                                                                 | 3.7                                                                                 |
| All-Red Time (s)     | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 | 2.0                                                                                 |
| Lost Time Adjust (s) | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Lost Time (s)  | 5.7                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                               | 6.0                                                                               | 5.7                                                                               | 6.0                                                                                 | 5.7                                                                                 | 6.0                                                                                 | 5.7                                                                                 |
| Lead/Lag             | Lead                                                                              | Lag                                                                               | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Recall Mode          | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               | None                                                                                | C-Max                                                                               | None                                                                                |
| Act Effect Green (s) | 35.0                                                                              | 17.4                                                                              | 32.6                                                                              | 16.2                                                                              | 16.2                                                                              | 91.7                                                                              | 85.0                                                                                | 10.5                                                                                | 85.6                                                                                | 103.2                                                                               |
| Actuated g/C Ratio   | 0.23                                                                              | 0.12                                                                              | 0.22                                                                              | 0.11                                                                              | 0.11                                                                              | 0.61                                                                              | 0.57                                                                                | 0.07                                                                                | 0.57                                                                                | 0.69                                                                                |
| v/c Ratio            | 1.06                                                                              | 0.56                                                                              | 0.85                                                                              | 0.70                                                                              | 0.33                                                                              | 0.26                                                                              | 0.72                                                                                | 0.55                                                                                | 0.50                                                                                | 0.12                                                                                |
| Control Delay        | 121.7                                                                             | 65.7                                                                              | 76.5                                                                              | 75.5                                                                              | 8.0                                                                               | 12.2                                                                              | 28.2                                                                                | 84.8                                                                                | 21.1                                                                                | 3.7                                                                                 |
| Queue Delay          | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay          | 121.7                                                                             | 65.7                                                                              | 76.5                                                                              | 75.5                                                                              | 8.0                                                                               | 12.2                                                                              | 28.2                                                                                | 84.8                                                                                | 21.1                                                                                | 3.7                                                                                 |
| LOS                  | F                                                                                 | E                                                                                 | E                                                                                 | E                                                                                 | A                                                                                 | B                                                                                 | C                                                                                   | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay       |                                                                                   | 98.3                                                                              |                                                                                   | 66.1                                                                              |                                                                                   |                                                                                   | 27.2                                                                                |                                                                                     | 22.9                                                                                |                                                                                     |
| Approach LOS         |                                                                                   | F                                                                                 |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | C                                                                                   |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 24 (16%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.06

Intersection Signal Delay: 42.1

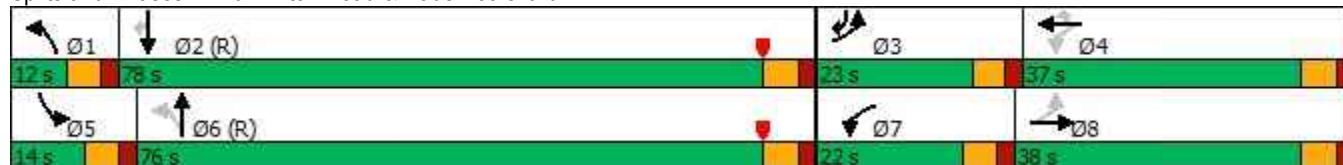
Intersection LOS: D

Intersection Capacity Utilization 87.1%

ICU Level of Service E

Analysis Period (min) 15

Splits and Phases: 104: Alton Road & Dade Boulevard



## Queues

## 104: Alton Road &amp; Dade Boulevard

09/18/2023



| Lane Group              | EBL   | EBT  | WBL  | WBT  | WBR  | NBL  | NBT  | SBL  | SBT  | SBR  |
|-------------------------|-------|------|------|------|------|------|------|------|------|------|
| Lane Group Flow (vph)   | 281   | 202  | 234  | 238  | 80   | 85   | 1251 | 60   | 893  | 113  |
| v/c Ratio               | 1.06  | 0.56 | 0.85 | 0.70 | 0.33 | 0.26 | 0.72 | 0.55 | 0.50 | 0.12 |
| Control Delay           | 121.7 | 65.7 | 76.5 | 75.5 | 8.0  | 12.2 | 28.2 | 84.8 | 21.1 | 3.7  |
| Queue Delay             | 0.0   | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 121.7 | 65.7 | 76.5 | 75.5 | 8.0  | 12.2 | 28.2 | 84.8 | 21.1 | 3.7  |
| Queue Length 50th (ft)  | ~269  | 95   | 200  | 120  | 0    | 28   | 467  | 58   | 265  | 13   |
| Queue Length 95th (ft)  | #363  | 136  | #298 | 163  | 28   | 54   | 636  | 106  | 361  | 37   |
| Internal Link Dist (ft) |       | 316  |      | 456  |      |      | 473  |      | 500  |      |
| Turn Bay Length (ft)    | 220   |      | 185  |      | 60   | 350  |      | 185  |      | 70   |
| Base Capacity (vph)     | 264   | 664  | 276  | 651  | 370  | 323  | 1735 | 115  | 1800 | 953  |
| Starvation Cap Reductn  | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0     | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 1.06  | 0.30 | 0.85 | 0.37 | 0.22 | 0.26 | 0.72 | 0.52 | 0.50 | 0.12 |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# HCM 6th Signalized Intersection Summary

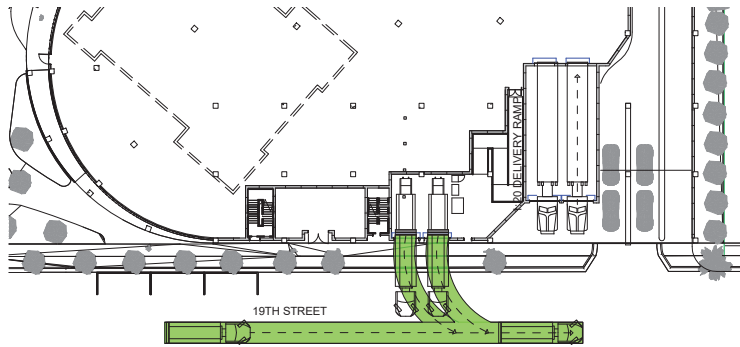
## 104: Alton Road & Dade Boulevard

09/18/2023

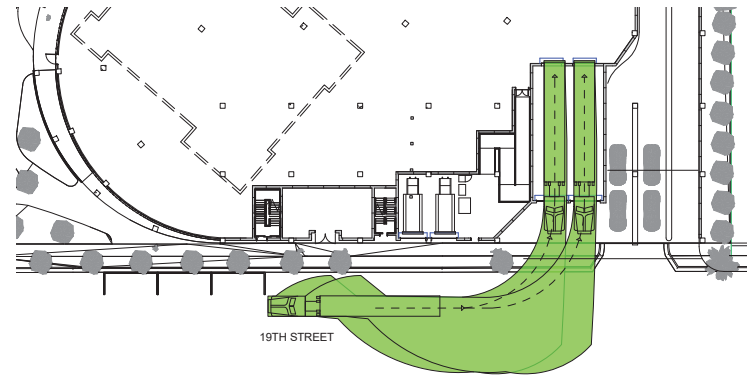
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|---------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Movement                                                                                                      | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations                                                                                           |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Traffic Volume (veh/h)                                                                                        | 256                                                                               | 163                                                                               | 21                                                                                | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                 | 930                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Future Volume (veh/h)                                                                                         | 256                                                                               | 163                                                                               | 21                                                                                | 213                                                                               | 217                                                                               | 73                                                                                | 77                                                                                 | 930                                                                                 | 208                                                                                 | 55                                                                                  | 813                                                                                 | 103                                                                                 |
| Initial Q (Qb), veh                                                                                           | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Ped-Bike Adj(A_pbT)                                                                                           | 0.99                                                                              |                                                                                   | 1.00                                                                              | 0.98                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.98                                                                                | 1.00                                                                                |                                                                                     | 0.98                                                                                |
| Parking Bus, Adj                                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Work Zone On Approach                                                                                         |                                                                                   | No                                                                                |                                                                                   |                                                                                   | No                                                                                |                                                                                   |                                                                                    | No                                                                                  |                                                                                     |                                                                                     | No                                                                                  |                                                                                     |
| Adj Sat Flow, veh/h/ln                                                                                        | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                              | 1670                                                                               | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                | 1670                                                                                |
| Adj Flow Rate, veh/h                                                                                          | 281                                                                               | 179                                                                               | 0                                                                                 | 234                                                                               | 238                                                                               | 0                                                                                 | 85                                                                                 | 1022                                                                                | 229                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Peak Hour Factor                                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                              | 0.91                                                                               | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                | 0.91                                                                                |
| Percent Heavy Veh, %                                                                                          | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                 | 3                                                                                  | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   | 3                                                                                   |
| Cap, veh/h                                                                                                    | 296                                                                               | 447                                                                               |                                                                                   | 315                                                                               | 426                                                                               |                                                                                   | 298                                                                                | 1405                                                                                | 314                                                                                 | 74                                                                                  | 1773                                                                                | 935                                                                                 |
| Arrive On Green                                                                                               | 0.12                                                                              | 0.14                                                                              | 0.00                                                                              | 0.11                                                                              | 0.13                                                                              | 0.00                                                                              | 0.04                                                                               | 0.55                                                                                | 0.55                                                                                | 0.05                                                                                | 0.56                                                                                | 0.56                                                                                |
| Sat Flow, veh/h                                                                                               | 1590                                                                              | 3256                                                                              | 0                                                                                 | 1590                                                                              | 3173                                                                              | 1415                                                                              | 1590                                                                               | 2564                                                                                | 573                                                                                 | 1590                                                                                | 3173                                                                                | 1381                                                                                |
| Grp Volume(v), veh/h                                                                                          | 281                                                                               | 179                                                                               | 0                                                                                 | 234                                                                               | 238                                                                               | 0                                                                                 | 85                                                                                 | 631                                                                                 | 620                                                                                 | 60                                                                                  | 893                                                                                 | 113                                                                                 |
| Grp Sat Flow(s),veh/h/ln                                                                                      | 1590                                                                              | 1586                                                                              | 0                                                                                 | 1590                                                                              | 1586                                                                              | 1415                                                                              | 1590                                                                               | 1586                                                                                | 1550                                                                                | 1590                                                                                | 1586                                                                                | 1381                                                                                |
| Q Serve(g_s), s                                                                                               | 17.3                                                                              | 7.7                                                                               | 0.0                                                                               | 16.3                                                                              | 10.5                                                                              | 0.0                                                                               | 3.5                                                                                | 44.8                                                                                | 45.2                                                                                | 5.6                                                                                 | 25.9                                                                                | 4.4                                                                                 |
| Cycle Q Clear(g_c), s                                                                                         | 17.3                                                                              | 7.7                                                                               | 0.0                                                                               | 16.3                                                                              | 10.5                                                                              | 0.0                                                                               | 3.5                                                                                | 44.8                                                                                | 45.2                                                                                | 5.6                                                                                 | 25.9                                                                                | 4.4                                                                                 |
| Prop In Lane                                                                                                  | 1.00                                                                              |                                                                                   | 0.00                                                                              | 1.00                                                                              |                                                                                   | 1.00                                                                              | 1.00                                                                               |                                                                                     | 0.37                                                                                | 1.00                                                                                |                                                                                     | 1.00                                                                                |
| Lane Grp Cap(c), veh/h                                                                                        | 296                                                                               | 447                                                                               |                                                                                   | 315                                                                               | 426                                                                               |                                                                                   | 298                                                                                | 869                                                                                 | 850                                                                                 | 74                                                                                  | 1773                                                                                | 935                                                                                 |
| V/C Ratio(X)                                                                                                  | 0.95                                                                              | 0.40                                                                              |                                                                                   | 0.74                                                                              | 0.56                                                                              |                                                                                   | 0.29                                                                               | 0.73                                                                                | 0.73                                                                                | 0.81                                                                                | 0.50                                                                                | 0.12                                                                                |
| Avail Cap(c_a), veh/h                                                                                         | 296                                                                               | 677                                                                               |                                                                                   | 315                                                                               | 656                                                                               |                                                                                   | 308                                                                                | 869                                                                                 | 850                                                                                 | 88                                                                                  | 1773                                                                                | 935                                                                                 |
| HCM Platoon Ratio                                                                                             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Upstream Filter(I)                                                                                            | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                              | 1.00                                                                              | 0.00                                                                              | 1.00                                                                               | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                | 1.00                                                                                |
| Uniform Delay (d), s/veh                                                                                      | 55.1                                                                              | 58.7                                                                              | 0.0                                                                               | 51.8                                                                              | 60.8                                                                              | 0.0                                                                               | 16.1                                                                               | 25.4                                                                                | 25.5                                                                                | 70.9                                                                                | 20.3                                                                                | 8.7                                                                                 |
| Incr Delay (d2), s/veh                                                                                        | 38.3                                                                              | 0.4                                                                               | 0.0                                                                               | 8.1                                                                               | 0.9                                                                               | 0.0                                                                               | 0.2                                                                                | 5.3                                                                                 | 5.5                                                                                 | 31.4                                                                                | 1.0                                                                                 | 0.3                                                                                 |
| Initial Q Delay(d3),s/veh                                                                                     | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| %ile BackOfQ(50%),veh/ln                                                                                      | 6.4                                                                               | 3.1                                                                               | 0.0                                                                               | 2.0                                                                               | 4.3                                                                               | 0.0                                                                               | 1.3                                                                                | 18.0                                                                                | 17.8                                                                                | 2.9                                                                                 | 9.9                                                                                 | 1.4                                                                                 |
| Unsig. Movement Delay, s/veh                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| LnGrp Delay(d),s/veh                                                                                          | 93.4                                                                              | 59.1                                                                              | 0.0                                                                               | 60.0                                                                              | 61.6                                                                              | 0.0                                                                               | 16.3                                                                               | 30.7                                                                                | 31.0                                                                                | 102.3                                                                               | 21.4                                                                                | 8.9                                                                                 |
| LnGrp LOS                                                                                                     | F                                                                                 | E                                                                                 |                                                                                   | E                                                                                 | E                                                                                 |                                                                                   | B                                                                                  | C                                                                                   | C                                                                                   | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Vol, veh/h                                                                                           |                                                                                   | 460                                                                               |                                                                                   |                                                                                   | 472                                                                               |                                                                                   |                                                                                    | 1336                                                                                |                                                                                     |                                                                                     | 1066                                                                                |                                                                                     |
| Approach Delay, s/veh                                                                                         |                                                                                   | 80.0                                                                              |                                                                                   |                                                                                   | 60.8                                                                              |                                                                                   |                                                                                    | 29.9                                                                                |                                                                                     |                                                                                     | 24.6                                                                                |                                                                                     |
| Approach LOS                                                                                                  |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                    | C                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |
| Timer - Assigned Phs                                                                                          | 1                                                                                 | 2                                                                                 | 3                                                                                 | 4                                                                                 | 5                                                                                 | 6                                                                                 | 7                                                                                  | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Phs Duration (G+Y+Rc), s                                                                                      | 11.1                                                                              | 89.8                                                                              | 23.0                                                                              | 26.1                                                                              | 12.7                                                                              | 88.2                                                                              | 22.0                                                                               | 27.1                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Change Period (Y+Rc), s                                                                                       | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                             | 6.0                                                                               | * 5.7                                                                              | 6.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Green Setting (Gmax), s                                                                                   | * 6.3                                                                             | 72.0                                                                              | * 17                                                                              | 31.0                                                                              | * 8.3                                                                             | 70.0                                                                              | * 16                                                                               | 32.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Max Q Clear Time (g_c+I1), s                                                                                  | 5.5                                                                               | 27.9                                                                              | 19.3                                                                              | 12.5                                                                              | 7.6                                                                               | 47.2                                                                              | 18.3                                                                               | 9.7                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Green Ext Time (p_c), s                                                                                       | 0.0                                                                               | 2.7                                                                               | 0.0                                                                               | 1.1                                                                               | 0.0                                                                               | 3.3                                                                               | 0.0                                                                                | 0.9                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Intersection Summary</b>                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th Ctrl Delay                                                                                            |                                                                                   |                                                                                   | 39.5                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| HCM 6th LOS                                                                                                   |                                                                                   |                                                                                   | D                                                                                 |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| <b>Notes</b>                                                                                                  |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| * HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Unsignalized Delay for [EBR, WBR] is excluded from calculations of the approach delay and intersection delay. |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# **APPENDIX F**

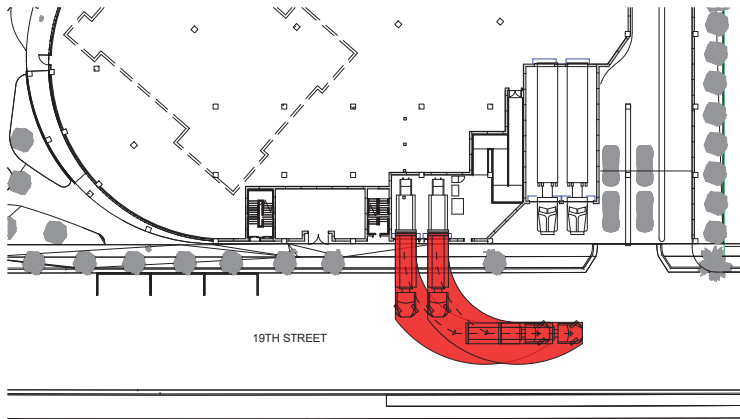
## **Maneuverability Analysis**



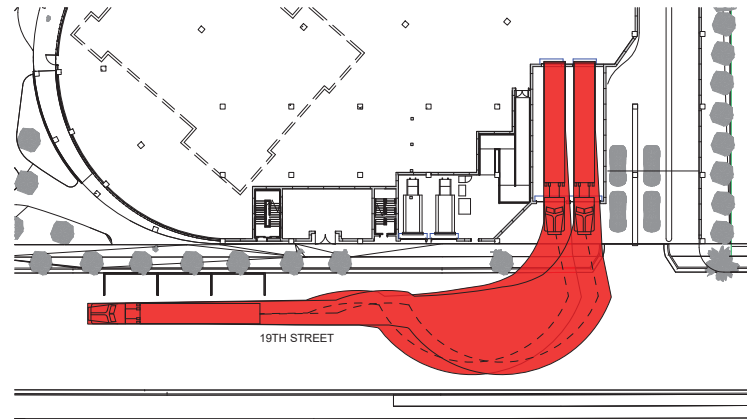
4 LOADING DOCK DIAGRAM  
1" = 50'-0"



1 LOADING DOCK DIAGRAM  
1" = 50'-0"



3 LOADING DOCK DIAGRAM  
1" = 50'-0"



2 LOADING DOCK DIAGRAM  
1" = 50'-0"

# **APPENDIX G**

## **Response to Comments Letter**

September 25, 2023

Mr. Otniel Rodriguez, E.I.  
City of Miami Beach Transportation Department  
1700 Convention Center Drive  
Miami Beach, Florida 33139

**Re: 1901 Alton Road - Traffic Analysis Review Comments Dated  
September 11, 2023**

Dear Otniel:

Traf Tech Engineering, Inc. has been retained by the Crecent Heights team to address the traffic-related comments prepared by Kimley Horn and Associates, Inc. The responses to the traffic-related comments are provided below:

1. Provide a formal response to comments document when preparing resubmittals.

***Response 1:*** A response to Comments letter is included in the revised report. Please refer to Appendix G.

2. Confirm the land use of the existing development. According to the Miami-Dade County Property Appraiser website, the existing development at 1901 Alton Road is a drive-through bank. However, according to the "Inventory" section of the traffic study, the existing land use is an 11,000 square-foot retail space.

***Response 2:*** The existing land use was revised to Drive-in Bank and the square footage was revised to 6,654 square feet, per property appraiser report.

3. The proposed square footage for both the supermarket and the drive-in bank varies from the approved methodology. Provide the final proposed square footages of the Supermarket and Bank in the traffic study and as part of the response to this comment.

***Response 3:*** Square footages of both land uses were revised, based on the latest site plan.

4. The approved methodology and traffic study should have consistent land uses and similar square feet and/or units. Please revise the documentation to be consistent and update trip generation accordingly.

**Response 4:** *Trip generation calculations were revised accordingly. Since the traffic methodology, the square feet of the land uses changed. The latest changes are reflected in the updated traffic study.*

5. Provide a zoning data sheet detailing the scale and required/provided parking of all proposed land uses.

**Response 5:** *A table summarizing the information requested was included in the revised report under the parking section.*

6. Confirm the date of traffic data collection. According to the “Traffic Counts” section of the traffic study, traffic data was collected on December 1, 2022. However, according to Appendix B, traffic data was collected on August 9, 2023.

**Response 6:** *The date of the counts was revised to August 9, 2023.*

7. The 2045 Miami-Dade Cardinal Trip Distribution for the WNW direction in TAZ 634 should be 13.6 percent (13.6%). As other changes will most likely made throughout the traffic study, please update cardinal trip distribution calculations accordingly, if needed.

**Response 7:** *The incorrect percentage was revised and all calculations were revised accordingly.*

8. Clarify how the growth rate of 2.3 percent (2.3%) was selected as the study area growth rate as the growth rate with the highest R-squared value is the decaying exponential 10-year.

**Response 8:** *The growth rate was revised accordingly.*

9. Identify the number of required parking spaces in the “Parking” section of the traffic study.



**Response 9:** Table 4 summarizes the number of required parking spaces.

10. The site plan contains grocery pick-up spaces where currently on-street parking is provided. Clarify the intended operation and confirm that sufficient stacking is provided. Note that coordination with the Parking Department will be needed for the elimination of the on-street parking spaces.

**Response 10:** The intent of these parking spaces is for grocery pick-up service. These parking stalls will have similar dimensions as a regular on-street parking space. Prior to providing any grocery pick-up signs, coordination with the City's Parking Department will be held to ensure the city approves the use of these parking spaces for grocery pick-up service.

11. Consistent with the methodology comments provided, include a maneuverability analysis section in the report and provide maneuverability exhibits for passenger vehicles within the parking garage and loading areas as an appendix within the study.

**Response 11:** The section was added to the revised report and exhibits are included in Appendix H.

12. The proposed driveway appears to accommodate parking revenue equipment. Confirm if an entry gate will be provided. If so, provide an entry gate queuing analysis.

**Response 12:** Entry gates are not proposed for this project.

13. The curb and gutter at the project driveway appear to block the entry lane and the loading area. Please clarify.

**Response 13:** The entry/exit lanes of the driveway and the loading dock access will not have curb and gutter. The site plan was revised to eliminate the curb and gutter in front of the entry lane and loading area.

14. Include Project Driveway intersection in Figure 6.

**Response 14:** The project driveway was included in Figure 6.

15. Provide volume development worksheets for the project driveway as well.

**Response 15:** *Volume Development Sheets for the project driveway were included in Appendix D.*

16. Please review the Synchro comments below and update models accordingly:

- a. Dade Boulevard and Michigan Avenue
  - i. The westbound approach should be modeled as two (2) through lanes and one (1) right-turn lane.
  - ii. The southeastbound approach should be modeled as two (2) left-turn lanes and one (1) right-turn lane.
  - iii. Signal operates as coordinated.
- b. Dade Boulevard and Alton Road
  - i. the southbound left-turn lane should be modeled with storage length.
  - ii. A.M. and P.M. peak hour cycle lengths should be 150s, round yellow time when calculating max splits.
  - iii. Phases 7 and 8 have incorrect max splits.
  - iv. Please explain why the detector phases for north and south approaches have been overridden.
- c. Alton Road and 20th Street
  - i. A.M. and P.M. peak hour cycle lengths should be 150s, round yellow time when calculating max splits.
  - ii. Phase 4 minimum gap is incorrect.  
Please explain why the detector phases for southwest and northeast approaches have been overridden.
- d. Alton Road and Michigan Avenue
  - i. SOP is not included in the appendices.
  - ii. Please explain why the detector phases for southwest and northeast approaches have been overridden.

**Response 16:** *Synchro files were updated to address all comments and the SOP for the intersection of Alton Road and Michigan Avenue was included in the Appendix.*

17. The eastbound approach at the intersection of Alton Road and Dade Boulevard worsens to LOS F/131.0 under future conditions during the AM peak hour. Provide mitigation.

**Response 17:** *Minor signal optimization is proposed to mitigate additional delays.*

18. The southwestbound left-turn movement is expected to exceed provided storage under future conditions. Provide mitigation.

**Response 18:** *The movement is expected to exceed the provided storage under background condition scenario without the project traffic in place. The impact of the project trips on this queue is 17 ft or less than one vehicle. Therefore, mitigation is not provided.*

19. Provide the width of sidewalks in the multimodal evaluation section.

**Response 19:** *The width was added to the section. The width of the sidewalk along Alton Road is nine (9) feet and along 19<sup>th</sup> Street it is five (5) feet.*

20. Provide Transportation Demand Management strategies to reduce single-occupant vehicular traffic and encourage patrons and employees to walk, bike, use public transportation, and carpool/vanpool. Below is a list of strategies that should be considered for implementation by the project:

- a. Creation of an Employee Transportation Coordinator position to run the transportation demand management (TDM) programs.
- b. Provide secure bicycle parking (bicycle racks and/lockers). If so, how many and will they be short-term and/or long-term?
- c. Provide transit information within the site including route schedules and maps.
- d. Carpool incentive program for employees.
- e. Improved, enhanced (wide) sidewalks around the site.
- f. Subsidized transit passes for employees.
- g. Providing a Citibike station or bike sharing/rentals.
- h. Car/vanpooling designated parking spaces.

i. Lockers for bicyclists to store a change of clothes will be provided on-site.

j. Shower facility, bicyclist can use will be provided on-site

**Response 20:** *A transportation Demand Management section was added to the report to address this comment.*

Please call me if you have any questions.

Sincerely,

**TRAF TECH ENGINEERING, INC.**

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

October 9, 2023

Mr. Otniel Rodriguez, E.I.  
City of Miami Beach Transportation Department  
1700 Convention Center Drive  
Miami Beach, Florida 33139

**Re: 1901 Alton Road - Traffic Analysis Review Comments Dated  
September 11, 2023**

Dear Otniel:

Traf Tech Engineering, Inc. has been retained by the Crecent Heights team to address the traffic-related comments prepared by Kimley Horn and Associates, Inc. The responses to the traffic-related comments are provided below:

1. Provide a formal response to comments document when preparing resubmittals.

***Response 1:*** A response to Comments letter is included in the revised report. Please refer to Appendix G.

2. Confirm the land use of the existing development. According to the Miami-Dade County Property Appraiser website, the existing development at 1901 Alton Road is a drive-through bank. However, according to the "Inventory" section of the traffic study, the existing land use is an 11,000 square-foot retail space.

***Response 2:*** The existing land use was revised to Drive-in Bank and the square footage was revised to 6,654 square feet, per property appraiser report.

3. The proposed square footage for both the supermarket and the drive-in bank varies from the approved methodology. Provide the final proposed square footages of the Supermarket and Bank in the traffic study and as part of the response to this comment.

***Response 3:*** Square footages of both land uses were revised, based on the latest site plan.

4. The approved methodology and traffic study should have consistent land uses and similar square feet and/or units. Please revise the documentation to be consistent and update trip generation accordingly.

**Response 4:** *Trip generation calculations were revised accordingly. Since the traffic methodology, the square feet of the land uses changed. The latest changes are reflected in the updated traffic study.*

*10/3/2023 Follow-up Comment: Comment partially addressed. On Page 8 of the Traffic Study (Trip Generation), please correct the discrepancy between the proposed LUC's in the Trip Generation Table description and those shown in the table.*

*Response 10/9/2023: The discrepancy has been corrected.*

5. Provide a zoning data sheet detailing the scale and required/provided parking of all proposed land uses.

**Response 5:** *A table summarizing the information requested was included in the revised report under the parking section.*

6. Confirm the date of traffic data collection. According to the "Traffic Counts" section of the traffic study, traffic data was collected on December 1, 2022. However, according to Appendix B, traffic data was collected on August 9, 2023.

**Response 6:** *The date of the counts was revised to August 9, 2023.*

7. The 2045 Miami-Dade Cardinal Trip Distribution for the WNW direction in TAZ 634 should be 13.6 percent (13.6%). As other changes will most likely made throughout the traffic study, please update cardinal trip distribution calculations accordingly, if needed.

**Response 7:** *The incorrect percentage was revised and all calculations were revised accordingly.*

8. Clarify how the growth rate of 2.3 percent (2.3%) was selected as the study area growth rate as the growth rate with the highest R-squared value is the decaying exponential 10-year.

**Response 8:** *The growth rate was revised accordingly.*

*10/3/2023 Follow-up Comment: Comment partially addressed. Appendix D indicates the 10-year decaying exponential growth rate of 2.9 percent (2.9%) was applied to the existing conditions volumes. However, please revise the "Future Conditions Traffic Volumes" section to state a 2.9 percent (2.9%) growth rate was used rather than a 2.3 percent (2.3%) growth rate. Note the results of the analysis are not expected to change based on the above changes.*

*Response 10/9/2023: The "Future Conditions Traffic Volumes" section was revised to indicate 2.9%.*

9. Identify the number of required parking spaces in the "Parking" section of the traffic study.

**Response 9:** *Table 4 summarizes the number of required parking spaces.*

10. The site plan contains grocery pick-up spaces where currently on-street parking is provided. Clarify the intended operation and confirm that sufficient stacking is provided. Note that coordination with the Parking Department will be needed for the elimination of the on-street parking spaces.

**Response 10:** *The intent of these parking spaces is for grocery pick-up service. These parking stalls will have similar dimensions as a regular on-street parking space. Prior to providing any grocery pick-up signs, coordination with the City's Parking Department will be held to ensure the city approves the use of these parking spaces for grocery pick-up service.*

*10/3/2023 Follow-up Comment: Comment partially addressed. Please reach out to the Parking Department to discuss the use of these on-street parking spaces for curbside pickup. This must first be confirmed or denied by the Parking Department before we can approve the Traffic Study, as it impacts maneuverability, queuing, and available parking spaces for the project.*

*Response 10/9/2023: The grocery pick-up parking spaces have been removed from the site plan (please refer to updated site plan contained in Appendix A).*

11. Consistent with the methodology comments provided, include a maneuverability analysis section in the report and provide maneuverability exhibits for passenger vehicles within the parking garage and loading areas as an appendix within the study.

**Response 11:** *The section was added to the revised report and exhibits are included in Appendix H.*

*10/3/2023 Follow-up Comment: Comment partially addressed. Revise the "Maneuverability Analysis" section to identify all vehicles utilized in the maneuverability analysis. Additionally, in Appendix F, include the maneuverability analysis of the passenger vehicle driveway maneuvers.*

*Furthermore, note that loading vehicles reversing off of/onto public right-of-way, loading vehicles conflicting with oncoming traffic, and on-street loading operations require coordination with the City of Miami Beach. Note that all back-in maneuvers from public right-of-way require a dockmaster.*

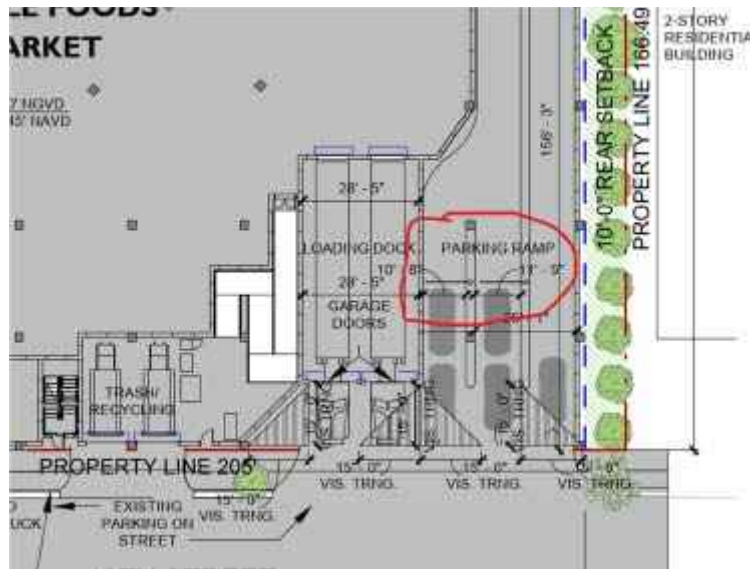
*Response 10/9/2023: The updated AutoTURN analysis is provided in Appendix F. If desired by the City of Miami Beach, a dockmaster can be provided at the loading docks during deliveries.*

12. The proposed driveway appears to accommodate parking revenue equipment. Confirm if an entry gate will be provided. If so, provide an entry gate queuing analysis.

**Response 12:** *Entry gates are not proposed for this project.*

*10/3/2023 Follow-up Comment: The below screenshot appears to show exit gates in the marked area. Please clarify.*





*Response 10/9/2023: The gates are for exiting lanes only and therefore, will not affect inbound vehicles.*

13. The curb and gutter at the project driveway appear to block the entry lane and the loading area. Please clarify.

**Response 13:** The entry/exit lanes of the driveway and the loading dock access will not have curb and gutter. The site plan was revised to eliminate the curb and gutter in front of the entry lane and loading area.

14. Include Project Driveway intersection in Figure 6.

**Response 14:** The project driveway was included in Figure 6.

15. Provide volume development worksheets for the project driveway as well.

**Response 15:** Volume Development Sheets for the project driveway were included in Appendix D.

10/3/2023 Follow-up Comment: Comment partially addressed. Revise the title of the project driveway intersection volume development sheet. Giving it the same title as another study intersection's volume development sheet is confusing.

Response 10/9/2023: The project driveway title has been revised.

16. Please review the Synchro comments below and update models accordingly:

- a. Dade Boulevard and Michigan Avenue
  - i. The westbound approach should be modeled as two (2) through lanes and one (1) right-turn lane.
  - ii. The southeastbound approach should be modeled as two (2) left-turn lanes and one (1) right-turn lane.
  - iii. Signal operates as coordinated.
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  - iv. Please explain why the detector phases for north and south approaches have been overridden.
- c. Alton Road and 20th Street
  - i. A.M. and P.M. peak hour cycle lengths should be 150s, round yellow time when calculating max splits.
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19. Provide the width of sidewalks in the multimodal evaluation section.

**Response 19:** *The width was added to the section. The width of the sidewalk along Alton Road is nine (9) feet and along 19<sup>th</sup> Street it is five (5) feet.*

*10/3/2023 Follow-up Comment: Comment partially addressed. As other sections of the report will be updated, please include the above information in the "Pedestrian Access" section of the report in the "Multimodal Evaluation" section.*

*Response 10/9/2023: The sidewalk widths for both Alton Road and 19<sup>th</sup> Street have been added to the "Pedestrian Access" section of the report in the "Multimodal Evaluation" section.*

20. Provide Transportation Demand Management strategies to reduce single-occupant vehicular traffic and encourage patrons and employees to walk, bike, use public transportation, and carpool/vanpool. Below is a list of strategies that should be considered for implementation by the project:

- a. Creation of an Employee Transportation Coordinator position to run the transportation demand management (TDM) programs.
- b. Provide secure bicycle parking (bicycle racks and/lockers). If so, how many and will they be short-term and/or long-term?
- c. Provide transit information within the site including route schedules and maps.
- d. Carpool incentive program for employees.
- e. Improved, enhanced (wide) sidewalks around the site.
- f. Subsidized transit passes for employees.
- g. Providing a Citibike station or bike sharing/rentals.

- h. Car/vanpooling designated parking spaces.
- i. Lockers for bicyclists to store a change of clothes will be provided on-site.
- j. Shower facility, bicyclist can use will be provided on-site

**Response 20:** A transportation Demand Management section was added to the report to address this comment.

21.10/3/2023 Follow-up: The Methodology must be in accordance with the Traffic Study. Please submit a Revised Methodology with your next response to comments with the aforementioned new square footages updated in order for both documents to be consistent.

Response 10/9/2023: The updated traffic methodology is consistent with the latest square footages and is included in the October 9, 2023 traffic study.

22.10/3/2023 Follow-up: Please clarify how the site plan will be changing as the result of the square footage changes.

Response 10/9/2023: The final updated site plan is contained in Appendix A. No changes were incorporated other than minor adjustments in square footages.

23.10/3/2023 Follow-up: Please ensure the Trip Generation Table, the Parking Summary, and the Conclusion in the Traffic Study are consistent with the newly proposed square footages.

Response 10/9/2023: The trip generation, parking and site plan are consistent in square footages.

Please call me if you have any questions.

Sincerely,

**TRAF TECH ENGINEERING, INC.**

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

# **APPENDIX H**

## **Approved Traffic Methodology**

## PROPOSED TRAFFIC METHODOLOGY

- The trip generation analysis will be based upon the Institute of Transportation Engineers (ITE) *Trip Generation Manual (11<sup>th</sup> Edition)*. Table 1 documents the trip generation associated with the proposed supermarket/bank development.
- The trip distribution and assignment of project traffic will be based upon the applicable TAZ data contained within the Long-Range Transportation Plan (LRTP) published by the Miami-Dade MPO. The distribution will be interpolated between the 2015 and 2045 model years for the appropriate buildout year (tentatively estimated to be 2025).
- The subject traffic study will evaluate the following intersections during the typical AM and PM peak periods:
  - o Dade Boulevard and Alton Road (signalized)
  - o Alton Road and 19<sup>th</sup> Street (stop control)
  - o Alton Road and 20<sup>th</sup> Street (signalized)
  - o Alton Road and Michigan Avenue (signalized)
  - o Michigan Avenue and Dade Boulevard (signalized)
- Traffic counts will be adjusted to reflect average peak season conditions based upon the most recent available FDOT adjustment factors.
- No adjustment to account for Covid will be applied (it is believed that traffic conditions are similar to pre-covid conditions).
- A growth factor will be applied to the traffic counts to reflect future traffic conditions at project build-out. The growth factor will be based upon historical traffic data available for the area near the project site.
- Traffic associated with the committed developments will be provided by the City of Miami Beach. The 1920 Alton project will be included as committed development.
- Existing traffic signal timing data for the study intersections will be obtained from Miami-Dade County DTPW and will be included in the Appendix of the traffic study.

- Traffic analysis will be prepared for each of the study intersections and project driveways for the following scenarios:
  - o Existing (2023) traffic conditions
  - o Background traffic conditions for buildout year (2026)
  - o Future conditions with growth rate, committed development and project traffic for the buildout year (2026)
- The level of service and delay for the study intersections will be summarized by movement and approach as well as for the overall intersection. If necessary, mitigation of impacts will be recommended.
- Intersection analyses will be conducted using the Synchro software for existing conditions, future conditions without the project, and future conditions with the proposed project in place. The Highway Capacity Manual (HCM) 6<sup>th</sup> or 2000 Edition will be used, as applicable. Synchro files will be provided as part of the traffic study.
- A parking description (required vs provided) will be documented in the traffic study.
- The traffic study will include a multimodal section addressing non-automobile modes of transportation. Pedestrian features located near the site, such as sidewalks, crosswalks, ramps to access crosswalks, etc. will be documented.
- Transit routes traveling along Alton Road and Dade Boulevard will be documented. The locations of bus stops and proximity to the project will also be addressed in the traffic study.
- The results of the traffic impact analysis will be documented in a technical report with an executive summary. All traffic data obtained for this project will be included in the Appendix of the traffic study.
- Delivery vehicles will be addressed in the traffic study.
- AutoTURN analyses will be provided as part of the submittal package.
- Entry gates queuing will be addressed if gates for inbound vehicles are proposed.

- The updated traffic study will be consistent with the previously approved traffic report.
- The buildout year for the project is anticipated to be the end of 2026.



**TABLE 1**  
**Trip Generation Summary (Proposed Uses)**  
**1901 Alton**

| Land Use               | Size      | Daily Trips  | AM Peak Hour |           |           | PM Peak Hour |            |            |
|------------------------|-----------|--------------|--------------|-----------|-----------|--------------|------------|------------|
|                        |           |              | Total Trips  | Inbound   | Outbound  | Total Trips  | Inbound    | Outbound   |
| Supermarket (LUC 850)  | 34,953 sf | 3,454        | 101          | 60        | 41        | 314          | 157        | 157        |
| Walk in Bank (LUC 911) | 3,908 sf  | n/a          | n/a          | n/a       | n/a       | 48           | 21         | 27         |
| <b>External Trips</b>  |           | <b>3,454</b> | <b>101</b>   | <b>60</b> | <b>41</b> | <b>362</b>   | <b>178</b> | <b>184</b> |

Source: ITE Trip Generation Manual (11th Edition)



**ATTACHMENT A**  
**Site Plan for 1901 Alton**



DESIGN REVIEW BOARD  
1901 ALTON ROAD

FINAL SUBMITTAL  
10/09/2023

FILE NO. DRB23-0956

COMMERCIAL PROJECT  
1901 ALTON ROAD MIAMI BEACH, FLORIDA, 33139  
SCOPE OF WORK: NEW CONSTRUCTION OF 4 STORY BUILDING WITH GROUND FLOOR RETAIL AND 3 LEVELS OF PARKING



STUDIO  
MCG  
ARCHITECTURE

OPPENHEIM  
ARCHITECTURE

STUDIO  
MCG  
ARCHITECTURE

7500 NE 4th Court  
Suite 102  
Miami, FL 33138  
T: (305) 573-2728

PROJECT NUMBER

2314

PROJECT NAME

WHOLE FOODS  
AND  
WELLS FARGO  
1901 ALTON ROAD  
MIAMI BEACH, FL 33141

OWNER

CRESCENT HEIGHTS

FACADE ARCHITECT

OPPENHEIM ARCHITECTURE  
AND DESIGN

DRAWING

COVER-DRB

Digitally signed by  
Jennifer McConney  
DN: c=US, o=STUDIO  
MCG+G  
ARCHITECTURE,  
dnQualifier=A01410  
D00000186945F530E  
0000E32D,  
cn=Jennifer  
McConney  
Date: 2023.10.06  
16:00:59 -04'00'

(JENNIFER MCCONNEY FLORIDA LIC# AB0394)

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SCALE:

DRAWN: CV, JDB

CHECK: JMcG

DATE: 10/09/23

SHEET NUMBER

A0.00

ZONING DATA SHEET

| ITEM # | Zoning Information LAND USE: CD-2 |                                                              |                      |                                            |
|--------|-----------------------------------|--------------------------------------------------------------|----------------------|--------------------------------------------|
| 1      | Address:                          | 1901 Alton Rd, Miami Beach, FL 33139                         |                      |                                            |
| 2      | Board and File numbers:           |                                                              |                      |                                            |
| 3      | Folio number(s):                  | 02-3234-001-0030                                             |                      |                                            |
| 4      | Year constructed:                 | 1986                                                         | Zoning District:     | CD-1 COMMERCIAL, LOW INTENSITY DISTRICT    |
| 5      | Base Flood Elevation:             | 8'-0 " NGVD                                                  | Grade Value in NGVD: | 3.7 NGVD (existing) 8' 0 NGVD proposed     |
|        |                                   | (road elevation to be raised in 2025 per City of Miami Beach |                      |                                            |
| 6      | Adjusted grade (Flood+Grade/2)    | 8'-0"                                                        | Lot Area:            | 55,377 SF                                  |
| 7      | Lot Width                         | N/A                                                          | Lot Depth:           | N/A                                        |
| 8      | Minimum Unit Size                 | N/A                                                          |                      |                                            |
| 9      | Existing User                     | WELLS FARGO                                                  | Proposed Use:        | GROCERY STORE MAIN USE, BANK ACCESSORY USE |

|    |                             | Maximum   | Existing | Proposed   | Deficiencies |
|----|-----------------------------|-----------|----------|------------|--------------|
| 10 | Height                      | 45'-0"    |          | 43'-0"     | -            |
| 11 | Number of Stories           | N/A       | 1        | 4          | -            |
| 12 | FAR                         | 1         | 0.00     | 0.94       | -            |
| 13 | FLOOR AREA Square Footage   | 55,377 SF | 0 SF     | 52,100 SF  | -            |
| 14 | GROSS Square Footage        | N/A       | N/A      | 199,772 SF | -            |
| 15 | Number of Units Residential | N/A       | N/A      | N/A        | -            |
| 16 | Number of Units Hotel       | N/A       | N/A      | N/A        | -            |
| 17 | Number of Seats             | N/A       | N/A      | N/A        | -            |
| 18 | Occupancy Load              | N/A       | N/A      | SEE CHART  | -            |

|    | Setbacks                                                  | Required | Existing | Proposed | Deficiencies |
|----|-----------------------------------------------------------|----------|----------|----------|--------------|
|    | <b>Pedestal (CD-1) COMMERCIAL, LOW INTENSITY DISTRICT</b> |          |          |          |              |
| 19 | Front Setback (ALTON RD):                                 | 0'-0"    | N/A      | 0' - 0"  | -            |
| 20 | Interior side Setback (NE):                               | 10'-0"   | N/A      | 10'-0"   | -            |
| 21 | Rear Setback (E):                                         | 10'-0"   | N/A      | 10'-0"   | -            |
| 22 | Side Setback facing Street (NE 19th ST):                  | 0'-0"    | N/A      | 0'-0"    | -            |
|    |                                                           |          |          |          |              |

|    | Parking                                  | Required   | Existing | Proposed   | Deficiencies |
|----|------------------------------------------|------------|----------|------------|--------------|
| 23 | Parking District (DISTRICT #1) TIER 1    | 163        |          | 277        | -            |
| 24 | Total # of parking spaces required       | 163        | N/A      | 277        | -            |
| 25 | Parking Space Dimensions                 | 8.5' X 18' | N/A      | 8.5' X 18' |              |
|    | Parking Space Configurations             |            |          |            |              |
| 26 | (45°,60°,90°,Parallel)                   |            | N/A      | 90 DEG     | -            |
| 27 | ADA Spaces                               |            | N/A      | 12         | -            |
| 28 | Tandem Spaces                            | 0          | N/A      | 0          | -            |
| 29 | Drive Aisle Width                        | 22'        | N/A      | 22'        | -            |
| 30 | Valet Drop off and pick up               | N/A        | N/A      | N/A        | -            |
| 31 | Loading zones and Trash collection areas | 2          | N/A      | 2          | -            |
| 32 | Bikes (SHORT TERM)                       | 4          | N/A      | 4          |              |
| 33 | Bikes (LONG TERM)                        | 15         | N/A      | 15         | -            |
| 34 | loading spaces: 3 for 20-40k sf          | 3          | N/A      | 3          | -            |

|    |                                           |    |
|----|-------------------------------------------|----|
| 35 | Is this a contributing building?          | NO |
| 36 | Located within a Local Historic District? | NO |

| INDEX OF DRAWINGS |                                              |       |       |       |
|-------------------|----------------------------------------------|-------|-------|-------|
| SHEET #           | DESCRIPTION                                  | SUBM1 | SUBM2 | SUBM3 |
| _____             | SURVEY                                       |       | •     |       |
| A0.00-PB          | COVER-PB                                     |       | •     |       |
| A0.01             | INDEX OF DRAWINGS AND SITE DATA              |       | •     |       |
| A0.02             | GROSS AREA DIAGRAMS                          |       | •     |       |
| A0.03             | FAR DIAGRAMS                                 |       | •     |       |
| A0.04             | RENDERING VIEW OF SOUTH AND ALTON RD FACADES |       | •     |       |
| A0.07             | AERIAL VIEWS                                 |       | •     |       |
| A0.08             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.09             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.10             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.11             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.12             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.13             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.14             | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.14.1           | EXISTING PHOTOGRAPHY                         |       | •     |       |
| A0.15             | SITE ELEVATIONS                              |       | •     |       |
| A0.16             | SITE ELEVATIONS                              |       | •     |       |
| A0.17             | EXPLODED AXONOMETRIC DIAGRAM                 |       | •     |       |
| A1.00             | SITE PLAN                                    |       | •     |       |
| A1.01             | LEVEL 1 FLOOR PLAN                           |       | •     |       |
| A1.02             | LEVEL 1.5 FLOOR PLAN                         |       | •     |       |
| A1.03             | LEVEL 2 FLOOR PLAN                           |       | •     |       |
| A1.04             | LEVEL 3 FLOOR PLAN                           |       | •     |       |
| A1.05             | LEVEL 4 FLOOR PLAN AND ROOF PLAN             |       | •     |       |
| A1.06             | LOADING DOCK DIAGRAMS                        |       | •     |       |
| A1.07             | DEMO FLOOR PLAN                              |       | •     |       |
| A2.01             | BUILDING ELEVATIONS                          |       | •     |       |
| A2.02             | BUILDING ELEVATIONS                          |       | •     |       |
| A2.03             | BUILDING SECTIONS                            |       | •     |       |
| A2.10             | WALL SECTION                                 |       | •     |       |
| A2.11             | WALL SECTION                                 |       | •     |       |
| A2.12             | WALL SECTION                                 |       | •     |       |

| PARKING REQUIREMENTS |                   |                   |                |                |
|----------------------|-------------------|-------------------|----------------|----------------|
| SPACE                | REQUIRED          | GROSS AREA/ SEATS | FACTOR         | PARKING SPACES |
| GROCERY STORE        | 1 SPACE / 250 SF  | 34,953            | 250            | 140            |
| CAFÉ (WITHIN STORE)  | 1 SPACE / 4 SEATS | 60                | 4              | 15             |
| BANK                 | 1 SPACE / 400 SF  | 3,908             | 400            | 10             |
|                      |                   |                   | TOTAL PROVIDED | 165            |
|                      |                   |                   | EXCESS         | 277 -112       |



7500 NE 4th Court  
Suite 102  
Miami, FL 33138  
T: (305) 573-2728

PROJECT NUMBER  
2314

PROJECT NAME  
WHOLE FOODS  
AND  
WELLS FARGO  
1901 ALTON ROAD  
MIAMI BEACH, FL 33141

OWNER  
CRESCENT HEIGHTS

FACADE ARCHITECT  
OPPENHEIM ARCHITECTURE  
AND DESIGN

DRAWING

INDEX OF  
DRAWINGS  
AND SITE  
DATA

JENNIFER McCONNAY FLORIDA LIC# AR93044

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DRAWN: CV, JDB

CHECK: JMcG

DATE: 10/09/23

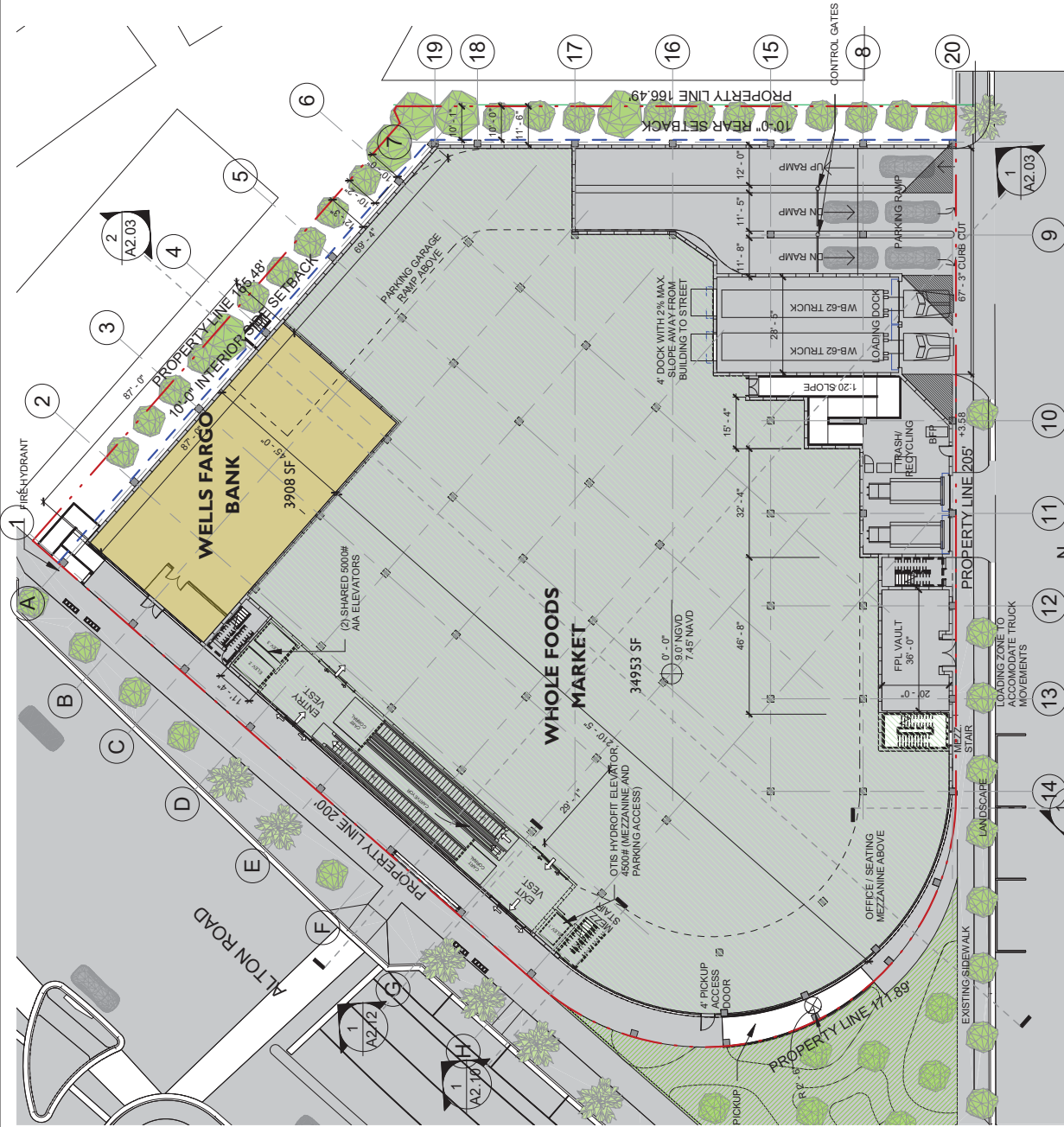
SHEET NUMBER  
A0.01





| Parking Schedule |                    |       |
|------------------|--------------------|-------|
| Level            | Comments           | Count |
| L2 PARKING       | PARKING ON STREET  | 3     |
| L2 PARKING       | PARKING 1 CAR TYP. | 79    |
| L2 PARKING       | PARKING SINGLE ADA | 4     |
| L3 PARKING       | PARKING 1 CAR TYP. | 85    |
| L3 PARKING       | PARKING SINGLE ADA | 6     |
| L4 PARKING       | PARKING 1 CAR TYP. | 96    |
| L4 PARKING       | PARKING SINGLE ADA | 4     |

277



# **ATTACHMENT B**

## **Responses to Traffic Methodology**





## MEMORANDUM

To: Otniel Rodriguez, E.I.  
City of Miami Beach

From: Adrian K. Dabkowski, P.E., PTOE 

Date: July 28, 2023

Subject: 1901 Alton Road  
Traffic Study Review Comments

Per your request, we have completed our review of the subject submittal. We offer the following comments:

1. As discussed in the methodology meeting, a traffic impact analysis was previously prepared and approved for this project. Therefore, the study area intersections should be consistent with the previously approved traffic study. A copy of the previously approved study should be included as an attachment to the methodology.
2. Provide maneuverability analysis for parking garage, loading areas, and refuse pick-up as part of the traffic study.
3. Provide entry gate analysis, if entry gate will be provided.
4. Include 1920 Alton Road as a committed development and 1910 Alton Road if it has yet to receive its certificate of occupancy.

k:\ftl\_tpto\040223301 comb study review\1901 alton road\2023 07 - 1901 alton - methodology comments.docx

**Response 1: The updated traffic study will be consistent with the previously approved traffic study. A copy of the previous traffic study is attached.**

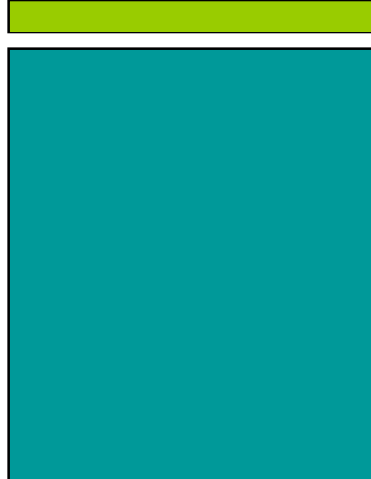
**Response2: AutoTURN analyses will be provided as part of the submittal package.**

**Response 3: If entry gates are provided, a queuing analysis will be provided.**

**Response 4: The 1920 Alton project trips will be included as committed development trips.**

# 1901 Alton (Whole Foods) Miami Beach, Florida

traffic study



prepared for:  
**Crescent Heights**

**Traf Tech**  
ENGINEERING, INC.

**March 31, 2015**

March 31, 2015

Mr. Graham Penn  
Bercow Radell & Fernandez, P.A.  
200 S. Biscayne Boulevard, Suite 850  
Miami, Florida 33131

**Re: 1901 Alton (Whole Foods) – Updated Traffic Study**

Dear Mr. Penn:

Traf Tech Engineering, Inc. is pleased to provide you with the results of the traffic study undertaken for the proposed 1901 Alton (Whole Foods) project planned to be located at 1901 Alton Road in Miami Beach, Florida. The study addresses the traffic impacts created by the proposed project to the surrounding street system.

It has been a pleasure working with you on this project.

Sincerely,

**TRAF TECH ENGINEERING, INC.**

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

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## INTRODUCTION

---

1901 Alton (Whole Foods) is a proposed supermarket and bank development planned to be located on the east side of Alton Road just north of 19<sup>th</sup> Street (1901 Alton Road) in the City of Miami Beach in Miami-Dade County, Florida. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. was retained by Crescent Heights to conduct a traffic study<sup>1</sup> in connection with the proposed development. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Impact Analysis
7. Conclusions and Recommendations

---

<sup>1</sup> The traffic methodology was discussed and agreed with the City of Miami Beach staff.



## INVENTORY

---

### **Existing Land Use**

Bank and parking lot

### **Proposed Land Uses and Access**

The 1901 Alton project consists of the following land use and intensity:

- o 49,328 square foot Supermarket
- o 4,490 square foot Drive-in Bank

The access to the project's proposed parking garage will consist of the following:

- o Full access driveway off of 19<sup>th</sup> Street

Additionally, the parking garage will provide a total of 363 parking spaces plus 3,489 square foot of loading space. Appendix A contains a copy of the proposed site plan for the project site.



## **EXISTING CONDITIONS**

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This section addresses the existing roadway system located in the vicinity of the project site and nearby intersections.

### **Roadway System**

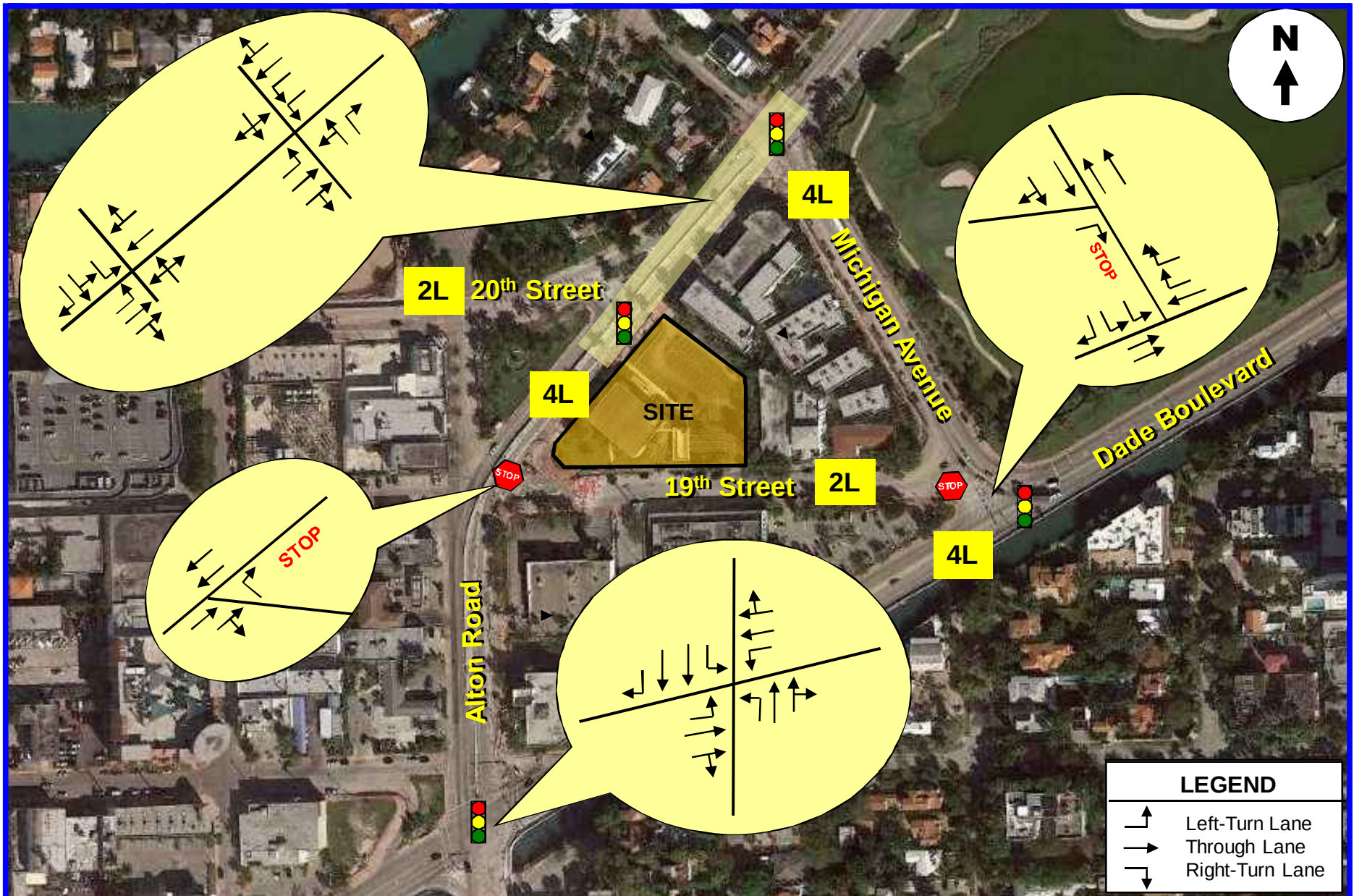
The roadway system located near the project site includes Alton Road, Michigan Avenue, 20<sup>th</sup> Street, 19<sup>th</sup> Street, and Dade Avenue. Near the project site, Alton Road, Michigan Avenue, and Dade Avenue are four-lane facilities, while 20<sup>th</sup> Street and 19<sup>th</sup> Street, are two-lane facilities.

### **Nearby Intersections**

With the assistance of City of Miami Beach staff, four intersections (plus the future access driveway) were identified as the locations that will be impacted the most by the proposed project. These intersections include Alton Road and Michigan Avenue, Alton Road and 19<sup>th</sup> Street, Alton Road and Dade Boulevard, and 19<sup>th</sup> Street and Michigan Avenue. The two intersections of 19<sup>th</sup> Street are controlled with a stop sign and the remaining intersections are signalized.

Figure 2 shows the existing lane geometry of the four intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in the figure.





## TRAFFIC COUNTS

---

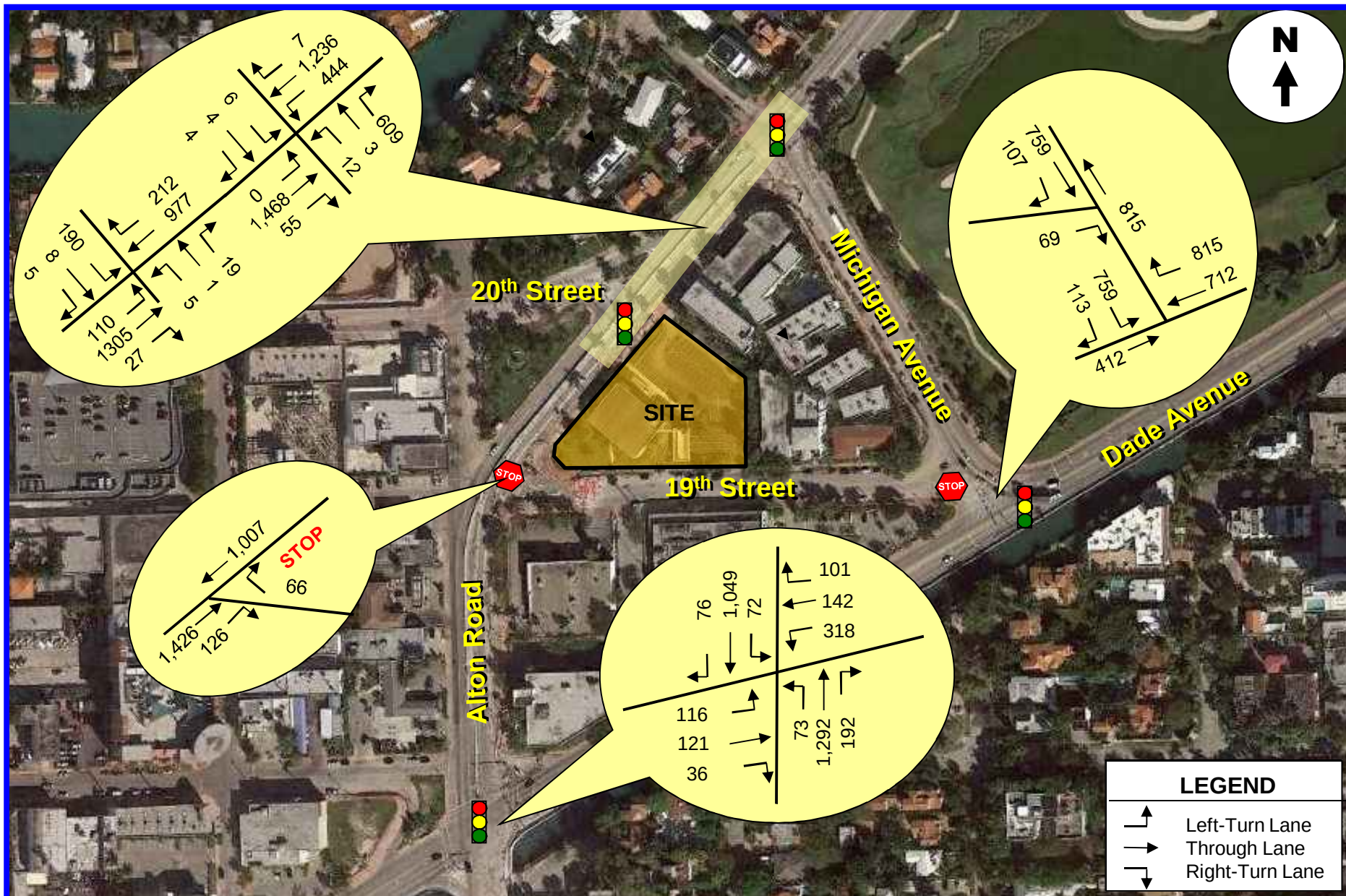
Traffic counts were obtained from studies conducted by FDOT since traffic patterns are currently altered due to the construction of Alton Road.

The obtained TMCs were performed on a typical weekday and collected during the PM peak periods (3:30 PM to 5:30 PM and 4:00 PM to 6:00 PM) established based on 72-hour Automated Traffic Recorders. The TMCs were collected on March 29, 30, and 31, 2011 and on January 27, 2012 at the following four intersections located near the project site:

1. Alton Road and Michigan Avenue (signalized intersection)
2. Alton Road and 19<sup>th</sup> Street (stop controlled)
3. Alton Road and Dade Avenue (signalized intersection)
4. 19<sup>th</sup> Street and Michigan Avenue (stop controlled)

Figure 3 summarizes the results of the intersection turning movement counts undertaken during the weekday peak hour. Appendix B contains the intersection turning movement counts, as collected in the field. The signal timing plan for the signalized intersections of Alton Road and Michigan Avenue, and Alton Road and Dade Avenue were obtained from the Miami-Dade County's web site.





## TRIP GENERATION

The trip generation for the project was based on information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual* (9<sup>th</sup> Edition). According to the subject ITE manual, the most appropriate "land use" categories for the proposed land uses includes Land Use 850 – Supermarket and Land Use 912 – Drive-in Bank. Table 1 summarizes the external trips associated with the proposed 1901 Alton development.

| TABLE 1<br>Trip Generation Summary<br>1901 Alton (Proposed Land Use) |           |             |                         |          |       |
|----------------------------------------------------------------------|-----------|-------------|-------------------------|----------|-------|
| Land Use                                                             | Size      | Daily Trips | Weekday Peak Hour Trips |          |       |
|                                                                      |           |             | Inbound                 | Outbound | Total |
| PROPOSED USES                                                        |           |             |                         |          |       |
| Supermarket                                                          | 49,328 sf | 4,694       | 236                     | 226      | 462   |
| Drive-in Bank                                                        | 4,490 sf  | 665         | 55                      | 54       | 109   |
| Total                                                                | -         | 5,359       | 291                     | 280      | 571   |

Source: ITE Trip Generation Manual (9<sup>th</sup> Edition)

As indicated in Table 1, the external trips anticipated to be generated by the proposed 1901 Alton project consist of approximately 5,359 daily trips and approximately 571 trips (291 inbound and 280 outbound) during the typical PM peak hour. In order to assess impacts with a conservative approach, no deductions were made to account for trips associated with the existing land use (bank and parking lot), internal trips, and passer-by traffic. The trip generation rates used to determine the trips associated with the proposed uses are presented below:

### ITE Land Use 850 – Supermarket

#### *Daily Trips*

$$T = 66.95 (X) + 1391.56$$

Where T = number of weekday daily trips and

X = 1000 Sq feet gross floor area

---

*PM Peak Hour of Adjacent Street (Typical Afternoon Rush Hour)*

$$\ln(T) = 0.74 \ln(X) + 3.25 \text{ (51\% inbound and 49\% outbound)}$$

Where T = average PM peak hour vehicle trip ends and

X = 1000 Sq feet gross floor area

ITE Land Use 912 – Drive-in Bank

*Daily Trips*

$$T = 148.15 (X)$$

Where T = number of weekday daily trips and

X = 1000 Sq feet gross floor area

*PM Peak Hour of Adjacent Street (Typical Afternoon Rush Hour)*

$$T = 24.30 (X) \text{ (50\% inbound and 50\% outbound)}$$

Where T = average AM peak hour vehicle trip ends and

X = 1000 Sq feet gross floor area

## TRIP DISTRUBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone 617, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

| <b>TABLE 2</b>                   |           |                         |
|----------------------------------|-----------|-------------------------|
| <b>Project Trip Distribution</b> |           |                         |
| <b>1901 Alton</b>                |           |                         |
| <b>Direction</b>                 |           | <b>% of Total Trips</b> |
| North:                           | Northwest | 9.99%                   |
|                                  | Northeast | 0%                      |
| South:                           | Southwest | 0%                      |
|                                  | Southeast | 0%                      |
| East:                            | Northeast | 28.84%                  |
|                                  | Southeast | 24.92%                  |
| West:                            | Northwest | 10.92%                  |
|                                  | Southwest | 25.33%                  |
| <b>Total</b>                     |           | <b>100.00%</b>          |

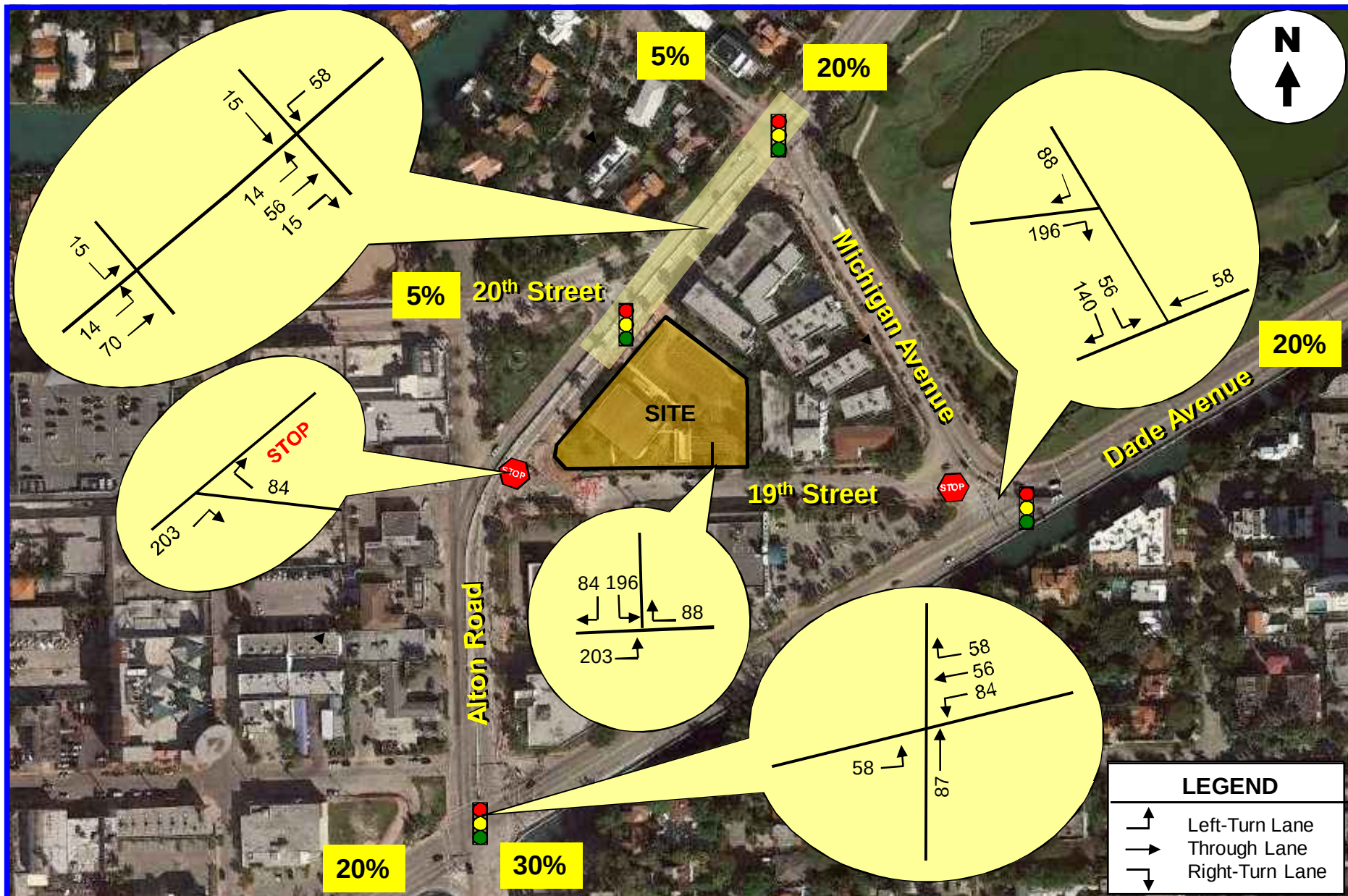
Source: Miami-Dade County (2035 SERPM)

Based on the above, the following traffic assignment was assumed for the proposed development:

- o 20% to and from the north via Alton Road
- o 20% to and from the north via Dade Boulevard
- o 5% to and from the west via Michigan Avenue
- o 5% to and from the west via 20<sup>th</sup> Street
- o 30% to and from the south north via Alton Road
- o 20% to and from the south via Dade Boulevard

The new peak hour traffic generated by the project was assigned to the nearby transportation network using the traffic assignment documented above. The new project traffic assignment is summarized in Figure 4.





## **TRAFFIC ANALYSIS**

---

This section of the study is divided into three parts. The first part consists of developing the future conditions traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions. The third section addresses the projected operating conditions of the project's access driveway.

### **Future Conditions Traffic Volumes**

Two sets of future traffic volumes were developed. The first set includes project buildout conditions without the proposed project and the second set adds the new trips anticipated to be generated by the project.

In order to develop year 2016 traffic volumes (project anticipated to be built and occupied by the year 2016), without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the month of March to average peak season conditions. Based on the 2013 FDOT's Peak Season Factor Category report, factors of 1.00 and 1.03 are required to convert traffic counts collected in March of 2011 and January 2012 to average peak season conditions (refer to Appendix C). Moreover, a growth factor of 1% was applied to project 2011 and 2012 peak season traffic volumes to year 2014. The second analysis includes a growth factor to project 2014 peak season traffic volumes to year 2016. Based on traffic growth data published by the FDOT for a nearby traffic count station, minimal traffic growth has occurred during the past five years (refer to Appendix C). However, in order to assess impacts with a conservative approach, and to account for unforeseen approved projects (committed trips) that may impact the study intersections, a one percent (1%) growth rate was used for purposes of this study.



---

The new trips generated by the 1901 Alton project (refer to Figure 4) were added to the 2016 background traffic in order to develop total traffic conditions. The future traffic projections for the study intersections (peak season adjustments, growth rates, committed development trips and project traffic) are presented in tabular format in Appendix E. Figures 5 and 6 present the year 2016 future traffic volumes for the study area.

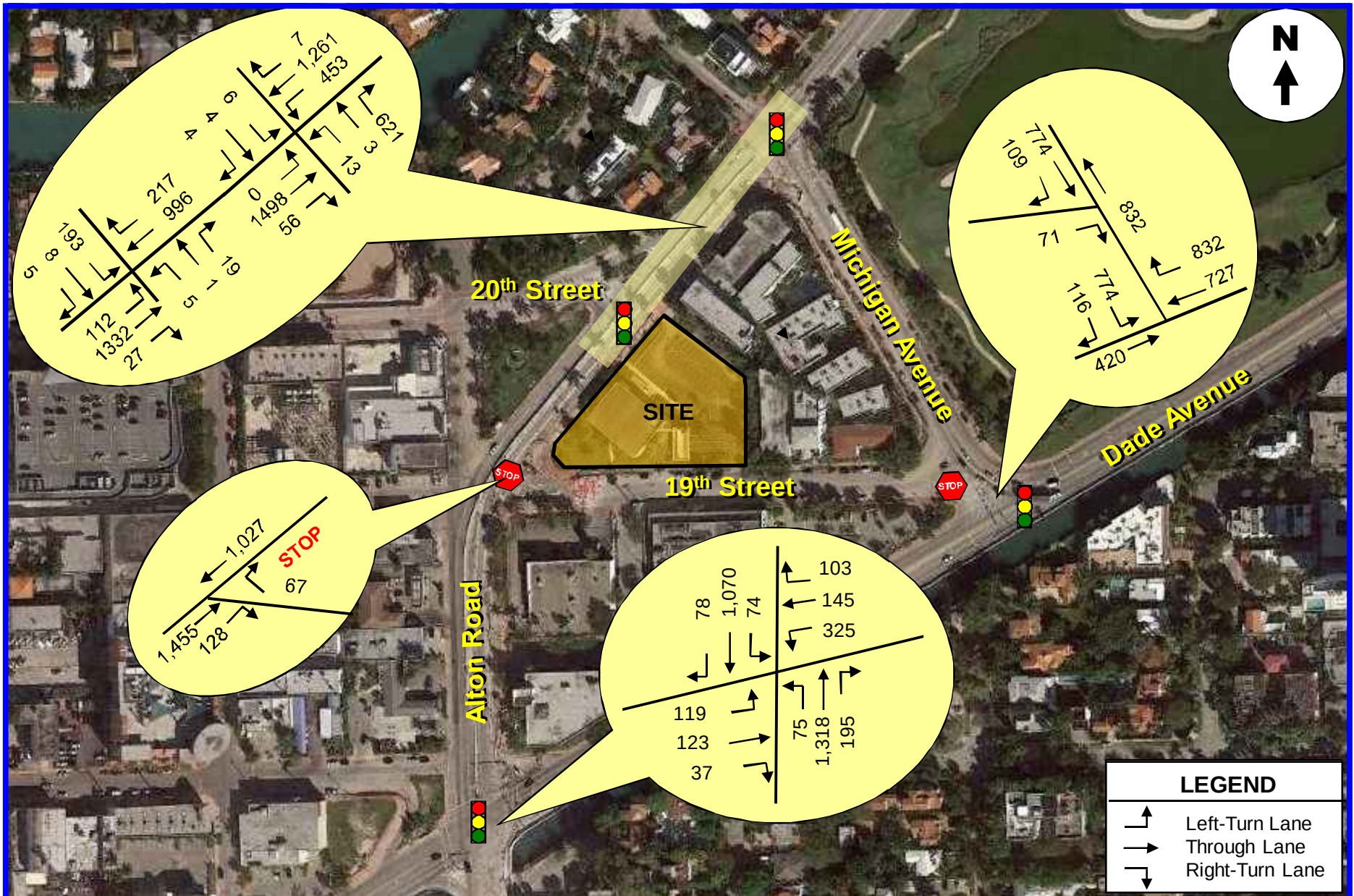
Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the 1901 Alton project.

### **Level of Service Analyses**

Intersection capacity/level of service analyses were conducted for the four study intersections and the access driveway. The analyses were undertaken following the capacity/level of service procedures outlined in the Highway Capacity Manual (HCS) using the SYNCHRO software.

Please note that this study will account for the future implementation of the southbound dual left-turn lanes at Alton Road and Michigan Avenue, as currently being pursued by FDOT.

The results of the capacity analyses are summarized in Tables 3 and 4. As indicated in Tables 3 and 4, all study intersections are currently operating adequately and will continue to operate at a acceptable level of service in the year 2016 with the proposed project in place, with two exceptions (the intersections of Alton Road/Dade Boulevard and Alton Road at 19<sup>th</sup> Street (westbound approach)).







With signal timing optimization the delay at the Alton Road/Dade Boulevard intersection can be improved by approximately 10%. Hence, coordination with Miami-Dade County is recommended after this project is built and occupied. In order to improve the Alton Road/19<sup>th</sup> Street intersection, multi-modal improvements, such as bicycle racks, car-pool parking, transit bus passes for employees, etc. should be considered for this project.

### Access Driveway (19<sup>th</sup> Street)

The project access driveway is projected to operate at level of service “C” (refer to Table 4).

| <b>TABLE 3</b><br><b>Intersection Level of Service – (Signalized Intersections)</b><br><b>1901 Alton</b> |                      |                                  |                          |
|----------------------------------------------------------------------------------------------------------|----------------------|----------------------------------|--------------------------|
| <b>Intersection</b>                                                                                      | <b>2014 Existing</b> | <b>Future Traffic Conditions</b> |                          |
|                                                                                                          |                      | <b>2016 w/o Project</b>          | <b>2016 With Project</b> |
| Alton Rd & Michigan Ave                                                                                  | D                    | C                                | D                        |
| Alton Rd & Dade Ave                                                                                      | D                    | D                                | E                        |
| Dade Ave & Michigan Ave                                                                                  | B                    | B                                | C                        |

Source: *Highway Capacity Manual*

| <b>TABLE 4</b><br><b>Intersection Level of Service (Stop-Control Intersections)</b><br><b>1901 Alton</b> |                      |                                  |                          |
|----------------------------------------------------------------------------------------------------------|----------------------|----------------------------------|--------------------------|
| <b>Intersection/Movement</b>                                                                             | <b>2014 Existing</b> | <b>Future Traffic Conditions</b> |                          |
|                                                                                                          |                      | <b>2016 w/o Project</b>          | <b>2016 With Project</b> |
| Alton Rd & 19 <sup>th</sup> St (WB)                                                                      | C                    | C                                | E                        |
| 19 <sup>th</sup> & Michigan (EB)                                                                         | B                    | B                                | C                        |
| 19 <sup>th</sup> & Driveway (Exit)                                                                       | -                    | -                                | D                        |

Source: *Highway Capacity Manual*

The computer printouts of the intersection capacity analyses are contained in Appendix F.

## **CONCLUSIONS AND RECOMMENDATIONS**

---

1901 Alton (Whole Foods) is a proposed development planned to be located at 1901 Alton Road in the City of Miami Beach in Miami-Dade County, Florida.

The project site is currently occupied by a Bank with a parking lot.

The 1901 Alton project consists of the following land use and intensity:

- o 49,328 square foot Supermarket
- o 4,490 square foot Drive-in Bank

The access to the project's proposed parking garage will consist of the following:

- o Full access driveway off of 19<sup>th</sup> Street.

Additionally, the parking garage will provide a total of 363 parking spaces plus 3,489 square foot of loading space.

Traf Tech Engineering, Inc. was retained by Crescent Heights to conduct a traffic study in connection with the proposed 1901 Alton development. The study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. The conclusions and recommendations of the traffic study are presented below:

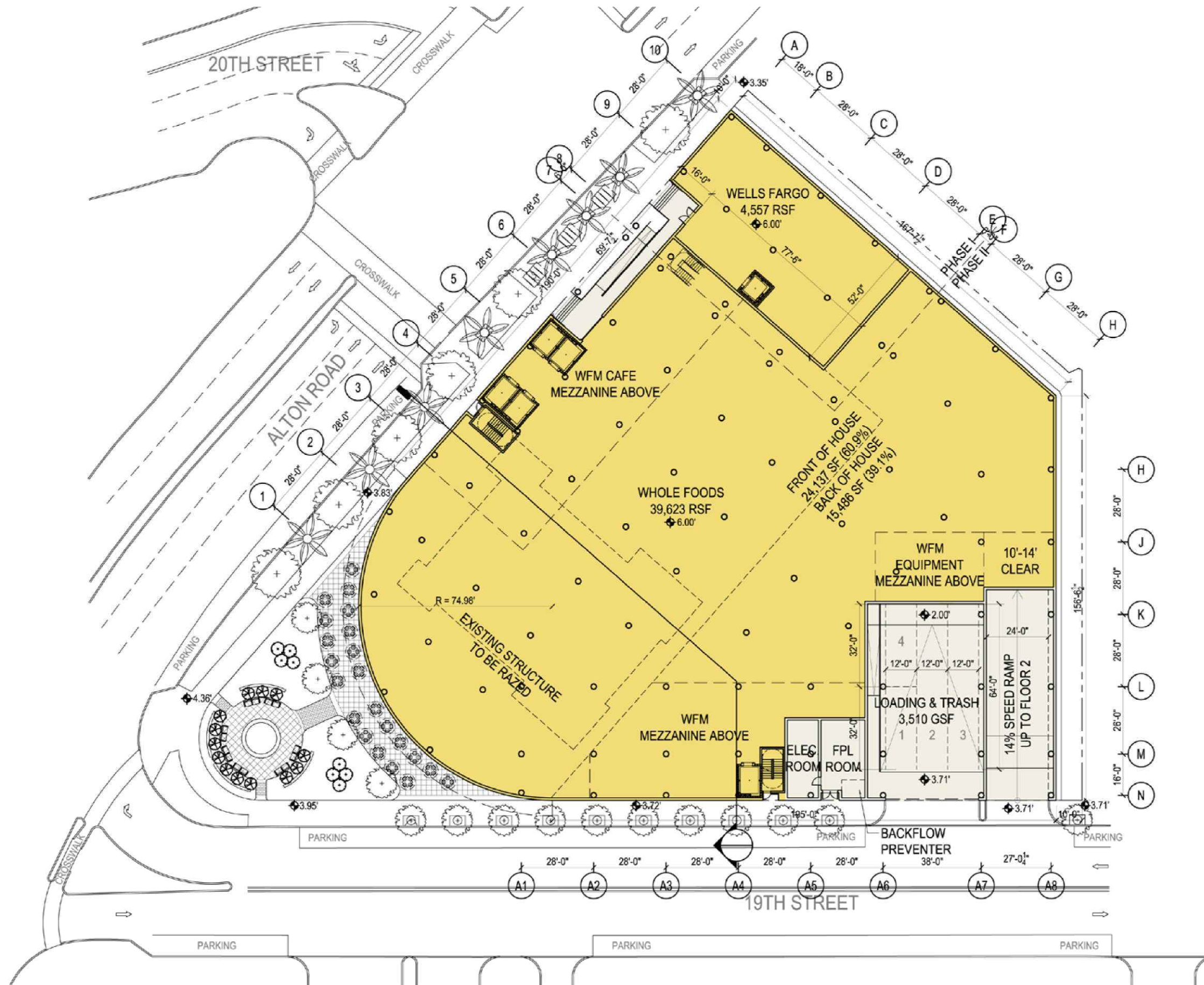
- o The external trips anticipated to be generated by the proposed 1901 Alton project consist of approximately 5,359 daily trips and approximately 571 trips (291 inbound and 280 outbound) during the typical PM peak hour. In order to assess impacts with a conservative approach, no deductions were made to account for trips associated with the existing land use (bank and parking lot), internal trips, and passer-by traffic.

- 
- o All study intersections are currently operating adequately and will continue to operate at an acceptable level of service in the year 2016 with the proposed project in place with two exceptions (the intersections of Alton Road/Dade Boulevard and Alton Road at 19<sup>th</sup> Street).
  - o With signal timing optimization the delay at the Alton Road/Dade Boulevard intersection can be improved by approximately 10%. Hence, coordination with Miami-Dade County is recommended after this project is built and occupied. In order to improve the Alton Road/19<sup>th</sup> Street intersection, multi-modal improvements, such as bicycle racks, preferential car-pool parking, transit bus passes for employees, etc. should be considered for this project.
  - o The project access driveway is projected to operate at level of service “B”.

# **APPENDIX A**

## **Site Plan – 1901 Alton (Whole Foods)**





BUILT AREA

FAR AREA

1901 ALTON RD

CRESCENT HEIGHTS®

ANTUNOVICH ASSOCIATES  
ARCHITECTURE · PLANNING · INTERIOR DESIGN

First Floor Plan 8

Miami Beach, FLORIDA | December 8, 2014



# **APPENDIX B**

## **Traffic Counts and Signal Timing Data**



TOD Schedule Report for 2648: Alton Rd&Dade Blvd

Active Phase Bank: Phase Bank

| Phase | Walk | Don't Walk | Min Initial  | Veh Ext   | Max Limit       | Max 2        | Yellow       | Red |
|-------|------|------------|--------------|-----------|-----------------|--------------|--------------|-----|
| 1     | 2    | 3          | 1            | 2         | 3               | 1            | 2            | 3   |
| 1     | NBL  | 0 - 0 - 0  | 0 - 0 - 0    | 5 - 5 - 5 | 2 - 2 - 2       | 5 - 7 - 8    | 14 - 5 - 12  | 3   |
| 2     | SBT  | 7 - 7 - 7  | 19 - 19 - 19 | 7 - 7 - 7 | 1 - 1 - 1       | 30 - 45 - 30 | 0 - 30 - 30  | 4   |
| 3     | NEL  | 0 - 0 - 0  | 0 - 0 - 0    | 5 - 5 - 5 | 2 - 2 - 2       | 5 - 5 - 8    | 13 - 5 - 12  | 3   |
| 4     | SWT  | 7 - 7 - 7  | 32 - 32 - 32 | 7 - 7 - 7 | 2.5 - 2.5 - 2.5 | 12 - 32 - 20 | 33 - 32 - 25 | 4   |
| 5     | SBL  | 0 - 0 - 0  | 0 - 0 - 0    | 5 - 5 - 5 | 2 - 2 - 2       | 5 - 7 - 8    | 14 - 5 - 12  | 4   |
| 6     | NBT  | 7 - 7 - 7  | 19 - 19 - 19 | 7 - 7 - 7 | 1 - 1 - 1       | 30 - 45 - 30 | 0 - 30 - 30  | 4   |
| 7     | SWL  | 0 - 0 - 0  | 0 - 0 - 0    | 5 - 5 - 5 | 2 - 2 - 2       | 8 - 5 - 8    | 13 - 5 - 12  | 3   |
| 8     | NET  | 7 - 7 - 7  | 32 - 32 - 32 | 7 - 7 - 7 | 2.5 - 2.5 - 2.5 | 12 - 32 - 20 | 33 - 32 - 25 | 4   |

Last In Service Date:

Permitted Phases

12345678

12345678

-2456-8

-2456-8

-2456-8

Default

External Permit 0

External Permit 1

External Permit 2

Green Time

| Current TOD Schedule | Plan | Cycle | 1  | 2   | 3  | 4  | 5  | 6   | 7  | 8  | Ring Offset | Offset |
|----------------------|------|-------|----|-----|----|----|----|-----|----|----|-------------|--------|
| 1                    |      | 160   | 7  | 97  | 8  | 32 | 7  | 95  | 8  | 32 | 0           | 133    |
| 2                    |      | 160   | 5  | 102 | 5  | 32 | 5  | 100 | 5  | 32 | 0           | 138    |
| 3                    |      | 120   | 10 | 50  | 12 | 32 | 10 | 48  | 12 | 32 | 0           | 106    |
| 4                    |      | 130   | 14 | 56  | 12 | 32 | 14 | 54  | 12 | 32 | 0           | 3      |
| 5                    |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 119    |
| 6                    |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 65     |
| 7                    |      | 105   | 7  | 44  | 6  | 32 | 7  | 42  | 6  | 32 | 0           | 28     |
| 8                    |      | 120   | 11 | 49  | 12 | 32 | 11 | 47  | 12 | 32 | 0           | 116    |
| 9                    |      | 120   | 7  | 57  | 8  | 32 | 7  | 55  | 8  | 32 | 0           | 87     |
| 10                   |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 70     |
| 13                   |      | 105   | 10 | 39  | 8  | 32 | 10 | 37  | 8  | 32 | 0           | 69     |
| 14                   |      | 105   | 10 | 39  | 8  | 32 | 10 | 37  | 8  | 32 | 0           | 68     |
| 15                   |      | 130   | 10 | 64  | 8  | 32 | 10 | 62  | 8  | 32 | 0           | 124    |
| 16                   |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 70     |
| 17                   |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 65     |
| 18                   |      | 90    | 5  | 32  | 5  | 32 | 5  | 30  | 5  | 32 | 0           | 66     |
| 19                   |      | 90    | 5  | 44  | 5  | 20 | 5  | 42  | 5  | 20 | 0           | 76     |
| 20                   |      | 130   | 10 | 60  | 12 | 32 | 10 | 58  | 12 | 32 | 0           | 120    |
| 23                   |      | 90    | 5  | 32  | 5  | 32 | 5  | 30  | 5  | 32 | 0           | 64     |

Local TOD Schedule

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | 8    | Su M T W Th S   |
| 0000 | Free | F               |
| 0030 | Free | Su              |
| 0600 | 8    | Su M T W Th F S |
| 0800 | 7    | Su              |
| 0800 | 5    | M T W Th F      |
| 1000 | 4    | Su              |
| 1030 | 4    | S               |
| 1515 | 16   | M T W Th F      |
| 1615 | 6    | M T W Th F      |
| 1830 | 4    | Su M T W Th F S |
| 2000 | 8    | Su M T W Th F S |
| 2330 | Free | M T W Th        |

| Current Time of Day Function |                 |                   |                    |
|------------------------------|-----------------|-------------------|--------------------|
| <u>Time</u>                  | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> |
| 0000                         | TOD OUTPUTS     | -----             | Su M T W Th S      |
| 0030                         | TOD OUTPUTS     | -----2-           | M T W Th           |
| 0600                         | TOD OUTPUTS     | -----             | Su M T W Th F S    |
| 2330                         | TOD OUTPUTS     | -----2-           | M T W Th           |

| Local Time of Day Function |                 |                   |                    |
|----------------------------|-----------------|-------------------|--------------------|
| <u>Time</u>                | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> |
| 0000                       | TOD OUTPUTS     | -----             | Su M T W Th S      |
| 0000                       | TOD OUTPUTS     | -----2-           | F                  |
| 0030                       | TOD OUTPUTS     | -----1            | Su                 |
| 0030                       | TOD OUTPUTS     | -----2-           | M T W Th           |
| 0600                       | TOD OUTPUTS     | -----             | Su M T W Th F S    |
| 2330                       | TOD OUTPUTS     | -----2-           | M T W Th           |

| * Settings                         |
|------------------------------------|
| Blank - FREE - Phase Bank 1, Max 1 |
| Blank - Plan - Phase Bank 1, Max 2 |
| 1 - Phase Bank 2, Max 1            |
| 2 - Phase Bank 2, Max 2            |
| 3 - Phase Bank 3, Max 1            |
| 4 - Phase Bank 3, Max 2            |
| 5 - EXTERNAL PERMIT 1              |
| 6 - EXTERNAL PERMIT 2              |
| 7 - X-PED OMIT                     |
| 8 - TBA                            |



TOD Schedule Report for 3276: Alton Rd&20 St

Active Phase Bank: Phase Bank 1

| Phase | Walk | Don't Walk | Min Initial  | Veh Ext   | Max Limit       | Max 2        | Yellow      | Red |
|-------|------|------------|--------------|-----------|-----------------|--------------|-------------|-----|
| 1     | 2    | 3          | 1            | 2         | 3               | 1            | 2           | 3   |
| 1     | NBL  | 0 - 0 - 0  | 0 - 0 - 0    | 5 - 5 - 5 | 2 - 2 - 2       | 5 - 5 - 9    | 12 - 5 - 0  | 3   |
| 2     | SBT  | 5 - 5 - 5  | 19 - 19 - 19 | 7 - 7 - 7 | 1 - 1 - 1       | 40 - 63 - 40 | 0 - 63 - 0  | 4   |
| 3     | EBT  | 5 - 5 - 5  | 19 - 19 - 19 | 7 - 7 - 7 | 2.5 - 2.5 - 2.5 | 12 - 27 - 30 | 22 - 27 - 0 | 4   |
| 4     | WBT  | 0 - 0 - 0  | 0 - 0 - 0    | 7 - 7 - 7 | 2.5 - 2.5 - 2.5 | 9 - 14 - 20  | 14 - 15 - 0 | 4   |
| 5     |      | 0 - 0 - 0  | 0 - 0 - 0    | 0 - 0 - 0 | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0   | 0   |
| 6     | NBT  | 5 - 5 - 5  | 19 - 19 - 19 | 7 - 7 - 7 | 1 - 1 - 1       | 40 - 63 - 40 | 0 - 63 - 0  | 4   |
| 7     |      | 0 - 0 - 0  | 0 - 0 - 0    | 0 - 0 - 0 | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0   | 0   |
| 8     |      | 0 - 0 - 0  | 0 - 0 - 0    | 0 - 0 - 0 | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0   | 0   |

Last In Service Date: unknown

Permitted Phases

12345678

Default 1234-6--

External Permit 0 -234-6--

External Permit 1 -234-6--

External Permit 2 -234-6--

Green Time

| Current TOD Schedule | Plan | Cycle | 1  | 2  | 3  | 4  | 5 | 6   | 7 | 8 | Ring Offset | Offset |
|----------------------|------|-------|----|----|----|----|---|-----|---|---|-------------|--------|
| 1                    |      | 160   | 11 | 95 | 27 | 8  | 0 | 109 | 0 | 0 | 0           | 11     |
| 3                    |      | 120   | 10 | 55 | 27 | 9  | 0 | 68  | 0 | 0 | 0           | 99     |
| 4                    |      | 130   | 7  | 63 | 27 | 14 | 0 | 73  | 0 | 0 | 0           | 122    |
| 5                    |      | 130   | 10 | 63 | 27 | 11 | 0 | 76  | 0 | 0 | 0           | 104    |
| 6                    |      | 130   | 12 | 63 | 27 | 9  | 0 | 78  | 0 | 0 | 0           | 66     |
| 7                    |      | 105   | 9  | 42 | 27 | 8  | 0 | 54  | 0 | 0 | 0           | 3      |
| 8                    |      | 120   | 10 | 55 | 27 | 9  | 0 | 68  | 0 | 0 | 0           | 106    |
| 9                    |      | 120   | 8  | 57 | 27 | 9  | 0 | 68  | 0 | 0 | 0           | 5      |
| 10                   |      | 130   | 7  | 63 | 27 | 14 | 0 | 73  | 0 | 0 | 0           | 54     |
| 11                   |      | 105   | 9  | 38 | 27 | 12 | 0 | 50  | 0 | 0 | 0           | 94     |
| 12                   |      | 105   | 9  | 38 | 27 | 12 | 0 | 50  | 0 | 0 | 0           | 94     |
| 13                   |      | 105   | 9  | 42 | 27 | 8  | 0 | 54  | 0 | 0 | 0           | 56     |
| 14                   |      | 105   | 9  | 42 | 27 | 8  | 0 | 54  | 0 | 0 | 0           | 56     |
| 15                   |      | 130   | 9  | 67 | 27 | 8  | 0 | 79  | 0 | 0 | 0           | 94     |
| 16                   |      | 130   | 7  | 63 | 27 | 14 | 0 | 73  | 0 | 0 | 0           | 54     |
| 17                   |      | 130   | 12 | 63 | 27 | 9  | 0 | 78  | 0 | 0 | 0           | 47     |
| 20                   |      | 130   | 10 | 63 | 27 | 11 | 0 | 76  | 0 | 0 | 0           | 104    |

Local TOD Schedule

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | 8    | Su M T W Th S   |
| 0000 | Free | F               |
| 0030 | 11   | Su              |
| 0030 | Free | M T W Th        |
| 0600 | 8    | Su M T W Th F S |
| 0800 | 7    | Su              |
| 0800 | 5    | M T W Th F      |
| 1000 | 7    | Su              |
| 1030 | 4    | S               |
| 1515 | 16   | M T W Th F      |
| 1615 | 6    | M T W Th F      |
| 1830 | 4    | Su M T W Th F   |
| 2000 | 8    | Su M T W Th F S |
| 2330 | Free | M T W Th        |

| Current Time of Day Function |                 |                   |                    |
|------------------------------|-----------------|-------------------|--------------------|
| <u>Time</u>                  | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> |
| 0000                         | TOD OUTPUTS     | -----             | Su M T W Th S      |
| 0030                         | TOD OUTPUTS     | -----1            | M T W Th           |
| 0100                         | TOD OUTPUTS     | -----2-           | M T W Th F         |
| 0600                         | TOD OUTPUTS     | -----             | Su M T W Th F S    |
| 2330                         | TOD OUTPUTS     | -----1            | M T W Th           |

| Local Time of Day Function |                 |                   |                    |
|----------------------------|-----------------|-------------------|--------------------|
| <u>Time</u>                | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> |
| 0000                       | TOD OUTPUTS     | -----             | Su M T W Th S      |
| 0000                       | TOD OUTPUTS     | -----1            | F                  |
| 0030                       | TOD OUTPUTS     | -----1            | M T W Th           |
| 0100                       | TOD OUTPUTS     | -----2-           | M T W Th F         |
| 0600                       | TOD OUTPUTS     | -----             | Su M T W Th F S    |
| 2330                       | TOD OUTPUTS     | -----1            | M T W Th           |

| * Settings                         |
|------------------------------------|
| Blank - FREE - Phase Bank 1, Max 1 |
| Blank - Plan - Phase Bank 1, Max 2 |
| 1 - Phase Bank 2, Max 1            |
| 2 - Phase Bank 2, Max 2            |
| 3 - Phase Bank 3, Max 1            |
| 4 - Phase Bank 3, Max 2            |
| 5 - EXTERNAL PERMIT 1              |
| 6 - EXTERNAL PERMIT 2              |
| 7 - X-PED OMIT                     |
| 8 - TBA                            |



TOD Schedule Report for 3392: Alton Rd&Michigan A

Active Phase Bank: Phase Bank

| Phase | Walk      | Don't Walk   | Min Initial | Veh Ext         | Max Limit    | Max 2        | Yellow | Red |
|-------|-----------|--------------|-------------|-----------------|--------------|--------------|--------|-----|
| 1     | 2         | 3            | 1           | 2               | 3            | 1            | 2      | 3   |
| 1 SBL | 0 - 0 - 0 | 0 - 0 - 0    | 5 - 5 - 5   | 2 - 2 - 2       | 6 - 6 - 6    | 22 - 22 - 22 | 3      | 0   |
| 2 NBT | 7 - 7 - 7 | 14 - 14 - 14 | 7 - 7 - 7   | 1 - 1 - 1       | 40 - 40 - 40 | 0 - 0 - 0    | 4      | 1   |
| 3     | 0 - 0 - 0 | 0 - 0 - 0    | 0 - 0 - 0   | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0    | 0      | 0   |
| 4 EBT | 7 - 7 - 7 | 25 - 25 - 25 | 7 - 7 - 7   | 2.5 - 2.5 - 2.5 | 12 - 12 - 12 | 32 - 32 - 31 | 4      | 1   |
| 5     | 0 - 0 - 0 | 0 - 0 - 0    | 0 - 0 - 0   | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0    | 0      | 0   |
| 6 SBT | 7 - 7 - 7 | 14 - 14 - 14 | 7 - 7 - 7   | 1 - 1 - 1       | 40 - 40 - 40 | 0 - 0 - 0    | 4      | 1   |
| 7     | 0 - 0 - 0 | 0 - 0 - 0    | 0 - 0 - 0   | 0 - 0 - 0       | 0 - 0 - 0    | 0 - 0 - 0    | 0      | 0   |
| 8 WBT | 0 - 0 - 0 | 0 - 0 - 0    | 7 - 7 - 7   | 2.5 - 2.5 - 2.5 | 12 - 12 - 12 | 32 - 32 - 31 | 4      | 1   |

Last In Service Date:

Permitted Phases

12345678

12-4-6-8

-----

-2-4-6-8

-2-4-6-8

Default

External Permit 0

External Permit 1

External Permit 2

Green Time

| Current TOD Schedule | Plan | Cycle | 1  | 2   | 3 | 4  | 5 | 6   | 7 | 8  | Ring Offset | Offset |
|----------------------|------|-------|----|-----|---|----|---|-----|---|----|-------------|--------|
| 1                    |      | 160   | 8  | 108 | 0 | 31 | 0 | 119 | 0 | 31 | 0           | 34     |
| 2                    |      | 160   | 8  | 108 | 0 | 31 | 0 | 119 | 0 | 31 | 0           | 19     |
| 3                    |      | 120   | 14 | 62  | 0 | 31 | 0 | 79  | 0 | 31 | 0           | 96     |
| 4                    |      | 130   | 14 | 72  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 8      |
| 5                    |      | 130   | 14 | 72  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 124    |
| 6                    |      | 130   | 14 | 72  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 67     |
| 7                    |      | 105   | 14 | 47  | 0 | 31 | 0 | 64  | 0 | 31 | 0           | 2      |
| 8                    |      | 120   | 13 | 63  | 0 | 31 | 0 | 79  | 0 | 31 | 0           | 115    |
| 9                    |      | 120   | 14 | 62  | 0 | 31 | 0 | 79  | 0 | 31 | 0           | 20     |
| 10                   |      | 130   | 14 | 72  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 73     |
| 13                   |      | 105   | 8  | 53  | 0 | 31 | 0 | 64  | 0 | 31 | 0           | 60     |
| 14                   |      | 105   | 8  | 53  | 0 | 31 | 0 | 64  | 0 | 31 | 0           | 14     |
| 15                   |      | 130   | 12 | 74  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 101    |
| 16                   |      | 130   | 14 | 72  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 73     |
| 17                   |      | 130   | 24 | 62  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 67     |
| 18                   |      | 90    | 8  | 38  | 0 | 31 | 0 | 49  | 0 | 31 | 0           | 38     |
| 19                   |      | 90    | 8  | 38  | 0 | 31 | 0 | 49  | 0 | 31 | 0           | 42     |
| 20                   |      | 130   | 24 | 62  | 0 | 31 | 0 | 89  | 0 | 31 | 0           | 122    |
| 23                   |      | 90    | 8  | 38  | 0 | 31 | 0 | 49  | 0 | 31 | 0           | 42     |

Local TOD Schedule

| Time | Plan | DOW             |
|------|------|-----------------|
| 0000 | 8    | Su M T W Th S   |
| 0000 | Free | F               |
| 0030 | Free | Su              |
| 0030 | Free | M T W Th        |
| 0600 | 8    | Su M T W Th F S |
| 0800 | 7    | Su              |
| 0800 | 5    | M T W Th F      |
| 1000 | 4    | W               |
| 1030 | 7    | S               |
| 1515 | 16   | M T W Th F      |
| 1615 | 6    | M T W Th F      |
| 1830 | 4    | Su M T W Th F S |
| 2000 | 8    | Su M T W Th F S |
| 2330 | Free | M T W Th        |

| Current Time of Day Function |                 |                   |                    | Local Time of Day Function |                 |                   |                    | * Settings                                                                                                                                                                                                                                                          |
|------------------------------|-----------------|-------------------|--------------------|----------------------------|-----------------|-------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <u>Time</u>                  | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> | <u>Time</u>                | <u>Function</u> | <u>Settings *</u> | <u>Day of Week</u> |                                                                                                                                                                                                                                                                     |
| 0000                         | TOD OUTPUTS     | -----             | Su M T W Th F S    | 0000                       | TOD OUTPUTS     | -----             | Su M T W Th F S    | Blank - FREE - Phase Bank 1, Max 1<br>Blank - Plan - Phase Bank 1, Max 2<br>1 - Phase Bank 2, Max 1<br>2 - Phase Bank 2, Max 2<br>3 - Phase Bank 3, Max 1<br>4 - Phase Bank 3, Max 2<br>5 - EXTERNAL PERMIT 1<br>6 - EXTERNAL PERMIT 2<br>7 - X-PED OMIT<br>8 - TBA |

# TOD Schedule Report

## for 3391: Dade Blvd&Michigan Av N

Print Date: 11/3/2011      Print Time: 3:01 AM

| Asset | Intersection            | TOD Schedule | Op Mode | Plan # | Cycle | Offset | TOD Setting | Active PhaseBank | Active Maximum |
|-------|-------------------------|--------------|---------|--------|-------|--------|-------------|------------------|----------------|
| 3391  | Dade Blvd&Michigan Av N | DOW-5        |         | N/A    | 0     | 0      | N/A         | 0                | Max 0          |

### Splits

| PH1 | PH2 | PH3 | PH4 | PH5 | PH6 | PH7 | PH8 |
|-----|-----|-----|-----|-----|-----|-----|-----|
| -   | SWT | PED | SET | -   | NET | -   | -   |
| 0   | 0   | 0   | 0   | 0   | 0   | 0   | 0   |



| Active Phase Bank: |      | Phase Bank 1 |   |            |   |   |             |    |    |         |   |   |           |   |     |       |   |    |        |     |    |     |    |   |     |   |     |
|--------------------|------|--------------|---|------------|---|---|-------------|----|----|---------|---|---|-----------|---|-----|-------|---|----|--------|-----|----|-----|----|---|-----|---|-----|
| Phase              | Walk |              |   | Don't Walk |   |   | Min Initial |    |    | Veh Ext |   |   | Max Limit |   |     | Max 2 |   |    | Yellow | Red |    |     |    |   |     |   |     |
|                    | 1    | 2            | 3 | 1          | 2 | 3 | 1           | 2  | 3  | 1       | 2 | 3 | 1         | 2 | 3   | 1     | 2 | 3  |        |     |    |     |    |   |     |   |     |
| 1                  | -    | 0            | - | 0          | 0 | - | 0           | 0  | -  | 0       | 0 | - | 0         | 0 | -   | 0     | 0 | -  | 0      | 0   |    |     |    |   |     |   |     |
| 2                  | SWT  | 0            | - | 0          | 0 | - | 0           | 14 | -  | 14      | - | 1 | 1         | - | 1   | 25    | - | 21 | -      | 25  | 4  | 0.3 |    |   |     |   |     |
| 3                  | PED  | 7            | - | 7          | - | 7 | 23          | -  | 23 | 0       | - | 0 | 0         | - | 0   | 0     | - | 0  | -      | 0   | 0  | 0   |    |   |     |   |     |
| 4                  | SET  | 0            | - | 0          | 0 | - | 0           | 7  | -  | 7       | - | 7 | 2.5       | - | 2.5 | 9     | - | 9  | -      | 15  | 20 | -   | 20 | 4 | 0.6 |   |     |
| 5                  | -    | 0            | - | 0          | 0 | - | 0           | 0  | -  | 0       | 0 | - | 0         | 0 | -   | 0     | 0 | -  | 0      | 0   | 0  | 0   | 0  | 0 |     |   |     |
| 6                  | NET  | 0            | - | 0          | 0 | - | 0           | 14 | -  | 14      | - | 1 | 1         | - | 1   | 25    | - | 21 | -      | 25  | 0  | -   | 21 | - | 25  | 4 | 0.3 |
| 7                  | -    | 0            | - | 0          | 0 | - | 0           | 0  | -  | 0       | 0 | - | 0         | 0 | -   | 0     | 0 | -  | 0      | 0   | 0  | 0   | 0  | 0 | 0   | 0 |     |
| 8                  | -    | 0            | - | 0          | 0 | - | 0           | 0  | -  | 0       | 0 | - | 0         | 0 | -   | 0     | 0 | -  | 0      | 0   | 0  | 0   | 0  | 0 | 0   | 0 |     |

Last In Service Date: unknown

| Permitted Phases  |          |
|-------------------|----------|
| Default           | 12345678 |
| External Permit 0 | -234-6-- |
| External Permit 1 | -----    |
| External Permit 2 | -----    |



| Current      |      | Green Time |     |     |     |    |     |    |   |
|--------------|------|------------|-----|-----|-----|----|-----|----|---|
| TOD Schedule | Plan | 1          | 2   | 3   | 4   | 5  | 6   | 7  | 8 |
| Cycle        | Plan | -          | SWT | PED | SET | -  | NET | -  | - |
| 2            |      | 100        | 0   | 48  | 0   | 42 | 0   | 48 | 0 |
| 3            |      | 100        | 0   | 48  | 0   | 42 | 0   | 48 | 0 |
| 4            |      | 100        | 0   | 41  | 0   | 49 | 0   | 41 | 0 |
| 5            |      | 80         | 0   | 28  | 0   | 42 | 0   | 28 | 0 |
| 6            |      | 120        | 0   | 64  | 0   | 46 | 0   | 64 | 0 |
| 9            |      | 90         | 0   | 24  | 0   | 56 | 0   | 24 | 0 |
| 10           |      | 80         | 0   | 23  | 0   | 47 | 0   | 23 | 0 |
| 11           |      | 80         | 0   | 30  | 0   | 40 | 0   | 30 | 0 |
| 13           |      | 85         | 0   | 30  | 0   | 45 | 0   | 30 | 0 |
| 14           |      | 85         | 0   | 26  | 0   | 49 | 0   | 26 | 0 |
| 15           |      | 90         | 0   | 24  | 0   | 56 | 0   | 24 | 0 |
| 16           |      | 80         | 0   | 23  | 0   | 47 | 0   | 23 | 0 |
| 17           |      | 80         | 0   | 30  | 0   | 40 | 0   | 30 | 0 |
| 23           |      | 80         | 0   | 28  | 0   | 42 | 0   | 28 | 0 |

| Current Time of Day Function |             |            |                 |  |
|------------------------------|-------------|------------|-----------------|--|
| Time                         | Function    | Settings * | Day of Week     |  |
| 0000                         | TOD OUTPUTS | -----1     | Su M T W Th F S |  |
| 0100                         | TOD OUTPUTS | -----      | Su M T W Th F S |  |
| 2200                         | TOD OUTPUTS | -----1     | M T W Th F S    |  |

| Local Time of Day Function |             |            |                 |   |
|----------------------------|-------------|------------|-----------------|---|
| Time                       | Function    | Settings * | Day of Week     |   |
| 0000                       | TOD OUTPUTS | -----1     | Su M T W Th F S |   |
| 0100                       | TOD OUTPUTS | -----      | Su M T W Th F S |   |
| 0700                       | TOD OUTPUTS | -----1     | Su              | S |
| 1000                       | TOD OUTPUTS | -----      | Su              | S |
| 2000                       | TOD OUTPUTS | -----1     | Su              |   |
| 2200                       | TOD OUTPUTS | -----1     | M T W Th F S    |   |

| * Settings                         |  |
|------------------------------------|--|
| Blank - FREE - Phase Bank 1, Max 1 |  |
| Blank - Plan - Phase Bank 1, Max 2 |  |
| 1 - Phase Bank 2, Max 1            |  |
| 2 - Phase Bank 2, Max 2            |  |
| 3 - Phase Bank 3, Max 1            |  |
| 4 - Phase Bank 3, Max 2            |  |
| 5 - EXTERNAL PERMIT 1              |  |
| 6 - EXTERNAL PERMIT 2              |  |
| 7 - X-PED OMIT                     |  |
| 8 - TBA                            |  |

|                             |  |
|-----------------------------|--|
| No Calendar Defined/Enabled |  |
|-----------------------------|--|

| Local TOD Schedule |      |                 |
|--------------------|------|-----------------|
| Time               | Plan | DOW             |
| 0000               | Free | Su M T W Th F S |
| 0600               | 13   | M T W Th F      |
| 0700               | 2    | M T W Th F      |
| 0830               | 13   | M T W Th F      |
| 1000               | 13   | Su              |
| 1415               | 14   | M T W Th F      |
| 1500               | 4    | F               |
| 1645               | 4    | M T W Th        |
| 1830               | 13   | M T W Th F      |
| 2000               | Free | Su              |
| 2200               | Free | M T W Th F      |

# CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201

Miami, Florida, 33178

Turning Movement Count  
SR 907/Alton Road at Dade Boulevard

File Name : SR 907 at Dade Blvd

Site Code : 00190702

Start Date : 3/29/2011

Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

|                 | SR 907/Alton Road<br>Southbound |      |      |         |            | Dade Boulevard<br>Westbound |      |      |         |            | SR 907/Alton Road<br>Northbound |      |      |         |            | Dade Boulevard<br>Eastbound |      |      |         |            |            |
|-----------------|---------------------------------|------|------|---------|------------|-----------------------------|------|------|---------|------------|---------------------------------|------|------|---------|------------|-----------------------------|------|------|---------|------------|------------|
| Start Time      | Right                           | Thru | Left | P&B CNL | App. Total | Right                       | Thru | Left | P&B CNL | App. Total | Right                           | Thru | Left | P&B CNL | App. Total | Right                       | Thru | Left | P&B CWL | App. Total | Int. Total |
| 08:15 AM        | 21                              | 242  | 9    | 1       | 273        | 8                           | 19   | 66   | 7       | 100        | 35                              | 195  | 8    | 3       | 241        | 7                           | 27   | 52   | 5       | 91         | 705        |
| 08:30 AM        | 23                              | 250  | 16   | 3       | 292        | 11                          | 28   | 68   | 3       | 110        | 37                              | 227  | 8    | 0       | 272        | 4                           | 15   | 34   | 5       | 58         | 732        |
| 08:45 AM        | 21                              | 306  | 13   | 3       | 343        | 9                           | 42   | 63   | 10      | 124        | 47                              | 202  | 9    | 4       | 262        | 9                           | 17   | 33   | 8       | 67         | 796        |
| Total           | 65                              | 798  | 38   | 7       | 908        | 28                          | 89   | 197  | 20      | 334        | 119                             | 624  | 25   | 7       | 775        | 20                          | 59   | 119  | 18      | 216        | 2233       |
| 09:00 AM        | 36                              | 292  | 11   | 3       | 342        | 14                          | 26   | 82   | 5       | 127        | 28                              | 212  | 16   | 0       | 256        | 7                           | 18   | 40   | 3       | 68         | 793        |
| 09:15 AM        | 23                              | 286  | 19   | 6       | 334        | 17                          | 33   | 69   | 9       | 128        | 39                              | 164  | 15   | 0       | 218        | 8                           | 13   | 33   | 8       | 62         | 742        |
| 09:30 AM        | 26                              | 226  | 7    | 2       | 261        | 13                          | 23   | 54   | 18      | 108        | 27                              | 154  | 17   | 0       | 198        | 8                           | 54   | 22   | 5       | 89         | 656        |
| 09:45 AM        | 23                              | 279  | 10   | 4       | 316        | 9                           | 17   | 78   | 11      | 115        | 38                              | 148  | 14   | 0       | 200        | 12                          | 21   | 21   | 5       | 59         | 690        |
| Total           | 108                             | 1083 | 47   | 15      | 1253       | 53                          | 99   | 283  | 43      | 478        | 132                             | 678  | 62   | 0       | 872        | 35                          | 106  | 116  | 21      | 278        | 2881       |
| 10:00 AM        | 14                              | 276  | 14   | 4       | 308        | 16                          | 25   | 59   | 9       | 109        | 47                              | 201  | 15   | 0       | 263        | 7                           | 17   | 28   | 3       | 55         | 735        |
| *** BREAK ***   |                                 |      |      |         |            |                             |      |      |         |            |                                 |      |      |         |            |                             |      |      |         |            |            |
| Total           | 14                              | 276  | 14   | 4       | 308        | 16                          | 25   | 59   | 9       | 109        | 47                              | 201  | 15   | 0       | 263        | 7                           | 17   | 28   | 3       | 55         | 735        |
| *** BREAK ***   |                                 |      |      |         |            |                             |      |      |         |            |                                 |      |      |         |            |                             |      |      |         |            |            |
| 03:30 PM        | 22                              | 258  | 17   | 4       | 301        | 29                          | 36   | 67   | 12      | 144        | 53                              | 286  | 19   | 0       | 358        | 6                           | 49   | 35   | 10      | 100        | 903        |
| 03:45 PM        | 23                              | 263  | 19   | 4       | 309        | 28                          | 38   | 82   | 7       | 155        | 37                              | 312  | 14   | 2       | 365        | 9                           | 20   | 33   | 12      | 74         | 903        |
| Total           | 45                              | 521  | 36   | 8       | 610        | 57                          | 74   | 149  | 19      | 299        | 90                              | 598  | 33   | 2       | 723        | 15                          | 69   | 68   | 22      | 174        | 1806       |
| 04:00 PM        | 14                              | 249  | 17   | 2       | 282        | 16                          | 25   | 74   | 15      | 130        | 44                              | 308  | 8    | 1       | 361        | 12                          | 26   | 25   | 18      | 81         | 854        |
| 04:15 PM        | 15                              | 248  | 17   | 2       | 282        | 25                          | 39   | 86   | 19      | 169        | 52                              | 348  | 30   | 5       | 435        | 8                           | 22   | 20   | 12      | 62         | 948        |
| 04:30 PM        | 16                              | 234  | 13   | 10      | 273        | 26                          | 35   | 75   | 14      | 150        | 60                              | 292  | 22   | 6       | 380        | 23                          | 20   | 31   | 10      | 84         | 887        |
| 04:45 PM        | 15                              | 241  | 24   | 2       | 282        | 21                          | 37   | 76   | 16      | 150        | 66                              | 289  | 18   | 5       | 378        | 10                          | 32   | 29   | 19      | 90         | 900        |
| Total           | 60                              | 972  | 71   | 16      | 1119       | 88                          | 136  | 311  | 64      | 599        | 222                             | 1237 | 78   | 17      | 1554       | 53                          | 100  | 105  | 59      | 317        | 3589       |
| 05:00 PM        | 18                              | 251  | 6    | 1       | 276        | 38                          | 29   | 57   | 10      | 134        | 56                              | 316  | 19   | 3       | 394        | 21                          | 23   | 35   | 17      | 96         | 900        |
| 05:15 PM        | 21                              | 252  | 18   | 4       | 295        | 21                          | 40   | 70   | 22      | 153        | 63                              | 290  | 10   | 1       | 364        | 14                          | 29   | 27   | 5       | 75         | 887        |
| Grand Total     | 331                             | 4153 | 230  | 55      | 4769       | 301                         | 492  | 1126 | 187     | 2106       | 729                             | 3944 | 242  | 30      | 4945       | 165                         | 403  | 498  | 145     | 1211       | 13031      |
| Apprch %        | 6.9                             | 87.1 | 4.8  | 1.2     |            | 14.3                        | 23.4 | 53.5 | 8.9     |            | 14.7                            | 79.8 | 4.9  | 0.6     |            | 13.6                        | 33.3 | 41.1 | 12      |            |            |
| Total %         | 2.5                             | 31.9 | 1.8  | 0.4     | 36.6       | 2.3                         | 3.8  | 8.6  | 1.4     | 16.2       | 5.6                             | 30.3 | 1.9  | 0.2     | 37.9       | 1.3                         | 3.1  | 3.8  | 1.1     | 9.3        |            |
| Passenger Veh   | 316                             | 4065 | 225  | 55      | 4661       | 294                         | 475  | 1117 | 187     | 2073       | 720                             | 3872 | 226  | 30      | 4848       | 158                         | 394  | 480  | 145     | 1177       | 12759      |
| % Passenger Veh | 95.5                            | 97.9 | 97.8 | 100     | 97.7       | 97.7                        | 96.5 | 99.2 | 100     | 98.4       | 98.8                            | 98.2 | 93.4 | 100     | 98         | 95.8                        | 97.8 | 96.4 | 100     | 97.2       | 97.9       |
| Heavy Veh       | 15                              | 88   | 5    | 0       | 108        | 7                           | 17   | 9    | 0       | 33         | 9                               | 72   | 16   | 0       | 97         | 7                           | 9    | 18   | 0       | 34         | 272        |
| % Heavy Veh     | 4.5                             | 2.1  | 2.2  | 0       | 2.3        | 2.3                         | 3.5  | 0.8  | 0       | 1.6        | 1.2                             | 1.8  | 6.6  | 0       | 2          | 4.2                         | 2.2  | 3.6  | 0       | 2.8        | 2.1        |

P&B CNL: Pedestrians and Bicyclists Crossing North Leg

P&B CEL: Pedestrians and Bicyclists Crossing East Leg

P&B CSL: Pedestrians and Bicyclists Crossing South Leg

P&B CWL: Pedestrians and Bicyclists Crossing West Leg

# CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201  
Miami, Florida, 33178

Turning Movement Count  
SR 907/Alton Road at 20th Street

File Name : SR 907 at 20 St  
Site Code : 02000701  
Start Date : 3/30/2011  
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

|                 | SR 907/Alton Road Southbound |      |      |         |            | 20th Street Westbound |      |      |         |            | SR 907/Alton Road Northbound |      |      |         |            | 20th Street Eastbound |      |      |         |            |            |
|-----------------|------------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------------------------|------|------|---------|------------|-----------------------|------|------|---------|------------|------------|
| Start Time      | Right                        | Thru | Left | P&B CNL | App. Total | Right                 | Thru | Left | P&B CNL | App. Total | Right                        | Thru | Left | P&B CNL | App. Total | Right                 | Thru | Left | P&B CWL | App. Total | Int. Total |
| 08:15 AM        | 28                           | 257  | 7    | 0       | 292        | 0                     | 0    | 0    | 0       | 0          | 1                            | 207  | 25   | 0       | 233        | 1                     | 1    | 26   | 1       | 29         | 554        |
| 08:30 AM        | 40                           | 277  | 6    | 0       | 323        | 6                     | 2    | 1    | 2       | 11         | 6                            | 237  | 19   | 0       | 262        | 1                     | 3    | 22   | 3       | 29         | 625        |
| 08:45 AM        | 76                           | 291  | 7    | 0       | 374        | 1                     | 0    | 0    | 1       | 2          | 3                            | 213  | 22   | 0       | 238        | 1                     | 2    | 30   | 0       | 33         | 647        |
| Total           | 144                          | 825  | 20   | 0       | 989        | 7                     | 2    | 1    | 3       | 13         | 10                           | 657  | 66   | 0       | 733        | 3                     | 6    | 78   | 4       | 91         | 1826       |
| 09:00 AM        | 55                           | 315  | 2    | 0       | 372        | 2                     | 0    | 1    | 2       | 5          | 1                            | 203  | 24   | 0       | 228        | 1                     | 3    | 32   | 0       | 36         | 641        |
| 09:15 AM        | 53                           | 271  | 3    | 1       | 328        | 0                     | 0    | 2    | 1       | 3          | 5                            | 179  | 24   | 2       | 210        | 3                     | 1    | 33   | 1       | 38         | 579        |
| 09:30 AM        | 52                           | 278  | 9    | 0       | 339        | 1                     | 0    | 0    | 7       | 8          | 6                            | 182  | 23   | 0       | 211        | 3                     | 2    | 28   | 0       | 33         | 591        |
| 09:45 AM        | 43                           | 263  | 9    | 2       | 317        | 3                     | 1    | 2    | 4       | 10         | 5                            | 183  | 22   | 2       | 212        | 0                     | 1    | 28   | 0       | 29         | 568        |
| Total           | 203                          | 1127 | 23   | 3       | 1356       | 6                     | 1    | 5    | 14      | 26         | 17                           | 747  | 93   | 4       | 861        | 7                     | 7    | 121  | 1       | 136        | 2379       |
| 10:00 AM        | 44                           | 264  | 7    | 0       | 315        | 7                     | 0    | 3    | 0       | 10         | 3                            | 184  | 35   | 1       | 223        | 5                     | 3    | 24   | 1       | 33         | 581        |
| *** BREAK ***   |                              |      |      |         |            |                       |      |      |         |            |                              |      |      |         |            |                       |      |      |         |            |            |
| Total           | 44                           | 264  | 7    | 0       | 315        | 7                     | 0    | 3    | 0       | 10         | 3                            | 184  | 35   | 1       | 223        | 5                     | 3    | 24   | 1       | 33         | 581        |
| *** BREAK ***   |                              |      |      |         |            |                       |      |      |         |            |                              |      |      |         |            |                       |      |      |         |            |            |
| 03:30 PM        | 52                           | 246  | 13   | 0       | 311        | 7                     | 0    | 1    | 1       | 9          | 9                            | 326  | 33   | 0       | 368        | 0                     | 2    | 50   | 0       | 52         | 740        |
| 03:45 PM        | 46                           | 243  | 4    | 0       | 293        | 4                     | 0    | 2    | 2       | 8          | 8                            | 315  | 38   | 0       | 361        | 2                     | 4    | 45   | 2       | 53         | 715        |
| Total           | 98                           | 489  | 17   | 0       | 604        | 11                    | 0    | 3    | 3       | 17         | 17                           | 641  | 71   | 0       | 729        | 2                     | 6    | 95   | 2       | 105        | 1455       |
| 04:00 PM        | 55                           | 237  | 3    | 0       | 295        | 4                     | 0    | 1    | 0       | 5          | 5                            | 318  | 22   | 0       | 345        | 2                     | 1    | 48   | 0       | 51         | 696        |
| 04:15 PM        | 54                           | 223  | 7    | 0       | 284        | 3                     | 1    | 1    | 1       | 6          | 4                            | 307  | 14   | 0       | 325        | 1                     | 1    | 41   | 0       | 43         | 658        |
| 04:30 PM        | 49                           | 233  | 7    | 0       | 289        | 4                     | 0    | 1    | 0       | 5          | 2                            | 330  | 28   | 0       | 360        | 3                     | 2    | 40   | 0       | 45         | 699        |
| 04:45 PM        | 55                           | 239  | 1    | 0       | 295        | 6                     | 0    | 0    | 0       | 6          | 2                            | 293  | 25   | 0       | 320        | 3                     | 2    | 33   | 0       | 38         | 659        |
| Total           | 213                          | 932  | 18   | 0       | 1163       | 17                    | 1    | 3    | 1       | 22         | 13                           | 1248 | 89   | 0       | 1350       | 9                     | 6    | 162  | 0       | 177        | 2712       |
| 05:00 PM        | 52                           | 233  | 12   | 0       | 297        | 1                     | 0    | 1    | 0       | 2          | 4                            | 312  | 15   | 0       | 331        | 1                     | 3    | 42   | 0       | 46         | 676        |
| 05:15 PM        | 53                           | 256  | 2    | 0       | 311        | 3                     | 0    | 2    | 0       | 5          | 4                            | 316  | 36   | 0       | 356        | 2                     | 4    | 45   | 0       | 51         | 723        |
| Grand Total     | 807                          | 4126 | 99   | 3       | 5035       | 52                    | 4    | 18   | 21      | 95         | 68                           | 4105 | 405  | 5       | 4583       | 29                    | 35   | 567  | 8       | 639        | 10352      |
| Apprch %        | 16                           | 81.9 | 2    | 0.1     |            | 54.7                  | 4.2  | 18.9 | 22.1    |            | 1.5                          | 89.6 | 8.8  | 0.1     |            | 4.5                   | 5.5  | 88.7 | 1.3     |            |            |
| Total %         | 7.8                          | 39.9 | 1    | 0       | 48.6       | 0.5                   | 0    | 0.2  | 0.2     | 0.9        | 0.7                          | 39.7 | 3.9  | 0       | 44.3       | 0.3                   | 0.3  | 5.5  | 0.1     | 6.2        |            |
| Passenger Veh   | 792                          | 4047 | 95   | 3       | 4937       | 52                    | 4    | 18   | 21      | 95         | 68                           | 4038 | 391  | 5       | 4502       | 18                    | 34   | 557  | 8       | 617        | 10151      |
| % Passenger Veh | 98.1                         | 98.1 | 96   | 100     | 98.1       | 100                   | 100  | 100  | 100     | 100        | 100                          | 98.4 | 96.5 | 100     | 98.2       | 62.1                  | 97.1 | 98.2 | 100     | 96.6       | 98.1       |
| Heavy Veh       | 15                           | 79   | 4    | 0       | 98         | 0                     | 0    | 0    | 0       | 0          | 0                            | 67   | 14   | 0       | 81         | 11                    | 1    | 10   | 0       | 22         | 201        |
| % Heavy Veh     | 1.9                          | 1.9  | 4    | 0       | 1.9        | 0                     | 0    | 0    | 0       | 0          | 0                            | 1.6  | 3.5  | 0       | 1.8        | 37.9                  | 2.9  | 1.8  | 0       | 3.4        | 1.9        |

P&B CNL: Pedestrians and Bicyclists Crossing North Leg  
P&B CEL: Pedestrians and Bicyclists Crossing East Leg  
P&B CSL: Pedestrians and Bicyclists Crossing South Leg  
P&B CWL: Pedestrians and Bicyclists Crossing West Leg

# CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201

Miami, Florida, 33178

Turning Movement Count  
SR 907/Alton Road at 19th Street

File Name : sr 907 at 19 st  
Site Code : 00190331  
Start Date : 3/31/2011  
Page No : 1

Groups Printed- Passenger Veh - Heavy Veh

|                 | SR 907/Alton Road<br>Southbound |      |      |         |            | 19th Street<br>Westbound |      |      |         |            | SR 907/Alton Road<br>Northbound |      |      |         |            | 19th Street<br>Eastbound |      |      |         |            |            |
|-----------------|---------------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|---------------------------------|------|------|---------|------------|--------------------------|------|------|---------|------------|------------|
| Start Time      | Right                           | Thru | Left | P&B CNL | App. Total | Right                    | Thru | Left | P&B CEL | App. Total | Right                           | Thru | Left | P&B CSL | App. Total | Right                    | Thru | Left | P&B CWL | App. Total | Int. Total |
| 08:15 AM        | 12                              | 285  | 0    | 0       | 297        | 8                        | 0    | 0    | 0       | 8          | 9                               | 230  | 0    | 0       | 239        | 17                       | 0    | 0    | 0       | 17         | 561        |
| 08:30 AM        | 10                              | 285  | 2    | 0       | 298        | 13                       | 0    | 0    | 0       | 13         | 14                              | 245  | 0    | 0       | 260        | 8                        | 0    | 0    | 0       | 8          | 579        |
| 08:45 AM        | 0                               | 315  | 0    | 0       | 315        | 16                       | 0    | 0    | 0       | 16         | 13                              | 223  | 0    | 0       | 236        | 28                       | 0    | 0    | 0       | 28         | 595        |
| Total           | 22                              | 885  | 2    | 0       | 910        | 37                       | 0    | 0    | 0       | 37         | 36                              | 699  | 0    | 0       | 735        | 53                       | 0    | 0    | 0       | 53         | 1735       |
| 09:00 AM        | 2                               | 272  | 0    | 0       | 274        | 10                       | 0    | 0    | 0       | 10         | 20                              | 214  | 0    | 0       | 234        | 23                       | 0    | 0    | 0       | 23         | 541        |
| 09:15 AM        | 0                               | 327  | 0    | 0       | 327        | 7                        | 0    | 0    | 0       | 7          | 13                              | 208  | 0    | 0       | 221        | 28                       | 2    | 0    | 0       | 30         | 585        |
| 09:30 AM        | 14                              | 284  | 0    | 0       | 298        | 7                        | 0    | 0    | 0       | 7          | 22                              | 208  | 0    | 0       | 230        | 16                       | 3    | 0    | 0       | 19         | 554        |
| 09:45 AM        | 8                               | 280  | 0    | 0       | 288        | 6                        | 0    | 0    | 0       | 6          | 17                              | 187  | 0    | 0       | 204        | 19                       | 0    | 0    | 0       | 19         | 517        |
| Total           | 24                              | 1163 | 0    | 0       | 1187       | 30                       | 0    | 0    | 0       | 30         | 72                              | 817  | 0    | 0       | 889        | 86                       | 5    | 0    | 0       | 91         | 2197       |
| 10:00 AM        | 2                               | 301  | 0    | 0       | 303        | 12                       | 0    | 0    | 0       | 12         | 11                              | 194  | 0    | 0       | 205        | 26                       | 0    | 0    | 0       | 26         | 546        |
| *** BREAK ***   |                                 |      |      |         |            |                          |      |      |         |            |                                 |      |      |         |            |                          |      |      |         |            |            |
| Total           | 2                               | 301  | 0    | 0       | 303        | 12                       | 0    | 0    | 0       | 12         | 11                              | 194  | 0    | 0       | 205        | 26                       | 0    | 0    | 0       | 26         | 546        |
| *** BREAK ***   |                                 |      |      |         |            |                          |      |      |         |            |                                 |      |      |         |            |                          |      |      |         |            |            |
| 03:30 PM        | 1                               | 271  | 0    | 0       | 272        | 21                       | 0    | 0    | 1       | 22         | 32                              | 345  | 0    | 0       | 377        | 24                       | 0    | 0    | 4       | 28         | 699        |
| 03:45 PM        | 0                               | 242  | 0    | 0       | 242        | 16                       | 0    | 0    | 0       | 16         | 32                              | 333  | 0    | 0       | 365        | 29                       | 0    | 0    | 1       | 30         | 653        |
| Total           | 1                               | 513  | 0    | 0       | 514        | 37                       | 0    | 0    | 1       | 38         | 64                              | 678  | 0    | 0       | 742        | 53                       | 0    | 0    | 5       | 58         | 1352       |
| 04:00 PM        | 1                               | 238  | 0    | 3       | 242        | 17                       | 0    | 0    | 3       | 20         | 28                              | 356  | 0    | 3       | 387        | 32                       | 0    | 0    | 3       | 35         | 684        |
| 04:15 PM        | 3                               | 225  | 0    | 0       | 228        | 10                       | 0    | 0    | 0       | 10         | 30                              | 350  | 0    | 0       | 380        | 29                       | 0    | 0    | 0       | 29         | 647        |
| 04:30 PM        | 0                               | 272  | 0    | 1       | 273        | 20                       | 0    | 0    | 1       | 21         | 28                              | 332  | 0    | 1       | 361        | 16                       | 0    | 0    | 0       | 16         | 671        |
| 04:45 PM        | 0                               | 236  | 0    | 1       | 237        | 24                       | 0    | 0    | 2       | 26         | 29                              | 295  | 0    | 3       | 327        | 20                       | 0    | 0    | 1       | 21         | 611        |
| Total           | 4                               | 971  | 0    | 5       | 980        | 71                       | 0    | 0    | 6       | 77         | 115                             | 1333 | 0    | 7       | 1455       | 97                       | 0    | 0    | 4       | 101        | 2613       |
| 05:00 PM        | 0                               | 229  | 0    | 0       | 229        | 19                       | 0    | 0    | 4       | 23         | 13                              | 370  | 0    | 1       | 384        | 26                       | 0    | 0    | 3       | 29         | 665        |
| 05:15 PM        | 0                               | 247  | 0    | 1       | 248        | 19                       | 0    | 0    | 0       | 19         | 23                              | 311  | 0    | 2       | 336        | 23                       | 0    | 0    | 0       | 23         | 626        |
| Grand Total     | 53                              | 4310 | 2    | 6       | 4371       | 225                      | 0    | 0    | 11      | 236        | 334                             | 4402 | 0    | 10      | 4746       | 364                      | 5    | 0    | 12      | 381        | 9734       |
| Apprch %        | 1.2                             | 98.6 | 0    | 0.1     |            | 95.3                     | 0    | 0    | 4.7     |            | 7                               | 92.8 | 0    | 0.2     |            | 95.5                     | 1.3  | 0    | 3.1     |            |            |
| Total %         | 0.5                             | 44.3 | 0    | 0.1     | 44.9       | 2.3                      | 0    | 0    | 0.1     | 2.4        | 3.4                             | 45.2 | 0    | 0.1     | 48.8       | 3.7                      | 0.1  | 0    | 0.1     | 3.9        |            |
| Passenger Veh   | 53                              | 4214 | 2    | 6       | 4275       | 221                      | 0    | 0    | 11      | 232        | 331                             | 4336 | 0    | 10      | 4677       | 357                      | 3    | 0    | 12      | 372        | 9556       |
| % Passenger Veh | 100                             | 97.8 | 100  | 100     | 97.8       | 98.2                     | 0    | 0    | 100     | 98.3       | 99.1                            | 98.5 | 0    | 100     | 98.5       | 98.1                     | 60   | 0    | 100     | 97.6       | 98.2       |
| Heavy Veh       | 0                               | 96   | 0    | 0       | 96         | 4                        | 0    | 0    | 0       | 4          | 3                               | 66   | 0    | 0       | 69         | 7                        | 2    | 0    | 0       | 9          | 178        |
| % Heavy Veh     | 0                               | 2.2  | 0    | 0       | 2.2        | 1.8                      | 0    | 0    | 0       | 1.7        | 0.9                             | 1.5  | 0    | 0       | 1.5        | 1.9                      | 40   | 0    | 0       | 2.4        | 1.8        |

P&B CNL: Pedestrians and Bicyclists Crossing North Leg  
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P&B CSL: Pedestrians and Bicyclists Crossing South Leg  
P&B CWL: Pedestrians and Bicyclists Crossing West Leg

# CH Perez and Associates Consulting Engineers Inc.

9594 NW 41st Street, Suite 201  
Miami, Florida, 33178

Turning Movement Count  
SR 907/Alton Road at Michigan Avenue

File Name : SR 907 at Michigan Ave  
Site Code : 00290701  
Start Date : 3/30/2011  
Page No : 1

## Groups Printed- Passenger Veh - Heavy Veh

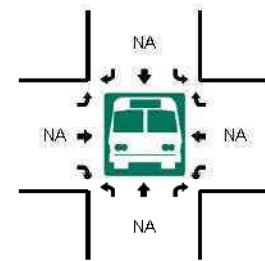
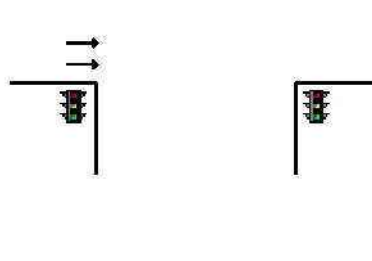
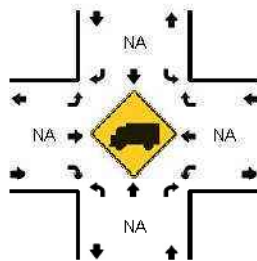
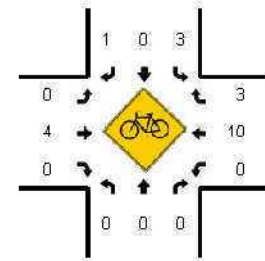
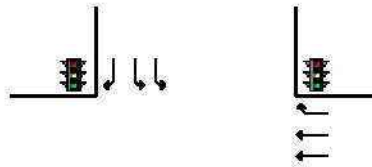
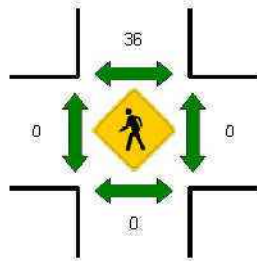
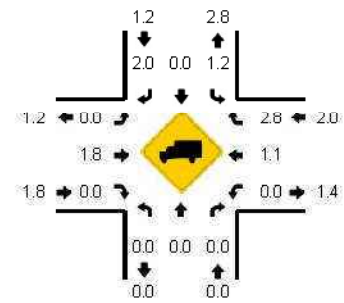
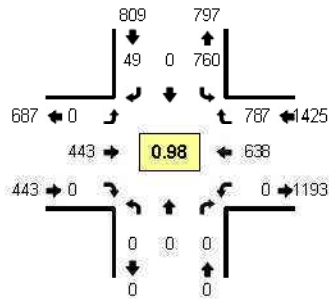
|                 | SR 907/Alton Road<br>Southbound |      |      |         |            | Michigan Avenue<br>Westbound |      |      |         |            | SR 907/Alton Road<br>Northbound |      |      |         |            | Michigan Avenue<br>Eastbound |      |      |         |            |            |
|-----------------|---------------------------------|------|------|---------|------------|------------------------------|------|------|---------|------------|---------------------------------|------|------|---------|------------|------------------------------|------|------|---------|------------|------------|
| Start Time      | Right                           | Thru | Left | P&B CNL | App. Total | Right                        | Thru | Left | P&B CNL | App. Total | Right                           | Thru | Left | P&B CNL | App. Total | Right                        | Thru | Left | P&B CWL | App. Total | Int. Total |
| 08:15 AM        | 13                              | 282  | 122  | 0       | 417        | 71                           | 1    | 3    | 1       | 76         | 2                               | 242  | 1    | 1       | 246        | 0                            | 1    | 0    | 0       | 1          | 740        |
| 08:30 AM        | 4                               | 334  | 131  | 0       | 469        | 74                           | 2    | 1    | 2       | 79         | 3                               | 250  | 1    | 2       | 256        | 0                            | 1    | 1    | 5       | 7          | 811        |
| 08:45 AM        | 5                               | 385  | 145  | 1       | 538        | 82                           | 3    | 2    | 0       | 87         | 9                               | 239  | 1    | 0       | 249        | 0                            | 0    | 1    | 0       | 1          | 875        |
| Total           | 22                              | 1002 | 399  | 1       | 1424       | 227                          | 6    | 6    | 3       | 242        | 14                              | 731  | 3    | 3       | 751        | 0                            | 2    | 2    | 5       | 9          | 2426       |
| 09:00 AM        | 1                               | 379  | 145  | 0       | 526        | 56                           | 0    | 3    | 0       | 59         | 1                               | 244  | 0    | 0       | 245        | 0                            | 0    | 0    | 1       | 1          | 831        |
| 09:15 AM        | 2                               | 335  | 111  | 0       | 448        | 74                           | 1    | 0    | 1       | 76         | 5                               | 196  | 0    | 0       | 201        | 1                            | 1    | 0    | 2       | 4          | 729        |
| 09:30 AM        | 4                               | 317  | 110  | 1       | 432        | 56                           | 0    | 3    | 0       | 59         | 4                               | 198  | 1    | 1       | 204        | 0                            | 0    | 0    | 0       | 0          | 695        |
| 09:45 AM        | 3                               | 305  | 118  | 0       | 427        | 59                           | 0    | 0    | 0       | 59         | 3                               | 210  | 0    | 0       | 213        | 3                            | 0    | 2    | 2       | 7          | 706        |
| Total           | 10                              | 1337 | 485  | 1       | 1833       | 245                          | 1    | 6    | 1       | 253        | 13                              | 848  | 1    | 1       | 863        | 4                            | 1    | 2    | 5       | 12         | 2951       |
| 10:00 AM        | 3                               | 304  | 107  | 1       | 415        | 53                           | 0    | 3    | 0       | 56         | 8                               | 217  | 0    | 2       | 227        | 2                            | 0    | 0    | 3       | 5          | 703        |
| *** BREAK ***   |                                 |      |      |         |            |                              |      |      |         |            |                                 |      |      |         |            |                              |      |      |         |            |            |
| Total           | 3                               | 304  | 107  | 1       | 415        | 53                           | 0    | 3    | 0       | 56         | 8                               | 217  | 0    | 2       | 227        | 2                            | 0    | 0    | 3       | 5          | 703        |
| *** BREAK ***   |                                 |      |      |         |            |                              |      |      |         |            |                                 |      |      |         |            |                              |      |      |         |            |            |
| 03:30 PM        | 1                               | 311  | 103  | 0       | 415        | 131                          | 0    | 3    | 0       | 134        | 10                              | 363  | 0    | 1       | 374        | 2                            | 2    | 2    | 1       | 7          | 930        |
| 03:45 PM        | 1                               | 294  | 134  | 1       | 430        | 115                          | 0    | 5    | 1       | 121        | 14                              | 357  | 0    | 1       | 372        | 1                            | 0    | 1    | 3       | 5          | 928        |
| Total           | 2                               | 605  | 237  | 1       | 845        | 246                          | 0    | 8    | 1       | 255        | 24                              | 720  | 0    | 2       | 746        | 3                            | 2    | 3    | 4       | 12         | 1858       |
| 04:00 PM        | 2                               | 302  | 90   | 0       | 394        | 193                          | 2    | 2    | 0       | 197        | 13                              | 349  | 0    | 0       | 362        | 0                            | 1    | 2    | 2       | 5          | 958        |
| 04:15 PM        | 3                               | 293  | 104  | 0       | 400        | 152                          | 1    | 2    | 0       | 155        | 16                              | 356  | 0    | 0       | 372        | 1                            | 1    | 1    | 3       | 6          | 933        |
| 04:30 PM        | 1                               | 314  | 96   | 0       | 411        | 168                          | 1    | 3    | 2       | 174        | 11                              | 349  | 1    | 0       | 361        | 0                            | 2    | 0    | 4       | 6          | 952        |
| 04:45 PM        | 2                               | 295  | 99   | 0       | 396        | 147                          | 0    | 7    | 0       | 154        | 16                              | 341  | 0    | 1       | 358        | 0                            | 1    | 0    | 2       | 3          | 911        |
| Total           | 8                               | 1204 | 389  | 0       | 1601       | 660                          | 4    | 14   | 2       | 680        | 56                              | 1395 | 1    | 1       | 1453       | 1                            | 5    | 3    | 11      | 20         | 3754       |
| 05:00 PM        | 3                               | 333  | 117  | 0       | 453        | 189                          | 0    | 2    | 1       | 192        | 10                              | 392  | 0    | 1       | 403        | 0                            | 0    | 1    | 2       | 3          | 1051       |
| 05:15 PM        | 2                               | 295  | 92   | 0       | 389        | 167                          | 3    | 4    | 1       | 175        | 17                              | 345  | 3    | 2       | 367        | 1                            | 1    | 1    | 3       | 6          | 937        |
| Grand Total     | 50                              | 5080 | 1826 | 4       | 6960       | 1787                         | 14   | 43   | 9       | 1853       | 142                             | 4548 | 8    | 12      | 4810       | 11                           | 11   | 12   | 33      | 67         | 13690      |
| Apprch %        | 0.7                             | 73   | 26.2 | 0.1     |            | 96.4                         | 0.8  | 2.3  | 0.5     |            | 3                               | 96.6 | 0.2  | 0.2     |            | 16.4                         | 16.4 | 17.9 | 49.3    |            |            |
| Total %         | 0.4                             | 37.1 | 13.3 | 0       | 50.8       | 13.1                         | 0.1  | 0.3  | 0.1     | 13.5       | 1                               | 34   | 0.1  | 0.1     | 35.1       | 0.1                          | 0.1  | 0.1  | 0.2     | 0.5        |            |
| Passenger Veh   | 49                              | 4999 | 1804 | 4       | 6856       | 1764                         | 14   | 43   | 9       | 1830       | 142                             | 4578 | 8    | 12      | 4740       | 10                           | 10   | 12   | 33      | 65         | 13491      |
| % Passenger Veh | 98                              | 98.4 | 98.8 | 100     | 98.5       | 98.7                         | 100  | 100  | 100     | 98.8       | 100                             | 98.5 | 100  | 100     | 98.5       | 90.9                         | 90.9 | 100  | 100     | 97         | 98.5       |
| Heavy Veh       | 1                               | 81   | 22   | 0       | 104        | 23                           | 0    | 0    | 0       | 23         | 0                               | 70   | 0    | 0       | 70         | 1                            | 1    | 0    | 0       | 2          | 199        |
| % Heavy Veh     | 2                               | 1.6  | 1.2  | 0       | 1.5        | 1.3                          | 0    | 0    | 0       | 1.2        | 0                               | 1.5  | 0    | 0       | 1.5        | 9.1                          | 9.1  | 0    | 0       | 3          | 1.5        |

P&B CNL: Pedestrians and Bicyclists Crossing North Leg  
P&B CEL: Pedestrians and Bicyclists Crossing East Leg  
P&B CSL: Pedestrians and Bicyclists Crossing South Leg  
P&B CWL: Pedestrians and Bicyclists Crossing West Leg

**LOCATION:** Michigan Ave -- Dade Blvd  
**CITY/STATE:** Miami Beach, FL

**QC JOB #:** 10703207  
**DATE:** Fri, Jan 27 2012

**Peak-Hour: 5:15 PM -- 6:15 PM**  
**Peak 15-Min: 5:15 PM -- 5:30 PM**



| 15-Min Count Period Beginning At | Michigan Ave (Northbound) |      |       |   | Michigan Ave (Southbound) |      |       |   | Dade Blvd (Eastbound) |      |       |   | Dade Blvd (Westbound) |      |       |   | Total        | Hourly Totals |
|----------------------------------|---------------------------|------|-------|---|---------------------------|------|-------|---|-----------------------|------|-------|---|-----------------------|------|-------|---|--------------|---------------|
|                                  | Left                      | Thru | Right | U | Left                      | Thru | Right | U | Left                  | Thru | Right | U | Left                  | Thru | Right | U |              |               |
| 4:00 PM                          | 0                         | 0    | 0     | 0 | 185                       | 0    | 21    | 0 | 0                     | 108  | 0     | 0 | 0                     | 170  | 188   | 0 | 672          |               |
| 4:15 PM                          | 0                         | 0    | 0     | 0 | 176                       | 0    | 33    | 4 | 0                     | 88   | 0     | 0 | 0                     | 169  | 200   | 0 | 670          |               |
| 4:30 PM                          | 0                         | 0    | 0     | 0 | 171                       | 0    | 15    | 1 | 0                     | 111  | 0     | 0 | 0                     | 164  | 198   | 0 | 660          |               |
| 4:45 PM                          | 0                         | 0    | 0     | 0 | 168                       | 0    | 18    | 2 | 0                     | 111  | 0     | 0 | 0                     | 157  | 183   | 0 | 639          | 2641          |
| 5:00 PM                          | 0                         | 0    | 0     | 0 | 180                       | 0    | 8     | 3 | 0                     | 100  | 0     | 0 | 0                     | 146  | 194   | 0 | 631          | 2600          |
| 5:15 PM                          | 0                         | 0    | 0     | 0 | 204                       | 0    | 14    | 2 | 0                     | 105  | 0     | 0 | 0                     | 165  | 194   | 0 | 684          | 2614          |
| 5:30 PM                          | 0                         | 0    | 0     | 0 | 184                       | 0    | 8     | 3 | 0                     | 104  | 0     | 0 | 0                     | 164  | 206   | 0 | 669          | 2623          |
| 5:45 PM                          | 0                         | 0    | 0     | 0 | 156                       | 0    | 13    | 1 | 0                     | 124  | 0     | 0 | 0                     | 155  | 203   | 0 | 652          | 2636          |
| 6:00 PM                          | 0                         | 0    | 0     | 0 | 206                       | 0    | 14    | 4 | 0                     | 110  | 0     | 0 | 0                     | 154  | 184   | 0 | 672          | 2677          |
| 6:15 PM                          | 0                         | 0    | 0     | 0 | 167                       | 0    | 11    | 3 | 0                     | 119  | 0     | 0 | 0                     | 130  | 165   | 0 | 595          | 2588          |
| 6:30 PM                          | 0                         | 0    | 0     | 0 | 209                       | 0    | 23    | 3 | 0                     | 143  | 0     | 0 | 0                     | 137  | 163   | 0 | 678          | 2597          |
| 6:45 PM                          | 0                         | 0    | 0     | 0 | 215                       | 0    | 15    | 1 | 0                     | 109  | 0     | 0 | 0                     | 140  | 121   | 0 | 601          | 2546          |
| 7:00 PM                          | 0                         | 0    | 0     | 0 | 138                       | 0    | 27    | 4 | 0                     | 95   | 0     | 0 | 0                     | 157  | 137   | 0 | 558          | 2432          |
| 7:15 PM                          | 0                         | 0    | 0     | 0 | 158                       | 0    | 23    | 1 | 0                     | 87   | 0     | 0 | 0                     | 135  | 141   | 0 | 545          | 2382          |
| 7:30 PM                          | 0                         | 0    | 0     | 0 | 160                       | 0    | 22    | 3 | 0                     | 83   | 0     | 0 | 0                     | 129  | 133   | 0 | 530          | 2234          |
| 7:45 PM                          | 0                         | 0    | 0     | 0 | 124                       | 0    | 12    | 2 | 0                     | 75   | 0     | 0 | 0                     | 118  | 94    | 0 | 425          | 2058          |
| <b>Peak 15-Min Flowrates</b>     | <b>Northbound</b>         |      |       |   | <b>Southbound</b>         |      |       |   | <b>Eastbound</b>      |      |       |   | <b>Westbound</b>      |      |       |   | <b>Total</b> |               |
| All Vehicles                     | 0                         | 0    | 0     | 0 | 816                       | 0    | 56    | 8 | 0                     | 420  | 0     | 0 | 0                     | 660  | 776   | 0 | 2736         |               |
| Heavy Trucks                     | 0                         | 0    | 0     | 0 | 4                         | 0    | 0     | 0 | 0                     | 8    | 0     | 0 | 0                     | 8    | 16    | 0 | 36           |               |
| Pedestrians                      | 0                         | 0    | 0     | 0 | 24                        | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 24           |               |
| Bicycles                         | 0                         | 0    | 0     | 0 | 1                         | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0                     | 2    | 0     | 0 | 3            |               |
| Railroad                         | 0                         | 0    | 0     | 0 | 0                         | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0            |               |
| Stopped Buses                    | 0                         | 0    | 0     | 0 | 0                         | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0                     | 0    | 0     | 0 | 0            |               |

Comments:

# **APPENDIX C**

## **Historical Traffic Counts and Peak Season Conversion Factors**

2013 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL  
 CATEGORY: 8700 MIAMI-DADE NORTH

| WEEK | DATES                   | SF   | MOCF: 0.97 |  |
|------|-------------------------|------|------------|--|
|      |                         |      | PSCF       |  |
| 1    | 01/01/2013 - 01/05/2013 | 1.03 | 1.06       |  |
| 2    | 01/06/2013 - 01/12/2013 | 1.03 | 1.06       |  |
| 3    | 01/13/2013 - 01/19/2013 | 1.03 | 1.06       |  |
| 4    | 01/20/2013 - 01/26/2013 | 1.01 | 1.04       |  |
| 5    | 01/27/2013 - 02/02/2013 | 1.00 | 1.03       |  |
| 6    | 02/03/2013 - 02/09/2013 | 0.99 | 1.02       |  |
| * 7  | 02/10/2013 - 02/16/2013 | 0.97 | 1.00       |  |
| * 8  | 02/17/2013 - 02/23/2013 | 0.96 | 0.99       |  |
| * 9  | 02/24/2013 - 03/02/2013 | 0.96 | 0.99       |  |
| *10  | 03/03/2013 - 03/09/2013 | 0.96 | 0.99       |  |
| *11  | 03/10/2013 - 03/16/2013 | 0.96 | 0.99       |  |
| *12  | 03/17/2013 - 03/23/2013 | 0.97 | 1.00       |  |
| *13  | 03/24/2013 - 03/30/2013 | 0.97 | 1.00       |  |
| *14  | 03/31/2013 - 04/06/2013 | 0.97 | 1.00       |  |
| *15  | 04/07/2013 - 04/13/2013 | 0.98 | 1.01       |  |
| *16  | 04/14/2013 - 04/20/2013 | 0.98 | 1.01       |  |
| *17  | 04/21/2013 - 04/27/2013 | 0.98 | 1.01       |  |
| *18  | 04/28/2013 - 05/04/2013 | 0.99 | 1.02       |  |
| *19  | 05/05/2013 - 05/11/2013 | 0.99 | 1.02       |  |
| 20   | 05/12/2013 - 05/18/2013 | 1.00 | 1.03       |  |
| 21   | 05/19/2013 - 05/25/2013 | 1.00 | 1.03       |  |
| 22   | 05/26/2013 - 06/01/2013 | 1.00 | 1.03       |  |
| 23   | 06/02/2013 - 06/08/2013 | 1.01 | 1.04       |  |
| 24   | 06/09/2013 - 06/15/2013 | 1.01 | 1.04       |  |
| 25   | 06/16/2013 - 06/22/2013 | 1.02 | 1.05       |  |
| 26   | 06/23/2013 - 06/29/2013 | 1.02 | 1.05       |  |
| 27   | 06/30/2013 - 07/06/2013 | 1.03 | 1.06       |  |
| 28   | 07/07/2013 - 07/13/2013 | 1.04 | 1.07       |  |
| 29   | 07/14/2013 - 07/20/2013 | 1.05 | 1.08       |  |
| 30   | 07/21/2013 - 07/27/2013 | 1.04 | 1.07       |  |
| 31   | 07/28/2013 - 08/03/2013 | 1.03 | 1.06       |  |
| 32   | 08/04/2013 - 08/10/2013 | 1.03 | 1.06       |  |
| 33   | 08/11/2013 - 08/17/2013 | 1.02 | 1.05       |  |
| 34   | 08/18/2013 - 08/24/2013 | 1.02 | 1.05       |  |
| 35   | 08/25/2013 - 08/31/2013 | 1.02 | 1.05       |  |
| 36   | 09/01/2013 - 09/07/2013 | 1.02 | 1.05       |  |
| 37   | 09/08/2013 - 09/14/2013 | 1.02 | 1.05       |  |
| 38   | 09/15/2013 - 09/21/2013 | 1.02 | 1.05       |  |
| 39   | 09/22/2013 - 09/28/2013 | 1.02 | 1.05       |  |
| 40   | 09/29/2013 - 10/05/2013 | 1.01 | 1.04       |  |
| 41   | 10/06/2013 - 10/12/2013 | 1.01 | 1.04       |  |
| 42   | 10/13/2013 - 10/19/2013 | 1.01 | 1.04       |  |
| 43   | 10/20/2013 - 10/26/2013 | 1.01 | 1.04       |  |
| 44   | 10/27/2013 - 11/02/2013 | 1.01 | 1.04       |  |
| 45   | 11/03/2013 - 11/09/2013 | 1.01 | 1.04       |  |
| 46   | 11/10/2013 - 11/16/2013 | 1.01 | 1.04       |  |
| 47   | 11/17/2013 - 11/23/2013 | 1.02 | 1.05       |  |
| 48   | 11/24/2013 - 11/30/2013 | 1.02 | 1.05       |  |
| 49   | 12/01/2013 - 12/07/2013 | 1.02 | 1.05       |  |
| 50   | 12/08/2013 - 12/14/2013 | 1.02 | 1.05       |  |
| 51   | 12/15/2013 - 12/21/2013 | 1.03 | 1.06       |  |
| 52   | 12/22/2013 - 12/28/2013 | 1.03 | 1.06       |  |
| 53   | 12/29/2013 - 12/31/2013 | 1.03 | 1.06       |  |

\* PEAK SEASON

18-FEB-2014 08:46:31

830UPD

6\_8700\_PKSEASON.TXT

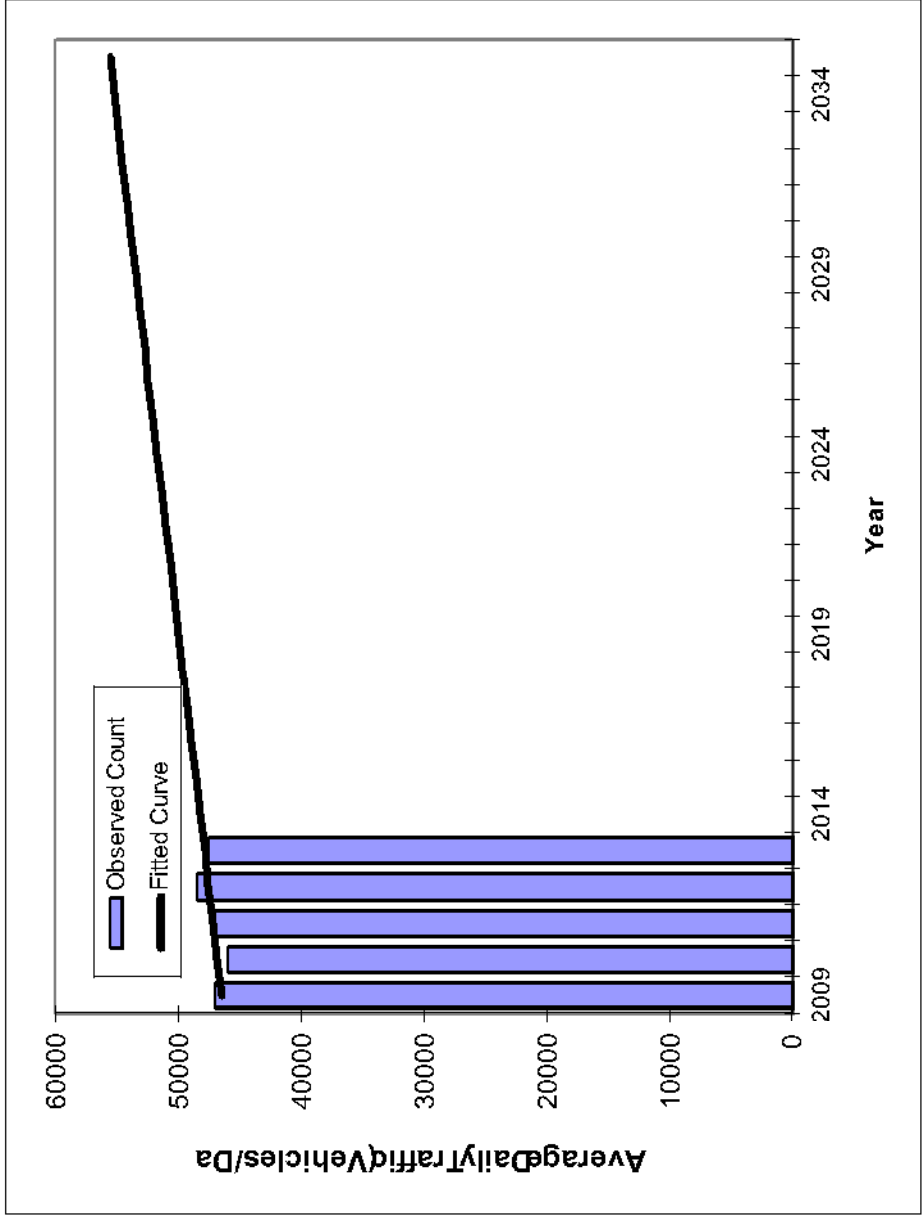


# Traffic Trends - V2.0

## SR 907/ALTON RD -- 200' N OF 20 ST

|          |   |
|----------|---|
| PIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | Miami-Dade (87) |
| Station #: | 0012            |
| Highway:   | SR 907/ALTON RD |



|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | 350       |
| Trend R-squared:                         | 37.12%    |
| Trend Annual Historic Growth Rate:       | 0.75%     |
| Trend Growth Rate (2013 to Design Year): | 0.77%     |
| Printed:                                 | 14-Aug-14 |

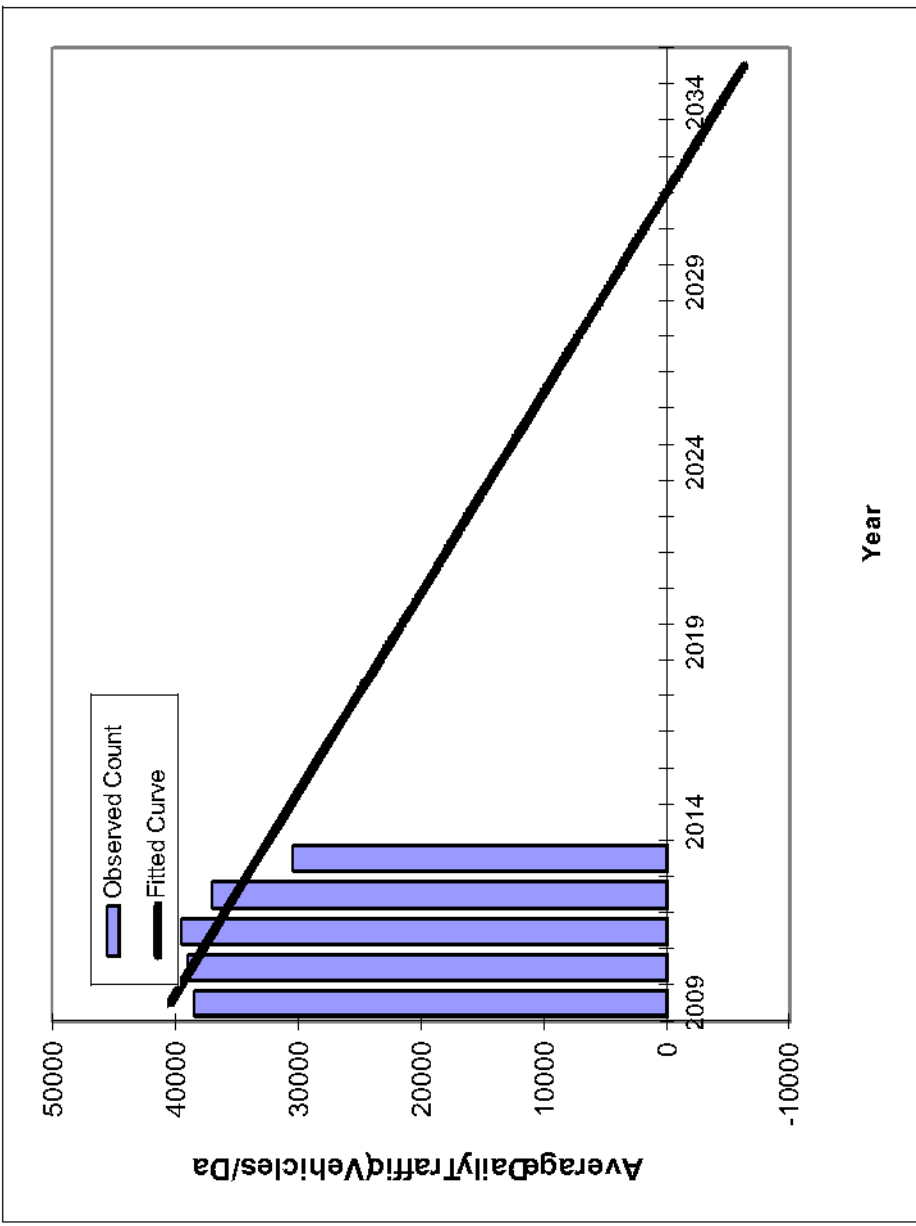
| Year                      | Count* | Trend** |
|---------------------------|--------|---------|
| 2009                      | 47000  | 46500   |
| 2010                      | 46000  | 46900   |
| 2011                      | 47000  | 47200   |
| 2012                      | 48500  | 47600   |
| 2013                      | 47500  | 47900   |
| 2014                      | N/A    | 48300   |
| 2015                      | N/A    | 48600   |
| 2016                      | N/A    | 49000   |
| TRANPLAN Forecasts/Trends |        |         |
| 2014 Opening Year Trend   |        |         |
| 2015 Mid-Year Trend       |        |         |
| 2016 Design Year Trend    |        |         |

# Traffic Trends - V2.0

## SR 907/ALTON RD -- 200' S OF VENETIAN CSWY

|          |   |
|----------|---|
| PIN#     | 0 |
| Location | 1 |

|            |                 |
|------------|-----------------|
| County:    | Miami-Dade (87) |
| Station #: | 2542            |
| Highway:   | SR 907/ALTON RD |



|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | -1,800    |
| Trend R-squared:                         | 59.23%    |
| Trend Annual Historic Growth Rate:       | -4.44%    |
| Trend Growth Rate (2013 to Design Year): | -5.41%    |
| Printed:                                 | 14-Aug-14 |

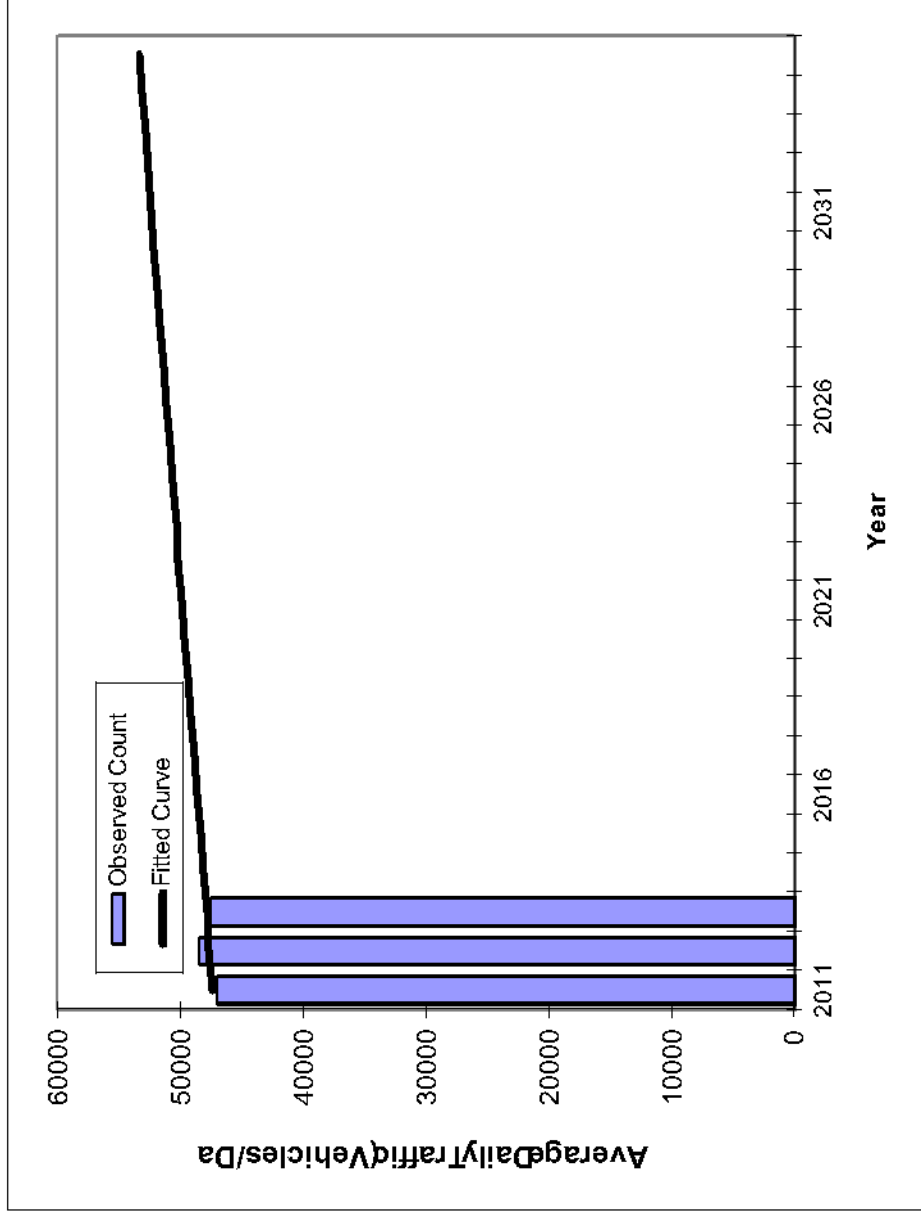
| Year                      | Count* | Trend** |
|---------------------------|--------|---------|
| 2009                      | 38500  | 40500   |
| 2010                      | 39000  | 38700   |
| 2011                      | 39500  | 36900   |
| 2012                      | 37000  | 35100   |
| 2013                      | 30500  | 33300   |
| 2014 Opening Year Trend   | N/A    | 31500   |
| 2015 Mid-Year Trend       | N/A    | 29700   |
| 2016 Design Year Trend    | N/A    | 27900   |
| TRANPLAN Forecasts/Trends |        |         |

# Traffic Trends - V2.0

## VENETIAN CSWY(CR956) -- 200' E OF WEST AVE

|          |   |   |
|----------|---|---|
| PIN#     | 0 | 1 |
| Location |   |   |

|            |                      |
|------------|----------------------|
| County:    | Miami-Dade (87)      |
| Station #: | 8350                 |
| Highway:   | VENETIAN CSWY(CR956) |



| Year | Count* | Trend** |
|------|--------|---------|
| 2011 | 47000  | 47400   |
| 2012 | 48500  | 47700   |
| 2013 | 47500  | 47900   |

|      |     |       |
|------|-----|-------|
| 2014 | N/A | 48200 |
| 2015 | N/A | 48400 |
| 2016 | N/A | 48700 |
| 2017 | N/A | 49000 |
| 2018 | N/A | 49300 |
| 2019 | N/A | 49600 |
| 2020 | N/A | 49900 |
| 2021 | N/A | 50200 |
| 2022 | N/A | 50500 |
| 2023 | N/A | 50800 |
| 2024 | N/A | 51100 |
| 2025 | N/A | 51400 |
| 2026 | N/A | 51700 |
| 2027 | N/A | 52000 |
| 2028 | N/A | 52300 |
| 2029 | N/A | 52600 |
| 2030 | N/A | 52900 |
| 2031 | N/A | 53200 |

|                                          |           |
|------------------------------------------|-----------|
| ** Annual Trend Increase:                | 250       |
| Trend R-squared:                         | 10.71%    |
| Trend Annual Historic Growth Rate:       | 0.53%     |
| Trend Growth Rate (2013 to Design Year): | 0.56%     |
| Printed:                                 | 14-Aug-14 |

# **APPENDIX D**

## **Projected Turning Movement Volumes**

# FUTURE TURNING MOVEMENT VOLUME ANALYSIS

## Alton Road and Michigan Avenue PM Peak Hour (3:30 PM - 4:30 PM)

| Description                  | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Michigan Avenue Eastbound |         |       | Michigan Avenue Westbound |         |       |
|------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|---------------------------|---------|-------|---------------------------|---------|-------|
|                              | Left                  | Through | Right | Left                  | Through | Right | Left                      | Through | Right | Left                      | Through | Right |
| Existing Traffic (3/30/2011) | 0                     | 1,425   | 53    | 431                   | 1,200   | 7     | 6                         | 4       | 4     | 12                        | 3       | 591   |
| Season Adjustment Factor     | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                      | 1.00    | 1.00  | 1.00                      | 1.00    | 1.00  |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                      | 1.0%    | 1.0%  | 1.0%                      | 1.0%    | 1.0%  |
| 2014 Peak Season Traffic     | 0                     | 1,468   | 55    | 444                   | 1,236   | 7     | 6                         | 4       | 4     | 12                        | 3       | 609   |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                      | 1.0%    | 1.0%  | 1.0%                      | 1.0%    | 1.0%  |
| 2016 Background Traffic      | 0                     | 1,498   | 56    | 453                   | 1,261   | 7     | 6                         | 4       | 4     | 13                        | 3       | 621   |
| 1901 Alton                   | 14                    | 56      | 15    | 58                    |         |       |                           | 15      |       |                           |         |       |
| 2016 Total Traffic           | 14                    | 1,554   | 71    | 511                   | 1,261   | 7     | 6                         | 19      | 4     | 13                        | 3       | 621   |

# FUTURE TURNING MOVEMENT VOLUME ANALYSIS

## Alton Road and 19th Street PM Peak Hour (3:30 PM - 4:30 PM)

| Description                  | Alton Road Northbound |         |       | Alton Road Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                              | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (3/31/2011) |                       | 1,384   | 122   |                       | 977     |       |                       |         |       |                       |         | 64    |
| Season Adjustment Factor     | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2014 Peak Season Traffic     | 0                     | 1,426   | 126   | 0                     | 1,007   | 0     | 0                     | 0       | 0     | 0                     | 0       | 66    |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2016 Background Traffic      | 0                     | 1,455   | 128   | 0                     | 1,027   | 0     | 0                     | 0       | 0     | 0                     | 0       | 67    |
| 1901 Alton                   |                       |         | 203   |                       |         |       |                       |         |       |                       |         | 84    |
| 2016 Total Traffic           | 0                     | 1,455   | 331   | 0                     | 1,027   | 0     | 0                     | 0       | 0     | 0                     | 0       | 151   |

# FUTURE TURNING MOVEMENT VOLUME ANALYSIS

## Alton Road and Dade Avenue PM Peak Hour (3:30 PM - 4:30 PM)

| Description                  | Alton Road Northbound |         |       | Alton Road Southbound |         |       | Dade Avenue Eastbound |         |       | Dade Avenue Westbound |         |       |
|------------------------------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                              | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (3/29/2011) | 71                    | 1,254   | 186   | 70                    | 1,018   | 74    | 113                   | 117     | 35    | 309                   | 138     | 98    |
| Season Adjustment Factor     | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2014 Peak Season Traffic     | 73                    | 1,292   | 192   | 72                    | 1,049   | 76    | 116                   | 121     | 36    | 318                   | 142     | 101   |
| Annual Growth Rate           | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2016 Background Traffic      | 75                    | 1,318   | 195   | 74                    | 1,070   | 78    | 119                   | 123     | 37    | 325                   | 145     | 103   |
| 1901 Alton                   |                       | 87      |       |                       |         |       | 58                    |         |       | 84                    | 56      | 58    |
| 2016 Total Traffic           | 75                    | 1,405   | 195   | 74                    | 1,070   | 78    | 177                   | 123     | 37    | 409                   | 201     | 161   |

# FUTURE TURNING MOVEMENT VOLUME ANALYSIS

19th Street and Michigan Avenue  
PM Peak Hour (3:30 PM - 4:30 PM)

| Description                  | Michigan Avenue Northbound |         |       | Michigan Avenue Southbound |         |            |       | 19th Street Eastbound |         |       | Dade Avenue Northwestbound |         |       | Dade Avenue Southwestbound |         |       |
|------------------------------|----------------------------|---------|-------|----------------------------|---------|------------|-------|-----------------------|---------|-------|----------------------------|---------|-------|----------------------------|---------|-------|
|                              | Left                       | Through | Right | Left                       | Through | Hard Right | Right | Left                  | Through | Right | Left                       | Through | Right | Left                       | Through | Right |
| Existing Traffic (1/27/2012) |                            | 776     |       |                            | 722     | 102        | 108   |                       |         | 66    |                            | 392     |       |                            | 678     | 776   |
| Season Adjustment Factor     | 1.03                       | 1.03    | 1.03  | 1.03                       | 1.03    | 1.03       | 1.03  | 1.03                  | 1.03    | 1.03  | 1.03                       | 1.03    | 1.03  | 1.03                       | 1.03    | 1.03  |
| Annual Growth Rate           | 1.0%                       | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%       | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%  |
| 2014 Peak Season Traffic     | 0                          | 815     | 0     | 0                          | 759     | 107        | 113   | 0                     | 0       | 69    | 0                          | 412     | 0     | 0                          | 712     | 815   |
| Annual Growth Rate           | 1.0%                       | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%       | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%  | 1.0%                       | 1.0%    | 1.0%  |
| 2016 Background Traffic      | 0                          | 832     | 0     | 0                          | 774     | 109        | 116   | 0                     | 0       | 71    | 0                          | 420     | 0     | 0                          | 727     | 832   |
| 1901 Alton                   |                            |         |       | 56                         |         | 88         | 140   |                       |         | 196   |                            |         |       |                            | 58      |       |
| 2016 Total Traffic           | 0                          | 832     | 0     | 56                         | 774     | 197        | 256   | 0                     | 0       | 267   | 0                          | 420     | 0     | 0                          | 785     | 832   |



# FUTURE TURNING MOVEMENT VOLUME ANALYSIS

## 19th Street and Project Driveway PM Peak Hour (3:30 PM - 4:30 PM)

| Description                  | Northbound |         |       | Driveway Southbound |         |       | 19th Street Eastbound |         |       | 19th Street Westbound |         |       |
|------------------------------|------------|---------|-------|---------------------|---------|-------|-----------------------|---------|-------|-----------------------|---------|-------|
|                              | Left       | Through | Right | Left                | Through | Right | Left                  | Through | Right | Left                  | Through | Right |
| Existing Traffic (3/31/2011) |            |         |       |                     |         |       |                       | 30      |       |                       | 104     |       |
| Season Adjustment Factor     | 1.00       | 1.00    | 1.00  | 1.00                | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  | 1.00                  | 1.00    | 1.00  |
| Annual Growth Rate           | 1.0%       | 1.0%    | 1.0%  | 1.0%                | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2014 Peak Season Traffic     | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 31      | 0     | 0                     | 107     | 0     |
| Annual Growth Rate           | 1.0%       | 1.0%    | 1.0%  | 1.0%                | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  | 1.0%                  | 1.0%    | 1.0%  |
| 2016 Background Traffic      | 0          | 0       | 0     | 0                   | 0       | 0     | 0                     | 32      | 0     | 0                     | 109     | 0     |
| 1901 Alton                   |            |         |       | 196                 |         | 84    | 203                   |         |       |                       |         | 88    |
| 2016 Total Traffic           | 0          | 0       | 0     | 196                 | 0       | 84    | 203                   | 32      | 0     | 0                     | 109     | 88    |

# **APPENDIX E**

## **Intersection Capacity Analyses**

# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 116                                                                               | 121                                                                               | 36                                                                                | 318                                                                               | 142                                                                               | 101                                                                               | 73                                                                                 | 1292                                                                                | 192                                                                                 | 72                                                                                  | 1049                                                                                | 76                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 60                                                                                | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.93                                                                              |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.96                                                                                |
| Frt                        |                                                                                   | 0.966                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.981                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3003                                                                              | 0                                                                                 | *1525                                                                             | 3185                                                                              | 1425                                                                              | 1540                                                                               | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.640                                                                             |                                                                                   |                                                                                   | 0.563                                                                             |                                                                                   |                                                                                   | 0.162                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 1027                                                                              | 3003                                                                              | 0                                                                                 | *992                                                                              | 3185                                                                              | 1331                                                                              | 263                                                                                | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1370                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 31                                                                                |                                                                                   |                                                                                   |                                                                                   | 115                                                                               |                                                                                    | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 737                                                                               |                                                                                   |                                                                                   | 978                                                                               |                                                                                   |                                                                                    | 249                                                                                 |                                                                                     |                                                                                     | 313                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 16.8                                                                              |                                                                                   |                                                                                   | 22.2                                                                              |                                                                                   |                                                                                    | 4.9                                                                                 |                                                                                     |                                                                                     | 6.1                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 52                                                                                |                                                                                   |                                                                                   | 55                                                                                |                                                                                    |                                                                                     | 14                                                                                  |                                                                                     |                                                                                     | 18                                                                                  |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 145                                                                               | 151                                                                               | 45                                                                                | 361                                                                               | 161                                                                               | 115                                                                               | 84                                                                                 | 1485                                                                                | 221                                                                                 | 76                                                                                  | 1104                                                                                | 80                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 145                                                                               | 196                                                                               | 0                                                                                 | 361                                                                               | 161                                                                               | 115                                                                               | 84                                                                                 | 1706                                                                                | 0                                                                                   | 76                                                                                  | 1104                                                                                | 80                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.14                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | custom                                                                            | pm+pt                                                                              | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | custom                                                                              |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 8                                                                                 | 1                                                                                  |                                                                                     |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Initial (s)     | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 8.0                                                                                 |
| Total Split (s)         | 15.0                                                                              | 44.4                                                                              |                                                                                   | 15.0                                                                              | 44.4                                                                              | 44.4                                                                              | 13.0                                                                              | 57.6                                                                                |                                                                                     | 13.0                                                                                | 57.6                                                                                | 15.0                                                                                |
| Total Split (%)         | 11.5%                                                                             | 34.2%                                                                             |                                                                                   | 11.5%                                                                             | 34.2%                                                                             | 34.2%                                                                             | 10.0%                                                                             | 44.3%                                                                               |                                                                                     | 10.0%                                                                               | 44.3%                                                                               | 11.5%                                                                               |
| Maximum Green (s)       | 12.0                                                                              | 39.0                                                                              |                                                                                   | 12.0                                                                              | 39.0                                                                              | 39.0                                                                              | 10.0                                                                              | 52.8                                                                                |                                                                                     | 10.0                                                                                | 52.8                                                                                | 12.0                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 3.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 |
| Lost Time Adjust (s)    | 1.0                                                                               | -1.4                                                                              |                                                                                   | 1.0                                                                               | -1.4                                                                              | -1.4                                                                              | 1.0                                                                               | -0.8                                                                                |                                                                                     | 1.0                                                                                 | -0.8                                                                                | 1.0                                                                                 |
| Total Lost Time (s)     | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.5                                                                               | 2.5                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 2.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | None                                                                                |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 13                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  |                                                                                     |
| Act Effct Green (s)     | 38.9                                                                              | 28.5                                                                              |                                                                                   | 40.1                                                                              | 29.1                                                                              | 28.5                                                                              | 73.0                                                                              | 66.3                                                                                |                                                                                     | 8.2                                                                                 | 67.9                                                                                | 76.8                                                                                |
| Actuated g/C Ratio      | 0.30                                                                              | 0.22                                                                              |                                                                                   | 0.31                                                                              | 0.22                                                                              | 0.22                                                                              | 0.56                                                                              | 0.51                                                                                |                                                                                     | 0.06                                                                                | 0.52                                                                                | 0.59                                                                                |
| v/c Ratio               | 0.42                                                                              | 0.29                                                                              |                                                                                   | 1.03                                                                              | 0.23                                                                              | 0.30                                                                              | 0.40                                                                              | 1.04                                                                                |                                                                                     | 0.79                                                                                | 0.66                                                                                | 0.10                                                                                |
| Control Delay           | 33.2                                                                              | 33.8                                                                              |                                                                                   | 95.3                                                                              | 39.3                                                                              | 7.8                                                                               | 20.0                                                                              | 67.2                                                                                |                                                                                     | 106.6                                                                               | 28.9                                                                                | 7.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 33.2                                                                              | 33.8                                                                              |                                                                                   | 95.3                                                                              | 39.3                                                                              | 7.8                                                                               | 20.0                                                                              | 67.2                                                                                |                                                                                     | 106.6                                                                               | 28.9                                                                                | 7.6                                                                                 |
| LOS                     | C                                                                                 | C                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | A                                                                                 | C                                                                                 | E                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 33.5                                                                              |                                                                                   |                                                                                   | 65.4                                                                              |                                                                                   |                                                                                   | 65.0                                                                                |                                                                                     |                                                                                     | 32.2                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | C                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 135

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.04

Intersection Signal Delay: 52.1

Intersection LOS: D

Intersection Capacity Utilization 111.8%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

### Splits and Phases: 2: Alton Rd & Dade Blvd

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 13 s                                                                                   | 57.6 s                                                                                     | 15 s                                                                                   | 44.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 13 s                                                                                   | 57.6 s                                                                                     | 15 s                                                                                   | 44.4 s                                                                                   |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 4                                                                                 | 4                                                                                 | 12                                                                                | 3                                                                                 | 609                                                                               | 0                                                                                   | 1468                                                                                | 55                                                                                  | 444                                                                                 | 1236                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frt                        |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.995                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.978                                                                             |                                                                                   |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1551                                                                              | 0                                                                                 | 0                                                                                 | 1629                                                                              | 1439                                                                              | 1676                                                                                | *3182                                                                               | 0                                                                                   | 1593                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.875                                                                             |                                                                                   |                                                                                   | 0.771                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.063                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1387                                                                              | 0                                                                                 | 0                                                                                 | 1305                                                                              | 1417                                                                              | 1676                                                                                | *3182                                                                               | 0                                                                                   | 106                                                                                 | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 791                                                                               |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   | 3                                                                                 |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 5                                                                                 | 5                                                                                 | 16                                                                                | 4                                                                                 | 791                                                                               | 0                                                                                   | 1483                                                                                | 56                                                                                  | 467                                                                                 | 1301                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 18                                                                                | 0                                                                                 | 0                                                                                 | 20                                                                                | 791                                                                               | 0                                                                                   | 1539                                                                                | 0                                                                                   | 467                                                                                 | 1308                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 12                                                                                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                     | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                  | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                  | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | custom                                                                            | Perm                                                                                | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 1 2                                                                                 |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                   |                                                                                     |                                                                                     | 1 2                                                                                 |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 |                                                                                     |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                |                                                                                     |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             | 28.5%                                                                             | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               |                                                                                     |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                |                                                                                     |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              |                                                                                   |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                                |                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 |                                                                                     |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 |                                                                                     |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               |                                                                                     | Max                                                                                 |                                                                                     |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   | 9.4                                                                               | 81.4                                                                              |                                                                                   | 72.0                                                                                |                                                                                     | 108.6                                                                               | 112.6                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.07                                                                              | 0.63                                                                              |                                                                                   | 0.55                                                                                |                                                                                     | 0.84                                                                                | 0.87                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.17                                                                              |                                                                                   |                                                                                   | 0.21                                                                              | 0.67                                                                              |                                                                                   | 0.87                                                                                |                                                                                     | 0.92                                                                                | 0.47                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 48.4                                                                              |                                                                                   |                                                                                   | 61.5                                                                              | 3.6                                                                               |                                                                                   | 31.8                                                                                |                                                                                     | 61.4                                                                                | 2.7                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.1                                                                               |                                                                                   | 47.6                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 48.4                                                                              |                                                                                   |                                                                                   | 61.5                                                                              | 3.7                                                                               |                                                                                   | 79.4                                                                                |                                                                                     | 61.4                                                                                | 2.7                                                                                 |                                                                                     |
| LOS                     |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 |                                                                                   | E                                                                                   |                                                                                     | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 48.4                                                                              |                                                                                   |                                                                                   | 5.1                                                                               |                                                                                   |                                                                                   | 79.4                                                                                |                                                                                     |                                                                                     | 18.1                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NESW, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 38.5

Intersection LOS: D

Intersection Capacity Utilization 112.0%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |

Lanes, Volumes, Timings  
4: Dade Blvd & Michigan Ave

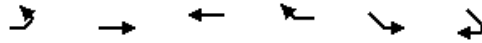
3/31/2015



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SEL   | SER   |
|----------------------------|------|-------|-------|-------|-------|-------|
| Lane Configurations        |      | ↑↑    | ↑     | ↑↑    | ↑↑    |       |
| Volume (vph)               | 0    | 412   | 712   | 815   | 759   | 113   |
| Ideal Flow (vphpl)         | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  |
| Storage Length (ft)        | 0    |       |       | 280   | 0     | 0     |
| Storage Lanes              | 0    |       |       | 2     | 2     | 0     |
| Taper Length (ft)          | 25   |       |       |       | 25    |       |
| Lane Util. Factor          | 1.00 | 0.95  | 1.00  | 0.88  | 0.97  | 0.95  |
| Frt                        |      |       |       | 0.850 | 0.980 |       |
| Flt Protected              |      |       |       |       | 0.958 |       |
| Satd. Flow (prot)          | 0    | 3505  | 1863  | 2787  | 3426  | 0     |
| Flt Permitted              |      |       |       |       | 0.958 |       |
| Satd. Flow (perm)          | 0    | 3505  | 1863  | 2787  | 3426  | 0     |
| Right Turn on Red          |      |       |       | Yes   |       | Yes   |
| Satd. Flow (RTOR)          |      |       |       |       | 24    |       |
| Link Speed (mph)           |      | 30    | 30    |       | 30    |       |
| Link Distance (ft)         |      | 246   | 421   |       | 91    |       |
| Travel Time (s)            |      | 5.6   | 9.6   |       | 2.1   |       |
| Peak Hour Factor           | 0.94 | 0.94  | 0.98  | 0.98  | 0.93  | 0.93  |
| Heavy Vehicles (%)         | 3%   | 3%    | 2%    | 2%    | 1%    | 1%    |
| Adj. Flow (vph)            | 0    | 438   | 727   | 832   | 816   | 122   |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |
| Lane Group Flow (vph)      | 0    | 438   | 727   | 832   | 938   | 0     |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |
| Median Width(ft)           |      | 0     | 0     |       | 24    |       |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |
| Crosswalk Width(ft)        |      | 16    | 16    |       | 16    |       |
| Two way Left Turn Lane     |      |       |       |       |       |       |
| Headway Factor             | 1.00 | 1.00  | 1.00  | 1.00  | 1.00  | 1.00  |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |
| Number of Detectors        |      | 2     | 2     | 1     | 1     |       |
| Detector Template          |      | Thru  | Thru  | Right | Left  |       |
| Leading Detector (ft)      |      | 100   | 100   | 20    | 20    |       |
| Trailing Detector (ft)     |      | 0     | 0     | 0     | 0     |       |
| Detector 1 Position(ft)    |      | 0     | 0     | 0     | 0     |       |
| Detector 1 Size(ft)        |      | 6     | 6     | 20    | 20    |       |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |       |
| Detector 1 Channel         |      |       |       |       |       |       |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   |       |
| Detector 2 Position(ft)    |      | 94    | 94    |       |       |       |
| Detector 2 Size(ft)        |      | 6     | 6     |       |       |       |
| Detector 2 Type            |      | Cl+Ex | Cl+Ex |       |       |       |
| Detector 2 Channel         |      |       |       |       |       |       |
| Detector 2 Extend (s)      |      | 0.0   | 0.0   |       |       |       |
| Turn Type                  |      | NA    | NA    | pm+ov | NA    |       |
| Protected Phases           |      | 6     | 2     | 4     | 4     |       |
| Permitted Phases           |      |       |       | 2     |       |       |

Lanes, Volumes, Timings  
4: Dade Blvd & Michigan Ave

3/31/2015



| Lane Group              | EBL | EBT   | WBT   | WBR   | SEL   | SER |
|-------------------------|-----|-------|-------|-------|-------|-----|
| Detector Phase          |     | 6     | 2     | 4     | 4     |     |
| Switch Phase            |     |       |       |       |       |     |
| Minimum Initial (s)     |     | 4.0   | 4.0   | 4.0   | 4.0   |     |
| Minimum Split (s)       |     | 34.8  | 34.8  | 20.6  | 20.6  |     |
| Total Split (s)         |     | 45.8  | 45.8  | 54.2  | 54.2  |     |
| Total Split (%)         |     | 45.8% | 45.8% | 54.2% | 54.2% |     |
| Maximum Green (s)       |     | 41.0  | 41.0  | 49.6  | 49.6  |     |
| Yellow Time (s)         |     | 4.0   | 4.0   | 4.0   | 4.0   |     |
| All-Red Time (s)        |     | 0.8   | 0.8   | 0.6   | 0.6   |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Lost Time (s)     |     | 4.8   | 4.8   | 4.6   | 4.6   |     |
| Lead/Lag                |     |       |       |       |       |     |
| Lead-Lag Optimize?      |     |       |       |       |       |     |
| Vehicle Extension (s)   |     | 1.0   | 1.0   | 2.5   | 2.5   |     |
| Recall Mode             |     | Min   | Min   | None  | None  |     |
| Walk Time (s)           |     | 7.0   | 7.0   |       |       |     |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |       |       |     |
| Pedestrian Calls (#/hr) |     | 0     | 0     |       |       |     |
| Act Effect Green (s)    |     | 34.0  | 34.0  | 72.1  | 28.3  |     |
| Actuated g/C Ratio      |     | 0.47  | 0.47  | 1.00  | 0.39  |     |
| v/c Ratio               |     | 0.26  | 0.83  | 0.30  | 0.69  |     |
| Control Delay           |     | 12.7  | 27.4  | 0.3   | 21.3  |     |
| Queue Delay             |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Delay             |     | 12.7  | 27.4  | 0.3   | 21.3  |     |
| LOS                     |     | B     | C     | A     | C     |     |
| Approach Delay          |     | 12.7  | 12.9  |       | 21.3  |     |
| Approach LOS            |     | B     | B     |       | C     |     |

Intersection Summary

Area Type: Other  
Cycle Length: 100  
Actuated Cycle Length: 72.1  
Natural Cycle: 60  
Control Type: Semi Act-Uncoord  
Maximum v/c Ratio: 0.83  
Intersection Signal Delay: 15.6  
Intersection Capacity Utilization 70.5%  
Analysis Period (min) 15

Intersection LOS: B  
ICU Level of Service C

Splits and Phases: 4: Dade Blvd & Michigan Ave

|        |        |
|--------|--------|
| ← p2   | → p4   |
| 45.8 s | 54.2 s |
| → p6   |        |
| 45.8 s |        |



**Intersection**

Intersection Delay, s/veh 0.5

| Movement                 | EBL  | EBR  | SET  | SER  | NWL  | NWT  |
|--------------------------|------|------|------|------|------|------|
| Vol, veh/h               | 0    | 69   | 759  | 107  | 0    | 815  |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 2    | 2    | 1    | 1    | 2    | 2    |
| Mvmt Flow                | 0    | 74   | 816  | 115  | 0    | 876  |

| Major/Minor             | Minor1 | Major1 | Major2 |
|-------------------------|--------|--------|--------|
| Conflicting Flow All    | 1312   | 466    | 0      |
| Stage 1                 | 874    | -      | -      |
| Stage 2                 | 438    | -      | -      |
| Follow-up Headway       | 4      | 3      | 2      |
| Pot Capacity-1 Maneuver | 150    | 543    | 731    |
| Stage 1                 | 369    | -      | -      |
| Stage 2                 | 618    | -      | -      |
| Time blocked-Platoon, % |        | -      | -      |
| Mov Capacity-1 Maneuver | 150    | 543    | 731    |
| Mov Capacity-2 Maneuver | 150    | -      | -      |
| Stage 1                 | 369    | -      | -      |
| Stage 2                 | 618    | -      | -      |

| Approach             | EB | SE | NW |
|----------------------|----|----|----|
| HCM Control Delay, s | 13 | 0  | 0  |

| Minor Lane / Major Mvmt | NWL | NWT | EBLn1 | SET | SER |
|-------------------------|-----|-----|-------|-----|-----|
| Capacity (veh/h)        | 731 | -   | 543   | -   | -   |
| HCM Lane V/C Ratio      | -   | -   | 0.137 | -   | -   |
| HCM Control Delay (s)   | 0   | -   | 12.7  | -   | -   |
| HCM Lane LOS            | A   |     | B     |     |     |
| HCM 95th % tile Q(veh)  | 0   | -   | 0.471 | -   | -   |

**Notes**

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection              |        |      |        |        |     |
|---------------------------|--------|------|--------|--------|-----|
| Intersection Delay, s/veh | 0.6    |      |        |        |     |
| Movement                  | WBL    | WBR  | NBR    | SWL    |     |
| Vol, veh/h                | 0      | 66   | 1426   | 1007   |     |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0      |     |
| Sign Control              | Stop   | Stop | Free   | Free   |     |
| RT Channelized            | -      | None | -      | None   |     |
| Storage Length            | -      | 0    | -      | -      |     |
| Veh in Median Storage, #  | 0      | -    | 0      | 0      |     |
| Grade, %                  | 0      | -    | 0      | 0      |     |
| Peak Hour Factor          | 80     | 80   | 98     | 90     |     |
| Heavy Vehicles, %         | 2      | 2    | 2      | 2      |     |
| Mvmt Flow                 | 0      | 82   | 1455   | 1119   |     |
| Major/Minor               | Minor1 |      | Major1 | Major2 |     |
| Conflicting Flow All      | 2078   | 792  | 0      | 1584   |     |
| Stage 1                   | 1519   | -    | -      | -      |     |
| Stage 2                   | 559    | -    | -      | -      |     |
| Follow-up Headway         | 4      | 3    | -      | 2      |     |
| Pot Capacity-1 Maneuver   | 46     | 332  | -      | 411    |     |
| Stage 1                   | 167    | -    | -      | -      |     |
| Stage 2                   | 536    | -    | -      | -      |     |
| Time blocked-Platoon, %   |        |      | -      |        |     |
| Mov Capacity-1 Maneuver   | 46     | 332  | -      | 411    |     |
| Mov Capacity-2 Maneuver   | 46     | -    | -      | -      |     |
| Stage 1                   | 167    | -    | -      | -      |     |
| Stage 2                   | 536    | -    | -      | -      |     |
| Approach                  | WB     |      | NB     | SW     |     |
| HCM Control Delay, s      | 19     |      | 0      | 0      |     |
| Minor Lane / Major Mvmt   | NBR    | NBR2 | WBLn1  | SWL2   | SWL |
| Capacity (veh/h)          | -      | -    | 332    | 411    | -   |
| HCM Lane V/C Ratio        | -      | -    | 0.248  | -      | -   |
| HCM Control Delay (s)     | -      | -    | 19.4   | 0      | -   |
| HCM Lane LOS              |        |      | C      | A      |     |
| HCM 95th % tile Q(veh)    | -      | -    | 0.962  | 0      | -   |
| Notes                     |        |      |        |        |     |

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

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|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 4                                                                                 | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 0                                                                                   | 1498                                                                                | 56                                                                                  | 453                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 2                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 0.97                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frt                        |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.995                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.978                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1551                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1676                                                                                | *3800                                                                               | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.874                                                                             |                                                                                   |                                                                                   | 0.767                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1386                                                                              | 0                                                                                 | 0                                                                                 | 1299                                                                              | 1417                                                                              | 1676                                                                                | 3168                                                                                | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 806                                                                               |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   | 3                                                                                 |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 5                                                                                 | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 0                                                                                   | 1513                                                                                | 57                                                                                  | 477                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 18                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 0                                                                                   | 1570                                                                                | 0                                                                                   | 477                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 24                                                                                  |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                     | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                  | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                  | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | custom                                                                            | Perm                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 1 2                                                                                 |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 |                                                                                     |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                |                                                                                     |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             | 28.5%                                                                             | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               |                                                                                     |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                |                                                                                     |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              |                                                                                   |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                                |                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 |                                                                                     |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 |                                                                                     |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               |                                                                                     | Max                                                                                 |                                                                                     |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 9.4                                                                               |                                                                                   |                                                                                   | 9.4                                                                               | 81.4                                                                              |                                                                                   | 72.0                                                                                |                                                                                     | 36.6                                                                                | 112.6                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.07                                                                              |                                                                                   |                                                                                   | 0.07                                                                              | 0.63                                                                              |                                                                                   | 0.55                                                                                |                                                                                     | 0.28                                                                                | 0.87                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.17                                                                              |                                                                                   |                                                                                   | 0.23                                                                              | 0.68                                                                              |                                                                                   | 0.75                                                                                |                                                                                     | 0.55                                                                                | 0.48                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 48.2                                                                              |                                                                                   |                                                                                   | 61.8                                                                              | 3.7                                                                               |                                                                                   | 24.8                                                                                |                                                                                     | 42.9                                                                                | 2.8                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.1                                                                               |                                                                                   | 48.6                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 48.2                                                                              |                                                                                   |                                                                                   | 61.8                                                                              | 3.8                                                                               |                                                                                   | 73.4                                                                                |                                                                                     | 42.9                                                                                | 2.8                                                                                 |                                                                                     |
| LOS                     |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 |                                                                                   | E                                                                                   |                                                                                     | D                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 48.2                                                                              |                                                                                   |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                   | 73.4                                                                                |                                                                                     |                                                                                     | 13.3                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NESW, Start of Yellow

Natural Cycle: 100

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 34.2

Intersection LOS: C

Intersection Capacity Utilization 113.7%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |

Lanes, Volumes, Timings  
4: Dade Blvd & Michigan Ave

3/31/2015

|                            |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SEL                                                                               | SER                                                                               |
| Lane Configurations        |                                                                                   | ↑↑                                                                                | ↑                                                                                 | ↑↑                                                                                | ↑↑                                                                                |                                                                                   |
| Volume (vph)               | 0                                                                                 | 420                                                                               | 727                                                                               | 832                                                                               | 774                                                                               | 116                                                                               |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)        | 0                                                                                 |                                                                                   |                                                                                   | 280                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Lanes              | 0                                                                                 |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 | 0                                                                                 |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 0.88                                                                              | 0.97                                                                              | 0.95                                                                              |
| Flt                        |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             | 0.980                                                                             |                                                                                   |
| Flt Protected              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.958                                                                             |                                                                                   |
| Satd. Flow (prot)          | 0                                                                                 | 3539                                                                              | 1863                                                                              | 2787                                                                              | 3426                                                                              | 0                                                                                 |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.958                                                                             |                                                                                   |
| Satd. Flow (perm)          | 0                                                                                 | 3539                                                                              | 1863                                                                              | 2787                                                                              | 3426                                                                              | 0                                                                                 |
| Right Turn on Red          |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 24                                                                                |                                                                                   |
| Link Speed (mph)           |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                |                                                                                   |
| Link Distance (ft)         |                                                                                   | 246                                                                               | 421                                                                               |                                                                                   | 91                                                                                |                                                                                   |
| Travel Time (s)            |                                                                                   | 5.6                                                                               | 9.6                                                                               |                                                                                   | 2.1                                                                               |                                                                                   |
| Peak Hour Factor           | 0.94                                                                              | 0.94                                                                              | 0.98                                                                              | 0.98                                                                              | 0.93                                                                              | 0.93                                                                              |
| Heavy Vehicles (%)         | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 1%                                                                                |
| Adj. Flow (vph)            | 0                                                                                 | 447                                                                               | 742                                                                               | 849                                                                               | 832                                                                               | 125                                                                               |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)      | 0                                                                                 | 447                                                                               | 742                                                                               | 849                                                                               | 957                                                                               | 0                                                                                 |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |
| Median Width(ft)           |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 24                                                                                |                                                                                   |
| Link Offset(ft)            |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   | 16                                                                                |                                                                                   |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)        | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 | 15                                                                                | 9                                                                                 |
| Number of Detectors        |                                                                                   | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |
| Detector Template          |                                                                                   | Thru                                                                              | Thru                                                                              | Right                                                                             | Left                                                                              |                                                                                   |
| Leading Detector (ft)      |                                                                                   | 100                                                                               | 100                                                                               | 20                                                                                | 20                                                                                |                                                                                   |
| Trailing Detector (ft)     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Detector 1 Position(ft)    |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Detector 1 Size(ft)        |                                                                                   | 6                                                                                 | 6                                                                                 | 20                                                                                | 20                                                                                |                                                                                   |
| Detector 1 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 1 Queue (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 1 Delay (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 2 Position(ft)    |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Size(ft)        |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Turn Type                  |                                                                                   | NA                                                                                | NA                                                                                | pm+ov                                                                             | NA                                                                                |                                                                                   |
| Protected Phases           |                                                                                   | 6                                                                                 | 2                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   |
| Permitted Phases           |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |

# Lanes, Volumes, Timings

## 4: Dade Blvd & Michigan Ave

3/31/2015



| Lane Group              | EBL | EBT   | WBT   | WBR   | SEL   | SER |
|-------------------------|-----|-------|-------|-------|-------|-----|
| Detector Phase          |     | 6     | 2     | 4     | 4     |     |
| Switch Phase            |     |       |       |       |       |     |
| Minimum Initial (s)     |     | 7.0   | 7.0   | 14.0  | 14.0  |     |
| Minimum Split (s)       |     | 34.8  | 34.8  | 20.6  | 20.6  |     |
| Total Split (s)         |     | 45.8  | 45.8  | 54.2  | 54.2  |     |
| Total Split (%)         |     | 45.8% | 45.8% | 54.2% | 54.2% |     |
| Maximum Green (s)       |     | 41.0  | 41.0  | 49.6  | 49.6  |     |
| Yellow Time (s)         |     | 4.0   | 4.0   | 4.0   | 4.0   |     |
| All-Red Time (s)        |     | 0.8   | 0.8   | 0.6   | 0.6   |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Lost Time (s)     |     | 4.8   | 4.8   | 4.6   | 4.6   |     |
| Lead/Lag                |     |       |       |       |       |     |
| Lead-Lag Optimize?      |     |       |       |       |       |     |
| Vehicle Extension (s)   |     | 1.0   | 1.0   | 2.5   | 2.5   |     |
| Recall Mode             |     | Min   | Min   | None  | None  |     |
| Walk Time (s)           |     | 7.0   | 7.0   |       |       |     |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |       |       |     |
| Pedestrian Calls (#/hr) |     | 0     | 0     |       |       |     |
| Act Effect Green (s)    |     | 35.9  | 35.9  | 74.5  | 28.9  |     |
| Actuated g/C Ratio      |     | 0.48  | 0.48  | 1.00  | 0.39  |     |
| v/c Ratio               |     | 0.26  | 0.83  | 0.30  | 0.71  |     |
| Control Delay           |     | 12.7  | 27.7  | 0.3   | 22.4  |     |
| Queue Delay             |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Delay             |     | 12.7  | 27.7  | 0.3   | 22.4  |     |
| LOS                     |     | B     | C     | A     | C     |     |
| Approach Delay          |     | 12.7  | 13.1  |       | 22.4  |     |
| Approach LOS            |     | B     | B     |       | C     |     |

### Intersection Summary

Area Type: Other

Cycle Length: 100

Actuated Cycle Length: 74.5

Natural Cycle: 60

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.83

Intersection Signal Delay: 16.0

Intersection LOS: B

Intersection Capacity Utilization 71.8%

ICU Level of Service C

Analysis Period (min) 15

Splits and Phases: 4: Dade Blvd & Michigan Ave

|        |        |
|--------|--------|
| ← p2   | ↘ p4   |
| 45.8 s | 54.2 s |
| → p6   |        |
| 45.8 s |        |

**Intersection**

Intersection Delay, s/veh 0.5

| Movement                 | EBL  | EBR  | SET  | SER  | NWL  | NWT  |
|--------------------------|------|------|------|------|------|------|
| Vol, veh/h               | 0    | 71   | 774  | 109  | 0    | 832  |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 2    | 2    | 1    | 1    | 2    | 2    |
| Mvmt Flow                | 0    | 76   | 832  | 117  | 0    | 895  |

| Major/Minor             | Minor1 | Major1 | Major2 |
|-------------------------|--------|--------|--------|
| Conflicting Flow All    | 1338   | 475    | 0      |
| Stage 1                 | 891    | -      | -      |
| Stage 2                 | 447    | -      | -      |
| Follow-up Headway       | 4      | 3      | 2      |
| Pot Capacity-1 Maneuver | 144    | 536    | 719    |
| Stage 1                 | 361    | -      | -      |
| Stage 2                 | 611    | -      | -      |
| Time blocked-Platoon, % |        | -      | -      |
| Mov Capacity-1 Maneuver | 144    | 536    | 719    |
| Mov Capacity-2 Maneuver | 144    | -      | -      |
| Stage 1                 | 361    | -      | -      |
| Stage 2                 | 611    | -      | -      |

| Approach             | EB | SE | NW |
|----------------------|----|----|----|
| HCM Control Delay, s | 13 | 0  | 0  |

| Minor Lane / Major Mvmt | NWL | NWT | EBLn1 | SET | SER |
|-------------------------|-----|-----|-------|-----|-----|
| Capacity (veh/h)        | 719 | -   | 536   | -   | -   |
| HCM Lane V/C Ratio      | -   | -   | 0.142 | -   | -   |
| HCM Control Delay (s)   | 0   | -   | 12.8  | -   | -   |
| HCM Lane LOS            | A   |     | B     |     |     |
| HCM 95th % tile Q(veh)  | 0   | -   | 0.494 | -   | -   |

**Notes**

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection              |        |      |        |        |     |
|---------------------------|--------|------|--------|--------|-----|
| Intersection Delay, s/veh | 0.6    |      |        |        |     |
| Movement                  | WBL    | WBR  | NBR    | SWL    |     |
| Vol, veh/h                | 0      | 67   | 1455   | 1027   |     |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0      |     |
| Sign Control              | Stop   | Stop | Free   | Free   |     |
| RT Channelized            | -      | None | -      | None   |     |
| Storage Length            | -      | 0    | -      | -      |     |
| Veh in Median Storage, #  | 0      | -    | 0      | 0      |     |
| Grade, %                  | 0      | -    | 0      | 0      |     |
| Peak Hour Factor          | 80     | 80   | 98     | 90     |     |
| Heavy Vehicles, %         | 2      | 2    | 2      | 2      |     |
| Mvmt Flow                 | 0      | 84   | 1485   | 1141   |     |
| Major/Minor               | Minor1 |      | Major1 | Major2 |     |
| Conflicting Flow All      | 2121   | 808  | 0      | 1615   |     |
| Stage 1                   | 1550   | -    | -      | -      |     |
| Stage 2                   | 571    | -    | -      | -      |     |
| Follow-up Headway         | 4      | 3    | -      | 2      |     |
| Pot Capacity-1 Maneuver   | 43     | 324  | -      | 400    |     |
| Stage 1                   | 161    | -    | -      | -      |     |
| Stage 2                   | 529    | -    | -      | -      |     |
| Time blocked-Platoon, %   |        |      | -      |        |     |
| Mov Capacity-1 Maneuver   | 43     | 324  | -      | 400    |     |
| Mov Capacity-2 Maneuver   | 43     | -    | -      | -      |     |
| Stage 1                   | 161    | -    | -      | -      |     |
| Stage 2                   | 529    | -    | -      | -      |     |
| Approach                  | WB     |      | NB     | SW     |     |
| HCM Control Delay, s      | 20     |      | 0      | 0      |     |
| Minor Lane / Major Mvmt   | NBR    | NBR2 | WBLn1  | SWL2   | SWL |
| Capacity (veh/h)          | -      | -    | 324    | 400    | -   |
| HCM Lane V/C Ratio        | -      | -    | 0.258  | -      | -   |
| HCM Control Delay (s)     | -      | -    | 19.9   | 0      | -   |
| HCM Lane LOS              |        |      | C      | A      |     |
| HCM 95th % tile Q(veh)    | -      | -    | 1.012  | 0      | -   |
| Notes                     |        |      |        |        |     |

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined



# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 177                                                                               | 123                                                                               | 37                                                                                | 325                                                                               | 145                                                                               | 161                                                                               | 75                                                                                 | 1405                                                                                | 195                                                                                 | 74                                                                                  | 1070                                                                                | 78                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 60                                                                                | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.93                                                                              |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.96                                                                                |
| Frt                        |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.982                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3000                                                                              | 0                                                                                 | *1525                                                                             | 3185                                                                              | 1425                                                                              | 1540                                                                               | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.619                                                                             |                                                                                   |                                                                                   | 0.571                                                                             |                                                                                   |                                                                                   | 0.155                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 993                                                                               | 3000                                                                              | 0                                                                                 | *981                                                                              | 3185                                                                              | 1331                                                                              | 251                                                                                | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1370                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 31                                                                                |                                                                                   |                                                                                   |                                                                                   | 183                                                                               |                                                                                    | 14                                                                                  |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 737                                                                               |                                                                                   |                                                                                   | 978                                                                               |                                                                                   |                                                                                    | 249                                                                                 |                                                                                     |                                                                                     | 313                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 16.8                                                                              |                                                                                   |                                                                                   | 22.2                                                                              |                                                                                   |                                                                                    | 4.9                                                                                 |                                                                                     |                                                                                     | 6.1                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 52                                                                                |                                                                                   |                                                                                   | 55                                                                                |                                                                                    |                                                                                     | 14                                                                                  |                                                                                     |                                                                                     | 18                                                                                  |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 221                                                                               | 154                                                                               | 46                                                                                | 369                                                                               | 165                                                                               | 183                                                                               | 86                                                                                 | 1615                                                                                | 224                                                                                 | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 221                                                                               | 200                                                                               | 0                                                                                 | 369                                                                               | 165                                                                               | 183                                                                               | 86                                                                                 | 1839                                                                                | 0                                                                                   | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.14                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | custom                                                                            | pm+pt                                                                              | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | custom                                                                              |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 8                                                                                 | 6                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 8                                                                                 | 1                                                                                  |                                                                                     |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Initial (s)     | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 8.0                                                                                 |
| Total Split (s)         | 15.0                                                                              | 44.4                                                                              |                                                                                   | 15.0                                                                              | 44.4                                                                              | 44.4                                                                              | 13.0                                                                              | 57.6                                                                                |                                                                                     | 13.0                                                                                | 57.6                                                                                | 15.0                                                                                |
| Total Split (%)         | 11.5%                                                                             | 34.2%                                                                             |                                                                                   | 11.5%                                                                             | 34.2%                                                                             | 34.2%                                                                             | 10.0%                                                                             | 44.3%                                                                               |                                                                                     | 10.0%                                                                               | 44.3%                                                                               | 11.5%                                                                               |
| Maximum Green (s)       | 12.0                                                                              | 39.0                                                                              |                                                                                   | 12.0                                                                              | 39.0                                                                              | 39.0                                                                              | 10.0                                                                              | 52.8                                                                                |                                                                                     | 10.0                                                                                | 52.8                                                                                | 12.0                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 3.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 |
| Lost Time Adjust (s)    | 1.0                                                                               | -1.4                                                                              |                                                                                   | 1.0                                                                               | -1.4                                                                              | -1.4                                                                              | 1.0                                                                               | -0.8                                                                                |                                                                                     | 1.0                                                                                 | -0.8                                                                                | 1.0                                                                                 |
| Total Lost Time (s)     | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.5                                                                               | 2.5                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 2.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | None                                                                                |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 13                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  |                                                                                     |
| Act Effct Green (s)     | 39.6                                                                              | 28.6                                                                              |                                                                                   | 39.6                                                                              | 28.6                                                                              | 28.6                                                                              | 72.9                                                                              | 66.2                                                                                |                                                                                     | 8.3                                                                                 | 67.7                                                                                | 77.2                                                                                |
| Actuated g/C Ratio      | 0.30                                                                              | 0.22                                                                              |                                                                                   | 0.30                                                                              | 0.22                                                                              | 0.22                                                                              | 0.56                                                                              | 0.51                                                                                |                                                                                     | 0.06                                                                                | 0.52                                                                                | 0.59                                                                                |
| v/c Ratio               | 0.64                                                                              | 0.29                                                                              |                                                                                   | 1.07                                                                              | 0.24                                                                              | 0.42                                                                              | 0.42                                                                              | 1.13                                                                                |                                                                                     | 0.80                                                                                | 0.68                                                                                | 0.10                                                                                |
| Control Delay           | 41.6                                                                              | 34.0                                                                              |                                                                                   | 107.5                                                                             | 39.7                                                                              | 7.6                                                                               | 20.7                                                                              | 97.7                                                                                |                                                                                     | 107.8                                                                               | 29.4                                                                                | 7.8                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 41.6                                                                              | 34.0                                                                              |                                                                                   | 107.5                                                                             | 39.7                                                                              | 7.6                                                                               | 20.7                                                                              | 97.7                                                                                |                                                                                     | 107.8                                                                               | 29.4                                                                                | 7.8                                                                                 |
| LOS                     | D                                                                                 | C                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | A                                                                                 | C                                                                                 | F                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 38.0                                                                              |                                                                                   |                                                                                   | 66.4                                                                              |                                                                                   |                                                                                   | 94.3                                                                                |                                                                                     |                                                                                     | 32.7                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.13

Intersection Signal Delay: 66.0

Intersection LOS: E

Intersection Capacity Utilization 115.9%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

Splits and Phases: 2: Alton Rd & Dade Blvd

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 13 s                                                                                   | 57.6 s                                                                                     | 15 s                                                                                   | 44.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 13 s                                                                                   | 57.6 s                                                                                     | 15 s                                                                                   | 44.4 s                                                                                   |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 19                                                                                | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 14                                                                                 | 1554                                                                                | 71                                                                                  | 511                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 2                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 0.97                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frt                        |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.993                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1607                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1593                                                                               | *3182                                                                               | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.937                                                                             |                                                                                   |                                                                                   | 0.852                                                                             |                                                                                   | 0.205                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1522                                                                              | 0                                                                                 | 0                                                                                 | 1442                                                                              | 1417                                                                              | 344                                                                                | *3182                                                                               | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 806                                                                               |                                                                                    | 6                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                    | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                    | 6.8                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   | 3                                                                                 |                                                                                    |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 24                                                                                | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 14                                                                                 | 1570                                                                                | 72                                                                                  | 538                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 37                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 14                                                                                 | 1642                                                                                | 0                                                                                   | 538                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 24                                                                                  |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                               | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | custom                                                                            | Perm                                                                               | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                    | 2                                                                                   |                                                                                     | 1                                                                                   | 1 2                                                                                 |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 |                                                                                     |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                |                                                                                     |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             | 28.5%                                                                             | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               |                                                                                     |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                |                                                                                     |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              |                                                                                   |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                                |                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 |                                                                                     |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 |                                                                                     |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               |                                                                                     | Max                                                                                 |                                                                                     |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 10.3                                                                              |                                                                                   |                                                                                   | 10.3                                                                              | 82.3                                                                              | 72.0                                                                              | 72.0                                                                                |                                                                                     | 35.7                                                                                | 111.7                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.08                                                                              | 0.63                                                                              | 0.55                                                                              | 0.55                                                                                |                                                                                     | 0.27                                                                                | 0.86                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.30                                                                              |                                                                                   |                                                                                   | 0.18                                                                              | 0.68                                                                              | 0.07                                                                              | 0.93                                                                                |                                                                                     | 0.63                                                                                | 0.49                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 58.4                                                                              | 3.6                                                                               | 14.9                                                                              | 37.4                                                                                |                                                                                     | 45.9                                                                                | 3.0                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.1                                                                               | 0.0                                                                               | 45.8                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 58.4                                                                              | 3.7                                                                               | 14.9                                                                              | 83.2                                                                                |                                                                                     | 45.9                                                                                | 3.0                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 | B                                                                                 | F                                                                                   |                                                                                     | D                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 5.1                                                                               |                                                                                   |                                                                                   | 82.6                                                                                |                                                                                     |                                                                                     | 15.4                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NESW, Start of Yellow

Natural Cycle: 140

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.93

Intersection Signal Delay: 39.1

Intersection LOS: D

Intersection Capacity Utilization 116.0%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |

Lanes, Volumes, Timings  
4: Dade Blvd & Michigan Ave

3/31/2015

|                            |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SEL                                                                               | SER                                                                               |
| Lane Configurations        |                                                                                   | ↑↑                                                                                | ↑                                                                                 | ↑↑                                                                                | ↑↑                                                                                |                                                                                   |
| Volume (vph)               | 0                                                                                 | 420                                                                               | 785                                                                               | 832                                                                               | 830                                                                               | 256                                                                               |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |
| Storage Length (ft)        | 0                                                                                 |                                                                                   |                                                                                   | 280                                                                               | 0                                                                                 | 0                                                                                 |
| Storage Lanes              | 0                                                                                 |                                                                                   |                                                                                   | 2                                                                                 | 2                                                                                 | 0                                                                                 |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 0.88                                                                              | 0.97                                                                              | 0.95                                                                              |
| Flt                        |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             | 0.965                                                                             |                                                                                   |
| Flt Protected              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.963                                                                             |                                                                                   |
| Satd. Flow (prot)          | 0                                                                                 | 3505                                                                              | 1863                                                                              | 2787                                                                              | 3391                                                                              | 0                                                                                 |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.963                                                                             |                                                                                   |
| Satd. Flow (perm)          | 0                                                                                 | 3505                                                                              | 1863                                                                              | 2787                                                                              | 3391                                                                              | 0                                                                                 |
| Right Turn on Red          |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   | Yes                                                                               |
| Satd. Flow (RTOR)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 60                                                                                |                                                                                   |
| Link Speed (mph)           |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                |                                                                                   |
| Link Distance (ft)         |                                                                                   | 246                                                                               | 421                                                                               |                                                                                   | 91                                                                                |                                                                                   |
| Travel Time (s)            |                                                                                   | 5.6                                                                               | 9.6                                                                               |                                                                                   | 2.1                                                                               |                                                                                   |
| Peak Hour Factor           | 0.94                                                                              | 0.94                                                                              | 0.98                                                                              | 0.98                                                                              | 0.93                                                                              | 0.93                                                                              |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 1%                                                                                |
| Adj. Flow (vph)            | 0                                                                                 | 447                                                                               | 801                                                                               | 849                                                                               | 892                                                                               | 275                                                                               |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Lane Group Flow (vph)      | 0                                                                                 | 447                                                                               | 801                                                                               | 849                                                                               | 1167                                                                              | 0                                                                                 |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |
| Lane Alignment             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |
| Median Width(ft)           |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 24                                                                                |                                                                                   |
| Link Offset(ft)            |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 |                                                                                   |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                | 16                                                                                |                                                                                   | 16                                                                                |                                                                                   |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Headway Factor             | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              |
| Turning Speed (mph)        | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 | 15                                                                                | 9                                                                                 |
| Number of Detectors        |                                                                                   | 2                                                                                 | 2                                                                                 | 1                                                                                 | 1                                                                                 |                                                                                   |
| Detector Template          |                                                                                   | Thru                                                                              | Thru                                                                              | Right                                                                             | Left                                                                              |                                                                                   |
| Leading Detector (ft)      |                                                                                   | 100                                                                               | 100                                                                               | 20                                                                                | 20                                                                                |                                                                                   |
| Trailing Detector (ft)     |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Detector 1 Position(ft)    |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |                                                                                   |
| Detector 1 Size(ft)        |                                                                                   | 6                                                                                 | 6                                                                                 | 20                                                                                | 20                                                                                |                                                                                   |
| Detector 1 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 1 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 1 Queue (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 1 Delay (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |                                                                                   |
| Detector 2 Position(ft)    |                                                                                   | 94                                                                                | 94                                                                                |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Size(ft)        |                                                                                   | 6                                                                                 | 6                                                                                 |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |
| Detector 2 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   |                                                                                   |                                                                                   |
| Turn Type                  |                                                                                   | NA                                                                                | NA                                                                                | pm+ov                                                                             | NA                                                                                |                                                                                   |
| Protected Phases           |                                                                                   | 6                                                                                 | 2                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                   |
| Permitted Phases           |                                                                                   |                                                                                   |                                                                                   | 2                                                                                 |                                                                                   |                                                                                   |

# Lanes, Volumes, Timings

## 4: Dade Blvd & Michigan Ave

3/31/2015



| Lane Group              | EBL | EBT   | WBT   | WBR   | SEL   | SER |
|-------------------------|-----|-------|-------|-------|-------|-----|
| Detector Phase          |     | 6     | 2     | 4     | 4     |     |
| Switch Phase            |     |       |       |       |       |     |
| Minimum Initial (s)     |     | 4.0   | 4.0   | 4.0   | 4.0   |     |
| Minimum Split (s)       |     | 34.8  | 34.8  | 20.6  | 20.6  |     |
| Total Split (s)         |     | 45.8  | 45.8  | 54.2  | 54.2  |     |
| Total Split (%)         |     | 45.8% | 45.8% | 54.2% | 54.2% |     |
| Maximum Green (s)       |     | 41.0  | 41.0  | 49.6  | 49.6  |     |
| Yellow Time (s)         |     | 4.0   | 4.0   | 4.0   | 4.0   |     |
| All-Red Time (s)        |     | 0.8   | 0.8   | 0.6   | 0.6   |     |
| Lost Time Adjust (s)    |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Lost Time (s)     |     | 4.8   | 4.8   | 4.6   | 4.6   |     |
| Lead/Lag                |     |       |       |       |       |     |
| Lead-Lag Optimize?      |     |       |       |       |       |     |
| Vehicle Extension (s)   |     | 1.0   | 1.0   | 2.5   | 2.5   |     |
| Recall Mode             |     | Min   | Min   | None  | None  |     |
| Walk Time (s)           |     | 7.0   | 7.0   |       |       |     |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |       |       |     |
| Pedestrian Calls (#/hr) |     | 0     | 0     |       |       |     |
| Act Effect Green (s)    |     | 41.3  | 41.3  | 87.5  | 36.7  |     |
| Actuated g/C Ratio      |     | 0.47  | 0.47  | 1.00  | 0.42  |     |
| v/c Ratio               |     | 0.27  | 0.91  | 0.30  | 0.80  |     |
| Control Delay           |     | 15.9  | 39.9  | 0.3   | 25.4  |     |
| Queue Delay             |     | 0.0   | 0.0   | 0.0   | 0.0   |     |
| Total Delay             |     | 15.9  | 39.9  | 0.3   | 25.4  |     |
| LOS                     |     | B     | D     | A     | C     |     |
| Approach Delay          |     | 15.9  | 19.5  |       | 25.4  |     |
| Approach LOS            |     | B     | B     |       | C     |     |

### Intersection Summary

Area Type: Other  
 Cycle Length: 100  
 Actuated Cycle Length: 87.5  
 Natural Cycle: 75  
 Control Type: Semi Act-Uncoord  
 Maximum v/c Ratio: 0.91  
 Intersection Signal Delay: 21.1  
 Intersection Capacity Utilization 80.9%  
 Analysis Period (min) 15

Intersection LOS: C  
 ICU Level of Service D

### Splits and Phases: 4: Dade Blvd & Michigan Ave

|        |        |
|--------|--------|
| ← p2   | → p4   |
| 45.8 s | 54.2 s |
| → p6   |        |
| 45.8 s |        |

**Intersection**

Intersection Delay, s/veh 2.9

| Movement                 | EBL  | EBR  | SET  | SER  | NWL  | NWT  |
|--------------------------|------|------|------|------|------|------|
| Vol, veh/h               | 0    | 267  | 830  | 197  | 0    | 832  |
| Conflicting Peds, #/hr   | 0    | 0    | 0    | 0    | 0    | 0    |
| Sign Control             | Stop | Stop | Free | Free | Free | Free |
| RT Channelized           | -    | None | -    | None | -    | None |
| Storage Length           | -    | 0    | -    | -    | -    | -    |
| Veh in Median Storage, # | 0    | -    | 0    | -    | -    | 0    |
| Grade, %                 | 0    | -    | 0    | -    | -    | 0    |
| Peak Hour Factor         | 93   | 93   | 93   | 93   | 93   | 93   |
| Heavy Vehicles, %        | 2    | 2    | 1    | 1    | 2    | 2    |
| Mvmt Flow                | 0    | 287  | 892  | 212  | 0    | 895  |

| Major/Minor             | Minor1 | Major1 | Major2 |
|-------------------------|--------|--------|--------|
| Conflicting Flow All    | 1445   | 552    | 0      |
| Stage 1                 | 998    | -      | -      |
| Stage 2                 | 447    | -      | -      |
| Follow-up Headway       | 4      | 3      | 2      |
| Pot Capacity-1 Maneuver | 123    | 477    | 628    |
| Stage 1                 | 317    | -      | -      |
| Stage 2                 | 611    | -      | -      |
| Time blocked-Platoon, % |        | -      | -      |
| Mov Capacity-1 Maneuver | 123    | 477    | 628    |
| Mov Capacity-2 Maneuver | 123    | -      | -      |
| Stage 1                 | 317    | -      | -      |
| Stage 2                 | 611    | -      | -      |

| Approach             | EB | SE | NW |
|----------------------|----|----|----|
| HCM Control Delay, s | 23 | 0  | 0  |

| Minor Lane / Major Mvmt | NWL | NWT | EBLn1 | SET | SER |
|-------------------------|-----|-----|-------|-----|-----|
| Capacity (veh/h)        | 628 | -   | 477   | -   | -   |
| HCM Lane V/C Ratio      | -   | -   | 0.602 | -   | -   |
| HCM Control Delay (s)   | 0   | -   | 23.3  | -   | -   |
| HCM Lane LOS            | A   |     | C     |     |     |
| HCM 95th % tile Q(veh)  | 0   | -   | 3.896 | -   | -   |

**Notes**

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined

| Intersection              |        |      |        |        |     |
|---------------------------|--------|------|--------|--------|-----|
| Intersection Delay, s/veh | 2.2    |      |        |        |     |
| Movement                  | WBL    | WBR  | NBR    | SWL    |     |
| Vol, veh/h                | 0      | 151  | 1455   | 1027   |     |
| Conflicting Peds, #/hr    | 0      | 0    | 0      | 0      |     |
| Sign Control              | Stop   | Stop | Free   | Free   |     |
| RT Channelized            | -      | Stop | -      | None   |     |
| Storage Length            | -      | 0    | -      | -      |     |
| Veh in Median Storage, #  | 0      | -    | 0      | 0      |     |
| Grade, %                  | 0      | -    | 0      | 0      |     |
| Peak Hour Factor          | 80     | 80   | 98     | 90     |     |
| Heavy Vehicles, %         | 2      | 2    | 2      | 2      |     |
| Mvmt Flow                 | 0      | 189  | 1485   | 1141   |     |
| Major/Minor               | Minor1 |      | Major1 | Major2 |     |
| Conflicting Flow All      | 2174   | 860  | 0      | 1720   |     |
| Stage 1                   | 1603   | -    | -      | -      |     |
| Stage 2                   | 571    | -    | -      | -      |     |
| Follow-up Headway         | 4      | 3    | -      | 2      |     |
| Pot Capacity-1 Maneuver   | 40     | 299  | -      | 364    |     |
| Stage 1                   | 150    | -    | -      | -      |     |
| Stage 2                   | 529    | -    | -      | -      |     |
| Time blocked-Platoon, %   |        |      | -      |        |     |
| Mov Capacity-1 Maneuver   | 40     | 299  | -      | 364    |     |
| Mov Capacity-2 Maneuver   | 40     | -    | -      | -      |     |
| Stage 1                   | 150    | -    | -      | -      |     |
| Stage 2                   | 529    | -    | -      | -      |     |
| Approach                  | WB     |      | NB     | SW     |     |
| HCM Control Delay, s      | 36     |      | 0      | 0      |     |
| Minor Lane / Major Mvmt   | NBR    | NBR2 | WBLn1  | SWL2   | SWL |
| Capacity (veh/h)          | -      | -    | 299    | 364    | -   |
| HCM Lane V/C Ratio        | -      | -    | 0.631  | -      | -   |
| HCM Control Delay (s)     | -      | -    | 35.6   | 0      | -   |
| HCM Lane LOS              |        |      | E      | A      |     |
| HCM 95th % tile Q(veh)    | -      | -    | 3.984  | 0      | -   |
| Notes                     |        |      |        |        |     |

~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined



| Intersection                                                                                 |        |        |        |      |       |      |
|----------------------------------------------------------------------------------------------|--------|--------|--------|------|-------|------|
| Intersection Delay, s/veh                                                                    | 13.6   |        |        |      |       |      |
| Movement                                                                                     | EBL    | EBT    | WBT    | WBR  | SBL   | SBR  |
| Vol, veh/h                                                                                   | 203    | 32     | 109    | 88   | 196   | 84   |
| Conflicting Peds, #/hr                                                                       | 0      | 0      | 0      | 0    | 0     | 0    |
| Sign Control                                                                                 | Free   | Free   | Free   | Free | Stop  | Stop |
| RT Channelized                                                                               | -      | None   | -      | None | -     | None |
| Storage Length                                                                               | -      | -      | -      | -    | 0     | -    |
| Veh in Median Storage, #                                                                     | -      | 0      | 0      | -    | 0     | -    |
| Grade, %                                                                                     | -      | 0      | 0      | -    | 0     | -    |
| Peak Hour Factor                                                                             | 92     | 92     | 92     | 92   | 92    | 92   |
| Heavy Vehicles, %                                                                            | 0      | 2      | 2      | 0    | 0     | 0    |
| Mvmt Flow                                                                                    | 221    | 35     | 118    | 96   | 213   | 91   |
| Major/Minor                                                                                  | Major1 | Major2 | Minor2 |      |       |      |
| Conflicting Flow All                                                                         | 214    | 0      | -      | 0    | 642   | 166  |
| Stage 1                                                                                      | -      | -      | -      | -    | 166   | -    |
| Stage 2                                                                                      | -      | -      | -      | -    | 476   | -    |
| Follow-up Headway                                                                            | 2      | -      | -      | -    | 4     | 3    |
| Pot Capacity-1 Maneuver                                                                      | 1368   | -      | -      | -    | 442   | 884  |
| Stage 1                                                                                      | -      | -      | -      | -    | 868   | -    |
| Stage 2                                                                                      | -      | -      | -      | -    | 629   | -    |
| Time blocked-Platoon, %                                                                      | -      | -      | -      | -    | -     | -    |
| Mov Capacity-1 Maneuver                                                                      | 1368   | -      | -      | -    | 369   | 884  |
| Mov Capacity-2 Maneuver                                                                      | -      | -      | -      | -    | 369   | -    |
| Stage 1                                                                                      | -      | -      | -      | -    | 868   | -    |
| Stage 2                                                                                      | -      | -      | -      | -    | 525   | -    |
| Approach                                                                                     | EB     | WB     | SB     |      |       |      |
| HCM Control Delay, s                                                                         | 7      | 0      | 29     |      |       |      |
| Minor Lane / Major Mvmt                                                                      | EBL    | EBT    | WBT    | WBR  | SBLn1 |      |
| Capacity (veh/h)                                                                             | 1368   | -      | -      | -    | 447   |      |
| HCM Lane V/C Ratio                                                                           | 0.161  | -      | -      | -    | 0.681 |      |
| HCM Control Delay (s)                                                                        | 8.137  | 0      | -      | -    | 28.6  |      |
| HCM Lane LOS                                                                                 | A      | A      |        |      | D     |      |
| HCM 95th % tile Q(veh)                                                                       | 0.575  | -      | -      | -    | 4.999 |      |
| Notes                                                                                        |        |        |        |      |       |      |
| ~ : Volume Exceeds Capacity; \$ : Delay Exceeds 300 Seconds; Error : Computation Not Defined |        |        |        |      |       |      |

# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 177                                                                               | 123                                                                               | 37                                                                                | 325                                                                               | 145                                                                               | 161                                                                               | 75                                                                                 | 1405                                                                                | 195                                                                                 | 74                                                                                  | 1070                                                                                | 78                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 60                                                                                | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.93                                                                              |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     | 0.96                                                                                |
| Frt                        |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.982                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3000                                                                              | 0                                                                                 | *1525                                                                             | 3185                                                                              | 1425                                                                              | 1540                                                                               | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.619                                                                             |                                                                                   |                                                                                   | 0.566                                                                             |                                                                                   |                                                                                   | 0.172                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 993                                                                               | 3000                                                                              | 0                                                                                 | *993                                                                              | 3185                                                                              | 1331                                                                              | 279                                                                                | *3185                                                                               | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1370                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 31                                                                                |                                                                                   |                                                                                   |                                                                                   | 128                                                                               |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     |                                                                                     | 45                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 737                                                                               |                                                                                   |                                                                                   | 978                                                                               |                                                                                   |                                                                                    | 249                                                                                 |                                                                                     |                                                                                     | 313                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 16.8                                                                              |                                                                                   |                                                                                   | 22.2                                                                              |                                                                                   |                                                                                    | 4.9                                                                                 |                                                                                     |                                                                                     | 6.1                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 52                                                                                |                                                                                   |                                                                                   | 55                                                                                |                                                                                    |                                                                                     | 14                                                                                  |                                                                                     |                                                                                     | 18                                                                                  |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 221                                                                               | 154                                                                               | 46                                                                                | 369                                                                               | 165                                                                               | 183                                                                               | 86                                                                                 | 1615                                                                                | 224                                                                                 | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 221                                                                               | 200                                                                               | 0                                                                                 | 369                                                                               | 165                                                                               | 183                                                                               | 86                                                                                 | 1839                                                                                | 0                                                                                   | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.14                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  | 50                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | D.P+P                                                                             | NA                                                                                |                                                                                   | D.P+P                                                                             | NA                                                                                | custom                                                                            | D.P+P                                                                              | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | custom                                                                              |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 3                                                                                   |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | 8                                                                                 | 2                                                                                  |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 6                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 8                                                                                 | 1                                                                                  |                                                                                     |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |

# Lanes, Volumes, Timings

## 2: Alton Rd & Dade Blvd

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Initial (s)     | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                               | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 5.0                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 42.4                                                                              |                                                                                   | 8.0                                                                               | 42.4                                                                              | 42.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 8.0                                                                                 |
| Total Split (s)         | 10.0                                                                              | 42.4                                                                              |                                                                                   | 11.0                                                                              | 43.4                                                                              | 42.4                                                                              | 10.0                                                                              | 67.6                                                                                |                                                                                     | 9.0                                                                                 | 66.6                                                                                | 10.0                                                                                |
| Total Split (%)         | 7.7%                                                                              | 32.6%                                                                             |                                                                                   | 8.5%                                                                              | 33.4%                                                                             | 32.6%                                                                             | 7.7%                                                                              | 52.0%                                                                               |                                                                                     | 6.9%                                                                                | 51.2%                                                                               | 7.7%                                                                                |
| Maximum Green (s)       | 7.0                                                                               | 37.0                                                                              |                                                                                   | 8.0                                                                               | 38.0                                                                              | 37.0                                                                              | 7.0                                                                               | 62.8                                                                                |                                                                                     | 6.0                                                                                 | 61.8                                                                                | 7.0                                                                                 |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 3.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.0                                                                                 |
| Lost Time Adjust (s)    | 1.0                                                                               | -1.4                                                                              |                                                                                   | 1.0                                                                               | -1.4                                                                              | -1.4                                                                              | 1.0                                                                               | -0.8                                                                                |                                                                                     | 1.0                                                                                 | -0.8                                                                                | 1.0                                                                                 |
| Total Lost Time (s)     | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lead                                                                                |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.5                                                                               | 2.5                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 2.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | None                                                                                |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 13                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  |                                                                                     |
| Act Effct Green (s)     | 34.3                                                                              | 27.3                                                                              |                                                                                   | 34.3                                                                              | 28.3                                                                              | 27.3                                                                              | 79.7                                                                              | 70.6                                                                                |                                                                                     | 9.1                                                                                 | 74.3                                                                                | 76.6                                                                                |
| Actuated g/C Ratio      | 0.26                                                                              | 0.21                                                                              |                                                                                   | 0.26                                                                              | 0.22                                                                              | 0.21                                                                              | 0.61                                                                              | 0.54                                                                                |                                                                                     | 0.07                                                                                | 0.57                                                                                | 0.59                                                                                |
| v/c Ratio               | 0.77                                                                              | 0.31                                                                              |                                                                                   | 1.27                                                                              | 0.24                                                                              | 0.48                                                                              | 0.39                                                                              | 1.06                                                                                |                                                                                     | 0.73                                                                                | 0.62                                                                                | 0.10                                                                                |
| Control Delay           | 57.6                                                                              | 35.1                                                                              |                                                                                   | 182.7                                                                             | 40.1                                                                              | 16.8                                                                              | 17.0                                                                              | 68.9                                                                                |                                                                                     | 94.9                                                                                | 23.2                                                                                | 6.7                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 57.6                                                                              | 35.1                                                                              |                                                                                   | 182.7                                                                             | 40.1                                                                              | 16.8                                                                              | 17.0                                                                              | 68.9                                                                                |                                                                                     | 94.9                                                                                | 23.2                                                                                | 6.7                                                                                 |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | B                                                                                 | B                                                                                 | E                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 46.9                                                                              |                                                                                   |                                                                                   | 107.5                                                                             |                                                                                   |                                                                                   | 66.6                                                                                |                                                                                     |                                                                                     | 26.5                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:NBSB and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 59.6

Intersection LOS: E

Intersection Capacity Utilization 115.9%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

### Splits and Phases: 2: Alton Rd & Dade Blvd

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 10 s                                                                                   | 66.6 s                                                                                     | 10 s                                                                                   | 43.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 9 s                                                                                    | 67.6 s                                                                                     | 11 s                                                                                   | 42.4 s                                                                                   |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                            |  |  |  |  |  |  |  |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 19                                                                                | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 14                                                                                 | 1554                                                                                | 71                                                                                  | 511                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 2                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 0.97                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   | 0.98                                                                              |                                                                                    | 1.00                                                                                |                                                                                     |                                                                                     | 1.00                                                                                |                                                                                     |
| Frt                        |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.993                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1607                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1593                                                                               | *3182                                                                               | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.937                                                                             |                                                                                   |                                                                                   | 0.852                                                                             |                                                                                   | 0.205                                                                              |                                                                                     |                                                                                     | 0.063                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1522                                                                              | 0                                                                                 | 0                                                                                 | 1442                                                                              | 1417                                                                              | 344                                                                                | *3182                                                                               | 0                                                                                   | 205                                                                                 | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 806                                                                               |                                                                                    | 5                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 35                                                                                  |                                                                                     |                                                                                     | 35                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                    | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                    | 6.8                                                                                 |                                                                                     |                                                                                     | 6.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   | 3                                                                                 |                                                                                    |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                               | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 24                                                                                | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 14                                                                                 | 1570                                                                                | 72                                                                                  | 538                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 37                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 14                                                                                 | 1642                                                                                | 0                                                                                   | 538                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 24                                                                                  |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 16                                                                                |                                                                                   |                                                                                   | 16                                                                                |                                                                                   |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     | 16                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                               | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Leading Detector (ft)      | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     |
| Detector 1 Size(ft)        | 50                                                                                | 50                                                                                |                                                                                   | 50                                                                                | 50                                                                                | 50                                                                                | 50                                                                                 | 50                                                                                  |                                                                                     | 50                                                                                  | 50                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | custom                                                                            | Perm                                                                               | NA                                                                                  |                                                                                     | D.P+P                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 | 4                                                                                 |                                                                                    | 2                                                                                   |                                                                                     | 1                                                                                   | 1 2                                                                                 |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 2                                                                                 | 2                                                                                  |                                                                                     |                                                                                     | 2                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 4                                                                                 | 4                                                                                 | 4                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                | 7.0                                                                                 |                                                                                     | 5.0                                                                                 |                                                                                     |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

3/31/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 |                                                                                     |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              | 37.0                                                                              | 69.0                                                                              | 69.0                                                                                |                                                                                     | 24.0                                                                                |                                                                                     |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             | 28.5%                                                                             | 53.1%                                                                             | 53.1%                                                                               |                                                                                     | 18.5%                                                                               |                                                                                     |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              | 32.0                                                                              | 64.0                                                                              | 64.0                                                                                |                                                                                     | 21.0                                                                                |                                                                                     |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 |                                                                                     |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 |                                                                                     |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | -1.0                                                                              |                                                                                   |                                                                                   | -1.0                                                                              | -1.0                                                                              | -1.0                                                                              | -1.0                                                                                |                                                                                     | 1.0                                                                                 |                                                                                     |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 4.0                                                                               |                                                                                   |                                                                                   | 4.0                                                                               | 4.0                                                                               | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 4.0                                                                                 |                                                                                     |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 |                                                                                     |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                             | C-Max                                                                               |                                                                                     | Max                                                                                 |                                                                                     |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              | 25.0                                                                              | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 10.3                                                                              |                                                                                   |                                                                                   | 10.3                                                                              | 75.3                                                                              | 65.0                                                                              | 65.0                                                                                |                                                                                     | 107.7                                                                               | 111.7                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.08                                                                              |                                                                                   |                                                                                   | 0.08                                                                              | 0.58                                                                              | 0.50                                                                              | 0.50                                                                                |                                                                                     | 0.83                                                                                | 0.86                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.30                                                                              |                                                                                   |                                                                                   | 0.18                                                                              | 0.69                                                                              | 0.08                                                                              | 1.03                                                                                |                                                                                     | 0.48                                                                                | 0.49                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 58.4                                                                              | 4.2                                                                               | 18.6                                                                              | 63.1                                                                                |                                                                                     | 25.0                                                                                | 3.0                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 28.5                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 58.4                                                                              | 4.2                                                                               | 18.6                                                                              | 91.7                                                                                |                                                                                     | 25.0                                                                                | 3.0                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 | B                                                                                 | F                                                                                   |                                                                                     | C                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 55.6                                                                              |                                                                                   |                                                                                   | 5.6                                                                               |                                                                                   |                                                                                   | 91.0                                                                                |                                                                                     |                                                                                     | 9.4                                                                                 |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | A                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NESW, Start of Yellow

Natural Cycle: 120

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.03

Intersection Signal Delay: 39.8

Intersection LOS: D

Intersection Capacity Utilization 116.0%

ICU Level of Service H

Analysis Period (min) 15

\* User Entered Value

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 24 s                                                                                   | 69 s                                                                                       | 37 s                                                                                     |

# **APPENDIX F**

## **Peak Hour Calculations, Percent Heavy Vehicles and Lane Widths**

### Alton Road and Dade Boulevard

|             |         | Northbound |      | Southbound |      | Eastbound  |     | Westbound  |     |
|-------------|---------|------------|------|------------|------|------------|-----|------------|-----|
| Peak Hour   |         | 15-Min     |      | 15-Min     |      | 15-Min     |     | 15-Min     |     |
| Time Period |         | Volume     | Max  | Volume     | Max  | Volume     | Max | Volume     | Max |
| 3:30 PM     | 3:45 PM | 359        | 435  | 301        | 309  | 103        | 103 | 144        | 169 |
| 3:45 PM     | 4:00 PM | 365        | 435  | 309        | 309  | 74         | 103 | 155        | 169 |
| 4:00 PM     | 4:15 PM | 361        | 435  | 282        | 309  | 91         | 103 | 130        | 169 |
| 4:15 PM     | 4:30 PM | 435        | 435  | 282        | 309  | 62         | 103 | 169        | 169 |
| Total       |         | 1520       | 1740 | 1174       | 1236 | 330        | 412 | 598        | 676 |
|             |         | PHF = 0.87 |      | PHF = 0.95 |      | PHF = 0.80 |     | PHF = 0.88 |     |

### Alton Road and 19th Street

|             |         | Northbound |      | Southbound |      | Eastbound     |     | Westbound  |     |
|-------------|---------|------------|------|------------|------|---------------|-----|------------|-----|
| Peak Hour   |         | 15-Min     |      | 15-Min     |      | 15-Min        |     | 15-Min     |     |
| Time Period |         | Volume     | Max  | Volume     | Max  | Volume        | Max | Volume     | Max |
| 3:30 PM     | 3:45 PM | 377        | 387  | 272        | 272  |               | 0   | 22         | 23  |
| 3:45 PM     | 4:00 PM | 365        | 387  | 242        | 272  |               | 0   | 16         | 23  |
| 4:00 PM     | 4:15 PM | 387        | 387  | 242        | 272  |               | 0   | 23         | 23  |
| 4:15 PM     | 4:30 PM | 383        | 387  | 228        | 272  |               | 0   | 13         | 23  |
| Total       |         | 1512       | 1548 | 984        | 1088 | 0             | 0   | 74         | 92  |
|             |         | PHF = 0.98 |      | PHF = 0.90 |      | PHF = #DIV/0! |     | PHF = 0.80 |     |

### Alton Road and Michigan Avenue

|             |         | Northbound |      | Southbound |      | Eastbound  |     | Westbound  |     |
|-------------|---------|------------|------|------------|------|------------|-----|------------|-----|
| Peak Hour   |         | 15-Min     |      | 15-Min     |      | 15-Min     |     | 15-Min     |     |
| Time Period |         | Volume     | Max  | Volume     | Max  | Volume     | Max | Volume     | Max |
| 3:30 PM     | 3:45 PM | 374        | 374  | 415        | 430  | 7          | 7   | 134        | 197 |
| 3:45 PM     | 4:00 PM | 372        | 374  | 430        | 430  | 5          | 7   | 121        | 197 |
| 4:00 PM     | 4:15 PM | 362        | 374  | 394        | 430  | 5          | 7   | 197        | 197 |
| 4:15 PM     | 4:30 PM | 372        | 374  | 400        | 430  | 5          | 7   | 153        | 197 |
| Total       |         | 1480       | 1496 | 1639       | 1720 | 22         | 28  | 605        | 788 |
|             |         | PHF = 0.99 |      | PHF = 0.95 |      | PHF = 0.79 |     | PHF = 0.77 |     |

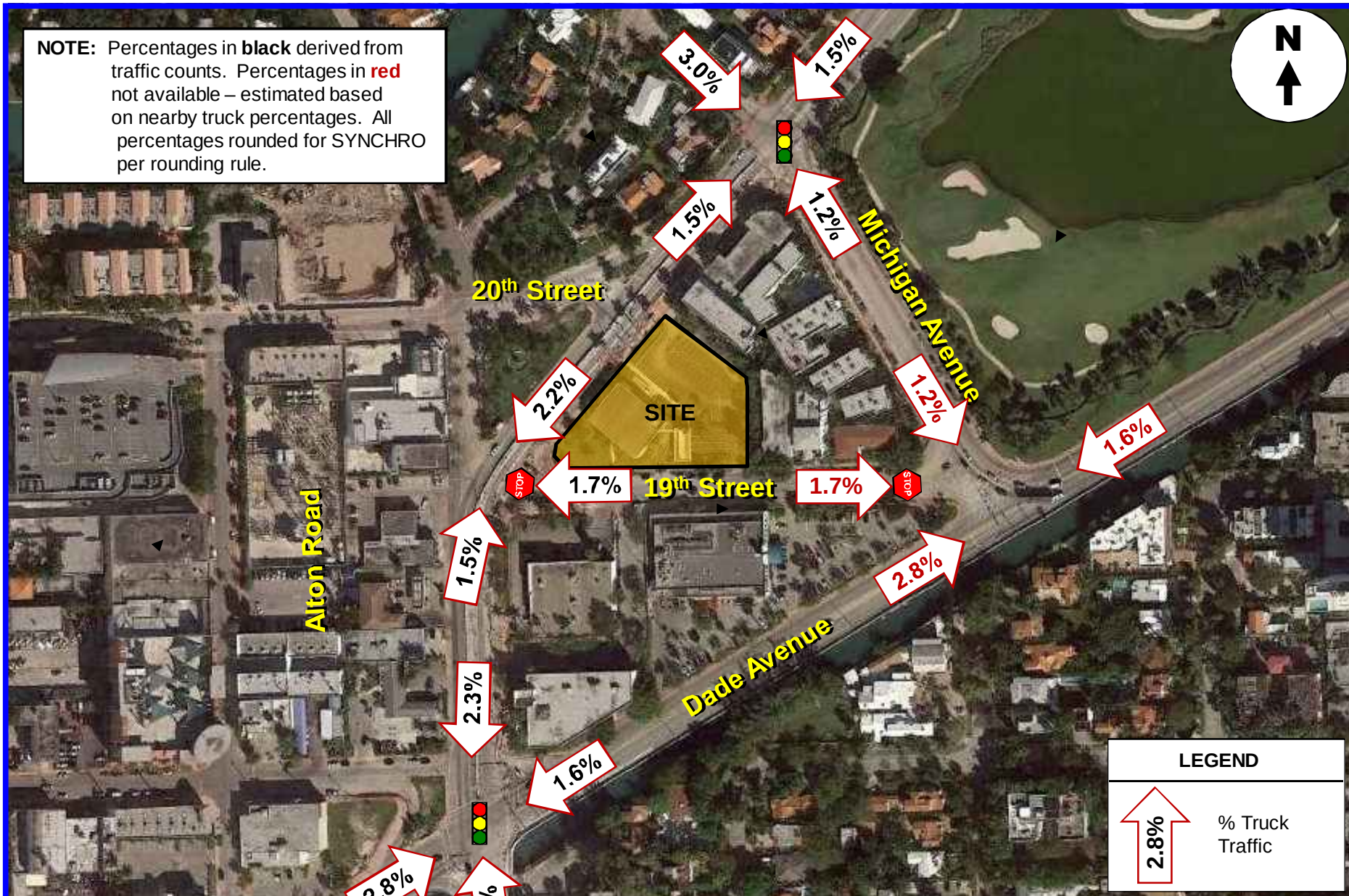
### Dade Boulevard and Michigan Avenue

|             |         | Northbound |     | Southbound |      | Eastbound  |     | Westbound     |     |
|-------------|---------|------------|-----|------------|------|------------|-----|---------------|-----|
| Peak Hour   |         | 15-Min     |     | 15-Min     |      | 15-Min     |     | 15-Min        |     |
| Time Period |         | Volume     | Max | Volume     | Max  | Volume     | Max | Volume        | Max |
| 4:00 PM     | 4:15 PM | 108        | 111 | 358        | 359  | 206        | 213 | 0             | 0   |
| 4:15 PM     | 4:30 PM | 88         | 111 | 359        | 359  | 213        | 213 | 0             | 0   |
| 4:30 PM     | 4:45 PM | 111        | 111 | 352        | 359  | 187        | 213 | 0             | 0   |
| 4:45 PM     | 5:00 PM | 111        | 111 | 340        | 359  | 188        | 213 | 0             | 0   |
| Total       |         | 418        | 444 | 1409       | 1436 | 794        | 852 | 0             | 0   |
|             |         | PHF = 0.94 |     | PHF = 0.98 |      | PHF = 0.93 |     | PHF = #DIV/0! |     |

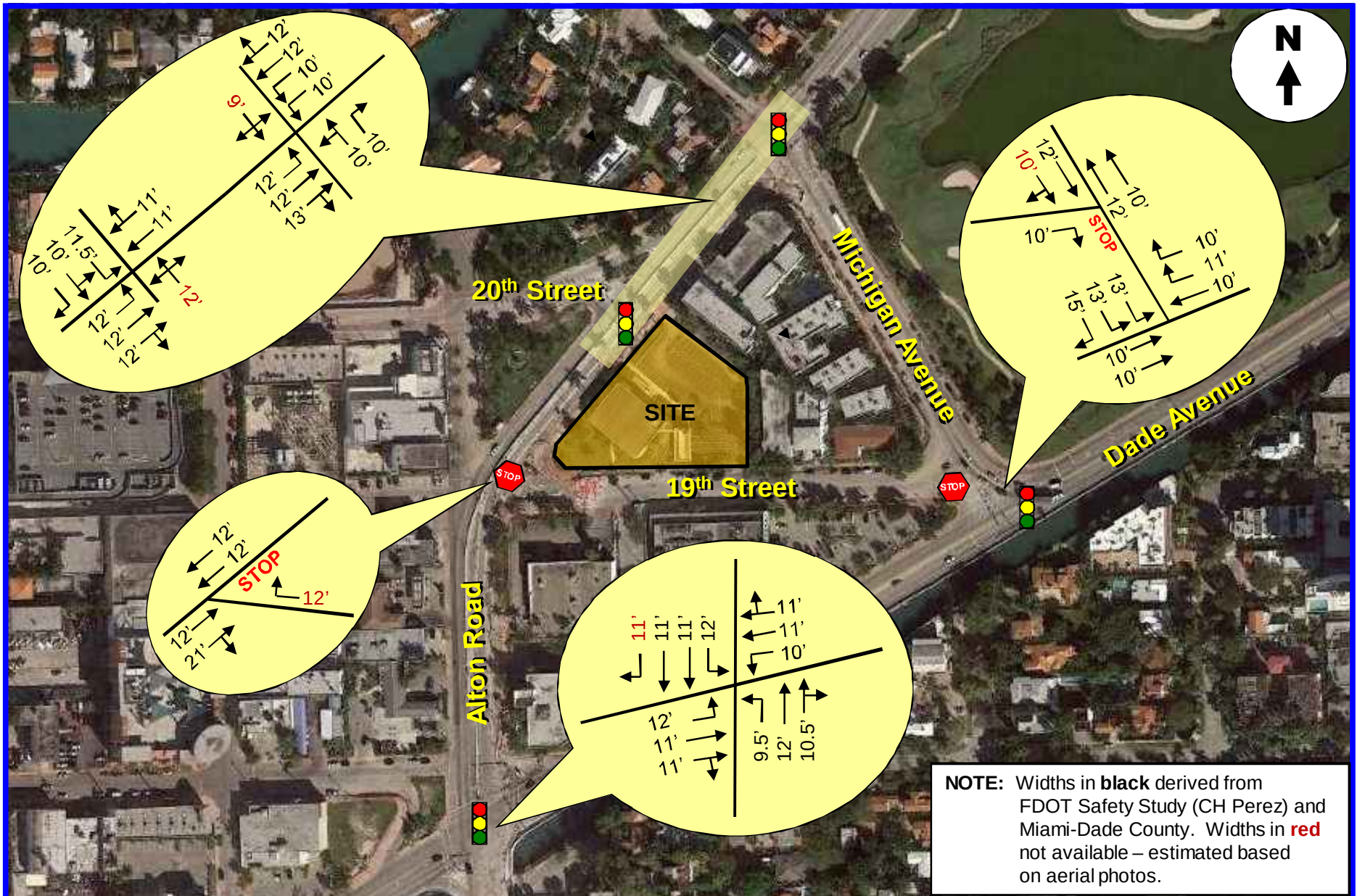
NOTE: For Dade and Michigan, the NB and SB were coded as EB and WB on SYNCHRO.



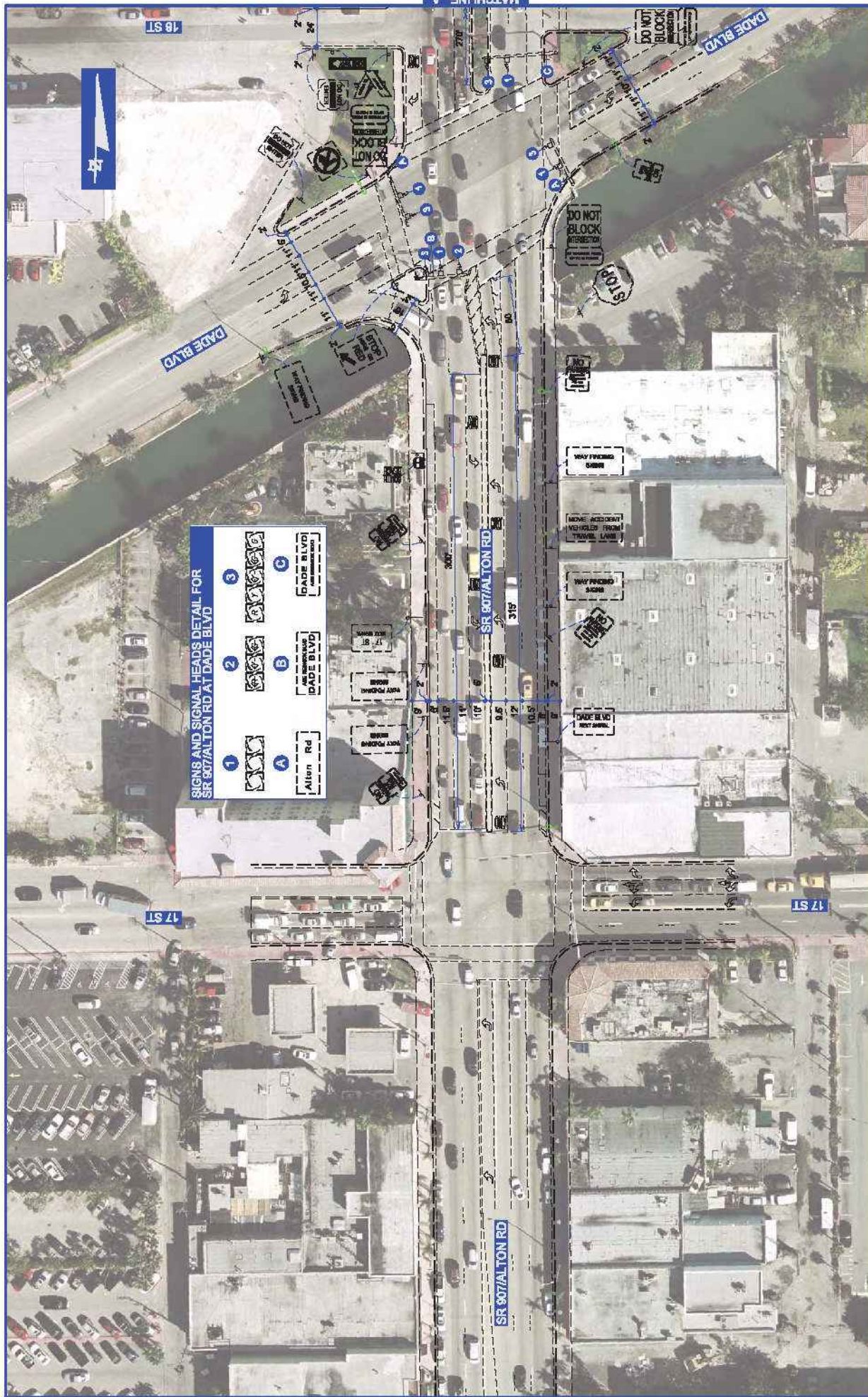
**NOTE:** Percentages in **black** derived from traffic counts. Percentages in **red** not available – estimated based on nearby truck percentages. All percentages rounded for SYNCHRO per rounding rule.











**SIGNS AND SIGNAL HEADS DETAIL FOR  
SR 907/ALTON RD AT DADE BLVD**

|          |           |           |
|----------|-----------|-----------|
| 1        | 2         | 3         |
|          |           |           |
| A        | B         | C         |
| Alton Rd | DADE BLVD | DADE BLVD |

CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC.  
 CERTIFICATE OF AUTHORIZATION NO. 28-20873  
 3600 N. MIAMI AVE., SUITE 201  
 MIAMI, FL 33136  
 (305) 555-1071 FAX: (305) 555-1076

**EXISTING CONDITION DIAGRAM**  
**SR 907/ALTON RD FROM**  
**DADE BLVD TO MICHIGAN AVE**

FIGURE NO. **2-A**

**LEGEND:**

|  |                      |                 |
|--|----------------------|-----------------|
|  | EXISTING SIGNAL HEAD | NEW SIGNAL HEAD |
|  | SECTION HEAD         | SECTION HEAD    |
|  | MANDREL              | MANDREL         |

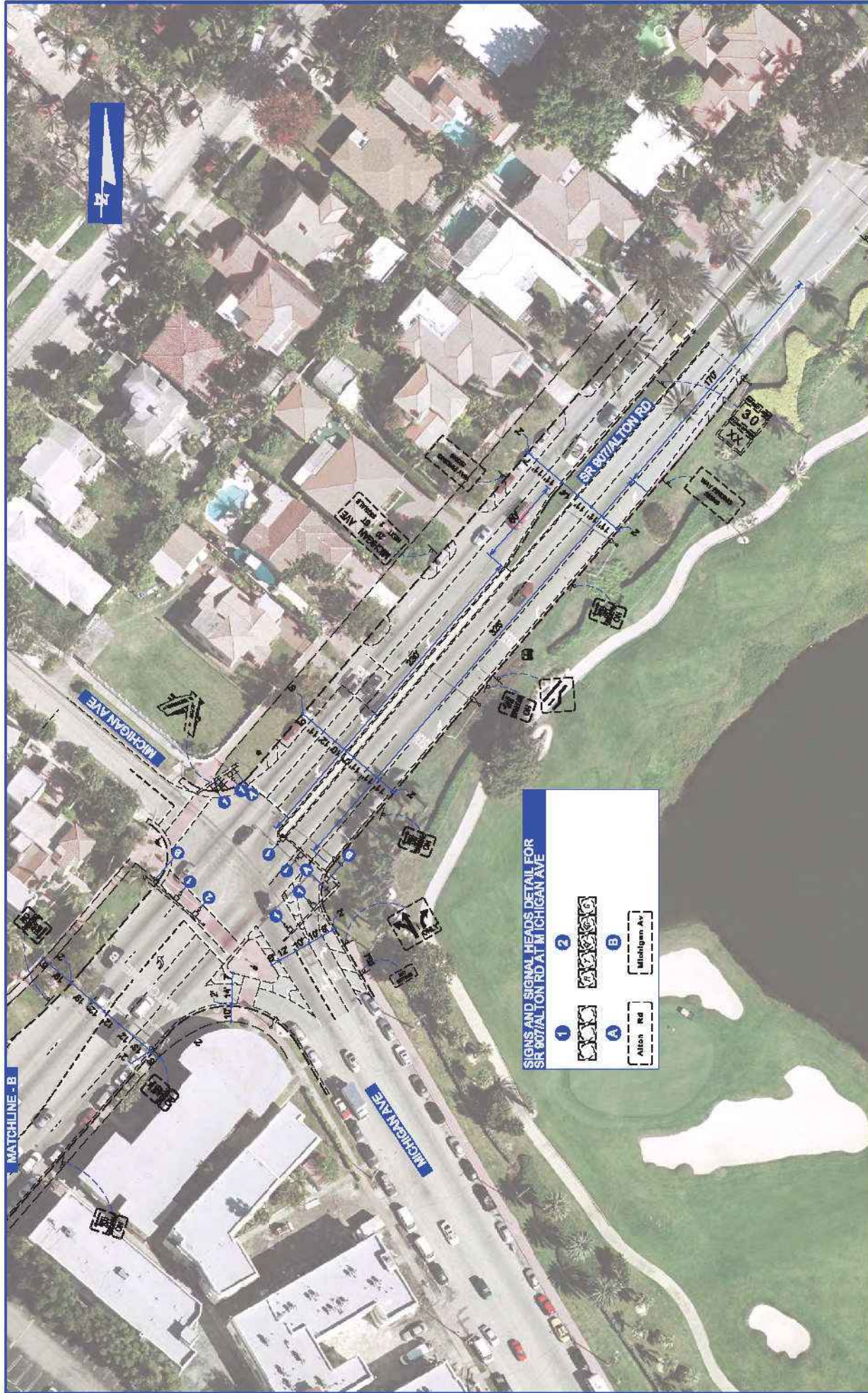
DATE: 1/27/2011

SCALE: 1" = 40'









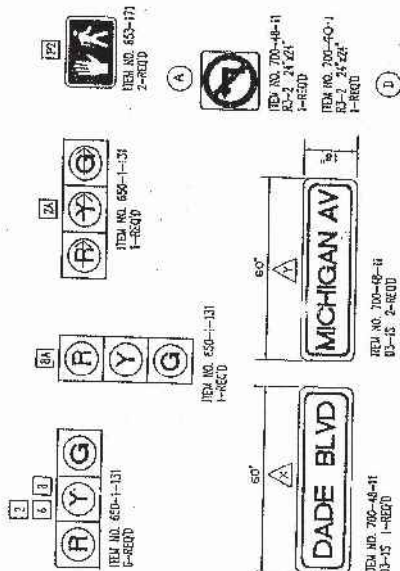
**SIGNS AND SIGNAL HEADS DETAIL FOR SR 907/ALTON RD AT MICHIGAN AVE**

|   |   |   |   |
|---|---|---|---|
| 1 | 2 | A | B |
|   |   |   |   |

| LEGEND:                                                                                                                                                                                   |                     |  |                   | EXISTING CONDITION DIAGRAM |              |  |            | FIGURE NO.                                     |  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--|-------------------|----------------------------|--------------|--|------------|------------------------------------------------|--|
|                                                                                                                                                                                           | EXISTING SIGN PANEL |  | DIRECTIONAL ARROW |                            | SECTION HEAD |  | RED SIGNAL | SR 907/ALTON RD FROM DADE BLVD TO MICHIGAN AVE |  |
|                                                                                                                                                                                           | STRUCTURE           |  | LIGHT POLE        |                            | SECTION HEAD |  |            |                                                |  |
|                                                                                                                                                                                           | MANHOLE             |  | BUS STOP          |                            | SECTION HEAD |  |            |                                                |  |
| CH PEREZ & ASSOCIATES CONSULTING ENGINEERS, INC.<br>CERTIFICATE OF AUTHORIZATION NO. EB-20073<br>3000 N. W. 10TH AVE., SUITE 201<br>MIAMI, FL 33142<br>(305) 555-1077 FAX: (305) 555-1078 |                     |  |                   | 4/27/2011                  |              |  |            | 2-C                                            |  |
| APPROVED                                                                                                                                                                                  |                     |  |                   | 4/27/2011                  |              |  |            | 4/27/2011                                      |  |



# SIGNAL HEAD & SIGN DETAILS



## NOTES

1. DEMAND VARIANCE FOR THIS INTERSECTION IS 1335 WATTS.
2. CONTRACTOR SHALL OBTAIN F.P.L. & S.B.T. SERVICE FROM EXISTING SERVICE POINT.
3. REMOVE EXISTING CABINET AND FOUNDATION.
4. REPLACE F.P.L. AND S.B.T. SERVICE WIRING AND CABLE, NO SPLICING PERMITTED.
5. CONTRACTOR TO HILL AND RESURFACE TO INDICATED LIMITS. ESTIMATED 4,300 S.Y. AND 4" MANHOLEX. 5" VALVES TO BE PROTECTED AND ADJUSTED.
6. CONTRACTOR IS RESPONSIBLE FOR PROTECTING EXISTING UTILITY LINES AND SHALL LOCATE AND VERIFY ALL UNDERGROUND UTILITY PRIOR TO COMMENCING ANY OPERATION.

## CONTROLLER OPERATIONS

1. MAJOR STREET IS DADE BLVD. MINOR STREET IS MICHIGAN AV.
2. SIGNAL OPERATION PLAN SHALL BE AS SHOWN BELOW.
3. PHASE 8 ACTUATED, PHASES 2+6 RECALL
4. SIGNAL COORDINATION PHASE IS 2+6
5. FLASHING OPERATION 2, 2A, 6 YELLOW, 0.8A, RED.

REMOVAL BY ITEMS

|     |    |        |
|-----|----|--------|
| 17  | EA | 250-20 |
| 18  | EA | 250-20 |
| 19  | EA | 250-20 |
| 20  | EA | 250-20 |
| 21  | EA | 250-20 |
| 22  | EA | 250-20 |
| 23  | EA | 250-20 |
| 24  | EA | 250-20 |
| 25  | EA | 250-20 |
| 26  | EA | 250-20 |
| 27  | EA | 250-20 |
| 28  | EA | 250-20 |
| 29  | EA | 250-20 |
| 30  | EA | 250-20 |
| 31  | EA | 250-20 |
| 32  | EA | 250-20 |
| 33  | EA | 250-20 |
| 34  | EA | 250-20 |
| 35  | EA | 250-20 |
| 36  | EA | 250-20 |
| 37  | EA | 250-20 |
| 38  | EA | 250-20 |
| 39  | EA | 250-20 |
| 40  | EA | 250-20 |
| 41  | EA | 250-20 |
| 42  | EA | 250-20 |
| 43  | EA | 250-20 |
| 44  | EA | 250-20 |
| 45  | EA | 250-20 |
| 46  | EA | 250-20 |
| 47  | EA | 250-20 |
| 48  | EA | 250-20 |
| 49  | EA | 250-20 |
| 50  | EA | 250-20 |
| 51  | EA | 250-20 |
| 52  | EA | 250-20 |
| 53  | EA | 250-20 |
| 54  | EA | 250-20 |
| 55  | EA | 250-20 |
| 56  | EA | 250-20 |
| 57  | EA | 250-20 |
| 58  | EA | 250-20 |
| 59  | EA | 250-20 |
| 60  | EA | 250-20 |
| 61  | EA | 250-20 |
| 62  | EA | 250-20 |
| 63  | EA | 250-20 |
| 64  | EA | 250-20 |
| 65  | EA | 250-20 |
| 66  | EA | 250-20 |
| 67  | EA | 250-20 |
| 68  | EA | 250-20 |
| 69  | EA | 250-20 |
| 70  | EA | 250-20 |
| 71  | EA | 250-20 |
| 72  | EA | 250-20 |
| 73  | EA | 250-20 |
| 74  | EA | 250-20 |
| 75  | EA | 250-20 |
| 76  | EA | 250-20 |
| 77  | EA | 250-20 |
| 78  | EA | 250-20 |
| 79  | EA | 250-20 |
| 80  | EA | 250-20 |
| 81  | EA | 250-20 |
| 82  | EA | 250-20 |
| 83  | EA | 250-20 |
| 84  | EA | 250-20 |
| 85  | EA | 250-20 |
| 86  | EA | 250-20 |
| 87  | EA | 250-20 |
| 88  | EA | 250-20 |
| 89  | EA | 250-20 |
| 90  | EA | 250-20 |
| 91  | EA | 250-20 |
| 92  | EA | 250-20 |
| 93  | EA | 250-20 |
| 94  | EA | 250-20 |
| 95  | EA | 250-20 |
| 96  | EA | 250-20 |
| 97  | EA | 250-20 |
| 98  | EA | 250-20 |
| 99  | EA | 250-20 |
| 100 | EA | 250-20 |

## SIGNAL TIMING DIAGRAM

| TIME INTERVAL | CONTROLLER TIMING |   |   |   |   |   |   |   |
|---------------|-------------------|---|---|---|---|---|---|---|
|               | 1                 | 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 1             |                   |   |   |   |   |   |   |   |
| 2             |                   |   |   |   |   |   |   |   |
| 3             |                   |   |   |   |   |   |   |   |
| 4             |                   |   |   |   |   |   |   |   |
| 5             |                   |   |   |   |   |   |   |   |
| 6             |                   |   |   |   |   |   |   |   |
| 7             |                   |   |   |   |   |   |   |   |
| 8             |                   |   |   |   |   |   |   |   |

SIGNAL TIMING TO BE SUPPLIED BY DADE COUNTY PUBLIC WORKS DEPARTMENT SIGNALS AND SIGNS DIVISION LOCATED AT 1100 NW 30 ST., (205) 885-8925.

STATE PROJ. NO. 87100-8604

LOCATION: 42393

SIGNALIZATION  
DADE BLVD & MICHIGAN AV.

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May 13, 2015

Mr. Josiel Ferrer-Diaz, E.I.  
Transportation Coordinator  
Transportation Department  
1700 Convention Center Drive  
Miami Beach, Florida 33139

**Re: 1901 Alton (Whole Foods) –Traffic Study Comments**

Dear Josiel:

Traf Tech Engineering, Inc. has revised the analyses for the three signalized intersections located within the study area of the 1901 Alton project, based on your comments dated 5/7/2015. The results of the re-evaluation are documented in the table below.

| <b>TABLE 1</b>                                                    |                          |                                  |                              |
|-------------------------------------------------------------------|--------------------------|----------------------------------|------------------------------|
| <b>Intersection Level of Service – (Signalized Intersections)</b> |                          |                                  |                              |
| <b>1901 Alton</b>                                                 |                          |                                  |                              |
| <b>Intersection</b>                                               | <b>2014<br/>Existing</b> | <b>Future Traffic Conditions</b> |                              |
|                                                                   |                          | <b>2016<br/>w/o Project</b>      | <b>2016<br/>With Project</b> |
| Alton Rd & Michigan Ave                                           | D                        | D                                | D                            |
| Alton Rd & Dade Ave                                               | E                        | F                                | F                            |
| Dade Ave & Michigan Ave                                           | B                        | B                                | B                            |

*Source: Highway Capacity Manual*

We have incorporated all comments provided in the May 7, 2015 comment table. The results of the SYNCHRO analyses are attached. As documented in the SYNCHRO results, the following observations are noted:

- o With signal timing optimization, the above levels of services do not change. However, with the future implementation of FDOT's dual southbound left-turn lanes at Alton Road and Michigan Avenue, the intersection will function much better due to a significant improvement to the southbound left-turn movement as well as the northbound through movement (refer to attached analyses).

### **Roundabout Analysis**

ATKINS is in the process of re-evaluating the roundabout at the intersection of Dade Boulevard and Michigan Avenue. With a roundabout at this intersection, it is anticipated that traffic patterns will change resulting in improved safety conditions at the Dade Boulevard/Michigan Avenue intersection, along 19<sup>th</sup> Street (the main ingress-egress driveway to and from the 1901 Alton project) and therefore, improved traffic conditions could be expected at the deficient intersection of Alton Road and Dade Boulevard.

It has been a pleasure working with you on this project.

Sincerely,

**TRAF TECH ENGINEERING, INC.**

Joaquin E. Vargas, P.E.  
Senior Transportation Engineer

Lanes, Volumes, Timings  
10: Alton Road & Dade Boulevard

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 116                                                                               | 121                                                                               | 36                                                                                | 318                                                                               | 142                                                                               | 101                                                                               | 73                                                                                 | 1292                                                                                | 192                                                                                 | 72                                                                                  | 1049                                                                                | 76                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 0                                                                                 | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.966                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.981                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3047                                                                              | 0                                                                                 | 1540                                                                              | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2906                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.650                                                                             |                                                                                   |                                                                                   | 0.614                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 1043                                                                              | 3047                                                                              | 0                                                                                 | 995                                                                               | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2906                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 28                                                                                |                                                                                   |                                                                                   |                                                                                   | 115                                                                               |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 774                                                                               |                                                                                   |                                                                                   | 969                                                                               |                                                                                   |                                                                                    | 240                                                                                 |                                                                                     |                                                                                     | 314                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 17.6                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                    | 5.5                                                                                 |                                                                                     |                                                                                     | 7.1                                                                                 |                                                                                     |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Parking (#/hr)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Adj. Flow (vph)            | 145                                                                               | 151                                                                               | 45                                                                                | 361                                                                               | 161                                                                               | 115                                                                               | 84                                                                                 | 1485                                                                                | 221                                                                                 | 76                                                                                  | 1104                                                                                | 80                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 145                                                                               | 196                                                                               | 0                                                                                 | 361                                                                               | 161                                                                               | 115                                                                               | 84                                                                                 | 1706                                                                                | 0                                                                                   | 76                                                                                  | 1104                                                                                | 80                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 10                                                                                |                                                                                   |                                                                                    | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.25                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          | Left                                                                              | Thru                                                                              |                                                                                   | Left                                                                              | Thru                                                                              | Right                                                                             | Left                                                                               | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                | Right                                                                               |
| Leading Detector (ft)      | 24                                                                                | 24                                                                                |                                                                                   | 24                                                                                | 24                                                                                | 24                                                                                | 24                                                                                 | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  | 24                                                                                  |
| Trailing Detector (ft)     | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Position(ft)    | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Size(ft)        | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                | 30                                                                                | 30                                                                                | 30                                                                                 | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  | 30                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                                | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |



# Lanes, Volumes, Timings

## 10: Alton Road & Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 30.8                                                                                |
| Total Split (s)         | 15.0                                                                              | 37.4                                                                              |                                                                                   | 15.0                                                                              | 37.4                                                                              | 37.4                                                                              | 13.0                                                                              | 64.6                                                                                |                                                                                     | 13.0                                                                                | 64.6                                                                                | 64.6                                                                                |
| Total Split (%)         | 11.5%                                                                             | 28.8%                                                                             |                                                                                   | 11.5%                                                                             | 28.8%                                                                             | 28.8%                                                                             | 10.0%                                                                             | 49.7%                                                                               |                                                                                     | 10.0%                                                                               | 49.7%                                                                               | 49.7%                                                                               |
| Maximum Green (s)       | 12.0                                                                              | 32.0                                                                              |                                                                                   | 12.0                                                                              | 32.0                                                                              | 32.0                                                                              | 10.0                                                                              | 59.8                                                                                |                                                                                     | 10.0                                                                                | 59.8                                                                                | 59.8                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.8                                                                                 |
| Lost Time Adjust (s)    | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 | 2.5                                                                                 |
| Total Lost Time (s)     | 5.5                                                                               | 7.9                                                                               |                                                                                   | 5.5                                                                               | 7.9                                                                               | 7.9                                                                               | 5.5                                                                               | 7.3                                                                                 |                                                                                     | 5.5                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                | 19.0                                                                                |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 21                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  | 53                                                                                  |
| Act Effect Green (s)    | 31.9                                                                              | 20.5                                                                              |                                                                                   | 32.9                                                                              | 21.0                                                                              | 21.0                                                                              | 7.5                                                                               | 66.7                                                                                |                                                                                     | 7.1                                                                                 | 66.3                                                                                | 66.3                                                                                |
| Actuated g/C Ratio      | 0.25                                                                              | 0.16                                                                              |                                                                                   | 0.25                                                                              | 0.16                                                                              | 0.16                                                                              | 0.06                                                                              | 0.51                                                                                |                                                                                     | 0.05                                                                                | 0.51                                                                                | 0.51                                                                                |
| v/c Ratio               | 0.50                                                                              | 0.39                                                                              |                                                                                   | 1.24                                                                              | 0.31                                                                              | 0.35                                                                              | 0.95                                                                              | 1.14                                                                                |                                                                                     | 0.92                                                                                | 0.68                                                                                | 0.11                                                                                |
| Control Delay           | 41.0                                                                              | 41.9                                                                              |                                                                                   | 171.7                                                                             | 47.5                                                                              | 10.2                                                                              | 144.7                                                                             | 101.4                                                                               |                                                                                     | 136.9                                                                               | 28.7                                                                                | 6.4                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 41.0                                                                              | 41.9                                                                              |                                                                                   | 171.7                                                                             | 47.5                                                                              | 10.2                                                                              | 144.7                                                                             | 101.4                                                                               |                                                                                     | 136.9                                                                               | 28.7                                                                                | 6.4                                                                                 |
| LOS                     | D                                                                                 | D                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | B                                                                                 | F                                                                                 | F                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 41.5                                                                              |                                                                                   |                                                                                   | 111.1                                                                             |                                                                                   |                                                                                   | 103.4                                                                               |                                                                                     |                                                                                     | 33.8                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.24

Intersection Signal Delay: 77.6

Intersection LOS: E

Intersection Capacity Utilization 98.2%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 10: Alton Road & Dade Boulevard

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |

## Queues

## 10: Alton Road &amp; Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 145                                                                               | 196                                                                               | 361                                                                               | 161                                                                               | 115                                                                               | 84                                                                                | 1706                                                                                | 76                                                                                  | 1104                                                                                | 80                                                                                  |
| v/c Ratio               | 0.50                                                                              | 0.39                                                                              | 1.24                                                                              | 0.31                                                                              | 0.35                                                                              | 0.95                                                                              | 1.14                                                                                | 0.92                                                                                | 0.68                                                                                | 0.11                                                                                |
| Control Delay           | 41.0                                                                              | 41.9                                                                              | 171.7                                                                             | 47.5                                                                              | 10.2                                                                              | 144.7                                                                             | 101.4                                                                               | 136.9                                                                               | 28.7                                                                                | 6.4                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 41.0                                                                              | 41.9                                                                              | 171.7                                                                             | 47.5                                                                              | 10.2                                                                              | 144.7                                                                             | 101.4                                                                               | 136.9                                                                               | 28.7                                                                                | 6.4                                                                                 |
| Queue Length 50th (ft)  | 86                                                                                | 61                                                                                | ~257                                                                              | 58                                                                                | 0                                                                                 | 72                                                                                | ~979                                                                                | 65                                                                                  | 412                                                                                 | 5                                                                                   |
| Queue Length 95th (ft)  | 123                                                                               | 84                                                                                | #481                                                                              | 88                                                                                | 47                                                                                | #171                                                                              | #1063                                                                               | #160                                                                                | 504                                                                                 | 35                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 694                                                                               |                                                                                   | 889                                                                               |                                                                                   |                                                                                   | 160                                                                                 |                                                                                     | 234                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 220                                                                               |                                                                                   | 185                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Base Capacity (vph)     | 295                                                                               | 713                                                                               | 291                                                                               | 722                                                                               | 412                                                                               | 88                                                                                | 1499                                                                                | 88                                                                                  | 1624                                                                                | 761                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.49                                                                              | 0.27                                                                              | 1.24                                                                              | 0.22                                                                              | 0.28                                                                              | 0.95                                                                              | 1.14                                                                                | 0.86                                                                                | 0.68                                                                                | 0.11                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
10: Alton Road & Dade Boulevard

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 119                                                                               | 123                                                                               | 37                                                                                | 325                                                                               | 145                                                                               | 103                                                                               | 75                                                                                 | 1318                                                                                | 195                                                                                 | 74                                                                                  | 1070                                                                                | 78                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 0                                                                                 | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.981                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3044                                                                              | 0                                                                                 | 1540                                                                              | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2906                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.648                                                                             |                                                                                   |                                                                                   | 0.611                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 1040                                                                              | 3044                                                                              | 0                                                                                 | 990                                                                               | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2906                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 28                                                                                |                                                                                   |                                                                                   |                                                                                   | 117                                                                               |                                                                                    | 16                                                                                  |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 774                                                                               |                                                                                   |                                                                                   | 969                                                                               |                                                                                   |                                                                                    | 240                                                                                 |                                                                                     |                                                                                     | 314                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 17.6                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                    | 5.5                                                                                 |                                                                                     |                                                                                     | 7.1                                                                                 |                                                                                     |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Parking (#/hr)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Adj. Flow (vph)            | 149                                                                               | 154                                                                               | 46                                                                                | 369                                                                               | 165                                                                               | 117                                                                               | 86                                                                                 | 1515                                                                                | 224                                                                                 | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 149                                                                               | 200                                                                               | 0                                                                                 | 369                                                                               | 165                                                                               | 117                                                                               | 86                                                                                 | 1739                                                                                | 0                                                                                   | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 10                                                                                |                                                                                   |                                                                                    | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.25                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          | Left                                                                              | Thru                                                                              |                                                                                   | Left                                                                              | Thru                                                                              | Right                                                                             | Left                                                                               | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                | Right                                                                               |
| Leading Detector (ft)      | 24                                                                                | 24                                                                                |                                                                                   | 24                                                                                | 24                                                                                | 24                                                                                | 24                                                                                 | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  | 24                                                                                  |
| Trailing Detector (ft)     | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Position(ft)    | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Size(ft)        | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                | 30                                                                                | 30                                                                                | 30                                                                                 | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  | 30                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                                | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |

# Lanes, Volumes, Timings

## 10: Alton Road & Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 30.8                                                                                |
| Total Split (s)         | 15.0                                                                              | 37.4                                                                              |                                                                                   | 15.0                                                                              | 37.4                                                                              | 37.4                                                                              | 13.0                                                                              | 64.6                                                                                |                                                                                     | 13.0                                                                                | 64.6                                                                                | 64.6                                                                                |
| Total Split (%)         | 11.5%                                                                             | 28.8%                                                                             |                                                                                   | 11.5%                                                                             | 28.8%                                                                             | 28.8%                                                                             | 10.0%                                                                             | 49.7%                                                                               |                                                                                     | 10.0%                                                                               | 49.7%                                                                               | 49.7%                                                                               |
| Maximum Green (s)       | 12.0                                                                              | 32.0                                                                              |                                                                                   | 12.0                                                                              | 32.0                                                                              | 32.0                                                                              | 10.0                                                                              | 59.8                                                                                |                                                                                     | 10.0                                                                                | 59.8                                                                                | 59.8                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.8                                                                                 |
| Lost Time Adjust (s)    | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 | 2.5                                                                                 |
| Total Lost Time (s)     | 5.5                                                                               | 7.9                                                                               |                                                                                   | 5.5                                                                               | 7.9                                                                               | 7.9                                                                               | 5.5                                                                               | 7.3                                                                                 |                                                                                     | 5.5                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                | 19.0                                                                                |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 21                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  | 53                                                                                  |
| Act Effct Green (s)     | 32.0                                                                              | 20.5                                                                              |                                                                                   | 32.9                                                                              | 21.0                                                                              | 21.0                                                                              | 7.5                                                                               | 66.6                                                                                |                                                                                     | 7.2                                                                                 | 66.3                                                                                | 66.3                                                                                |
| Actuated g/C Ratio      | 0.25                                                                              | 0.16                                                                              |                                                                                   | 0.25                                                                              | 0.16                                                                              | 0.16                                                                              | 0.06                                                                              | 0.51                                                                                |                                                                                     | 0.06                                                                                | 0.51                                                                                | 0.51                                                                                |
| v/c Ratio               | 0.52                                                                              | 0.40                                                                              |                                                                                   | 1.27                                                                              | 0.32                                                                              | 0.36                                                                              | 0.98                                                                              | 1.16                                                                                |                                                                                     | 0.93                                                                                | 0.69                                                                                | 0.11                                                                                |
| Control Delay           | 41.5                                                                              | 42.2                                                                              |                                                                                   | 182.7                                                                             | 47.6                                                                              | 10.2                                                                              | 150.5                                                                             | 111.2                                                                               |                                                                                     | 139.9                                                                               | 29.2                                                                                | 6.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 41.5                                                                              | 42.2                                                                              |                                                                                   | 182.7                                                                             | 47.6                                                                              | 10.2                                                                              | 150.5                                                                             | 111.2                                                                               |                                                                                     | 139.9                                                                               | 29.2                                                                                | 6.6                                                                                 |
| LOS                     | D                                                                                 | D                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | B                                                                                 | F                                                                                 | F                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 41.9                                                                              |                                                                                   |                                                                                   | 117.5                                                                             |                                                                                   |                                                                                   | 113.1                                                                               |                                                                                     |                                                                                     | 34.5                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.27

Intersection Signal Delay: 83.1

Intersection LOS: F

Intersection Capacity Utilization 99.6%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 10: Alton Road & Dade Boulevard

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |

## Queues

## 10: Alton Road &amp; Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 149                                                                               | 200                                                                               | 369                                                                               | 165                                                                               | 117                                                                               | 86                                                                                | 1739                                                                                | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| v/c Ratio               | 0.52                                                                              | 0.40                                                                              | 1.27                                                                              | 0.32                                                                              | 0.36                                                                              | 0.98                                                                              | 1.16                                                                                | 0.93                                                                                | 0.69                                                                                | 0.11                                                                                |
| Control Delay           | 41.5                                                                              | 42.2                                                                              | 182.7                                                                             | 47.6                                                                              | 10.2                                                                              | 150.5                                                                             | 111.2                                                                               | 139.9                                                                               | 29.2                                                                                | 6.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 41.5                                                                              | 42.2                                                                              | 182.7                                                                             | 47.6                                                                              | 10.2                                                                              | 150.5                                                                             | 111.2                                                                               | 139.9                                                                               | 29.2                                                                                | 6.6                                                                                 |
| Queue Length 50th (ft)  | 88                                                                                | 63                                                                                | ~275                                                                              | 60                                                                                | 0                                                                                 | 74                                                                                | ~1010                                                                               | 67                                                                                  | 424                                                                                 | 6                                                                                   |
| Queue Length 95th (ft)  | 126                                                                               | 86                                                                                | #513                                                                              | 91                                                                                | 48                                                                                | #174                                                                              | #1092                                                                               | #166                                                                                | 517                                                                                 | 36                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 694                                                                               |                                                                                   | 889                                                                               |                                                                                   |                                                                                   | 160                                                                                 |                                                                                     | 234                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 220                                                                               |                                                                                   | 185                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Base Capacity (vph)     | 294                                                                               | 712                                                                               | 291                                                                               | 722                                                                               | 413                                                                               | 88                                                                                | 1496                                                                                | 88                                                                                  | 1623                                                                                | 760                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.51                                                                              | 0.28                                                                              | 1.27                                                                              | 0.23                                                                              | 0.28                                                                              | 0.98                                                                              | 1.16                                                                                | 0.89                                                                                | 0.69                                                                                | 0.11                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
10: Alton Road & Dade Boulevard

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 177                                                                               | 123                                                                               | 37                                                                                | 409                                                                               | 201                                                                               | 161                                                                               | 75                                                                                 | 1405                                                                                | 195                                                                                 | 74                                                                                  | 1070                                                                                | 78                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                               | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                 | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 0                                                                                 | 0                                                                                  |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                  |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                 |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                               | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                    | 0.982                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3044                                                                              | 0                                                                                 | 1540                                                                              | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2909                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.610                                                                             |                                                                                   |                                                                                   | 0.626                                                                             |                                                                                   |                                                                                   | 0.950                                                                              |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 979                                                                               | 3044                                                                              | 0                                                                                 | 1014                                                                              | 3185                                                                              | 1425                                                                              | 1540                                                                               | 2909                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                    |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 28                                                                                |                                                                                   |                                                                                   |                                                                                   | 183                                                                               |                                                                                    | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                    | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 774                                                                               |                                                                                   |                                                                                   | 969                                                                               |                                                                                   |                                                                                    | 240                                                                                 |                                                                                     |                                                                                     | 314                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 17.6                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                    | 5.5                                                                                 |                                                                                     |                                                                                     | 7.1                                                                                 |                                                                                     |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                               | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                 | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Parking (#/hr)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    | 8                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Adj. Flow (vph)            | 221                                                                               | 154                                                                               | 46                                                                                | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                 | 1615                                                                                | 224                                                                                 | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 221                                                                               | 200                                                                               | 0                                                                                 | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                 | 1839                                                                                | 0                                                                                   | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                 | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                               | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                    | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                    | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 10                                                                                |                                                                                   |                                                                                    | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                               | 1.25                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                 |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                  | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          | Left                                                                              | Thru                                                                              |                                                                                   | Left                                                                              | Thru                                                                              | Right                                                                             | Left                                                                               | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                | Right                                                                               |
| Leading Detector (ft)      | 24                                                                                | 24                                                                                |                                                                                   | 24                                                                                | 24                                                                                | 24                                                                                | 24                                                                                 | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  | 24                                                                                  |
| Trailing Detector (ft)     | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Position(ft)    | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                 | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Size(ft)        | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                | 30                                                                                | 30                                                                                | 30                                                                                 | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  | 30                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                              | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | Perm                                                                              | Prot                                                                               | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                  | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                                | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |

Total Traffic (2016) Conditions with Project PM

Synchro 8 Report  
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Lanes, Volumes, Timings  
10: Alton Road & Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 30.8                                                                                |
| Total Split (s)         | 15.0                                                                              | 37.4                                                                              |                                                                                   | 15.0                                                                              | 37.4                                                                              | 37.4                                                                              | 13.0                                                                              | 64.6                                                                                |                                                                                     | 13.0                                                                                | 64.6                                                                                | 64.6                                                                                |
| Total Split (%)         | 11.5%                                                                             | 28.8%                                                                             |                                                                                   | 11.5%                                                                             | 28.8%                                                                             | 28.8%                                                                             | 10.0%                                                                             | 49.7%                                                                               |                                                                                     | 10.0%                                                                               | 49.7%                                                                               | 49.7%                                                                               |
| Maximum Green (s)       | 12.0                                                                              | 32.0                                                                              |                                                                                   | 12.0                                                                              | 32.0                                                                              | 32.0                                                                              | 10.0                                                                              | 59.8                                                                                |                                                                                     | 10.0                                                                                | 59.8                                                                                | 59.8                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.8                                                                                 |
| Lost Time Adjust (s)    | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 | 2.5                                                                                 |
| Total Lost Time (s)     | 5.5                                                                               | 7.9                                                                               |                                                                                   | 5.5                                                                               | 7.9                                                                               | 7.9                                                                               | 5.5                                                                               | 7.3                                                                                 |                                                                                     | 5.5                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                | 19.0                                                                                |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 21                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  | 53                                                                                  |
| Act Effct Green (s)     | 33.0                                                                              | 21.1                                                                              |                                                                                   | 33.0                                                                              | 21.1                                                                              | 21.1                                                                              | 7.5                                                                               | 66.0                                                                                |                                                                                     | 7.2                                                                                 | 65.7                                                                                | 65.7                                                                                |
| Actuated g/C Ratio      | 0.25                                                                              | 0.16                                                                              |                                                                                   | 0.25                                                                              | 0.16                                                                              | 0.16                                                                              | 0.06                                                                              | 0.51                                                                                |                                                                                     | 0.06                                                                                | 0.51                                                                                | 0.51                                                                                |
| v/c Ratio               | 0.77                                                                              | 0.39                                                                              |                                                                                   | 1.58                                                                              | 0.44                                                                              | 0.48                                                                              | 0.98                                                                              | 1.24                                                                                |                                                                                     | 0.93                                                                                | 0.70                                                                                | 0.11                                                                                |
| Control Delay           | 56.9                                                                              | 41.8                                                                              |                                                                                   | 306.0                                                                             | 50.0                                                                              | 10.0                                                                              | 150.5                                                                             | 143.0                                                                               |                                                                                     | 139.9                                                                               | 29.5                                                                                | 6.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 56.9                                                                              | 41.8                                                                              |                                                                                   | 306.0                                                                             | 50.0                                                                              | 10.0                                                                              | 150.5                                                                             | 143.0                                                                               |                                                                                     | 139.9                                                                               | 29.5                                                                                | 6.6                                                                                 |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | A                                                                                 | F                                                                                 | F                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 49.7                                                                              |                                                                                   |                                                                                   | 177.5                                                                             |                                                                                   |                                                                                   | 143.3                                                                               |                                                                                     |                                                                                     | 34.8                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | D                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.58

Intersection Signal Delay: 110.3

Intersection LOS: F

Intersection Capacity Utilization 107.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 10: Alton Road & Dade Boulevard

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 13 s                                                                                   | 64.6 s                                                                                     | 15 s                                                                                   | 37.4 s                                                                                   |

## Queues

## 10: Alton Road &amp; Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 221                                                                               | 200                                                                               | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                | 1839                                                                                | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| v/c Ratio               | 0.77                                                                              | 0.39                                                                              | 1.58                                                                              | 0.44                                                                              | 0.48                                                                              | 0.98                                                                              | 1.24                                                                                | 0.93                                                                                | 0.70                                                                                | 0.11                                                                                |
| Control Delay           | 56.9                                                                              | 41.8                                                                              | 306.0                                                                             | 50.0                                                                              | 10.0                                                                              | 150.5                                                                             | 143.0                                                                               | 139.9                                                                               | 29.5                                                                                | 6.6                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 56.9                                                                              | 41.8                                                                              | 306.0                                                                             | 50.0                                                                              | 10.0                                                                              | 150.5                                                                             | 143.0                                                                               | 139.9                                                                               | 29.5                                                                                | 6.6                                                                                 |
| Queue Length 50th (ft)  | 138                                                                               | 63                                                                                | ~483                                                                              | 84                                                                                | 0                                                                                 | 74                                                                                | ~1103                                                                               | 67                                                                                  | 424                                                                                 | 6                                                                                   |
| Queue Length 95th (ft)  | 184                                                                               | 86                                                                                | #689                                                                              | 121                                                                               | 56                                                                                | #174                                                                              | #1182                                                                               | #166                                                                                | 517                                                                                 | 36                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 694                                                                               |                                                                                   | 889                                                                               |                                                                                   |                                                                                   | 160                                                                                 |                                                                                     | 234                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 220                                                                               |                                                                                   | 185                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Base Capacity (vph)     | 288                                                                               | 712                                                                               | 295                                                                               | 722                                                                               | 464                                                                               | 88                                                                                | 1485                                                                                | 88                                                                                  | 1609                                                                                | 755                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.77                                                                              | 0.28                                                                              | 1.58                                                                              | 0.32                                                                              | 0.39                                                                              | 0.98                                                                              | 1.24                                                                                | 0.89                                                                                | 0.70                                                                                | 0.11                                                                                |

## Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.



Lanes, Volumes, Timings  
10: Alton Road & Dade Boulevard

5/13/2015

|                            |  |  |  |  |  |  |    |   |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                                 | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Configurations        |  |  |                                                                                   |  |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 177                                                                               | 123                                                                               | 37                                                                                | 409                                                                               | 201                                                                               | 161                                                                               | 75                                                                                  | 1405                                                                                | 195                                                                                 | 74                                                                                  | 1070                                                                                | 78                                                                                  |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Lane Width (ft)            | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                | 12                                                                                | 12                                                                                | 11                                                                                  | 12                                                                                  | 12                                                                                  | 11                                                                                  | 12                                                                                  | 12                                                                                  |
| Storage Length (ft)        | 220                                                                               |                                                                                   | 0                                                                                 | 185                                                                               |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     | 0                                                                                   | 0                                                                                   |                                                                                     | 70                                                                                  |
| Storage Lanes              | 1                                                                                 |                                                                                   | 0                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.95                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 1.00                                                                                |
| Frt                        |                                                                                   | 0.965                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.982                                                                               |                                                                                     |                                                                                     |                                                                                     | 0.850                                                                               |
| Flt Protected              | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 1525                                                                              | 3044                                                                              | 0                                                                                 | 1540                                                                              | 3185                                                                              | 1425                                                                              | 1540                                                                                | 2909                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Flt Permitted              | 0.610                                                                             |                                                                                   |                                                                                   | 0.602                                                                             |                                                                                   |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 979                                                                               | 3044                                                                              | 0                                                                                 | 976                                                                               | 3185                                                                              | 1425                                                                              | 1540                                                                                | 2909                                                                                | 0                                                                                   | 1540                                                                                | 3185                                                                                | 1425                                                                                |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 30                                                                                |                                                                                   |                                                                                   |                                                                                   | 142                                                                               |                                                                                     | 15                                                                                  |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 30                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 774                                                                               |                                                                                   |                                                                                   | 969                                                                               |                                                                                   |                                                                                     | 240                                                                                 |                                                                                     |                                                                                     | 314                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 17.6                                                                              |                                                                                   |                                                                                   | 22.0                                                                              |                                                                                   |                                                                                     | 5.5                                                                                 |                                                                                     |                                                                                     | 7.1                                                                                 |                                                                                     |
| Peak Hour Factor           | 0.80                                                                              | 0.80                                                                              | 0.80                                                                              | 0.88                                                                              | 0.88                                                                              | 0.88                                                                              | 0.87                                                                                | 0.87                                                                                | 0.87                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Parking (#/hr)             |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 8                                                                                   | 8                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Adj. Flow (vph)            | 221                                                                               | 154                                                                               | 46                                                                                | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                  | 1615                                                                                | 224                                                                                 | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 221                                                                               | 200                                                                               | 0                                                                                 | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                  | 1839                                                                                | 0                                                                                   | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 11                                                                                |                                                                                   |                                                                                   | 11                                                                                |                                                                                   |                                                                                     | 11                                                                                  |                                                                                     |                                                                                     | 11                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 10                                                                                |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                              | 1.14                                                                              | 1.14                                                                              | 1.19                                                                                | 1.25                                                                                | 1.14                                                                                | 1.19                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   | 1                                                                                   |
| Detector Template          | Left                                                                              | Thru                                                                              |                                                                                   | Left                                                                              | Thru                                                                              | Right                                                                             | Left                                                                                | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                | Right                                                                               |
| Leading Detector (ft)      | 24                                                                                | 24                                                                                |                                                                                   | 24                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  | 24                                                                                  |
| Trailing Detector (ft)     | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Position(ft)    | -6                                                                                | -6                                                                                |                                                                                   | -6                                                                                | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  | -6                                                                                  |
| Detector 1 Size(ft)        | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  | 30                                                                                  |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               | Cl+Ex                                                                               |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Turn Type                  | pm+pt                                                                             | NA                                                                                |                                                                                   | pm+pt                                                                             | NA                                                                                | Perm                                                                              | Prot                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  | Perm                                                                                |
| Protected Phases           | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 |                                                                                   | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   |                                                                                     |
| Permitted Phases           | 8                                                                                 |                                                                                   |                                                                                   | 4                                                                                 |                                                                                   | 4                                                                                 |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     | 2                                                                                   |
| Detector Phase             | 3                                                                                 | 8                                                                                 |                                                                                   | 7                                                                                 | 4                                                                                 | 4                                                                                 | 1                                                                                   | 6                                                                                   |                                                                                     | 5                                                                                   | 2                                                                                   | 2                                                                                   |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 5.0                                                                               | 7.0                                                                               |                                                                                   | 5.0                                                                               | 7.0                                                                               | 7.0                                                                               | 5.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 7.0                                                                                 | 7.0                                                                                 |

# Lanes, Volumes, Timings

## 10: Alton Road & Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | EBR                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | NBR                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Minimum Split (s)       | 8.0                                                                               | 44.4                                                                              |                                                                                   | 8.0                                                                               | 44.4                                                                              | 44.4                                                                              | 8.0                                                                               | 30.8                                                                                |                                                                                     | 8.0                                                                                 | 30.8                                                                                | 30.8                                                                                |
| Total Split (s)         | 10.0                                                                              | 44.4                                                                              |                                                                                   | 11.0                                                                              | 45.4                                                                              | 45.4                                                                              | 12.0                                                                              | 64.6                                                                                |                                                                                     | 10.0                                                                                | 62.6                                                                                | 62.6                                                                                |
| Total Split (%)         | 7.7%                                                                              | 34.2%                                                                             |                                                                                   | 8.5%                                                                              | 34.9%                                                                             | 34.9%                                                                             | 9.2%                                                                              | 49.7%                                                                               |                                                                                     | 7.7%                                                                                | 48.2%                                                                               | 48.2%                                                                               |
| Maximum Green (s)       | 7.0                                                                               | 39.0                                                                              |                                                                                   | 8.0                                                                               | 40.0                                                                              | 40.0                                                                              | 9.0                                                                               | 59.8                                                                                |                                                                                     | 7.0                                                                                 | 57.8                                                                                | 57.8                                                                                |
| Yellow Time (s)         | 3.0                                                                               | 4.0                                                                               |                                                                                   | 3.0                                                                               | 4.0                                                                               | 4.0                                                                               | 3.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 | 4.0                                                                                 |
| All-Red Time (s)        | 0.0                                                                               | 1.4                                                                               |                                                                                   | 0.0                                                                               | 1.4                                                                               | 1.4                                                                               | 0.0                                                                               | 0.8                                                                                 |                                                                                     | 0.0                                                                                 | 0.8                                                                                 | 0.8                                                                                 |
| Lost Time Adjust (s)    | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 | 2.5                                                                                 |
| Total Lost Time (s)     | 5.5                                                                               | 7.9                                                                               |                                                                                   | 5.5                                                                               | 7.9                                                                               | 7.9                                                                               | 5.5                                                                               | 7.3                                                                                 |                                                                                     | 5.5                                                                                 | 7.3                                                                                 | 7.3                                                                                 |
| Lead/Lag                | Lead                                                                              | Lag                                                                               |                                                                                   | Lead                                                                              | Lag                                                                               | Lag                                                                               | Lead                                                                              | Lag                                                                                 |                                                                                     | Lead                                                                                | Lag                                                                                 | Lag                                                                                 |
| Lead-Lag Optimize?      | Yes                                                                               | Yes                                                                               |                                                                                   | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 | Yes                                                                                 | Yes                                                                                 |
| Vehicle Extension (s)   | 2.0                                                                               | 2.5                                                                               |                                                                                   | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 2.0                                                                               | 1.0                                                                                 |                                                                                     | 2.0                                                                                 | 1.0                                                                                 | 1.0                                                                                 |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | Max                                                                               | None                                                                              | None                                                                              | None                                                                              | C-Max                                                                               |                                                                                     | None                                                                                | C-Max                                                                               | C-Max                                                                               |
| Walk Time (s)           |                                                                                   | 7.0                                                                               |                                                                                   |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 | 7.0                                                                                 |
| Flash Dont Walk (s)     |                                                                                   | 32.0                                                                              |                                                                                   |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 19.0                                                                                |                                                                                     |                                                                                     | 19.0                                                                                | 19.0                                                                                |
| Pedestrian Calls (#/hr) |                                                                                   | 13                                                                                |                                                                                   |                                                                                   | 21                                                                                | 21                                                                                |                                                                                   | 23                                                                                  |                                                                                     |                                                                                     | 53                                                                                  | 53                                                                                  |
| Act Effect Green (s)    | 31.6                                                                              | 24.7                                                                              |                                                                                   | 33.6                                                                              | 25.7                                                                              | 25.7                                                                              | 6.5                                                                               | 69.1                                                                                |                                                                                     | 4.5                                                                                 | 67.1                                                                                | 67.1                                                                                |
| Actuated g/C Ratio      | 0.24                                                                              | 0.19                                                                              |                                                                                   | 0.26                                                                              | 0.20                                                                              | 0.20                                                                              | 0.05                                                                              | 0.53                                                                                |                                                                                     | 0.03                                                                                | 0.52                                                                                | 0.52                                                                                |
| v/c Ratio               | 0.86                                                                              | 0.33                                                                              |                                                                                   | 1.69                                                                              | 0.36                                                                              | 0.46                                                                              | 1.12                                                                              | 1.18                                                                                |                                                                                     | 1.47                                                                                | 0.69                                                                                | 0.11                                                                                |
| Control Delay           | 71.7                                                                              | 37.2                                                                              |                                                                                   | 354.7                                                                             | 44.3                                                                              | 13.9                                                                              | 192.5                                                                             | 118.9                                                                               |                                                                                     | 331.7                                                                               | 29.3                                                                                | 6.9                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 71.7                                                                              | 37.2                                                                              |                                                                                   | 354.7                                                                             | 44.3                                                                              | 13.9                                                                              | 192.5                                                                             | 118.9                                                                               |                                                                                     | 331.7                                                                               | 29.3                                                                                | 6.9                                                                                 |
| LOS                     | E                                                                                 | D                                                                                 |                                                                                   | F                                                                                 | D                                                                                 | B                                                                                 | F                                                                                 | F                                                                                   |                                                                                     | F                                                                                   | C                                                                                   | A                                                                                   |
| Approach Delay          |                                                                                   | 55.3                                                                              |                                                                                   |                                                                                   | 202.7                                                                             |                                                                                   |                                                                                   | 122.2                                                                               |                                                                                     |                                                                                     | 46.2                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | F                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | D                                                                                   |                                                                                     |

### Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 65 (50%), Referenced to phase 2:SBT and 6:NBT, Start of Green

Natural Cycle: 145

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.69

Intersection Signal Delay: 109.9

Intersection LOS: F

Intersection Capacity Utilization 107.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 10: Alton Road & Dade Boulevard

|                                                                                        |                                                                                            |                                                                                        |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  ø1 |  ø2 (R) |  ø3 |  ø4 |
| 12 s                                                                                   | 62.6 s                                                                                     | 10 s                                                                                   | 45.4 s                                                                                   |
|  ø5 |  ø6 (R) |  ø7 |  ø8 |
| 10 s                                                                                   | 64.6 s                                                                                     | 11 s                                                                                   | 44.4 s                                                                                   |

## Queues

## 10: Alton Road &amp; Dade Boulevard

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | EBL                                                                               | EBT                                                                               | WBL                                                                               | WBT                                                                               | WBR                                                                               | NBL                                                                               | NBT                                                                                 | SBL                                                                                 | SBT                                                                                 | SBR                                                                                 |
| Lane Group Flow (vph)   | 221                                                                               | 200                                                                               | 465                                                                               | 228                                                                               | 183                                                                               | 86                                                                                | 1839                                                                                | 78                                                                                  | 1126                                                                                | 82                                                                                  |
| v/c Ratio               | 0.86                                                                              | 0.33                                                                              | 1.69                                                                              | 0.36                                                                              | 0.46                                                                              | 1.12                                                                              | 1.18                                                                                | 1.47                                                                                | 0.69                                                                                | 0.11                                                                                |
| Control Delay           | 71.7                                                                              | 37.2                                                                              | 354.7                                                                             | 44.3                                                                              | 13.9                                                                              | 192.5                                                                             | 118.9                                                                               | 331.7                                                                               | 29.3                                                                                | 6.9                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 | 0.0                                                                                 |
| Total Delay             | 71.7                                                                              | 37.2                                                                              | 354.7                                                                             | 44.3                                                                              | 13.9                                                                              | 192.5                                                                             | 118.9                                                                               | 331.7                                                                               | 29.3                                                                                | 6.9                                                                                 |
| Queue Length 50th (ft)  | 135                                                                               | 58                                                                                | ~477                                                                              | 78                                                                                | 26                                                                                | ~83                                                                               | ~1093                                                                               | ~90                                                                                 | 431                                                                                 | 6                                                                                   |
| Queue Length 95th (ft)  | 177                                                                               | 78                                                                                | #686                                                                              | 111                                                                               | 83                                                                                | #185                                                                              | #1182                                                                               | #197                                                                                | 533                                                                                 | 37                                                                                  |
| Internal Link Dist (ft) |                                                                                   | 694                                                                               |                                                                                   | 889                                                                               |                                                                                   |                                                                                   | 160                                                                                 |                                                                                     | 234                                                                                 |                                                                                     |
| Turn Bay Length (ft)    | 220                                                                               |                                                                                   | 185                                                                               |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 70                                                                                  |
| Base Capacity (vph)     | 256                                                                               | 876                                                                               | 275                                                                               | 918                                                                               | 512                                                                               | 77                                                                                | 1553                                                                                | 53                                                                                  | 1643                                                                                | 769                                                                                 |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   | 0                                                                                   | 0                                                                                   | 0                                                                                   |
| Reduced v/c Ratio       | 0.86                                                                              | 0.23                                                                              | 1.69                                                                              | 0.25                                                                              | 0.36                                                                              | 1.12                                                                              | 1.18                                                                                | 1.47                                                                                | 0.69                                                                                | 0.11                                                                                |

## Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 4                                                                                 | 4                                                                                 | 12                                                                                | 3                                                                                 | 609                                                                               | 0                                                                                   | 1468                                                                                | 55                                                                                  | 444                                                                                 | 1236                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                        |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.995                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.978                                                                             |                                                                                   |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1551                                                                              | 0                                                                                 | 0                                                                                 | 1629                                                                              | 1439                                                                              | 1676                                                                                | 3168                                                                                | 0                                                                                   | 1593                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.056                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1585                                                                              | 0                                                                                 | 0                                                                                 | 1693                                                                              | 1439                                                                              | 1676                                                                                | 3168                                                                                | 0                                                                                   | 94                                                                                  | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 430                                                                               |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 5                                                                                 | 5                                                                                 | 16                                                                                | 4                                                                                 | 791                                                                               | 0                                                                                   | 1483                                                                                | 56                                                                                  | 467                                                                                 | 1301                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 18                                                                                | 0                                                                                 | 0                                                                                 | 20                                                                                | 791                                                                               | 0                                                                                   | 1539                                                                                | 0                                                                                   | 467                                                                                 | 1308                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 12                                                                                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          | Left                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Right                                                                             |                                                                                     | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                |                                                                                     |
| Leading Detector (ft)      | 20                                                                                | 24                                                                                |                                                                                   | 50                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Size(ft)        | 20                                                                                | 30                                                                                |                                                                                   | 50                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | Free                                                                              | Perm                                                                                | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | Free                                                                              | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 4.0                                                                                 |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 | 37.0                                                                                |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                | 93.0                                                                                |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               | 71.5%                                                                               |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                | 88.0                                                                                |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   | 7.5                                                                               | 7.5                                                                                 |                                                                                     | 5.5                                                                                 | 7.5                                                                                 |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | C-Max                                                                             | C-Max                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              |                                                                                   | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 5.2                                                                               |                                                                                   |                                                                                   | 5.2                                                                               | 130.0                                                                             |                                                                                   | 68.5                                                                                |                                                                                     | 119.0                                                                               | 121.5                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.04                                                                              |                                                                                   |                                                                                   | 0.04                                                                              | 1.00                                                                              |                                                                                   | 0.53                                                                                |                                                                                     | 0.92                                                                                | 0.93                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   | 0.29                                                                              | 0.55                                                                              |                                                                                   | 0.92                                                                                |                                                                                     | 0.80                                                                                | 0.44                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 57.5                                                                              |                                                                                   |                                                                                   | 71.2                                                                              | 1.5                                                                               |                                                                                   | 38.5                                                                                |                                                                                     | 44.8                                                                                | 2.0                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 46.3                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 57.5                                                                              |                                                                                   |                                                                                   | 71.2                                                                              | 1.5                                                                               |                                                                                   | 84.9                                                                                |                                                                                     | 44.8                                                                                | 2.0                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                   |                                                                                     | D                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 57.5                                                                              |                                                                                   |                                                                                   | 3.2                                                                               |                                                                                   |                                                                                   | 84.9                                                                                |                                                                                     |                                                                                     | 13.2                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.92

Intersection Signal Delay: 38.1

Intersection LOS: D

Intersection Capacity Utilization 105.0%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |
|  06 |                                                                                            |  08 |
| 93 s                                                                                   |                                                                                            | 37 s                                                                                     |

## Queues

54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | SET                                                                               | NWT                                                                               | NWR                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                               |
| Lane Group Flow (vph)   | 18                                                                                | 20                                                                                | 791                                                                               | 1539                                                                              | 467                                                                               | 1308                                                                              |
| v/c Ratio               | 0.26                                                                              | 0.29                                                                              | 0.55                                                                              | 0.92                                                                              | 0.80                                                                              | 0.44                                                                              |
| Control Delay           | 57.5                                                                              | 71.2                                                                              | 1.5                                                                               | 38.5                                                                              | 44.8                                                                              | 2.0                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 46.3                                                                              | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 57.5                                                                              | 71.2                                                                              | 1.5                                                                               | 84.9                                                                              | 44.8                                                                              | 2.0                                                                               |
| Queue Length 50th (ft)  | 11                                                                                | 17                                                                                | 0                                                                                 | 605                                                                               | 277                                                                               | 0                                                                                 |
| Queue Length 95th (ft)  | 32                                                                                | 38                                                                                | 0                                                                                 | #754                                                                              | #574                                                                              | 159                                                                               |
| Internal Link Dist (ft) | 247                                                                               | 552                                                                               |                                                                                   | 268                                                                               |                                                                                   | 227                                                                               |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 215                                                                               |                                                                                   |
| Base Capacity (vph)     | 363                                                                               | 384                                                                               | 1439                                                                              | 1671                                                                              | 581                                                                               | 2973                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 543                                                                               | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.05                                                                              | 0.05                                                                              | 0.55                                                                              | 1.36                                                                              | 0.80                                                                              | 0.44                                                                              |

### Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

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|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 4                                                                                 | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 0                                                                                   | 1498                                                                                | 56                                                                                  | 453                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 0.99                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                        |                                                                                   | 0.962                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.995                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.978                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1551                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1676                                                                                | 3168                                                                                | 0                                                                                   | 1593                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     | 0.056                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1585                                                                              | 0                                                                                 | 0                                                                                 | 1693                                                                              | 1439                                                                              | 1676                                                                                | 3168                                                                                | 0                                                                                   | 94                                                                                  | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 429                                                                               |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 5                                                                                 | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 0                                                                                   | 1513                                                                                | 57                                                                                  | 477                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 18                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 0                                                                                   | 1570                                                                                | 0                                                                                   | 477                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 12                                                                                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          | Left                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Right                                                                             |                                                                                     | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                |                                                                                     |
| Leading Detector (ft)      | 20                                                                                | 24                                                                                |                                                                                   | 50                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Size(ft)        | 20                                                                                | 30                                                                                |                                                                                   | 50                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | Free                                                                              | Perm                                                                                | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | Free                                                                              | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 4.0                                                                                 |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

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|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 | 37.0                                                                                |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                | 93.0                                                                                |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               | 71.5%                                                                               |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                | 88.0                                                                                |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   | 7.5                                                                               | 7.5                                                                                 |                                                                                     | 5.5                                                                                 | 7.5                                                                                 |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | C-Max                                                                             | C-Max                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              |                                                                                   | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 5.3                                                                               |                                                                                   |                                                                                   | 5.3                                                                               | 130.0                                                                             |                                                                                   | 68.5                                                                                |                                                                                     | 116.5                                                                               | 117.5                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.04                                                                              |                                                                                   |                                                                                   | 0.04                                                                              | 1.00                                                                              |                                                                                   | 0.53                                                                                |                                                                                     | 0.90                                                                                | 0.90                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.26                                                                              |                                                                                   |                                                                                   | 0.30                                                                              | 0.56                                                                              |                                                                                   | 0.94                                                                                |                                                                                     | 0.87                                                                                | 0.46                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 57.1                                                                              |                                                                                   |                                                                                   | 71.4                                                                              | 1.6                                                                               |                                                                                   | 40.9                                                                                |                                                                                     | 52.4                                                                                | 2.6                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               |                                                                                   | 45.4                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 57.1                                                                              |                                                                                   |                                                                                   | 71.4                                                                              | 1.6                                                                               |                                                                                   | 86.3                                                                                |                                                                                     | 52.4                                                                                | 2.6                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 |                                                                                   | F                                                                                   |                                                                                     | D                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 57.1                                                                              |                                                                                   |                                                                                   | 3.4                                                                               |                                                                                   |                                                                                   | 86.3                                                                                |                                                                                     |                                                                                     | 15.7                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.94

Intersection Signal Delay: 39.7

Intersection LOS: D

Intersection Capacity Utilization 106.5%

ICU Level of Service G

Analysis Period (min) 15

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |
|  06 |                                                                                            |  08 |
| 93 s                                                                                   |                                                                                            | 37 s                                                                                     |



# Queues

54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Lane Group              | SET                                                                               | NWT                                                                               | NWR                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                               |
| Lane Group Flow (vph)   | 18                                                                                | 21                                                                                | 806                                                                               | 1570                                                                              | 477                                                                               | 1334                                                                              |
| v/c Ratio               | 0.26                                                                              | 0.30                                                                              | 0.56                                                                              | 0.94                                                                              | 0.87                                                                              | 0.46                                                                              |
| Control Delay           | 57.1                                                                              | 71.4                                                                              | 1.6                                                                               | 40.9                                                                              | 52.4                                                                              | 2.6                                                                               |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 45.4                                                                              | 0.0                                                                               | 0.0                                                                               |
| Total Delay             | 57.1                                                                              | 71.4                                                                              | 1.6                                                                               | 86.3                                                                              | 52.4                                                                              | 2.6                                                                               |
| Queue Length 50th (ft)  | 11                                                                                | 18                                                                                | 0                                                                                 | 629                                                                               | 343                                                                               | 113                                                                               |
| Queue Length 95th (ft)  | 32                                                                                | 39                                                                                | 0                                                                                 | #816                                                                              | #594                                                                              | 166                                                                               |
| Internal Link Dist (ft) | 247                                                                               | 552                                                                               |                                                                                   | 268                                                                               |                                                                                   | 227                                                                               |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 215                                                                               |                                                                                   |
| Base Capacity (vph)     | 363                                                                               | 384                                                                               | 1439                                                                              | 1671                                                                              | 551                                                                               | 2875                                                                              |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 531                                                                               | 0                                                                                 | 0                                                                                 |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 |
| Reduced v/c Ratio       | 0.05                                                                              | 0.05                                                                              | 0.56                                                                              | 1.38                                                                              | 0.87                                                                              | 0.46                                                                              |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 19                                                                                | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 14                                                                                  | 1554                                                                                | 71                                                                                  | 511                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                        |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.993                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1607                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1593                                                                                | 3161                                                                                | 0                                                                                   | 1593                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.919                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.205                                                                               |                                                                                     |                                                                                     | 0.056                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1493                                                                              | 0                                                                                 | 0                                                                                 | 1693                                                                              | 1439                                                                              | 344                                                                                 | 3161                                                                                | 0                                                                                   | 94                                                                                  | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 427                                                                               |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 24                                                                                | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 14                                                                                  | 1570                                                                                | 72                                                                                  | 538                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 37                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 14                                                                                  | 1642                                                                                | 0                                                                                   | 538                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 12                                                                                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          | Left                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Right                                                                             |                                                                                     | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                |                                                                                     |
| Leading Detector (ft)      | 20                                                                                | 24                                                                                |                                                                                   | 50                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Size(ft)        | 20                                                                                | 30                                                                                |                                                                                   | 50                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | Free                                                                              | Perm                                                                                | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | Free                                                                              | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 4.0                                                                                 |                                                                                     |

Total Traffic (2016) Conditions with Project PM

Synchro 8 Report  
Page 1

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 | 37.0                                                                                |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 76.0                                                                              | 76.0                                                                                |                                                                                     | 17.0                                                                                | 93.0                                                                                |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 58.5%                                                                             | 58.5%                                                                               |                                                                                     | 13.1%                                                                               | 71.5%                                                                               |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 71.0                                                                              | 71.0                                                                                |                                                                                     | 14.0                                                                                | 88.0                                                                                |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   | 7.5                                                                               | 7.5                                                                                 |                                                                                     | 5.5                                                                                 | 7.5                                                                                 |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | C-Max                                                                             | C-Max                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              |                                                                                   | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 5.9                                                                               |                                                                                   |                                                                                   | 5.9                                                                               | 130.0                                                                             | 68.5                                                                              | 68.5                                                                                |                                                                                     | 115.9                                                                               | 116.9                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   | 0.05                                                                              | 1.00                                                                              | 0.53                                                                              | 0.53                                                                                |                                                                                     | 0.89                                                                                | 0.90                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.51                                                                              |                                                                                   |                                                                                   | 0.27                                                                              | 0.56                                                                              | 0.08                                                                              | 0.99                                                                                |                                                                                     | 0.99                                                                                | 0.47                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 16.7                                                                              | 49.2                                                                                |                                                                                     | 74.7                                                                                | 2.8                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 40.5                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 16.7                                                                              | 89.7                                                                                |                                                                                     | 74.7                                                                                | 2.8                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 | B                                                                                 | F                                                                                   |                                                                                     | E                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 3.3                                                                               |                                                                                   |                                                                                   | 89.1                                                                                |                                                                                     |                                                                                     | 23.5                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | C                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.99

Intersection Signal Delay: 44.9

Intersection LOS: D

Intersection Capacity Utilization 112.6%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  Ø1 |  Ø2 (R) |  Ø4 |
| 17 s                                                                                   | 76 s                                                                                       | 37 s                                                                                     |
|  Ø6 |                                                                                            |  Ø8 |
| 93 s                                                                                   |                                                                                            | 37 s                                                                                     |

## Queues

54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Lane Group              | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                |
| Lane Group Flow (vph)   | 37                                                                                | 21                                                                                | 806                                                                               | 14                                                                                | 1642                                                                              | 538                                                                               | 1334                                                                               |
| v/c Ratio               | 0.51                                                                              | 0.27                                                                              | 0.56                                                                              | 0.08                                                                              | 0.99                                                                              | 0.99                                                                              | 0.47                                                                               |
| Control Delay           | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 16.7                                                                              | 49.2                                                                              | 74.7                                                                              | 2.8                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 40.5                                                                              | 0.0                                                                               | 0.0                                                                                |
| Total Delay             | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 16.7                                                                              | 89.7                                                                              | 74.7                                                                              | 2.8                                                                                |
| Queue Length 50th (ft)  | 27                                                                                | 18                                                                                | 0                                                                                 | 6                                                                                 | 690                                                                               | ~462                                                                              | 120                                                                                |
| Queue Length 95th (ft)  | 55                                                                                | 39                                                                                | 0                                                                                 | 18                                                                                | #885                                                                              | #726                                                                              | 180                                                                                |
| Internal Link Dist (ft) | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 215                                                                               |                                                                                    |
| Base Capacity (vph)     | 342                                                                               | 384                                                                               | 1439                                                                              | 181                                                                               | 1667                                                                              | 543                                                                               | 2860                                                                               |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 502                                                                               | 0                                                                                 | 0                                                                                  |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Reduced v/c Ratio       | 0.11                                                                              | 0.05                                                                              | 0.56                                                                              | 0.08                                                                              | 1.41                                                                              | 0.99                                                                              | 0.47                                                                               |

### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |                                                                                     |
| Volume (vph)               | 6                                                                                 | 19                                                                                | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 14                                                                                  | 1554                                                                                | 71                                                                                  | 511                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 1                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                        |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.993                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1607                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1593                                                                                | 3161                                                                                | 0                                                                                   | 1593                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.919                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.205                                                                               |                                                                                     |                                                                                     | 0.070                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1493                                                                              | 0                                                                                 | 0                                                                                 | 1693                                                                              | 1439                                                                              | 344                                                                                 | 3161                                                                                | 0                                                                                   | 117                                                                                 | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 558                                                                               |                                                                                     | 4                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 24                                                                                | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 14                                                                                  | 1570                                                                                | 72                                                                                  | 538                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 37                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 14                                                                                  | 1642                                                                                | 0                                                                                   | 538                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 12                                                                                  |                                                                                     |                                                                                     | 12                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          | Left                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Right                                                                             |                                                                                     | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                |                                                                                     |
| Leading Detector (ft)      | 20                                                                                | 24                                                                                |                                                                                   | 50                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Size(ft)        | 20                                                                                | 30                                                                                |                                                                                   | 50                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | Free                                                                              | Perm                                                                                | NA                                                                                  |                                                                                     | pm+pt                                                                               | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | Free                                                                              | 2                                                                                   |                                                                                     |                                                                                     | 6                                                                                   |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 4.0                                                                                 |                                                                                     |

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 | 37.0                                                                                |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 61.0                                                                              | 61.0                                                                                |                                                                                     | 32.0                                                                                | 93.0                                                                                |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 46.9%                                                                             | 46.9%                                                                               |                                                                                     | 24.6%                                                                               | 71.5%                                                                               |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 56.0                                                                              | 56.0                                                                                |                                                                                     | 29.0                                                                                | 88.0                                                                                |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   | 7.5                                                                               | 7.5                                                                                 |                                                                                     | 5.5                                                                                 | 7.5                                                                                 |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | C-Max                                                                             | C-Max                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              |                                                                                   | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Act Effect Green (s)    |                                                                                   | 5.9                                                                               |                                                                                   |                                                                                   | 5.9                                                                               | 130.0                                                                             | 53.5                                                                              | 53.5                                                                                |                                                                                     | 115.9                                                                               | 116.9                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   | 0.05                                                                              | 1.00                                                                              | 0.41                                                                              | 0.41                                                                                |                                                                                     | 0.89                                                                                | 0.90                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.51                                                                              |                                                                                   |                                                                                   | 0.27                                                                              | 0.56                                                                              | 0.10                                                                              | 1.26                                                                                |                                                                                     | 0.74                                                                                | 0.47                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 25.9                                                                              | 157.2                                                                               |                                                                                     | 33.9                                                                                | 2.8                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.3                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 25.9                                                                              | 158.6                                                                               |                                                                                     | 33.9                                                                                | 2.8                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 | C                                                                                 | F                                                                                   |                                                                                     | C                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 3.3                                                                               |                                                                                   |                                                                                   | 157.4                                                                               |                                                                                     |                                                                                     | 11.7                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | F                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 1.26

Intersection Signal Delay: 65.6

Intersection LOS: E

Intersection Capacity Utilization 112.6%

ICU Level of Service H

Analysis Period (min) 15

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 32 s                                                                                   | 61 s                                                                                       | 37 s                                                                                     |
|  06 |                                                                                            |  08 |
| 93 s                                                                                   |                                                                                            | 37 s                                                                                     |

## Queues

54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                 |
| Lane Group Flow (vph)   | 37                                                                                | 21                                                                                | 806                                                                               | 14                                                                                | 1642                                                                              | 538                                                                               | 1334                                                                                |
| v/c Ratio               | 0.51                                                                              | 0.27                                                                              | 0.56                                                                              | 0.10                                                                              | 1.26                                                                              | 0.74                                                                              | 0.47                                                                                |
| Control Delay           | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 25.9                                                                              | 157.2                                                                             | 33.9                                                                              | 2.8                                                                                 |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 1.3                                                                               | 0.0                                                                               | 0.0                                                                                 |
| Total Delay             | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 25.9                                                                              | 158.6                                                                             | 33.9                                                                              | 2.8                                                                                 |
| Queue Length 50th (ft)  | 27                                                                                | 18                                                                                | 0                                                                                 | 7                                                                                 | ~916                                                                              | 339                                                                               | 120                                                                                 |
| Queue Length 95th (ft)  | 55                                                                                | 39                                                                                | 0                                                                                 | 23                                                                                | #1058                                                                             | #560                                                                              | 180                                                                                 |
| Internal Link Dist (ft) | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                 |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 215                                                                               |                                                                                     |
| Base Capacity (vph)     | 342                                                                               | 384                                                                               | 1439                                                                              | 141                                                                               | 1303                                                                              | 727                                                                               | 2860                                                                                |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 336                                                                               | 0                                                                                 | 0                                                                                   |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                   |
| Reduced v/c Ratio       | 0.11                                                                              | 0.05                                                                              | 0.56                                                                              | 0.10                                                                              | 1.70                                                                              | 0.74                                                                              | 0.47                                                                                |

### Intersection Summary

- ~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.
- # 95th percentile volume exceeds capacity, queue may be longer.  
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |   |  |  |  |  |  |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group                 | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                                 | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Lane Configurations        |                                                                                   |  |                                                                                   |                                                                                   |  |  |  |  |                                                                                     |  |  |  |
| Volume (vph)               | 6                                                                                 | 19                                                                                | 4                                                                                 | 13                                                                                | 3                                                                                 | 621                                                                               | 14                                                                                  | 1554                                                                                | 71                                                                                  | 511                                                                                 | 1261                                                                                | 7                                                                                   |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                | 1900                                                                                |
| Storage Length (ft)        | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 100                                                                                 |                                                                                     | 0                                                                                   | 215                                                                                 |                                                                                     | 0                                                                                   |
| Storage Lanes              | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                   |                                                                                     | 0                                                                                   | 2                                                                                   |                                                                                     | 0                                                                                   |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |                                                                                   | 25                                                                                  |                                                                                     |                                                                                     | 25                                                                                  |                                                                                     |                                                                                     |
| Lane Util. Factor          | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                              | 1.00                                                                                | 0.95                                                                                | 0.95                                                                                | 0.97                                                                                | 0.95                                                                                | 0.95                                                                                |
| Ped Bike Factor            |                                                                                   | 1.00                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     | 1.00                                                                                |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Frt                        |                                                                                   | 0.982                                                                             |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                     | 0.993                                                                               |                                                                                     |                                                                                     | 0.999                                                                               |                                                                                     |
| Flt Protected              |                                                                                   | 0.989                                                                             |                                                                                   |                                                                                   | 0.961                                                                             |                                                                                   | 0.950                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (prot)          | 0                                                                                 | 1607                                                                              | 0                                                                                 | 0                                                                                 | 1627                                                                              | 1439                                                                              | 1593                                                                                | 3161                                                                                | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Flt Permitted              |                                                                                   | 0.919                                                                             |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.205                                                                               |                                                                                     |                                                                                     | 0.950                                                                               |                                                                                     |                                                                                     |
| Satd. Flow (perm)          | 0                                                                                 | 1493                                                                              | 0                                                                                 | 0                                                                                 | 1693                                                                              | 1439                                                                              | 344                                                                                 | 3161                                                                                | 0                                                                                   | 3090                                                                                | 3182                                                                                | 0                                                                                   |
| Right Turn on Red          |                                                                                   |                                                                                   | Yes                                                                               |                                                                                   |                                                                                   | Yes                                                                               |                                                                                     |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     | Yes                                                                                 |
| Satd. Flow (RTOR)          |                                                                                   | 5                                                                                 |                                                                                   |                                                                                   |                                                                                   | 496                                                                               |                                                                                     | 5                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |
| Link Speed (mph)           |                                                                                   | 30                                                                                |                                                                                   |                                                                                   | 30                                                                                |                                                                                   |                                                                                     | 35                                                                                  |                                                                                     |                                                                                     | 30                                                                                  |                                                                                     |
| Link Distance (ft)         |                                                                                   | 327                                                                               |                                                                                   |                                                                                   | 632                                                                               |                                                                                   |                                                                                     | 348                                                                                 |                                                                                     |                                                                                     | 307                                                                                 |                                                                                     |
| Travel Time (s)            |                                                                                   | 7.4                                                                               |                                                                                   |                                                                                   | 14.4                                                                              |                                                                                   |                                                                                     | 6.8                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   | 12                                                                                |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     | 1                                                                                   |                                                                                     |                                                                                     |                                                                                     |
| Peak Hour Factor           | 0.79                                                                              | 0.79                                                                              | 0.79                                                                              | 0.77                                                                              | 0.77                                                                              | 0.77                                                                              | 0.99                                                                                | 0.99                                                                                | 0.99                                                                                | 0.95                                                                                | 0.95                                                                                | 0.95                                                                                |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 3%                                                                                | 1%                                                                                | 1%                                                                                | 1%                                                                                | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  | 2%                                                                                  |
| Adj. Flow (vph)            | 8                                                                                 | 24                                                                                | 5                                                                                 | 17                                                                                | 4                                                                                 | 806                                                                               | 14                                                                                  | 1570                                                                                | 72                                                                                  | 538                                                                                 | 1327                                                                                | 7                                                                                   |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Lane Group Flow (vph)      | 0                                                                                 | 37                                                                                | 0                                                                                 | 0                                                                                 | 21                                                                                | 806                                                                               | 14                                                                                  | 1642                                                                                | 0                                                                                   | 538                                                                                 | 1334                                                                                | 0                                                                                   |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  | No                                                                                  |
| Lane Alignment             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                                | Left                                                                                | Right                                                                               | Left                                                                                | Left                                                                                | Right                                                                               |
| Median Width(ft)           |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 24                                                                                  |                                                                                     |                                                                                     | 24                                                                                  |                                                                                     |
| Link Offset(ft)            |                                                                                   | 0                                                                                 |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Crosswalk Width(ft)        |                                                                                   | 10                                                                                |                                                                                   |                                                                                   | 0                                                                                 |                                                                                   |                                                                                     | 10                                                                                  |                                                                                     |                                                                                     | 10                                                                                  |                                                                                     |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Headway Factor             | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                              | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                | 1.14                                                                                |
| Turning Speed (mph)        | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                |                                                                                   | 9                                                                                 | 15                                                                                  |                                                                                     | 9                                                                                   | 15                                                                                  |                                                                                     | 9                                                                                   |
| Number of Detectors        | 1                                                                                 | 1                                                                                 |                                                                                   | 1                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                   | 1                                                                                   |                                                                                     | 1                                                                                   | 1                                                                                   |                                                                                     |
| Detector Template          | Left                                                                              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Right                                                                             |                                                                                     | Thru                                                                                |                                                                                     | Left                                                                                | Thru                                                                                |                                                                                     |
| Leading Detector (ft)      | 20                                                                                | 24                                                                                |                                                                                   | 50                                                                                | 24                                                                                | 24                                                                                | 24                                                                                  | 24                                                                                  |                                                                                     | 24                                                                                  | 24                                                                                  |                                                                                     |
| Trailing Detector (ft)     | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Position(ft)    | 0                                                                                 | -6                                                                                |                                                                                   | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                  | -6                                                                                  |                                                                                     | -6                                                                                  | -6                                                                                  |                                                                                     |
| Detector 1 Size(ft)        | 20                                                                                | 30                                                                                |                                                                                   | 50                                                                                | 30                                                                                | 30                                                                                | 30                                                                                  | 30                                                                                  |                                                                                     | 30                                                                                  | 30                                                                                  |                                                                                     |
| Detector 1 Type            | Cl+Ex                                                                             | Cl+Ex                                                                             |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     | Cl+Ex                                                                               | Cl+Ex                                                                               |                                                                                     |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector 1 Extend (s)      | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Queue (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Detector 1 Delay (s)       | 0.0                                                                               | 0.0                                                                               |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                                 | 0.0                                                                                 |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Turn Type                  | Perm                                                                              | NA                                                                                |                                                                                   | Perm                                                                              | NA                                                                                | Free                                                                              | Perm                                                                                | NA                                                                                  |                                                                                     | Prot                                                                                | NA                                                                                  |                                                                                     |
| Protected Phases           |                                                                                   | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Permitted Phases           | 4                                                                                 |                                                                                   |                                                                                   | 8                                                                                 |                                                                                   | Free                                                                              | 2                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Detector Phase             | 4                                                                                 | 4                                                                                 |                                                                                   | 8                                                                                 | 8                                                                                 |                                                                                   |                                                                                     | 2                                                                                   |                                                                                     | 1                                                                                   | 6                                                                                   |                                                                                     |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |                                                                                     |
| Minimum Initial (s)        | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                                 | 7.0                                                                                 |                                                                                     | 5.0                                                                                 | 4.0                                                                                 |                                                                                     |

Total Traffic (2016) Conditions with Project PM  
with Signal Optimization + SB Dual Lefts

Synchro 8 Report  
Page 1



Lanes, Volumes, Timings  
54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Lane Group              | SEL                                                                               | SET                                                                               | SER                                                                               | NWL                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                                 | NER                                                                                 | SWL                                                                                 | SWT                                                                                 | SWR                                                                                 |
| Minimum Split (s)       | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 26.0                                                                              | 26.0                                                                                |                                                                                     | 8.0                                                                                 | 37.0                                                                                |                                                                                     |
| Total Split (s)         | 37.0                                                                              | 37.0                                                                              |                                                                                   | 37.0                                                                              | 37.0                                                                              |                                                                                   | 68.0                                                                              | 68.0                                                                                |                                                                                     | 25.0                                                                                | 93.0                                                                                |                                                                                     |
| Total Split (%)         | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 28.5%                                                                             | 28.5%                                                                             |                                                                                   | 52.3%                                                                             | 52.3%                                                                               |                                                                                     | 19.2%                                                                               | 71.5%                                                                               |                                                                                     |
| Maximum Green (s)       | 32.0                                                                              | 32.0                                                                              |                                                                                   | 32.0                                                                              | 32.0                                                                              |                                                                                   | 63.0                                                                              | 63.0                                                                                |                                                                                     | 22.0                                                                                | 88.0                                                                                |                                                                                     |
| Yellow Time (s)         | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                               |                                                                                   | 4.0                                                                               | 4.0                                                                                 |                                                                                     | 3.0                                                                                 | 4.0                                                                                 |                                                                                     |
| All-Red Time (s)        | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 0.0                                                                                 | 1.0                                                                                 |                                                                                     |
| Lost Time Adjust (s)    |                                                                                   | 2.5                                                                               |                                                                                   |                                                                                   | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                                 |                                                                                     | 2.5                                                                                 | 2.5                                                                                 |                                                                                     |
| Total Lost Time (s)     |                                                                                   | 7.5                                                                               |                                                                                   |                                                                                   | 7.5                                                                               |                                                                                   | 7.5                                                                               | 7.5                                                                                 |                                                                                     | 5.5                                                                                 | 7.5                                                                                 |                                                                                     |
| Lead/Lag                |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Lag                                                                               | Lag                                                                                 |                                                                                     | Lead                                                                                |                                                                                     |                                                                                     |
| Lead-Lag Optimize?      |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | Yes                                                                               | Yes                                                                                 |                                                                                     | Yes                                                                                 |                                                                                     |                                                                                     |
| Vehicle Extension (s)   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 2.5                                                                               | 2.5                                                                               |                                                                                   | 1.0                                                                               | 1.0                                                                                 |                                                                                     | 3.0                                                                                 | 3.0                                                                                 |                                                                                     |
| Recall Mode             | None                                                                              | None                                                                              |                                                                                   | None                                                                              | None                                                                              |                                                                                   | C-Max                                                                             | C-Max                                                                               |                                                                                     | None                                                                                | None                                                                                |                                                                                     |
| Walk Time (s)           | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                               |                                                                                   | 7.0                                                                               | 7.0                                                                                 |                                                                                     |                                                                                     | 7.0                                                                                 |                                                                                     |
| Flash Dont Walk (s)     | 25.0                                                                              | 25.0                                                                              |                                                                                   | 25.0                                                                              | 25.0                                                                              |                                                                                   | 14.0                                                                              | 14.0                                                                                |                                                                                     |                                                                                     | 25.0                                                                                |                                                                                     |
| Pedestrian Calls (#/hr) | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 | 0                                                                                   |                                                                                     |                                                                                     | 0                                                                                   |                                                                                     |
| Act Effct Green (s)     |                                                                                   | 5.9                                                                               |                                                                                   |                                                                                   | 5.9                                                                               | 130.0                                                                             | 76.3                                                                              | 76.3                                                                                |                                                                                     | 32.0                                                                                | 116.9                                                                               |                                                                                     |
| Actuated g/C Ratio      |                                                                                   | 0.05                                                                              |                                                                                   |                                                                                   | 0.05                                                                              | 1.00                                                                              | 0.59                                                                              | 0.59                                                                                |                                                                                     | 0.25                                                                                | 0.90                                                                                |                                                                                     |
| v/c Ratio               |                                                                                   | 0.51                                                                              |                                                                                   |                                                                                   | 0.27                                                                              | 0.56                                                                              | 0.07                                                                              | 0.88                                                                                |                                                                                     | 0.71                                                                                | 0.47                                                                                |                                                                                     |
| Control Delay           |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 14.8                                                                              | 30.9                                                                                |                                                                                     | 51.1                                                                                | 2.8                                                                                 |                                                                                     |
| Queue Delay             |                                                                                   | 0.0                                                                               |                                                                                   |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 47.0                                                                                |                                                                                     | 0.0                                                                                 | 0.0                                                                                 |                                                                                     |
| Total Delay             |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 67.9                                                                              | 1.6                                                                               | 14.8                                                                              | 78.0                                                                                |                                                                                     | 51.1                                                                                | 2.8                                                                                 |                                                                                     |
| LOS                     |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | E                                                                                 | A                                                                                 | B                                                                                 | E                                                                                   |                                                                                     | D                                                                                   | A                                                                                   |                                                                                     |
| Approach Delay          |                                                                                   | 77.3                                                                              |                                                                                   |                                                                                   | 3.3                                                                               |                                                                                   |                                                                                   | 77.4                                                                                |                                                                                     |                                                                                     | 16.7                                                                                |                                                                                     |
| Approach LOS            |                                                                                   | E                                                                                 |                                                                                   |                                                                                   | A                                                                                 |                                                                                   |                                                                                   | E                                                                                   |                                                                                     |                                                                                     | B                                                                                   |                                                                                     |

Intersection Summary

Area Type: CBD

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 67 (52%), Referenced to phase 2:NETL, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

Maximum v/c Ratio: 0.88

Intersection Signal Delay: 37.6

Intersection LOS: D

Intersection Capacity Utilization 97.3%

ICU Level of Service F

Analysis Period (min) 15

Splits and Phases: 54: Alton Rd & N Michigan Ave

|                                                                                        |                                                                                            |                                                                                          |
|----------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
|  01 |  02 (R) |  04 |
| 25 s                                                                                   | 68 s                                                                                       | 37 s                                                                                     |
|  06 |                                                                                            |  08 |
| 93 s                                                                                   |                                                                                            | 37 s                                                                                     |

# Queues

54: Alton Rd & N Michigan Ave

5/13/2015

|                         |  |  |  |  |  |  |  |
|-------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|
| Lane Group              | SET                                                                               | NWT                                                                               | NWR                                                                               | NEL                                                                               | NET                                                                               | SWL                                                                               | SWT                                                                                |
| Lane Group Flow (vph)   | 37                                                                                | 21                                                                                | 806                                                                               | 14                                                                                | 1642                                                                              | 538                                                                               | 1334                                                                               |
| v/c Ratio               | 0.51                                                                              | 0.27                                                                              | 0.56                                                                              | 0.07                                                                              | 0.88                                                                              | 0.71                                                                              | 0.47                                                                               |
| Control Delay           | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 14.8                                                                              | 30.9                                                                              | 51.1                                                                              | 2.8                                                                                |
| Queue Delay             | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 47.0                                                                              | 0.0                                                                               | 0.0                                                                                |
| Total Delay             | 77.3                                                                              | 67.9                                                                              | 1.6                                                                               | 14.8                                                                              | 78.0                                                                              | 51.1                                                                              | 2.8                                                                                |
| Queue Length 50th (ft)  | 27                                                                                | 18                                                                                | 0                                                                                 | 5                                                                                 | 618                                                                               | 219                                                                               | 120                                                                                |
| Queue Length 95th (ft)  | 55                                                                                | 39                                                                                | 0                                                                                 | 18                                                                                | #873                                                                              | 281                                                                               | 180                                                                                |
| Internal Link Dist (ft) | 247                                                                               | 552                                                                               |                                                                                   |                                                                                   | 268                                                                               |                                                                                   | 227                                                                                |
| Turn Bay Length (ft)    |                                                                                   |                                                                                   |                                                                                   | 100                                                                               |                                                                                   | 215                                                                               |                                                                                    |
| Base Capacity (vph)     | 342                                                                               | 384                                                                               | 1439                                                                              | 201                                                                               | 1857                                                                              | 761                                                                               | 2860                                                                               |
| Starvation Cap Reductn  | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 550                                                                               | 0                                                                                 | 0                                                                                  |
| Spillback Cap Reductn   | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Storage Cap Reductn     | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                 | 0                                                                                  |
| Reduced v/c Ratio       | 0.11                                                                              | 0.05                                                                              | 0.56                                                                              | 0.07                                                                              | 1.26                                                                              | 0.71                                                                              | 0.47                                                                               |

## Intersection Summary

# 95th percentile volume exceeds capacity, queue may be longer.

Queue shown is maximum after two cycles.

# Lanes, Volumes, Timings

## 4: Dade Blvd & N Michigan Ave

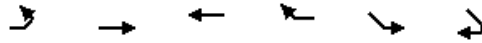
5/13/2015



| Lane Group                 | EBL  | EBT   | WBT   | WBR   | SEL   | SER   | ø3 |
|----------------------------|------|-------|-------|-------|-------|-------|----|
| Lane Configurations        |      | ↑↑    | ↑↑    | ↑     | ↑↑    | ↑     |    |
| Volume (vph)               | 0    | 412   | 712   | 815   | 759   | 113   |    |
| Ideal Flow (vphpl)         | 1900 | 1900  | 1900  | 1900  | 1900  | 1900  |    |
| Lane Width (ft)            | 10   | 10    | 10    | 10    | 10    | 10    |    |
| Storage Length (ft)        | 0    |       |       | 280   | 0     | 0     |    |
| Storage Lanes              | 0    |       |       | 1     | 2     | 1     |    |
| Taper Length (ft)          | 25   |       |       |       | 25    |       |    |
| Lane Util. Factor          | 1.00 | 0.95  | 0.95  | 1.00  | 0.97  | 1.00  |    |
| Ped Bike Factor            |      |       |       |       |       |       |    |
| Frt                        |      |       |       | 0.850 |       | 0.850 |    |
| Flt Protected              |      |       |       |       | 0.950 |       |    |
| Satd. Flow (prot)          | 0    | 3271  | 3303  | 1478  | 3236  | 1492  |    |
| Flt Permitted              |      |       |       |       | 0.950 |       |    |
| Satd. Flow (perm)          | 0    | 3271  | 3303  | 1478  | 3236  | 1492  |    |
| Right Turn on Red          |      |       |       | No    |       | Yes   |    |
| Satd. Flow (RTOR)          |      |       |       |       |       | 122   |    |
| Link Speed (mph)           |      | 30    | 30    |       | 30    |       |    |
| Link Distance (ft)         |      | 246   | 421   |       | 91    |       |    |
| Travel Time (s)            |      | 5.6   | 9.6   |       | 2.1   |       |    |
| Confl. Peds. (#/hr)        |      |       |       | 36    |       |       |    |
| Peak Hour Factor           | 0.94 | 0.94  | 0.98  | 0.98  | 0.93  | 0.93  |    |
| Heavy Vehicles (%)         | 3%   | 3%    | 2%    | 2%    | 1%    | 1%    |    |
| Adj. Flow (vph)            | 0    | 438   | 727   | 832   | 816   | 122   |    |
| Shared Lane Traffic (%)    |      |       |       |       |       |       |    |
| Lane Group Flow (vph)      | 0    | 438   | 727   | 832   | 816   | 122   |    |
| Enter Blocked Intersection | No   | No    | No    | No    | No    | No    |    |
| Lane Alignment             | Left | Left  | Left  | Right | Left  | Right |    |
| Median Width(ft)           |      | 0     | 0     |       | 20    |       |    |
| Link Offset(ft)            |      | 0     | 0     |       | 0     |       |    |
| Crosswalk Width(ft)        |      | 0     | 0     |       | 10    |       |    |
| Two way Left Turn Lane     |      |       |       |       |       |       |    |
| Headway Factor             | 1.09 | 1.09  | 1.09  | 1.09  | 1.09  | 1.09  |    |
| Turning Speed (mph)        | 15   |       |       | 9     | 15    | 9     |    |
| Number of Detectors        |      | 0     | 0     | 1     | 1     | 1     |    |
| Detector Template          |      |       |       | Right | Left  | Right |    |
| Leading Detector (ft)      |      | 0     | 0     | 24    | 24    | 24    |    |
| Trailing Detector (ft)     |      | 0     | 0     | -6    | -6    | -6    |    |
| Detector 1 Position(ft)    |      | 0     | 0     | -6    | -6    | -6    |    |
| Detector 1 Size(ft)        |      | 6     | 5     | 30    | 30    | 30    |    |
| Detector 1 Type            |      | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex | Cl+Ex |    |
| Detector 1 Channel         |      |       |       |       |       |       |    |
| Detector 1 Extend (s)      |      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |    |
| Detector 1 Queue (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |    |
| Detector 1 Delay (s)       |      | 0.0   | 0.0   | 0.0   | 0.0   | 0.0   |    |
| Turn Type                  |      | NA    | NA    | pt+ov | NA    | Perm  |    |
| Protected Phases           |      | 6     | 2     | 2 4   | 4     |       | 3  |
| Permitted Phases           |      |       |       |       |       | 4     |    |
| Detector Phase             |      |       |       | 2 4   | 4     | 4     |    |
| Switch Phase               |      |       |       |       |       |       |    |

Lanes, Volumes, Timings  
4: Dade Blvd & N Michigan Ave

5/13/2015



| Lane Group              | EBL | EBT   | WBT   | WBR  | SEL   | SER   | ø3   |
|-------------------------|-----|-------|-------|------|-------|-------|------|
| Minimum Initial (s)     |     | 14.0  | 14.0  |      | 7.0   | 7.0   | 7.0  |
| Minimum Split (s)       |     | 34.8  | 34.8  |      | 20.6  | 20.6  | 11.0 |
| Total Split (s)         |     | 45.8  | 45.8  |      | 54.2  | 54.2  | 30.0 |
| Total Split (%)         |     | 35.2% | 35.2% |      | 41.7% | 41.7% | 23%  |
| Maximum Green (s)       |     | 41.0  | 41.0  |      | 49.6  | 49.6  | 26.0 |
| Yellow Time (s)         |     | 4.0   | 4.0   |      | 4.0   | 4.0   | 3.5  |
| All-Red Time (s)        |     | 0.8   | 0.8   |      | 0.6   | 0.6   | 0.5  |
| Lost Time Adjust (s)    |     | 2.5   | 2.5   |      | 2.5   | 2.5   |      |
| Total Lost Time (s)     |     | 7.3   | 7.3   |      | 7.1   | 7.1   |      |
| Lead/Lag                |     |       |       |      | Lag   | Lag   | Lead |
| Lead-Lag Optimize?      |     |       |       |      | Yes   | Yes   | Yes  |
| Vehicle Extension (s)   |     | 1.0   | 1.0   |      | 2.5   | 2.5   | 3.0  |
| Recall Mode             |     | Min   | Min   |      | None  | None  | None |
| Walk Time (s)           |     | 7.0   | 7.0   |      |       |       |      |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |      |       |       |      |
| Pedestrian Calls (#/hr) |     | 36    | 10    |      |       |       |      |
| Act Effect Green (s)    |     | 17.6  | 17.6  | 57.5 | 24.1  | 24.1  |      |
| Actuated g/C Ratio      |     | 0.31  | 0.31  | 1.00 | 0.42  | 0.42  |      |
| v/c Ratio               |     | 0.44  | 0.72  | 0.56 | 0.60  | 0.18  |      |
| Control Delay           |     | 19.0  | 24.6  | 1.6  | 15.1  | 3.4   |      |
| Queue Delay             |     | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |      |
| Total Delay             |     | 19.0  | 24.6  | 1.6  | 15.1  | 3.4   |      |
| LOS                     |     | B     | C     | A    | B     | A     |      |
| Approach Delay          |     | 19.0  | 12.3  |      | 13.6  |       |      |
| Approach LOS            |     | B     | B     |      | B     |       |      |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 57.5

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 13.7

Intersection LOS: B

Intersection Capacity Utilization 59.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Dade Blvd & N Michigan Ave

|                                                                                        |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  ø2 |  ø3 |  ø4 |
| 45.8 s                                                                                 | 30 s                                                                                   | 54.2 s                                                                                 |
|  ø6 |                                                                                        |                                                                                        |
| 45.8 s                                                                                 |                                                                                        |                                                                                        |

## Queues

### 4: Dade Blvd & N Michigan Ave

5/13/2015

|                         | →    | ←    | ↖    | ↗    | ↘    |
|-------------------------|------|------|------|------|------|
| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
| Lane Group Flow (vph)   | 438  | 727  | 832  | 816  | 122  |
| v/c Ratio               | 0.44 | 0.72 | 0.56 | 0.60 | 0.18 |
| Control Delay           | 19.0 | 24.6 | 1.6  | 15.1 | 3.4  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 19.0 | 24.6 | 1.6  | 15.1 | 3.4  |
| Queue Length 50th (ft)  | 80   | ~174 | 0    | 77   | 0    |
| Queue Length 95th (ft)  | 132  | 228  | 0    | 189  | 26   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 1002 | 1011 | 1474 | 2618 | 1230 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.44 | 0.72 | 0.56 | 0.31 | 0.10 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.

Lanes, Volumes, Timings  
4: Dade Blvd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |    |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----|
| Lane Group                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SEL                                                                               | SER                                                                               | ø3 |
| Lane Configurations        |                                                                                   | ↑↑                                                                                | ↑↑                                                                                | ↑                                                                                 | ↑↑                                                                                | ↑                                                                                 |    |
| Volume (vph)               | 0                                                                                 | 420                                                                               | 727                                                                               | 832                                                                               | 774                                                                               | 116                                                                               |    |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |    |
| Lane Width (ft)            | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                |    |
| Storage Length (ft)        | 0                                                                                 |                                                                                   |                                                                                   | 280                                                                               | 0                                                                                 | 0                                                                                 |    |
| Storage Lanes              | 0                                                                                 |                                                                                   |                                                                                   | 1                                                                                 | 2                                                                                 | 1                                                                                 |    |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |    |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              |    |
| Ped Bike Factor            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Frt                        |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   | 0.850                                                                             |    |
| Flt Protected              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |    |
| Satd. Flow (prot)          | 0                                                                                 | 3271                                                                              | 3303                                                                              | 1478                                                                              | 3236                                                                              | 1492                                                                              |    |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |    |
| Satd. Flow (perm)          | 0                                                                                 | 3271                                                                              | 3303                                                                              | 1478                                                                              | 3236                                                                              | 1492                                                                              |    |
| Right Turn on Red          |                                                                                   |                                                                                   |                                                                                   | No                                                                                |                                                                                   | Yes                                                                               |    |
| Satd. Flow (RTOR)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 125                                                                               |    |
| Link Speed (mph)           |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                |                                                                                   |    |
| Link Distance (ft)         |                                                                                   | 246                                                                               | 421                                                                               |                                                                                   | 91                                                                                |                                                                                   |    |
| Travel Time (s)            |                                                                                   | 5.6                                                                               | 9.6                                                                               |                                                                                   | 2.1                                                                               |                                                                                   |    |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   |                                                                                   | 36                                                                                |                                                                                   |                                                                                   |    |
| Peak Hour Factor           | 0.94                                                                              | 0.94                                                                              | 0.98                                                                              | 0.98                                                                              | 0.93                                                                              | 0.93                                                                              |    |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 1%                                                                                |    |
| Adj. Flow (vph)            | 0                                                                                 | 447                                                                               | 742                                                                               | 849                                                                               | 832                                                                               | 125                                                                               |    |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Lane Group Flow (vph)      | 0                                                                                 | 447                                                                               | 742                                                                               | 849                                                                               | 832                                                                               | 125                                                                               |    |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |    |
| Lane Alignment             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |    |
| Median Width(ft)           |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 20                                                                                |                                                                                   |    |
| Link Offset(ft)            |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 |                                                                                   |    |
| Crosswalk Width(ft)        |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 10                                                                                |                                                                                   |    |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Headway Factor             | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              |    |
| Turning Speed (mph)        | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 | 15                                                                                | 9                                                                                 |    |
| Number of Detectors        |                                                                                   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |    |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   | Right                                                                             | Left                                                                              | Right                                                                             |    |
| Leading Detector (ft)      |                                                                                   | 0                                                                                 | 0                                                                                 | 24                                                                                | 24                                                                                | 24                                                                                |    |
| Trailing Detector (ft)     |                                                                                   | 0                                                                                 | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                |    |
| Detector 1 Position(ft)    |                                                                                   | 0                                                                                 | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                |    |
| Detector 1 Size(ft)        |                                                                                   | 6                                                                                 | 5                                                                                 | 30                                                                                | 30                                                                                | 30                                                                                |    |
| Detector 1 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |    |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Detector 1 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Detector 1 Queue (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Detector 1 Delay (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Turn Type                  |                                                                                   | NA                                                                                | NA                                                                                | pt+ov                                                                             | NA                                                                                | Perm                                                                              |    |
| Protected Phases           |                                                                                   | 6                                                                                 | 2                                                                                 | 2 4                                                                               | 4                                                                                 |                                                                                   | 3  |
| Permitted Phases           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 |    |
| Detector Phase             |                                                                                   |                                                                                   |                                                                                   | 2 4                                                                               | 4                                                                                 | 4                                                                                 |    |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |

Lanes, Volumes, Timings  
4: Dade Blvd & N Michigan Ave

5/13/2015



| Lane Group              | EBL | EBT   | WBT   | WBR  | SEL   | SER   | ø3   |
|-------------------------|-----|-------|-------|------|-------|-------|------|
| Minimum Initial (s)     |     | 14.0  | 14.0  |      | 7.0   | 7.0   | 7.0  |
| Minimum Split (s)       |     | 34.8  | 34.8  |      | 20.6  | 20.6  | 11.0 |
| Total Split (s)         |     | 45.8  | 45.8  |      | 54.2  | 54.2  | 30.0 |
| Total Split (%)         |     | 35.2% | 35.2% |      | 41.7% | 41.7% | 23%  |
| Maximum Green (s)       |     | 41.0  | 41.0  |      | 49.6  | 49.6  | 26.0 |
| Yellow Time (s)         |     | 4.0   | 4.0   |      | 4.0   | 4.0   | 3.5  |
| All-Red Time (s)        |     | 0.8   | 0.8   |      | 0.6   | 0.6   | 0.5  |
| Lost Time Adjust (s)    |     | 2.5   | 2.5   |      | 2.5   | 2.5   |      |
| Total Lost Time (s)     |     | 7.3   | 7.3   |      | 7.1   | 7.1   |      |
| Lead/Lag                |     |       |       |      | Lag   | Lag   | Lead |
| Lead-Lag Optimize?      |     |       |       |      | Yes   | Yes   | Yes  |
| Vehicle Extension (s)   |     | 1.0   | 1.0   |      | 2.5   | 2.5   | 3.0  |
| Recall Mode             |     | Min   | Min   |      | None  | None  | None |
| Walk Time (s)           |     | 7.0   | 7.0   |      |       |       |      |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |      |       |       |      |
| Pedestrian Calls (#/hr) |     | 36    | 10    |      |       |       |      |
| Act Effect Green (s)    |     | 17.7  | 17.7  | 59.0 | 25.3  | 25.3  |      |
| Actuated g/C Ratio      |     | 0.30  | 0.30  | 1.00 | 0.43  | 0.43  |      |
| v/c Ratio               |     | 0.46  | 0.75  | 0.57 | 0.60  | 0.18  |      |
| Control Delay           |     | 20.2  | 26.7  | 1.6  | 14.8  | 3.2   |      |
| Queue Delay             |     | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |      |
| Total Delay             |     | 20.2  | 26.7  | 1.6  | 14.8  | 3.2   |      |
| LOS                     |     | C     | C     | A    | B     | A     |      |
| Approach Delay          |     | 20.2  | 13.3  |      | 13.3  |       |      |
| Approach LOS            |     | C     | B     |      | B     |       |      |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 59

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.75

Intersection Signal Delay: 14.3

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Dade Blvd & N Michigan Ave

|                                                                                        |                                                                                        |                                                                                        |
|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|
|  ø2 |  ø3 |  ø4 |
| 45.8 s                                                                                 | 30 s                                                                                   | 54.2 s                                                                                 |
|  ø6 |                                                                                        |                                                                                        |
| 45.8 s                                                                                 |                                                                                        |                                                                                        |

## Queues

### 4: Dade Blvd & N Michigan Ave

5/13/2015

|                         | →    | ←    | ↖    | ↘    | ↙    |
|-------------------------|------|------|------|------|------|
| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
| Lane Group Flow (vph)   | 447  | 742  | 849  | 832  | 125  |
| v/c Ratio               | 0.46 | 0.75 | 0.57 | 0.60 | 0.18 |
| Control Delay           | 20.2 | 26.7 | 1.6  | 14.8 | 3.2  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 20.2 | 26.7 | 1.6  | 14.8 | 3.2  |
| Queue Length 50th (ft)  | 86   | ~190 | 0    | 79   | 0    |
| Queue Length 95th (ft)  | 143  | 250  | 0    | 192  | 25   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 981  | 990  | 1461 | 2578 | 1214 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.46 | 0.75 | 0.58 | 0.32 | 0.10 |

#### Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.  
Queue shown is maximum after two cycles.



Lanes, Volumes, Timings  
4: Dade Blvd & N Michigan Ave

5/13/2015

|                            |  |  |  |  |  |  |    |
|----------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----|
| Lane Group                 | EBL                                                                               | EBT                                                                               | WBT                                                                               | WBR                                                                               | SEL                                                                               | SER                                                                               | ø3 |
| Lane Configurations        |                                                                                   | ↑↑                                                                                | ↑↑                                                                                | ↑                                                                                 | ↑↑                                                                                | ↑                                                                                 |    |
| Volume (vph)               | 0                                                                                 | 420                                                                               | 785                                                                               | 832                                                                               | 830                                                                               | 256                                                                               |    |
| Ideal Flow (vphpl)         | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              | 1900                                                                              |    |
| Lane Width (ft)            | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                | 10                                                                                |    |
| Storage Length (ft)        | 0                                                                                 |                                                                                   |                                                                                   | 280                                                                               | 0                                                                                 | 0                                                                                 |    |
| Storage Lanes              | 0                                                                                 |                                                                                   |                                                                                   | 1                                                                                 | 2                                                                                 | 1                                                                                 |    |
| Taper Length (ft)          | 25                                                                                |                                                                                   |                                                                                   |                                                                                   | 25                                                                                |                                                                                   |    |
| Lane Util. Factor          | 1.00                                                                              | 0.95                                                                              | 0.95                                                                              | 1.00                                                                              | 0.97                                                                              | 1.00                                                                              |    |
| Ped Bike Factor            |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Frt                        |                                                                                   |                                                                                   |                                                                                   | 0.850                                                                             |                                                                                   | 0.850                                                                             |    |
| Flt Protected              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |    |
| Satd. Flow (prot)          | 0                                                                                 | 3271                                                                              | 3303                                                                              | 1478                                                                              | 3236                                                                              | 1492                                                                              |    |
| Flt Permitted              |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 0.950                                                                             |                                                                                   |    |
| Satd. Flow (perm)          | 0                                                                                 | 3271                                                                              | 3303                                                                              | 1478                                                                              | 3236                                                                              | 1492                                                                              |    |
| Right Turn on Red          |                                                                                   |                                                                                   |                                                                                   | No                                                                                |                                                                                   | Yes                                                                               |    |
| Satd. Flow (RTOR)          |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 275                                                                               |    |
| Link Speed (mph)           |                                                                                   | 30                                                                                | 30                                                                                |                                                                                   | 30                                                                                |                                                                                   |    |
| Link Distance (ft)         |                                                                                   | 246                                                                               | 421                                                                               |                                                                                   | 91                                                                                |                                                                                   |    |
| Travel Time (s)            |                                                                                   | 5.6                                                                               | 9.6                                                                               |                                                                                   | 2.1                                                                               |                                                                                   |    |
| Confl. Peds. (#/hr)        |                                                                                   |                                                                                   |                                                                                   | 36                                                                                |                                                                                   |                                                                                   |    |
| Peak Hour Factor           | 0.94                                                                              | 0.94                                                                              | 0.98                                                                              | 0.98                                                                              | 0.93                                                                              | 0.93                                                                              |    |
| Heavy Vehicles (%)         | 3%                                                                                | 3%                                                                                | 2%                                                                                | 2%                                                                                | 1%                                                                                | 1%                                                                                |    |
| Adj. Flow (vph)            | 0                                                                                 | 447                                                                               | 801                                                                               | 849                                                                               | 892                                                                               | 275                                                                               |    |
| Shared Lane Traffic (%)    |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Lane Group Flow (vph)      | 0                                                                                 | 447                                                                               | 801                                                                               | 849                                                                               | 892                                                                               | 275                                                                               |    |
| Enter Blocked Intersection | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                | No                                                                                |    |
| Lane Alignment             | Left                                                                              | Left                                                                              | Left                                                                              | Right                                                                             | Left                                                                              | Right                                                                             |    |
| Median Width(ft)           |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 20                                                                                |                                                                                   |    |
| Link Offset(ft)            |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 0                                                                                 |                                                                                   |    |
| Crosswalk Width(ft)        |                                                                                   | 0                                                                                 | 0                                                                                 |                                                                                   | 10                                                                                |                                                                                   |    |
| Two way Left Turn Lane     |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Headway Factor             | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              | 1.09                                                                              |    |
| Turning Speed (mph)        | 15                                                                                |                                                                                   |                                                                                   | 9                                                                                 | 15                                                                                | 9                                                                                 |    |
| Number of Detectors        |                                                                                   | 0                                                                                 | 0                                                                                 | 1                                                                                 | 1                                                                                 | 1                                                                                 |    |
| Detector Template          |                                                                                   |                                                                                   |                                                                                   | Right                                                                             | Left                                                                              | Right                                                                             |    |
| Leading Detector (ft)      |                                                                                   | 0                                                                                 | 0                                                                                 | 24                                                                                | 24                                                                                | 24                                                                                |    |
| Trailing Detector (ft)     |                                                                                   | 0                                                                                 | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                |    |
| Detector 1 Position(ft)    |                                                                                   | 0                                                                                 | 0                                                                                 | -6                                                                                | -6                                                                                | -6                                                                                |    |
| Detector 1 Size(ft)        |                                                                                   | 6                                                                                 | 5                                                                                 | 30                                                                                | 30                                                                                | 30                                                                                |    |
| Detector 1 Type            |                                                                                   | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             | Cl+Ex                                                                             |    |
| Detector 1 Channel         |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |
| Detector 1 Extend (s)      |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Detector 1 Queue (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Detector 1 Delay (s)       |                                                                                   | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               | 0.0                                                                               |    |
| Turn Type                  |                                                                                   | NA                                                                                | NA                                                                                | pt+ov                                                                             | NA                                                                                | Perm                                                                              |    |
| Protected Phases           |                                                                                   | 6                                                                                 | 2                                                                                 | 2 4                                                                               | 4                                                                                 |                                                                                   | 3  |
| Permitted Phases           |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   | 4                                                                                 |    |
| Detector Phase             |                                                                                   |                                                                                   |                                                                                   | 2 4                                                                               | 4                                                                                 | 4                                                                                 |    |
| Switch Phase               |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                   |    |

Lanes, Volumes, Timings  
4: Dade Blvd & N Michigan Ave

5/13/2015



| Lane Group              | EBL | EBT   | WBT   | WBR  | SEL   | SER   | ø3   |
|-------------------------|-----|-------|-------|------|-------|-------|------|
| Minimum Initial (s)     |     | 14.0  | 14.0  |      | 7.0   | 7.0   | 7.0  |
| Minimum Split (s)       |     | 34.8  | 34.8  |      | 20.6  | 20.6  | 11.0 |
| Total Split (s)         |     | 45.8  | 45.8  |      | 54.2  | 54.2  | 30.0 |
| Total Split (%)         |     | 35.2% | 35.2% |      | 41.7% | 41.7% | 23%  |
| Maximum Green (s)       |     | 41.0  | 41.0  |      | 49.6  | 49.6  | 26.0 |
| Yellow Time (s)         |     | 4.0   | 4.0   |      | 4.0   | 4.0   | 3.5  |
| All-Red Time (s)        |     | 0.8   | 0.8   |      | 0.6   | 0.6   | 0.5  |
| Lost Time Adjust (s)    |     | 2.5   | 2.5   |      | 2.5   | 2.5   |      |
| Total Lost Time (s)     |     | 7.3   | 7.3   |      | 7.1   | 7.1   |      |
| Lead/Lag                |     |       |       |      | Lag   | Lag   | Lead |
| Lead-Lag Optimize?      |     |       |       |      | Yes   | Yes   | Yes  |
| Vehicle Extension (s)   |     | 1.0   | 1.0   |      | 2.5   | 2.5   | 3.0  |
| Recall Mode             |     | Min   | Min   |      | None  | None  | None |
| Walk Time (s)           |     | 7.0   | 7.0   |      |       |       |      |
| Flash Dont Walk (s)     |     | 23.0  | 23.0  |      |       |       |      |
| Pedestrian Calls (#/hr) |     | 36    | 10    |      |       |       |      |
| Act Effect Green (s)    |     | 20.7  | 20.7  | 61.6 | 25.0  | 25.0  |      |
| Actuated g/C Ratio      |     | 0.34  | 0.34  | 1.00 | 0.41  | 0.41  |      |
| v/c Ratio               |     | 0.41  | 0.72  | 0.57 | 0.68  | 0.36  |      |
| Control Delay           |     | 18.4  | 23.6  | 1.6  | 17.8  | 3.1   |      |
| Queue Delay             |     | 0.0   | 0.0   | 0.0  | 0.0   | 0.0   |      |
| Total Delay             |     | 18.4  | 23.6  | 1.6  | 17.8  | 3.1   |      |
| LOS                     |     | B     | C     | A    | B     | A     |      |
| Approach Delay          |     | 18.5  | 12.3  |      | 14.3  |       |      |
| Approach LOS            |     | B     | B     |      | B     |       |      |

Intersection Summary

Area Type: Other

Cycle Length: 130

Actuated Cycle Length: 61.6

Natural Cycle: 75

Control Type: Semi Act-Uncoord

Maximum v/c Ratio: 0.72

Intersection Signal Delay: 13.9

Intersection LOS: B

Intersection Capacity Utilization 60.7%

ICU Level of Service B

Analysis Period (min) 15

Splits and Phases: 4: Dade Blvd & N Michigan Ave

|        |      |        |
|--------|------|--------|
|        |      |        |
| ø2     | ø3   | ø4     |
| 45.8 s | 30 s | 54.2 s |
|        |      |        |
| ø6     |      |        |
| 45.8 s |      |        |

## Queues

## 4: Dade Blvd &amp; N Michigan Ave

5/13/2015

|                         | →    | ←    | ↖    | ↗    | ↘    |
|-------------------------|------|------|------|------|------|
| Lane Group              | EBT  | WBT  | WBR  | SEL  | SER  |
| Lane Group Flow (vph)   | 447  | 801  | 849  | 892  | 275  |
| v/c Ratio               | 0.41 | 0.72 | 0.57 | 0.68 | 0.36 |
| Control Delay           | 18.4 | 23.6 | 1.6  | 17.8 | 3.1  |
| Queue Delay             | 0.0  | 0.0  | 0.0  | 0.0  | 0.0  |
| Total Delay             | 18.4 | 23.6 | 1.6  | 17.8 | 3.1  |
| Queue Length 50th (ft)  | 62   | 127  | 0    | 158  | 0    |
| Queue Length 95th (ft)  | 149  | 285  | 0    | 209  | 35   |
| Internal Link Dist (ft) | 166  | 341  |      | 11   |      |
| Turn Bay Length (ft)    |      |      | 280  |      |      |
| Base Capacity (vph)     | 1097 | 1107 | 1478 | 2521 | 1223 |
| Starvation Cap Reductn  | 0    | 0    | 0    | 0    | 0    |
| Spillback Cap Reductn   | 0    | 0    | 0    | 0    | 0    |
| Storage Cap Reductn     | 0    | 0    | 0    | 0    | 0    |
| Reduced v/c Ratio       | 0.41 | 0.72 | 0.57 | 0.35 | 0.22 |
| Intersection Summary    |      |      |      |      |      |