



*Traffic Impact Analysis
for Submittal to
the City of Miami Beach*

**Starwood Properties Office Building
Miami Beach, Florida**



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September 2018
043992000

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City of Miami Beach*

**Starwood Properties Office Building
Miami Beach, Florida**

Prepared for:

JAWS Equity Owner 80, LLC
Miami Beach, Florida

Prepared by:

Kimley-Horn and Associates, Inc.

Kimley»Horn

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September 2018
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EXECUTIVE SUMMARY

JAWS Equity Owner 80, LLC is proposing to develop the properties located at 2318, 2332, and 2340 Collins Avenue in Miami Beach, Florida. The parcels proposed for redevelopment are currently occupied by a surface parking lot and an AVIS car rental facility. The proposed redevelopment consists of a 132,600 square-foot office building and 11,146 square feet of retail space. Note that the AVIS car rental facility will remain as part of this redevelopment. The redevelopment will be served by one (1) full-access driveway along Liberty Avenue. Self-parking will not be provided on-site. All vehicles will be valeted. The project is expected to be completed and opened by year 2022.

A traffic impact analysis was conducted for the project. Trip generation for the proposed redevelopment was calculated using equations contained in the Institute of Transportation Engineers' (ITE's) *Trip Generation Manual*, 10th Edition. The project is expected to generate 123 net new vehicle trips during the weekday A.M. peak hour and 169 net new vehicle trips during the weekday P.M. peak hour.

The results of the intersection capacity analysis indicate that the study intersections are expected to operate at adopted levels of service (LOS D+20% or better) under all analysis conditions with the exception of the intersection of Dade Boulevard at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, Park Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, and SR A1A/Collins Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour. The project is expected to assign less than 2.8 percent (2.8%) of the overall traffic volume at Dade Boulevard at 23rd Street, 5.0 percent (5.0%) of the overall traffic volume at Park Avenue at 23rd Street, and less than 3.4 percent (3.4%) of the overall traffic volume at SR A1A/Collins Avenue at 23rd Street during the P.M. peak hour.

Please note that without inclusion of the geometric and signalization modifications proposed in the City's *23rd Street Complete Streets Study*, the intersection of Park Avenue at 23rd Street operates at adopted levels of service (LOS D+20% or better) and overall delay at the intersection of Dade Boulevard at 23rd Street is substantially lower under future background, and future total conditions. Furthermore, please note that the existing exclusive pedestrian phase at the intersection of Dade Boulevard and 23rd Street was maintained under future background and future total conditions.

Substantial improvement in delay is expected if the exclusive pedestrian phase is replaced with typical pedestrian interval phases.

The results of the turn lane queue length analysis indicate that all queues are expected to be accommodated within the exclusive turn lanes at all study intersections with the exception of the following:

- The exclusive westbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing conditions during the A.M. and P.M. peak hours. Note that the queues are accommodated with the proposed 23rd *Street Complete Streets* project.
- The exclusive southbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.
- The exclusive eastbound left-turn lane at the intersection of SR A1A/Collins Avenue at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.

Transportation Demand Management (TDM) strategies are proposed to reduce the impacts of the project traffic on the surrounding roadway network. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours. The applicant will commit to implementing the following strategies:

- Long-term bicycle parking will be provided on-site (97 spaces will be provided)
- Short-term bicycle parking will be provided on-site (22 spaces will be provided)
- Carpool/vanpool parking spaces will be provided on-site (4 spaces will be provided)
- Scooter/moped/motorcycle parking spaces will be provided on-site (35 spaces will be provided)
- Showers will be provided on-site

Please note that three (3) Citi Bike stations are located within the vicinity of the project site on the north side of 24th Street just east of SR A1A/Collins Avenue (8 bicycle docks), on the north side of 23rd Street just west of SR A1A/Collins Avenue (16 bicycle docks), and on the south side of 22nd Street just east of SR A1A/Collins Avenue (16 bicycle docks).

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INTRODUCTION

JAWS Equity Owner 80, LLC is proposing to develop the properties located at 2318, 2332, and 2340 Collins Avenue in Miami Beach, Florida. The parcels proposed for redevelopment are currently occupied by a surface parking lot and AVIS car rental facility. The proposed redevelopment consists of a 132,600 square-foot office building and 11,146 square feet of retail space. Note that the AVIS car rental facility will remain as part of this redevelopment. The redevelopment will be served by one (1) full-access driveway along Liberty Avenue. Self-parking will not be provided on-site. All vehicles will be valeted. The project is expected to be completed and opened by year 2022. A project location map is provided as Figure 1. A conceptual site plan is provided in Appendix A.

Kimley-Horn and Associates, Inc. has completed this traffic impact analysis for submittal to the City of Miami Beach. The purpose of the study is to assess the project's impact on the surrounding roadway network and determine if adequate capacity is available to support future traffic volumes. The study's methodology is consistent with the requirements of the City of Miami Beach. Methodology correspondence detailing the traffic study requirements is included in Appendix B. This report summarizes the data collection, project trip generation and distribution, and capacity analysis for the proposed redevelopment.



EXISTING TRAFFIC

Analysis peak period 7:00 to 9:00 A.M. and 4:00 to 6:00 P.M. turning movement counts were collected on Thursday, August 16, 2018 at the following intersections:

- Dade Boulevard and 23rd Street
- Park Avenue and 23rd Street
- Liberty Avenue and 23rd Street
- Collins Avenue and 23rd Street
- Collins Avenue and 22nd Street
- Collins Avenue and 24th Street
- Liberty Avenue and Project Driveway

The traffic volumes were collected in 15-minute intervals and the peak hour was determined for each intersection. City of Miami Beach peak season conversion factors were developed from Florida Department of Transportation (FDOT) data and were applied to the traffic counts to adjust the traffic to peak season volumes. The appropriate peak season conversion factor of 1.11 was applied to the collected turning movement counts.

Existing signal phasing and timing patterns were obtained from the Miami-Dade County Department of Transportation and Public Works – Traffic Signals and Signs Division for the signalized intersections required to be evaluated in this analysis. The turning movement counts, FDOT peak season factor category report, and signal timing data are included in Appendix C. Figure 2 presents the existing turning movement volumes at the study intersections during the A.M. and P.M. peak hours.



Legend

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

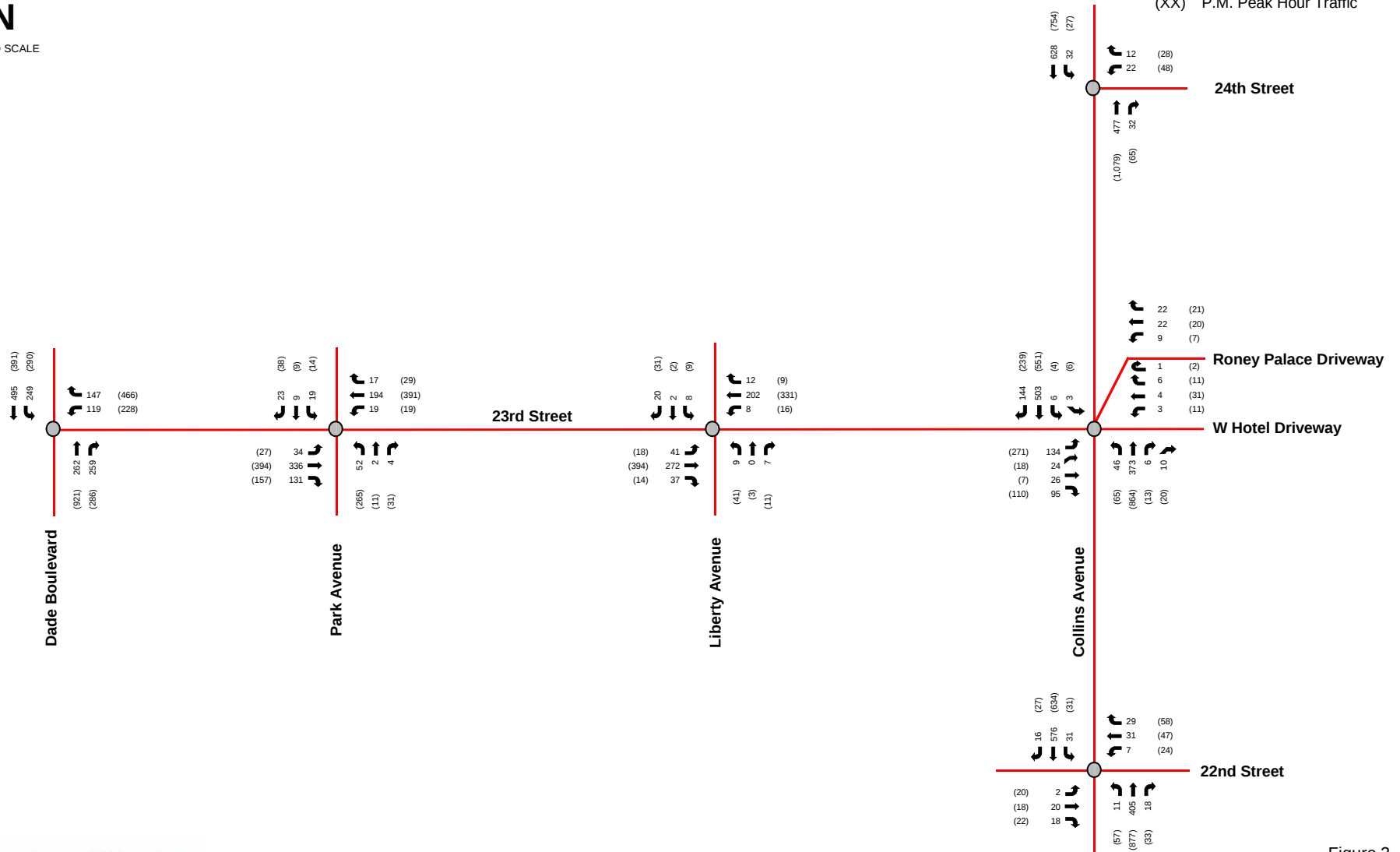


Figure 2
Existing Peak Hour Traffic
Starwood Properties Office Building
Miami Beach, Florida

FUTURE BACKGROUND TRAFFIC

Future background traffic conditions are defined as expected traffic conditions on the roadway network in the year 2022 without the construction of the proposed redevelopment. Future background traffic volumes used in the analysis are the sum of the existing traffic, additional traffic generated by growth in the study area, traffic generated from nearby committed developments, and traffic diversions associated with the closure of Liberty Avenue south of 23rd Street as part of the Collins Park Garage committed development. Refer to Figure 3 for the future background 2022 peak hour traffic volumes.

Please note that at the request of the City of Miami Beach, future background and future total conditions include the geometric and traffic control modifications proposed in the City of Miami Beach's *23rd Street Complete Streets Study*. The proposed modification pertinent to this study are as follows:

- The eastbound through lane along 23rd Street is proposed to be reduced from two (2) lanes to one (1) lane between Dade Boulevard and SR A1A/Collins Avenue in order to accommodate bicycle lanes in each direction along 23rd Street.
- The intersection of Park Avenue at 23rd Street is proposed to be signalized. Please note that due to their proximity, the intersections of Dade Boulevard at 23rd Street and Park Avenue at 23rd Street were analyzed as a clustered intersection.
- The eastbound approach at the intersection of SR A1A/Collins Avenue at 23rd Street is proposed to be reconfigured from one (1) exclusive left-turn lane and two (2) exclusive right-turn lanes to one (1) exclusive left-turn lane and one (1) shared through-right lane in order to accommodate bicycle lanes in each direction along 23rd Street.

Relevant pages from the City's *23rd Street Complete Streets Study* are included in Appendix E.

Background Area Growth

Future traffic growth on the transportation network was determined based upon (a) historic growth trends at nearby FDOT traffic count stations and (b) traffic volume comparisons from the year 2010 and 2040 Florida Standard Urban Transportation Model Structure (FSUTMS) - Southeast Florida Regional Planning Model (SERPM).

FDOT count stations referenced in this analysis include:

- Count Station #5170: SR A1A/Collins Avenue – North of 21st Street
- Count Station #8531: 17th Street – 200 feet east of Meridian Avenue
- Count Station #8676: Prairie Avenue – 400 feet south of 23rd Street

The historic growth rate analysis, based on FDOT count stations, examined linear, exponential, and decaying exponential growth rates for the most recent five (5) year and 10-year periods. The highest total growth rate of 2.68 percent (2.68%) occurred during the most recent five (5) year period. Based on the forecasted volumes obtained from the 2010 and 2040 FSUTMS SERPM, an annual growth rate of 0.00 percent (0.00%) was calculated in the vicinity of the redevelopment. The highest growth rate of 2.68 percent (2.68%) was applied to existing traffic volumes compounded annually to develop future 2022 volumes. The worksheets used to analyze the historic growth trends along with the FSUTMS transportation model outputs are included in Appendix D.

Committed Developments

City of Miami Beach staff identified the Collins Park Garage development as a committed development. Traffic generated by this development was included in future background conditions. Furthermore, traffic diversions associated with the closure of Liberty Avenue south of 23rd Street were included as part of future background conditions. Trip assignment information and the Liberty Avenue closure traffic diversions for the committed development are included in Appendix E.



Legend

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

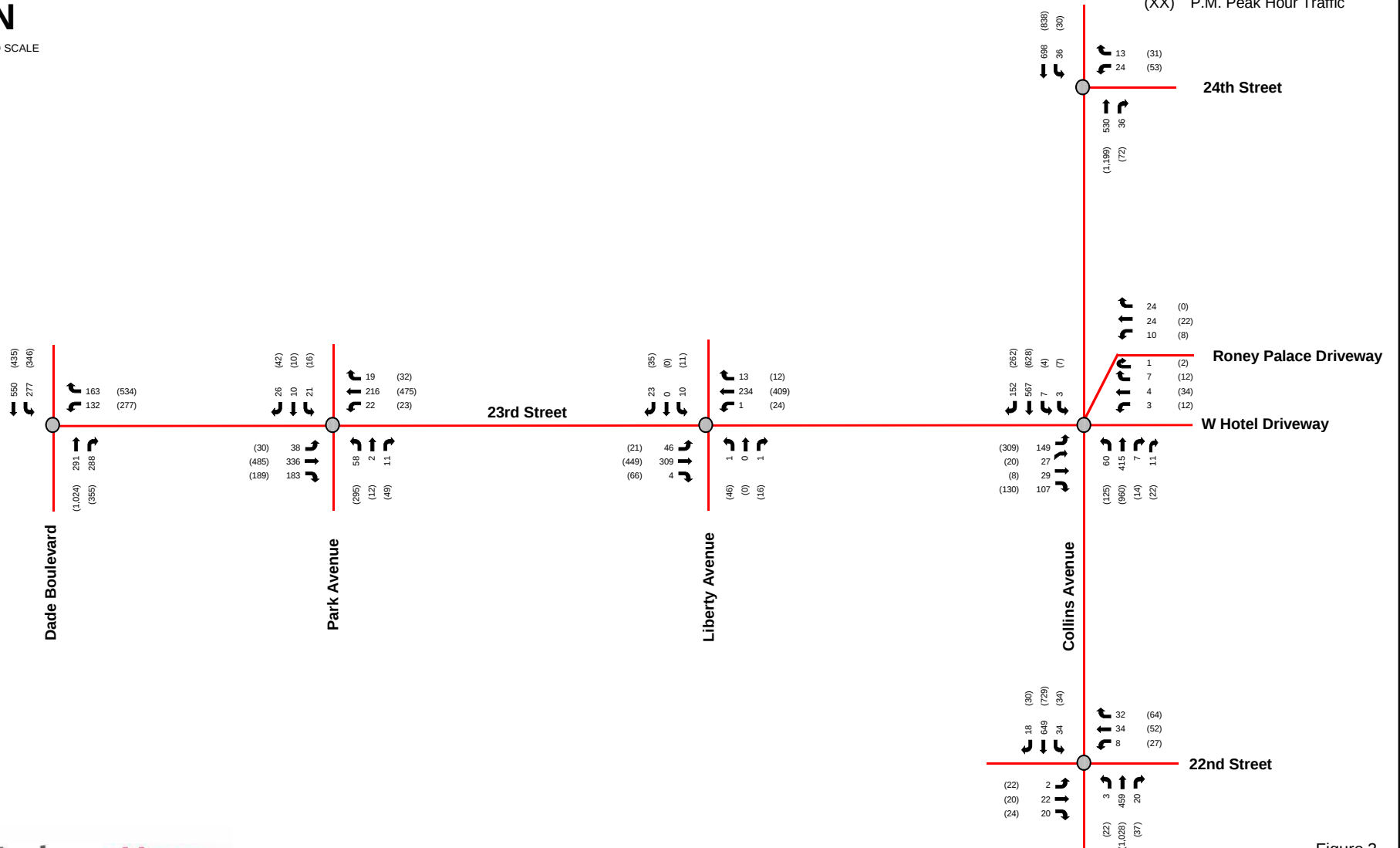


Figure 3
Future Background Peak Hour Traffic
Starwood Properties Office Building
Miami Beach, Florida

PROJECT TRAFFIC

Project traffic used in this analysis is defined as the vehicle trips expected to be generated by the project and the distribution and assignment of that traffic over the study roadway network.

Existing and Proposed Land Uses

The property proposed for redevelopment is currently occupied by a surface parking lot and AVIS car rental facility. The proposed redevelopment consists of a 132,600 square-foot office building and 11,146 square feet of retail. Note that the AVIS car rental facility will remain as part of this redevelopment. The project is expected to be completed by year 2022.

Project Access

Access to the proposed redevelopment will be provided via one (1) full-access driveway along Liberty Avenue. Self-parking will not be provided on-site. All vehicles will be valeted.

Trip Generation

Trip generation calculations for the proposed redevelopment were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. Trip generation calculations for the existing AVIS car rental facility were based on data collected on Thursday, August 16, 2018 at the existing AVIS car rental facility. The trip generation for the proposed redevelopment was determined using ITE Land Use Code (LUC) 710 (General Office Building) and LUC 820 (Shopping Center). Project trips were estimated for the weekday A.M. and P.M. peak hours.

Multimodal Reduction

A multimodal (public transit, bicycle, and pedestrian) factor of 22.8 percent (22.8%) was identified based on US Census *Means of Transportation to Work* data was for the census tract containing the proposed redevelopment. It is expected that employees and visitors will choose to walk, bike, or use public transit to and from the proposed redevelopment. Please note that the City of Miami Beach places a 20 percent (20%) cap on the multimodal factor. Therefore, a 20 percent (20%) multimodal factor was utilized in the analysis.

Miami-Dade County Transit (MDT) provides bus service to and from the project area via six (6) routes and the City of Miami Beach's Trolley provides service to and from the project area via two (2) routes:

- Route 103/Route C operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves Downtown (Miami) Bus Terminal, Main Library, Historical Museum of South Florida, Miami Art Museum, Government Center Metrorail station, Omni Metromover Station/Bus Terminal, City of Miami Beach via MacArthur Causeway, South Beach, Washington Avenue, Lincoln Road, Collins Avenue, 41st Street, Alton Road, and Mt. Sinai Hospital. This route operates with 30-minute headways during the weekday A.M. and P.M. peak hours and provides connecting service to 20 additional MDT bus routes, as well as the Metrorail.
- Route 112/Route L operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves Lincoln Road, Miami Beach Convention Center, Miami Beach Senior High School, 41st Street/Indian Creek Drive, JFK Causeway, Northside Metrorail station, Amtrak Terminal, and Hialeah Metrorail station. This route operates with 12-minute headways during the weekday A.M. and P.M. peak hours and provides connecting service to 23 additional MDT bus routes, as well as the Metrorail.
- Route 113/Route M operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves 17th Street, Lincoln Road, Washington Avenue, and SR A1A/Collins Avenue within the vicinity of the project. This route serves NW 21st Street and NW 19th Avenue via NW 17th Avenue, NW 19th Avenue/NW 20th Street, Civic Center Metrorail station, University of Miami/Jackson Memorial hospitals and clinics, Cedars Medical Center, VA Hospital, Omni Metromover Station/Bus Terminal, MacArthur Causeway, City of Miami Beach, South Beach, Lincoln Road, Collins Avenue/41st Street, and Mt. Sinai Hospital. This route operates with 40-minute headways during the weekday A.M. peak hour and 45-minute headways during the weekday P.M. peak hour and provides connecting service to 17 additional MDT bus routes, as well as the Metrorail.
- Route 119/Route S operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves 17th Street, Lincoln Road, Washington Avenue, and SR A1A/Collins Avenue within the vicinity of the project. This route serves Downtown (Miami)

Bus Terminal, Main Library, Historical Museum, Miami Art Museum, Government Center Metrorail station, Omni Bus Terminal, MacArthur Causeway, City of Miami Beach, South Beach, Lincoln Road, Collins Avenue, 192nd Street Causeway, City of Aventura, and Aventura Mall. This route operates with 15-minute headways during the weekday A.M. and P.M. peak hour and provides connecting service to 25 additional MDT bus routes, as well as the Metrorail.

- Route 120 Beach MAX operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves 17th Street, Lincoln Road, Washington Avenue, and SR A1A/Collins Avenue within the vicinity of the project. This route serves the Downtown Bus Terminal, Main Library, Historical Museum, Miami Art Museum, Government Center Metrorail station, Miami-Dade College Wolfson Campus, Omni Bus Terminal, MacArthur Causeway, City of Miami Beach, Collins Avenue, Town of Surfside, City of Bal Harbour, Haulover Park Marina, and Aventura Mall. This route operates with 12-minute headways during the weekday A.M. and P.M. peak hour and provides connecting service to 24 additional MDT bus routes, as well as the Metrorail.
- Route 150 operates on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. This route serves Miami International Airport Metrorail Station, 41st Street, Alton Road, SR A1A/Collins Avenue, Lincoln Road, and Washington Avenue. This route operates with 20-minute headways during the weekday A.M. and P.M. peak hours and provides connecting service to 10 additional MDT bus routes.
- The Miami Beach Trolley Middle Beach Loop and Collins Express operate on SR A1A/Collins Avenue and SR A1A/Indian Creek Drive within the vicinity of the project. These routes operate with between 15-minute to 20-minute headways during the analysis hour.

Detailed route information and headway data is provided in Appendix F.

Internal Capture

A portion of the trips generated by the redevelopment will be captured internally on the site. Internal capture rates were based upon values contained in ITE's *Trip Generation Handbook*, 3rd Edition. The internal capture for the proposed redevelopment is expected to be 4.7 percent (4.7%) during the A.M.

peak hour and 3.9 percent (3.9%) during the P.M. peak hour. Internal capture calculations are contained in Appendix F.

Pass-by Capture

In addition to internal capture, pass-by capture trips were also determined based on average rates provided in the *Trip Generation Handbook*, 3rd Edition. The pass-by capture rate for the shopping center is 34.0 percent (34.0%) during the P.M. peak hour.

Net New Project Trips

Net new project trips are equal to the gross project trips minus the multimodal reduction factor, internal capture, and pass-by capture. The net new project trips represent the additional vehicles on the roadway network. Table 1 summarizes the project's trip generation for the analysis hour. As shown in Table 1, the redevelopment is expected to generate 123 net new vehicle trips during the A.M. peak hour and 169 net new vehicle trips during the P.M. peak hour. Detailed trip generation information is included in Appendix F.

Table 1: Proposed Trip Generation				
A.M.(P.M.) Peak Hour Driveway Volume				
Future Land Use (ITE Code)	Scale	Net External Trips	Entering Trips	Exiting Trips
<i>Existing Development</i>				
Avis Car Rental ⁽¹⁾	n/a	12 (13)	7 (7)	5 (6)
<i>Proposed Redevelopment</i>				
General Office Building (710)	132.6 ksf	118 (115)	103 (18)	15 (97)
Shopping Center (820)	11.146 ksf	5 (54)	3 (25)	2 (29)
Avis Car Rental ⁽¹⁾	n/a	12 (13)	7 (7)	5 (6)
Subtotal		135 (182)	113 (50)	22 (132)
Net New Vehicle Trips (vehicles per hour)		123 (169)	106 (43)	17 (126)

Note: (1) Avis Car Rental traffic data was collected on Thursday, August 16, 2018.

Trip Distribution and Assignment

The trip distribution was based on an interpolated cardinal trip distribution for the project site's traffic analysis zone (TAZ) obtained from the Miami-Dade Metropolitan Planning Organization's (MPO's) *2040 Long Range Transportation Plan Directional Trip Distribution Report*. The project is located within TAZ 635. The cardinal distribution is shown in Table 2. Detailed cardinal distribution calculations are contained in Appendix G.

Table 2: Cardinal Trip Distribution	
Cardinal Direction	Percentage of Trips
North-Northeast	13.0%
East-Northeast	0.0%
East-Southeast	0.0%
South-Southeast	0.0%
South-Southwest	19.0%
West-Southwest	29.0%
West-Northwest	19.0%
North-Northwest	20.0%
Total	100.0%

Figures 4 and 5 show the project trip distribution and the project trip assignment at the project driveways and adjacent intersections for the A.M. and P.M. peak hours. Figures 6 and 7 show the pass-by trip distribution, and pass-by trip assignment at the project driveways and adjacent intersections for the P.M. peak hour.



- Legend**
- Study Roadway
 - Study Intersection
 - XX% Entering Trip Distribution
 - (XX%) Exiting Trip Distribution

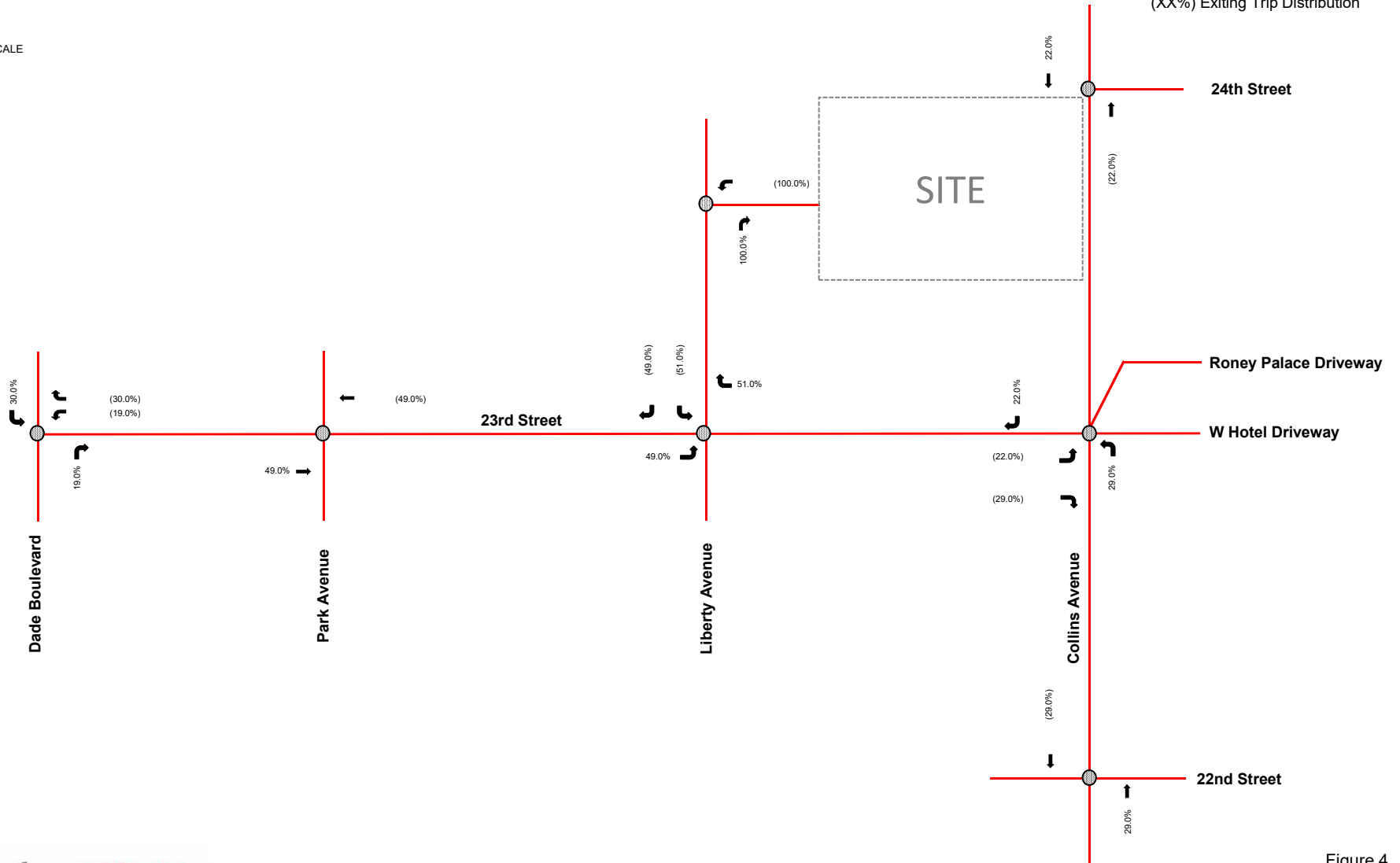


Figure 4
Peak Hour Project Trip Distribution
Starwood Properties Office Building
Miami Beach, Florida

N
NOT TO SCALE

- Legend**
- Study Roadway
 - Study Intersection
 - XX A.M. Peak Hour Project Trips
 - (XX) P.M. Peak Hour Project Trips

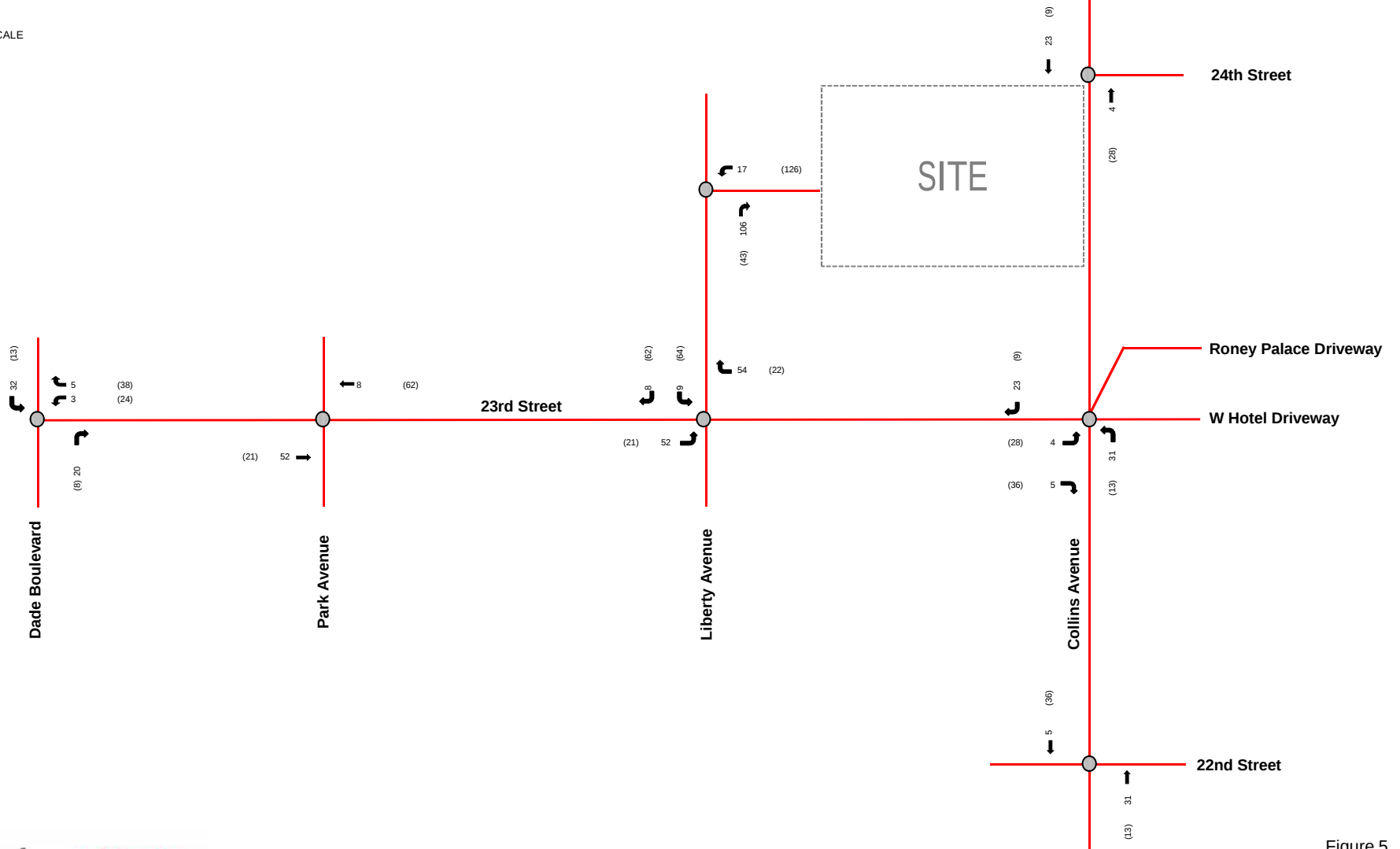


Figure 5
Peak Hour Project Trip Assignment
Starwood Properties Office Building
Miami Beach, Florida

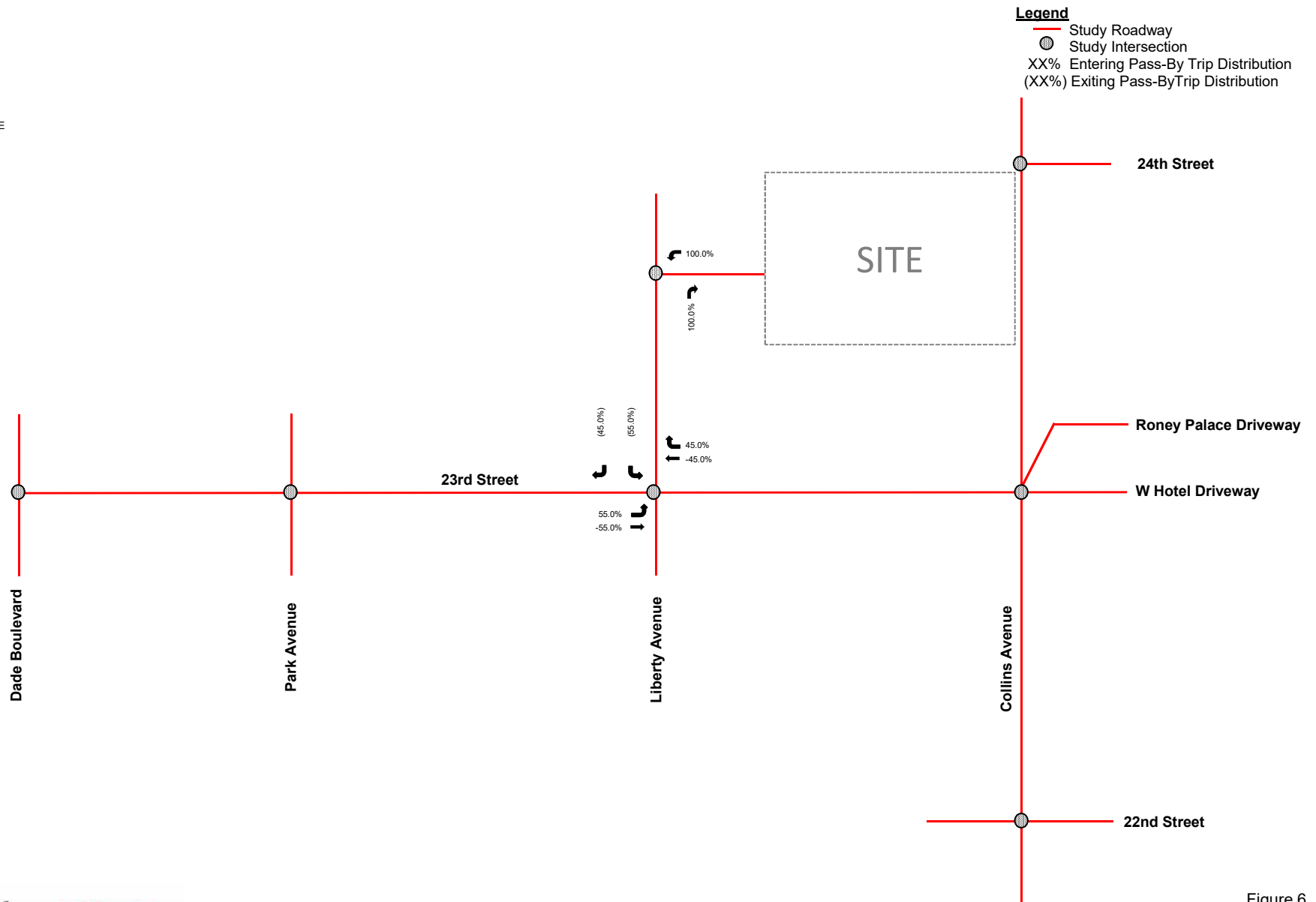


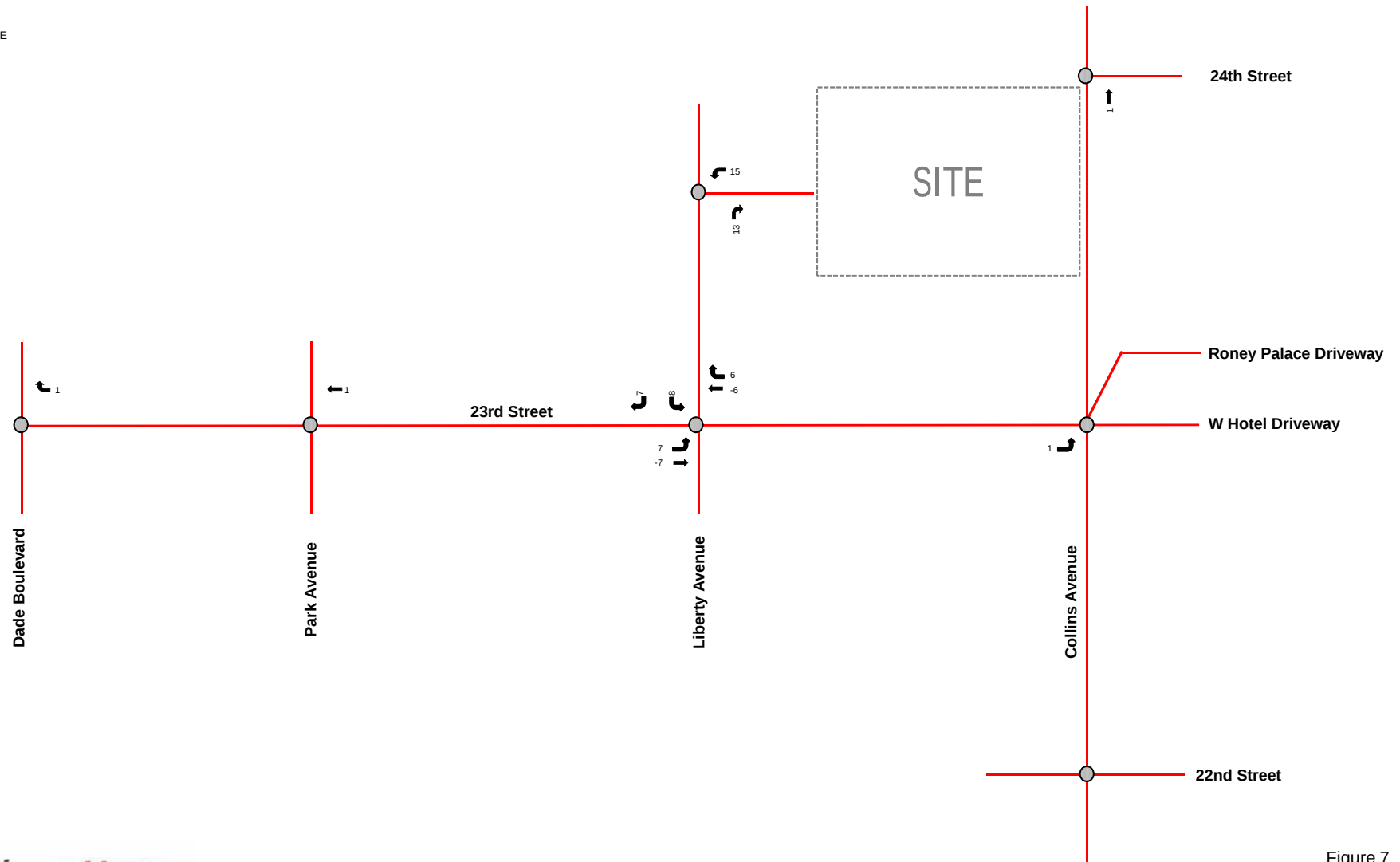
Figure 6
P.M. Peak Hour Pass-By Trip Distribution
Starwood Properties Office Building
Miami Beach, Florida



NOT TO SCALE

Legend

-  Study Roadway
-  Study Intersection
-  P.M. Peak Hour Pass-By Assignment



FUTURE TOTAL TRAFFIC

Future total traffic conditions are defined as the expected traffic conditions in the year 2022 after the opening of the project. Total traffic volumes considered in the analysis for this project are the sum of the background traffic volumes and expected project traffic volumes. Refer to Figure 8 for the 2022 future total peak hour traffic volumes. Volume Development worksheets for the study intersections are included in Appendix H.



- Legend**
- Study Roadway
 - Study Intersection
 - XX A.M. Peak Hour Traffic
 - (XX) P.M. Peak Hour Traffic

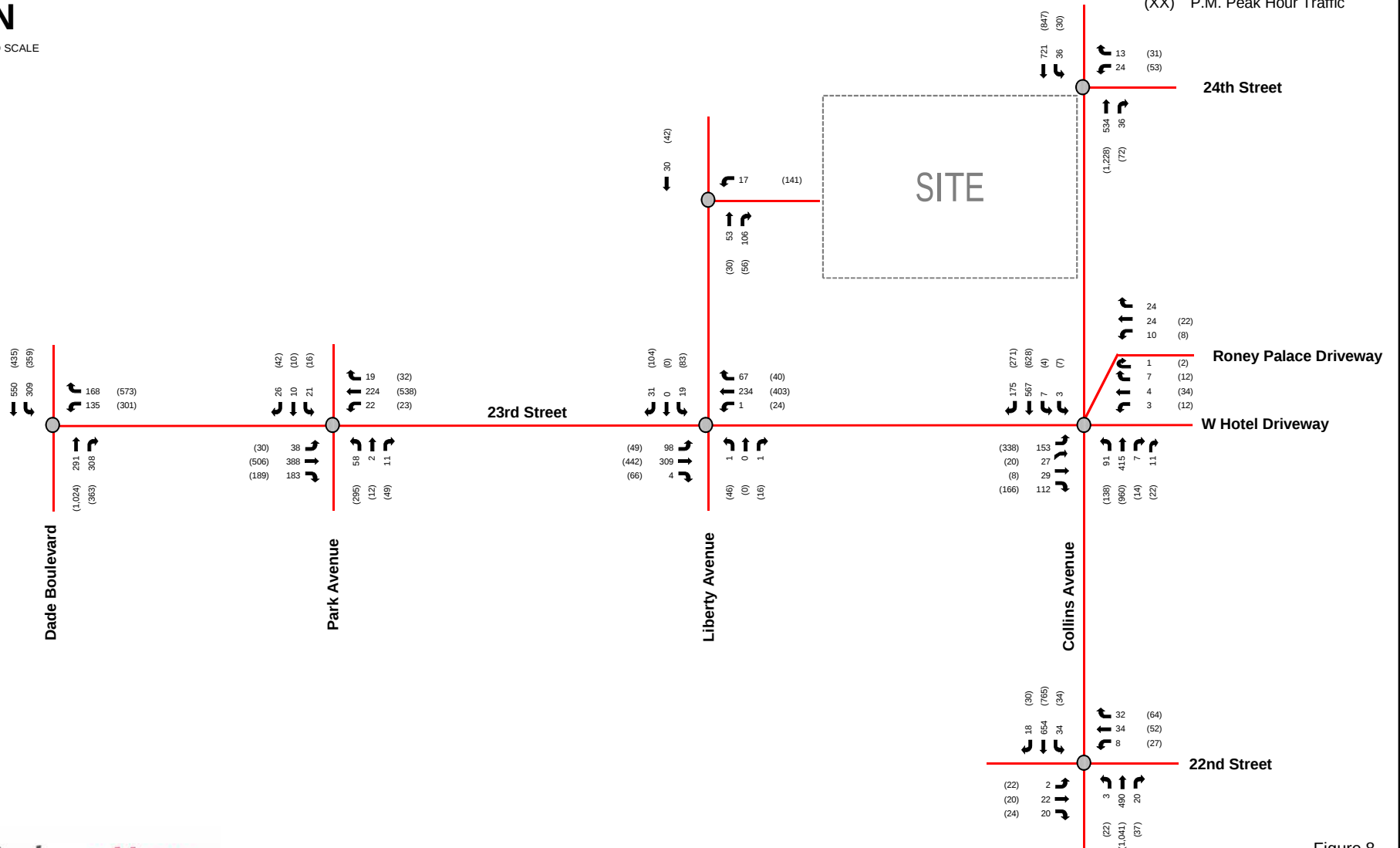


Figure 8
Future Total Peak Hour Traffic
Starwood Properties Office Building
Miami Beach, Florida

INTERSECTION CAPACITY ANALYSIS

The study area intersection operating conditions were analyzed for three (3) scenarios (existing conditions, future background conditions, and future total conditions) during the A.M. and P.M. peak hours using Trafficware's *SYNCHRO 10.0* software, which applies methodologies outlined in the Transportation Research Board's (TRB's) *Highway Capacity Manual (HCM)*, 2000 and 2010 Editions. Synchro worksheets for the study intersections are included in Appendix I.

A summary of the intersection analyses is presented in Table 3 and Table 4. Please note that as mass transit service with headways of 20 minutes or less operates within 0.25 miles of the study area, LOS D+20% was utilized as the adopted level of service standard consistent with the City of Miami Beach's *2025 Comprehensive Plan*.

The results of the intersection capacity analysis indicate that the study intersections are expected to operate at adopted levels of service (LOS D+20% or better) under all analysis conditions with the exception of the intersection of Dade Boulevard at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, Park Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, and SR A1A/Collins Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour. The project is expected to assign less than 2.8 percent (2.8%) of the overall traffic volume at Dade Boulevard at 23rd Street, 5.0 percent (5.0%) of the overall traffic volume at Park Avenue at 23rd Street, and less than 3.4 percent (3.4%) of the overall traffic volume at SR A1A/Collins Avenue at 23rd Street during the P.M. peak hour.

Please note that without inclusion of the geometric and signalization modifications proposed in the City's *23rd Street Complete Streets Study*, the intersection of Park Avenue at 23rd Street operates at adopted levels of service (LOS D+20% or better) and overall delay at the intersection of Dade Boulevard at 23rd Street is substantially improved under future background, and future total conditions. Furthermore, please note that the existing exclusive pedestrian phase at the intersection of Dade Boulevard and 23rd Street was maintained under future background and future total conditions. Substantial improvement in delay is expected if the exclusive pedestrian phase is replaced with typical pedestrian interval phases.

Table 3: A.M. Peak Hour Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS/Delay	Approach LOS			
			EB	WB	NB	SB
Existing Conditions (Future Background Conditions) ⁽⁵⁾ [Future Total Conditions] ⁽⁵⁾						
Dade Boulevard and 23 rd Street	Signalized ⁽¹⁾	C/20.4 sec (D/47.9 sec) [D+19%/59.4 sec]	(4)	D (B) [D]	C (E) [C]	A (D) [B]
Park Avenue and 23 rd Street	One-Way, Stop Controlled	(2)	(3)	(3)	B (B) [B]	(4)
	Signalized ⁽¹⁾⁽⁶⁾	- (C/23.7 sec) [C/27.2 sec]	- (A) [A]	- (D) [D]	- (F) [F]	- (A) [A]
Liberty Avenue and 23 rd Street	Two-Way, Stop-Controlled	(2)	(3)	(3)	B (B) [B]	A (B) [B]
SR A1A/Collins Avenue and 23 rd Street	Signalized ⁽¹⁾	C/27.4 sec (C/34.3 sec) [C/37.2 sec]	D (E) [E]	D (D) [D]	F ⁽⁵⁾ (F) ⁽⁵⁾ [F] ⁽⁵⁾	C (C) [C]
SR A1A/Collins Avenue and 22 nd Street	Signalized	A/4.5 sec (A/4.5 sec) [A/4.5 sec]	D (D) [D]	D (D) [D]	A (A) [A]	A (A) [A]
SR A1A/Collins Avenue and 24 th Street	Signalized ⁽¹⁾	A/5.6 sec (A/5.6 sec) [A/5.7 sec]	(4)	D (D) [D]	A (A) [A]	A (A) [A]
Liberty Avenue and Project Driveway	Two-Way, Stop-Controlled	(2)	(4)	(4) (4) [A]	(3)	(3)

Notes: ⁽¹⁾ Intersection cannot be analyzed in HCM 2010; therefore HCM 2000 was used.
⁽²⁾ Overall intersection LOS is not defined, as intersection operates under stop-control conditions.
⁽³⁾ Approach operates under free-flow conditions. LOS is not defined.
⁽⁴⁾ Approach does not exist.
⁽⁵⁾ Approach LOS for the southern westbound approach (W Hotel Driveway).
⁽⁶⁾ Future background and future total conditions include the geometric and traffic control modifications proposed in the 23rd Street Complete Streets Study

Table 4: P.M. Peak Hour Intersection Capacity Analysis						
Intersection	Traffic Control	Overall LOS/Delay	Approach LOS			
			EB	WB	NB	SB
Existing Conditions (Future Background Conditions) [Future Total Conditions]						
Dade Boulevard and 23 rd Street	Signalized ⁽¹⁾	D+14%/62.6 sec (F/>80 sec) ⁽⁷⁾ [F/>80 sec] ⁽⁷⁾	(4)	E (F) [F]	E (F) [F]	C (F) [F]
Park Avenue and 23 rd Street	One-Way, Stop Controlled	(2)	(3)	(3)	B (E) [E]	(4)
	Signalized ⁽¹⁾⁽⁶⁾	- (F/>80 sec) ⁽⁷⁾ [F/>80 sec] ⁽⁷⁾	- (A) [A]	- (F) [F]	- (F) [F]	- (A) [A]
Liberty Avenue and 23 rd Street	Two-Way, Stop-Controlled	(2)	(3)	(3)	B (B) [C]	B (B) [C]
SR A1A/Collins Avenue and 23 rd Street	Signalized ⁽¹⁾	D/40.2 sec (F/>80 sec) [F/>80 sec]	D (F) [F]	D (D) [D]	F ⁽⁵⁾ (F) ⁽⁵⁾ [F] ⁽⁵⁾	D (F) [F]
SR A1A/Collins Avenue and 22 nd Street	Signalized	A/5.8 sec (A/6.0 sec) [A/6.0 sec]	D (D) [D]	D (D) [D]	A (A) [A]	A (A) [A]
SR A1A/Collins Avenue and 24 th Street	Signalized ⁽¹⁾	A/7.6 sec (A/7.7 sec) [A/7.8 sec]	(4)	E (E) [E]	A (A) [A]	A (A) [A]
Liberty Avenue and Project Driveway	Two-Way, Stop-Controlled	(2)	(4)	(4) (4) [A]	(3)	(3)

Notes: ⁽¹⁾ Intersection cannot be analyzed in HCM 2010; therefore HCM 2000 was used.

⁽²⁾ Overall intersection LOS is not defined, as intersection operates under stop-control conditions.

⁽³⁾ Approach operates under free-flow conditions. LOS is not defined.

⁽⁴⁾ Approach does not exist.

⁽⁵⁾ Approach LOS for the southern westbound approach (W Hotel Driveway).

⁽⁶⁾ The analysis includes the geometric and traffic control modifications proposed in the 23rd Street Complete Streets Study

⁽⁷⁾ The existing exclusive pedestrian phase at the intersection of Dade Boulevard and 23rd Street was maintained under future background and future total conditions. The delay is expected to be significantly less if the exclusive pedestrian phase is replaced with typical pedestrian interval phases.

TURN LANE QUEUE LENGTH ANALYSIS

A 95th percentile queue analysis was performed to determine if the existing exclusive turn lanes at signalized study intersections can sufficiently accommodate expected vehicle queue lengths under existing, future background, and future total traffic conditions. The 95th percentile queue lengths were calculated using Trafficware's *SYNCHRO 10.0* software. Detailed Synchro worksheets are contained in Appendix I. The results of the queue length analysis are summarized in Table 5 and Table 6. The results of the analysis indicate that all queues are expected to be accommodated within the exclusive turn lanes at all study intersections with the exception of the following:

- The exclusive westbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing conditions during the A.M. and P.M. peak hours. Note that the queues are accommodated with the proposed *23rd Street Complete Streets* project.
- The exclusive southbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.
- The exclusive eastbound left-turn lane at the intersection of SR A1A/Collins Avenue at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.

Table 5: A.M. Peak Hour Turn Lane Queuing Analysis

Intersection	Turn Lane	95 th Percentile Queue (ft) ⁽¹⁾	Existing Turn Lane Length (ft)	Turn Lane Sufficient?
<i>Existing (Future Background) [Future Total]</i>				
Dade Boulevard and 23 rd Street	Westbound Left-Turn	#150 (m33) [#33]	80	No Yes Yes
	Southbound Left-Turn	#264 (#298) [#352]	100	No No No
SR A1A/Collins Avenue and 23 rd Street	Eastbound Left-Turn	124 (171) [174]	110	No No No
	Eastbound Right-Turn	<25 ⁽²⁾ [⁽²⁾]	275	Yes - -
	Southbound Right-Turn	27 (<25) [29]	160	Yes Yes Yes

Notes: ⁽¹⁾ The 95th percentile queue length is based on Synchro 10 capacity analyses. Minimum queue of 25 feet assumed.

⁽²⁾ Approach does not exist.

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

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

Table 6: P.M. Peak Hour Turn Lane Queuing Analysis

Intersection	Turn Lane	95 th Percentile Queue (ft) ⁽¹⁾	Existing Turn Lane Length (ft)	Turn Lane Sufficient?
<i>Existing (Future Background) [Future Total]</i>				
Dade Boulevard and 23 rd Street	Westbound Left-Turn	m#333 (m12) [m12]	80	No Yes Yes
	Southbound Left-Turn	#557 (#474) [#484]	100	No No No
SR A1A/Collins Avenue and 23 rd Street	Eastbound Left-Turn	m153 (#425) [#501]	110	No No No
	Eastbound Right-Turn	m38 ⁽²⁾ [⁽²⁾]	275	Yes - -
	Southbound Right-Turn	49 (45) [49]	160	Yes Yes Yes

Notes: ⁽¹⁾ The 95th percentile queue length is based on Synchro 10 capacity analyses. Minimum queue of 25 feet assumed.

⁽²⁾ Approach does not exist.

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

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

TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Transportation Demand Management (TDM) strategies are proposed to reduce the impacts of the project traffic on the surrounding roadway network. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours. The applicant will commit to implementing the following strategies:

- Long-term bicycle parking will be provided on-site (97 spaces will be provided)
- Short-term bicycle parking will be provided on-site (22 spaces will be provided)
- Carpool/vanpool parking spaces will be provided on-site (4 spaces will be provided)
- Scooter/moped/motorcycle parking spaces will be provided on-site (35 spaces will be provided)
- Showers will be provided on-site

Please note that three (3) Citi Bike stations are located within the vicinity of the project site on the north side of 24th Street just east of SR A1A/Collins Avenue (8 bicycle docks), on the north side of 23rd Street just west of SR A1A/Collins Avenue (16 bicycle docks), and on the south side of 22nd Street just east of SR A1A/Collins Avenue (16 bicycle docks).

CONCLUSION

JAWS Equity Owner 80, LLC is proposing to develop the properties located at 2318, 2332, and 2340 Collins Avenue in Miami Beach, Florida. The parcels proposed for redevelopment are currently occupied by a surface parking lot and AVIS car rental facility. The proposed redevelopment consists of a 132,600 square-foot office building and 11,146 square feet of retail space. Note that the AVIS car rental facility will remain as part of this redevelopment. The redevelopment will be served by one (1) full-access driveway along Liberty Avenue. Self-parking will not be provided on-site. All vehicles will be valeted. The project is expected to be completed and opened by year 2022.

The results of the intersection capacity analysis indicate that the study intersections are expected to operate at adopted levels of service (LOS D+20% or better) under all analysis conditions with the exception of the intersection of Dade Boulevard at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, Park Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour, and SR A1A/Collins Avenue at 23rd Street which operates at LOS F under future background and future total conditions during the P.M. peak hour. The project is expected to assign less than 2.8 percent (2.8%) of the overall traffic volume at Dade Boulevard at 23rd Street, 5.0 percent (5.0%) of the overall traffic volume at Park Avenue at 23rd Street, and less than 3.4 percent (3.4%) of the overall traffic volume at SR A1A/Collins Avenue at 23rd Street during the P.M. peak hour.

Please note that without inclusion of the geometric and signalization modifications proposed in the City's *23rd Street Complete Streets Study*, the intersection of Park Avenue at 23rd Street operates at adopted levels of service (LOS D+20% or better) and overall delay at the intersection of Dade Boulevard at 23rd Street is substantially lower under future background, and future total conditions. Furthermore, please note that the existing exclusive pedestrian phase at the intersection of Dade Boulevard and 23rd Street was maintained under future background and future total conditions. Substantial improvement in delay is expected if the exclusive pedestrian phase is replaced with typical pedestrian interval phases.

The results of the turn lane queue length analysis indicate that all queues are expected to be accommodated within the exclusive turn lanes at all study intersections with the exception of the following:

- The exclusive westbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing conditions during the A.M. and P.M. peak hours. Note that the queues are accommodated with the proposed *23rd Street Complete Streets* project.
- The exclusive southbound left-turn lane at the intersection of Dade Boulevard at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.
- The exclusive eastbound left-turn lane at the intersection of SR A1A/Collins Avenue at 23rd Street under existing, future background, and future total conditions during the A.M. and P.M. peak hours. Note that the queues extend beyond the provided storage prior to the completion of the project.

TDM strategies are proposed to reduce the impacts of the project traffic on the surrounding roadway network. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours. The applicant will commit to implementing the following strategies:

- Long-term bicycle parking will be provided on-site (97 spaces will be provided)
- Short-term bicycle parking will be provided on-site (22 spaces will be provided)
- Carpool/vanpool parking spaces will be provided on-site (4 spaces will be provided)
- Scooter/moped/motorcycle parking spaces will be provided on-site (35 spaces will be provided)
- Showers will be provided on-site

Please note that three (3) Citi Bike stations are located within the vicinity of the project site on the north side of 24th Street just east of SR A1A/Collins Avenue (8 bicycle docks), on the north side of 23rd Street just west of SR A1A/Collins Avenue (16 bicycle docks), and on the south side of 22nd Street just east of SR A1A/Collins Avenue (16 bicycle docks).

Appendix A

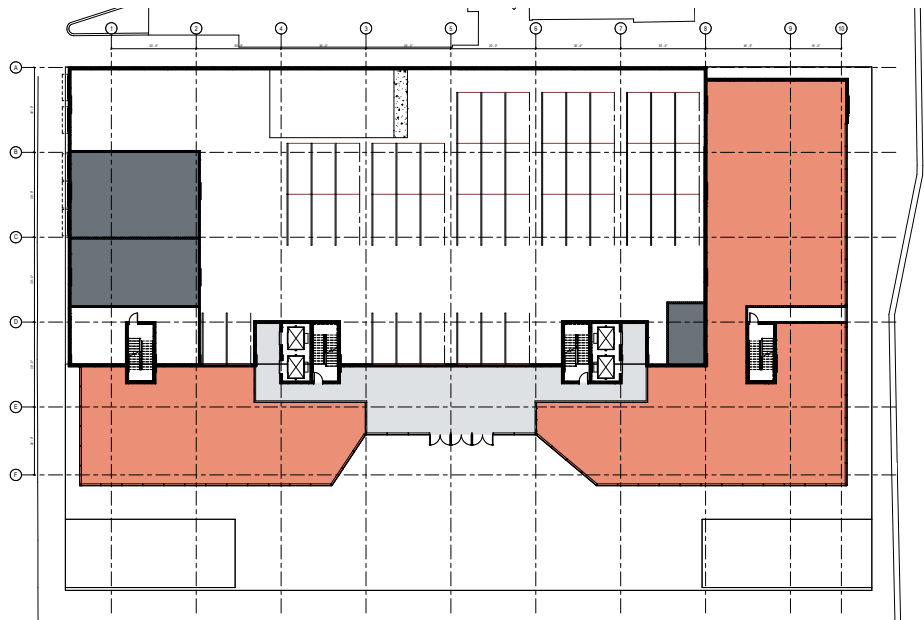
Site Plan



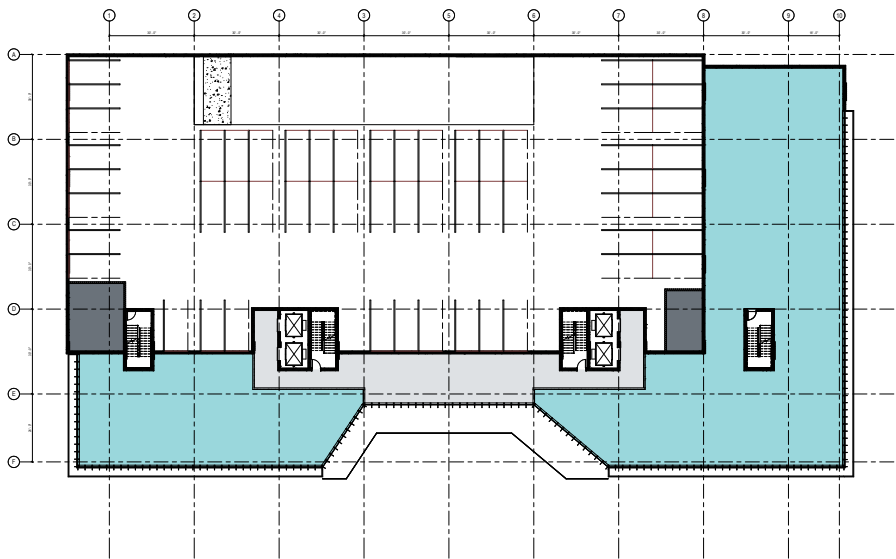
CORE STUDY 01

ALL LEVELS

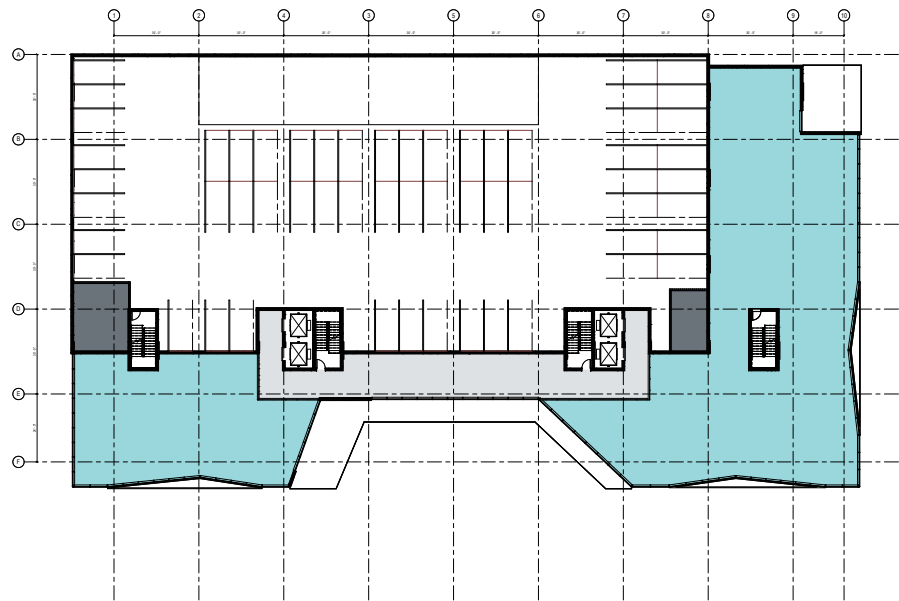
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LEVEL P02	57	0	
LEVEL P03	57	0	
LEVEL P04	57	57	
TOTAL		218	104 322 TOTAL



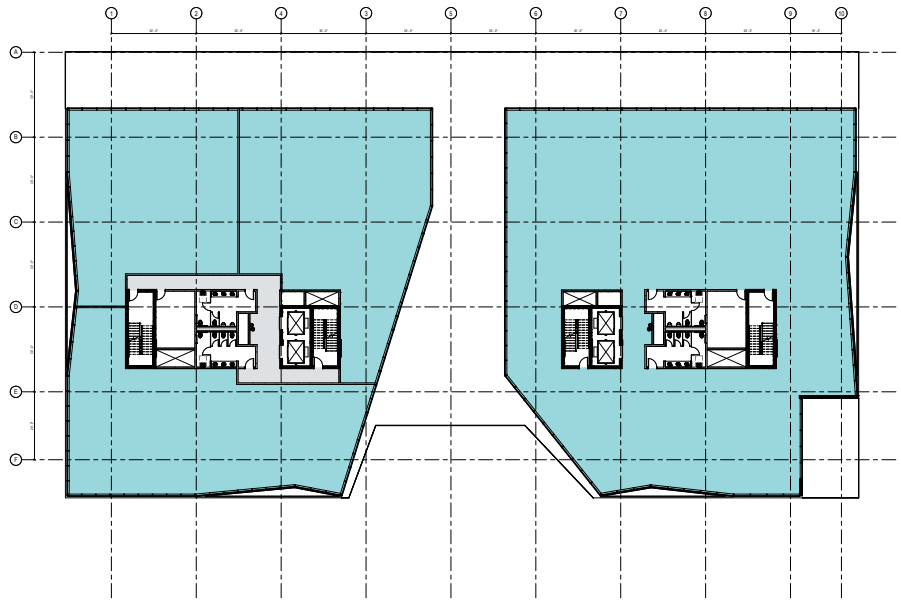
LEVEL 01



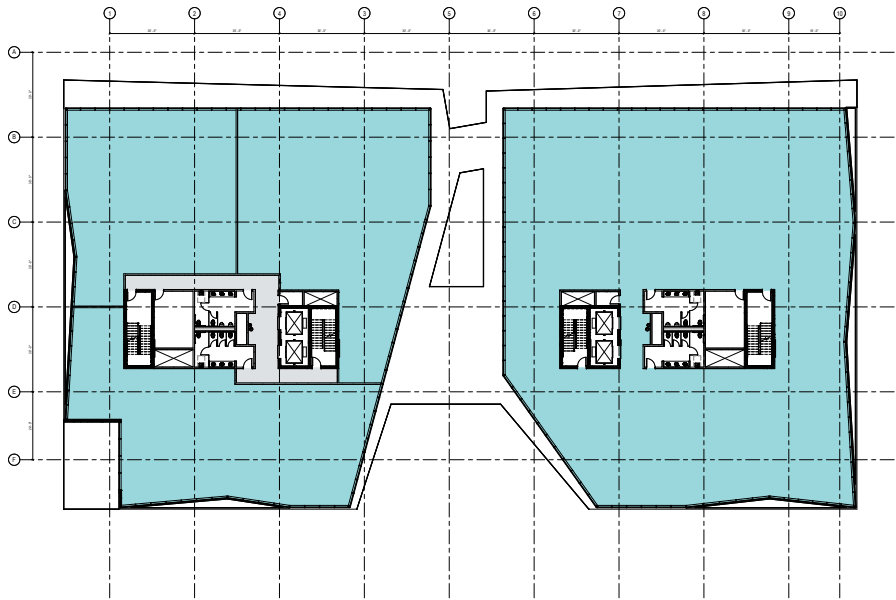
LEVEL 02



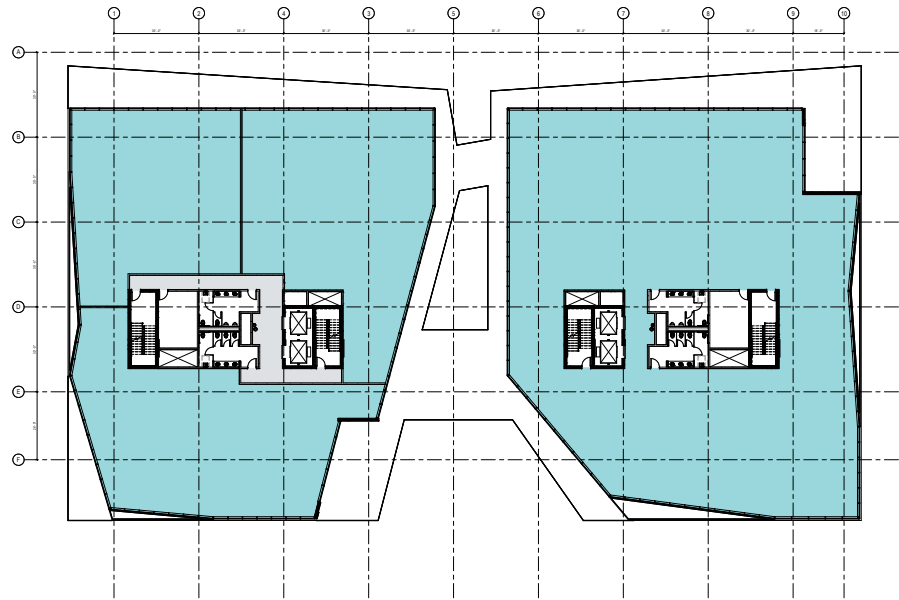
LEVEL 03



LEVEL 04



LEVEL 05



LEVEL 06

Appendix B

Methodology Correspondence

From: Akcay, Firat [<mailto:FiratAkcay@miamibeachfl.gov>]
Sent: Tuesday, August 14, 2018 12:26 PM
To: Dabkowski, Adrian <Adrian.Dabkowski@Kimley-horn.com>; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>
Cc: Kanaan, Omar <omar.kanaan@kimley-horn.com>; 'Mark Dubrow' <mark@integrafl.com>
Subject: RE: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

Adrian,

We approve the proposed methodology. In addition to the existing trip generation can you derive a trip generation matrix for maximum allowable uses. (i.e. quality restaurant, pharmacy(cvs) etc.)

Please let us know if you have any questions

Thank you

MIAMIBeach

Firat Akcay, *Transportation Analyst*
TRANSPORTATION DEPARTMENT
1688 Meridian Avenue, Suite 801, Miami Beach, FL 33139
Tel: 305-673-7000 X 6839 / www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic, community.



Please do not print this e-mail unless necessary.

From: Dabkowski, Adrian [<mailto:Adrian.Dabkowski@Kimley-horn.com>]
Sent: Tuesday, August 14, 2018 7:50 AM
To: Akcay, Firat; Ferrer, Josiel
Cc: Kanaan, Omar; 'Mark Dubrow'
Subject: RE: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

Good morning Firat:

It was great to see you yesterday. Could you please confirm the date the traffic study needs to be submitted by in order to be on November 27, 2018 Planning Board agenda.

Thanks again
Adrian

Please note that I will be out of the office beginning August 31 and returning to the office on September 17. I will have limited access to email and voicemail during this time.

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Mobile: 303-990-2761

From: Dabkowski, Adrian
Sent: Thursday, August 9, 2018 3:15 PM
To: 'Akcay, Firat' <FiratAkcay@miamibeachfl.gov>; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>

Cc: Kanaan, Omar <omar.kanaan@kimley-horn.com>; 'Mark Dubrow' <mark@integrafl.com>
Subject: RE: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

Thank you Firat. Can you also confirm the date that the traffic study needs to be submitted in order to be on the November 27, 2018 Planning Board agenda.

Thank you
Adrian

Adrian K. Dabkowski, P.E., PTOE
Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324
Direct: 954-535-5144 | Mobile: 303-990-2761

From: Akcay, Firat [<mailto:FiratAkcay@miamibeachfl.gov>]
Sent: Wednesday, August 8, 2018 4:38 PM
To: Dabkowski, Adrian <Adrian.Dabkowski@Kimley-horn.com>; Ferrer, Josiel <JOSIELFERRER@miamibeachfl.gov>
Cc: Kanaan, Omar <omar.kanaan@kimley-horn.com>; 'Mark Dubrow' <mark@integrafl.com>
Subject: RE: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

Adrian,

We will send you comments on the methodology as soon as possible.
Thank you

MIAMIBEACH

Firat Akcay, *Transportation Analyst*
TRANSPORTATION DEPARTMENT
1688 Meridian Avenue, Suite 801, Miami Beach, FL 33139
Tel: 305-673-7000 X 6839 / www.miamibeachfl.gov

We are committed to providing excellent public service and safety to all who live, work and play in our vibrant, tropical, historic, community.



Please do not print this e-mail unless necessary.

From: Akcay, Firat
Sent: Wednesday, August 08, 2018 3:12 PM
To: 'Dabkowski, Adrian'; Ferrer, Josiel
Cc: Kanaan, Omar; Mark Dubrow
Subject: RE: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

From: Dabkowski, Adrian [<mailto:Adrian.Dabkowski@Kimley-horn.com>]
Sent: Tuesday, August 07, 2018 8:48 PM
To: Ferrer, Josiel

Cc: Akcay, Firat; Kanaan, Omar; Mark Dubrow

Subject: 2318, 2332, and 2340 Collins Avenue | Traffic Study Methodology

Good evening Josiel and Firat:

Our traffic study methodology for the properties at 2318, 2332, and 2340 Collins Avenue is attached. Please let us know if you have any questions.

Thank you
Adrian

Adrian K. Dabkowski, P.E., PTOE

Kimley-Horn | 600 North Pine Island Road, Suite 450, Plantation, FL 33324

Direct: 954-535-5144 | Mobile: 303-990-2761



MEMORANDUM

To: Josiel Ferrer, E.I.
City of Miami Beach

Cc: Firat Akcay, City of Miami Beach

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

Date: August 7, 2018

**Subject: Starwood Properties Office Building
Traffic Study Methodology**

The purpose of this memorandum is to summarize the traffic study methodology discussed at our July 11, 2018 meeting. The City of Miami Beach checklist is provided in Attachment A. The proposed development is located at 2318, 2332, and 2340 Collins Avenue in Miami Beach, Florida. The parcels proposed for development is currently occupied by a surface parking lot and AVIS car rental facility. The proposed development consists of a 132,600 square-foot office building and 11,146 square feet of retail. Self-parking will be provided on-site within the existing surface parking lot. A conceptual site plan and location map are included in Attachment B. The following sections summarize our proposed methodology.

TRIP GENERATION

Trip generation calculations for the existing development and proposed redevelopment were performed using Institute of Transportation Engineers' (ITE) *Trip Generation Manual*, 10th Edition. The trip generation for the proposed development was determined using ITE LUC 710 (General Office Building) and LUC 820 (Shopping Center). Project trips were estimated for the weekday A.M. and P.M. peak hours. For the existing car rental facility (AVIS) driveway turning movement counts will be collected during the analysis period.

A multimodal (public transit, bicycle, and pedestrian) factor based on US Census *Means of Transportation to Work* data was reviewed for the census tract in the vicinity of the redevelopment. The US Census data indicated that there is a 22.8 percent (22.8%) multimodal factor within the vicinity of the development. It is expected that patrons and visitors will choose to walk, bike, or use public transit to and from the proposed development. Transit route information will be documented in the report. Detailed trip generation calculations and US Census *Means of Transportation to Work* data are included in Attachment C. Please note that the City of Miami Beach places a 20 percent (20%) cap on the multimodal factor. Therefore, 20 percent (20%) was utilized in the analysis.

The project is expected to generate 123 net new vehicle trips during the weekday A.M. peak hour and 169 net new vehicle trips during the P.M. peak hour. Detailed trip generation calculations are included

as Attachment C. Note that trip generation calculations will be revised based on existing traffic generated by the existing car rental facility.

STUDY AREA

The following intersections in addition to the project driveway, are proposed to be analyzed.

1. Dade Boulevard and 23rd Street
2. Park Avenue and 23rd Street
3. Liberty Avenue and 23rd Street
4. Collins Avenue and 23rd Street
5. Collins Avenue and 22nd Street
6. Collins Avenue and 24th Street

Turning movement counts will include pedestrians and bicyclists.

DATA COLLECTION

Weekday A.M. (7:00 to 9:00 A.M.) and P.M. (4:00 to 6:00 P.M.) peak period turning movement counts will be collected at all identified study intersections on a typical weekday (Tuesday, Wednesday, or Thursday). All traffic counts will be adjusted to peak season conditions using the appropriate Florida Department of Transportation (FDOT) peak season conversion factors for Miami Beach. Turning movement counts will be collected in 15-minute intervals during the analysis peak period and will include pedestrian and bicycle counts. Signal timing information will be obtained from Miami-Dade County Department of Transportation and Public Works – Traffic Signals and Signs Division. All collected traffic data will be provided in the Appendix of the traffic impact study.

TRIP DISTRIBUTION

Trip distribution will be determined based on turning movements counts collected at the study area intersections as well as the location of parking facilities used by the proposed redevelopment. Additionally, the distribution will be based on an interpolated cardinal trip distribution for the project site's traffic analysis zones (TAZs) obtained from the Miami-Dade Transportation Planning Organization's 2040 Cost Feasible Plan travel demand model 2010 and 2040 data. The trip distribution for the anticipated build-out year of 2022 was interpolated from the 2010 and 2040 data. The project is located within TAZ 635. The detailed cardinal distribution is provided in Attachment D.

BACKGROUND GROWTH RATE/MAJOR COMMITTED DEVELOPMENT

A background growth rate will be calculated based on historic growth trends at nearby Florida Department of Transportation (FDOT) traffic count stations. Additionally, growth rates based on Miami-Dade Transportation Planning Organization's (TPO) projected 2010 and 2040 model network volumes will be examined. The higher of the two (2) growth rates will be used in the analysis. Documentation will be provided in the Appendix of the traffic impact study.

The City has identified the Collins Park Garage as a committed development located in the vicinity of the proposed development to be included as part of future background conditions. The City will provide the trip assignment for this committed project.

CAPACITY ANALYSIS

Capacity analyses will be conducted for the analysis period for the study intersections. Intersection analyses will be performed using Trafficware's *Synchro* traffic engineering analysis software which applies the Transportation Research Board's (TRB's), *Highway Capacity Manual* (HCM), 2000 and 2010 methodologies. Capacity analyses will be conducted for three (3) scenarios: existing, build-out without project, and build-out with project.

The following figures will be included for the study intersections:

- Existing conditions
- Future background traffic conditions (with growth rate and committed development traffic)
- Trip distribution
- Trip assignment
- Future total traffic conditions (with project)

95TH PERCENT QUEUING ANALYSIS

A 95th percentile queue analysis utilizing Trafficware's *Synchro* traffic engineering analysis software, which applies the Transportation Research Board's (TRB) *Highway Capacity Manual* (HCM) methodologies, will be performed for exclusive turn-lanes at study area intersections. The analysis will examine expected vehicle queuing lengths under existing, future background (without project), and, future total traffic conditions (with project). If queuing deficiencies are identified, strategies and improvements may be developed to attain acceptable queuing lengths.

TRANSPORTATION DEMAND MANAGEMENT STRATEGIES

Transportation Demand Management (TDM) strategies will be developed to reduce the impact of project traffic on the surrounding roadway network and promote trip reduction. Typical measures promote bicycling and walking, encourage car/vanpooling and offer alternatives to the typical workday hours.

DOCUMENTATION

The results of the traffic analysis will be summarized in a report. The report will include supporting documents including signal timings, lane geometry, and software output sheets. The report will also include text and graphics necessary to summarize the assumptions and analysis.

A CD and electronic copy of the reports will be provided as part of the submittal package. Additionally, the *Synchro* analysis files will be provided on the CD.

MANEUVERABILITY ANALYSIS

A maneuverability analysis for the parking garage and loading areas of the proposed development will be performed utilizing Transoft Solutions' *AutoTURN* software. Deficiencies related to maneuverability, traffic flow, and vehicular conflicts will be documented in a technical memorandum.

VALET ANALYSIS

A valet operations queuing analysis will be prepared for the vehicle drop-off/pick-up area to determine if queues spill back into public right-of-way.

Trip generation estimates will be utilized to provide for the highest demand (weekday P.M. peak hour) scenario. The valet operations queuing analysis will be conducted consistent with procedures described in ITE's *Transportation and Land Development*, 1988. A traffic circulation figure will be prepared to illustrate the valet routes to and from the vehicle drop-off/pick-up area.

A technical memorandum documenting analysis assumptions and results, including the location of the valet garage and the required number of valet attendants to service the facility under highest demand conditions will be prepared.

K:\FTL_TPTO\043992000 Starwood Collins Ave\correspondence\memo\Starwood Properties - Traffic Study Methodology.docx

Attachment A

City of Miami Beach Checklist

MIAMI BEACH

Transportation Department, 1688 Meridian Avenue, Suite 801r
Miami Beach, Florida 33139, www.miamibeachfl.gov
305.673.7514

Page 1 of 2
LAST UPDATED: 06/26/18

Property address: 2318 Collins Avenue Board: Planning Board Date: 7/11/2018

TRANSPORTATION DEPARTMENT CHECK LIST

Incomplete, or submittals found to be insufficient will not be placed on a Board agenda.

ITEM #	ITEMS TO BE SUBMITTED BY APPLICANT 15 DAYS PRIOR BOARD FIRST SUBMITTAL (VIA CSS) ** To be uploaded online (CSS) by the applicant before 1:00 pm ALL PLANS MUST BE DIMENSIONED AND LEGIBLE. INCLUDE A GRAPHIC SCALE.	Required
1	Copy of signed and dated check list issued at Transportation meeting.	
2	Contents of Traffic Study	X
a	Name of development.	X
b	All proposed uses.	X
c	A legible map showing the study site in relation to the surrounding network. Context Location Plan, Min 8.5"X11" Color Aerial 1/2 mile radius, identifying project and showing name of streets. (no Google Images)	X
3	Land Use Information	
a	Zoning district	X
b	Existing land uses.	X
c	All proposed uses.	X
4	Site Plan, Floor plans and Site Accessibility.	
a	Survey: original signed & sealed, dated no more than six months from date of application. Survey must provide: lot area, grade per Section 114-1 of the City Code. (If no sidewalk exists, provide the elevation of the crown of the road) and spot elevations.	X
b	Site plan -(fully dimensioned with setbacks, existing and proposed, including adjacent right-of-way widths). with a brief narrative identifying the key features below on the plan/drawing:	X
c	North arrow and legend shall be placed on drawings and figures	X
d	Site Boundaries and adjacent streets (Street Names	X
e	Location of existing driveways on site and/or street intersections in close proximity to the site (include dimensions)	X
f	Existing rights-of-way of adjacent roadways, lane configurations, and width of pavement	X
g	Existing sidewalks with dimensions and/or existing multi use trails on all adjacent streets	X
h	Proposed site plan/ floor plans:	X
i	Proposed building configuration and pedestrian access including sidewalks (include dimensions)	X
j	Identify: setbacks ____ Height ____ Drive aisle widths <u>X</u> Streets and sidewalks widths <u>X</u>	X
k	Location and design of all proposed driveways ____ Parking layout, internal circulation ____	X
l	# parking spaces & dimensions ____ Loading spaces locations & dimensions ____	X
m	# of bicycle parking spaces ____	X
n	Interior and loading area location & dimensions ____	X
o	Delivery route ____ Sanitation operation ____ Valet drop-off & pick-up ____ Valet route in and out ____	X
p	Valet route to and from ____ auto-turn analysis for delivery and sanitation vehicles ____	X
q	Preliminary on-street loading plan	X
r	Any deed restrictions affecting access or transportation to/from site	
s	Existing and proposed medians & median openings	
t	Existing Conditions Drawings (Floor Plans & Elevations with dimensions). Number of seats, furniture layout if applicable	X
u	Proposed Floor Plans and Roof Plan, including mechanical equipment plan and section marks. Plans shall indicate location of all property lines and setbacks.	X

Indicate N/A If Not Applicable

Initials: _____

MIAMI BEACH

Transportation Department, 1688 Meridian Avenue, Suite 801r
Miami Beach, Florida 33139, www.miamibeachfl.gov
305.673.7514

Page 2 of 2
LAST UPDATED: 06/26/18

Property address: _____

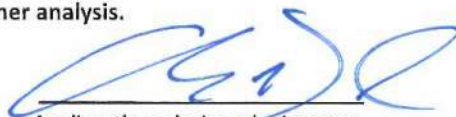
v	Maneuvering plan for loading within the existing/proposed conditions, delivery and garbage trucks size (length and width).	X
	Floor Plan (dimensioned)	
w	Total floor area	X
x	Identify # seats indoors _____ outdoors _____ seating in public right of way _____ Total _____	X
y	Occupancy load indoors and outdoors per venue _____ Total when applicable _____	.
5	Influence Area	
	Study area will be determined during the methodology meeting	X
	Committed developments within study area including trip generation	X
6	Data Collection	
	Data collection of vehicles, heavy vehicles, bicycles, pedestrians, transit routes and transit ridership at stops within study area	X
	Field visit and observations shall be documented with pictures and other reports as applicable	X
	All data collected shall be presented in raw(excel) and pdf format	X
7	Existing Condition Analysis	
	Roadway network characteristics within the study area.	X
	Traffic volume (Graphics must be provided which show the various peak volume and turning movements)	X
	Capacity and Level of Service(LOS) analysis utilizing Traffic Modelling Software(Synchro latest version)	X
	The signal timing data sheets (if applicable)	X
	Synchro model results	X
8	Trip Generation	
	Trip generation calculations presented in table format based on ITE Trip Generation Manual 9th Edition or another acceptable and pre-agreed method.	X
9	Trip Distribution	
	Trip distribution analysis presented in table and figure format.	X
10	Future Condition Analysis	
	Background Growth Traffic and Future Traffic Analysis	X
	Synchro model results	X
11	Queue Analysis	X
12	Multi-Modal Review and Analysis	X
	Bicycle and Pedestrian Facilities	
	Provide information on existing and committed bicycle facilities in the area.	
	SUPPLEMENTAL STUDIES - to be determined during methodology meeting	
13	Valet Service Analysis	X
14	Transportation Demand Management Plan	X
15	Other:	
	Notes: The applicant is responsible for checking above referenced sections of the Code. If not applicable write N/A	

ADDITIONAL INFORMATION AND ACKNOWLEDGEMENTS

- A. Other information/documentation required for First submittal will be identified during Pre-Application meeting but may be modified based on further analysis.

ADAM K. DABROWSKI

Applicant's or designee's Name



Applicant's or designee's signature

8/7/18

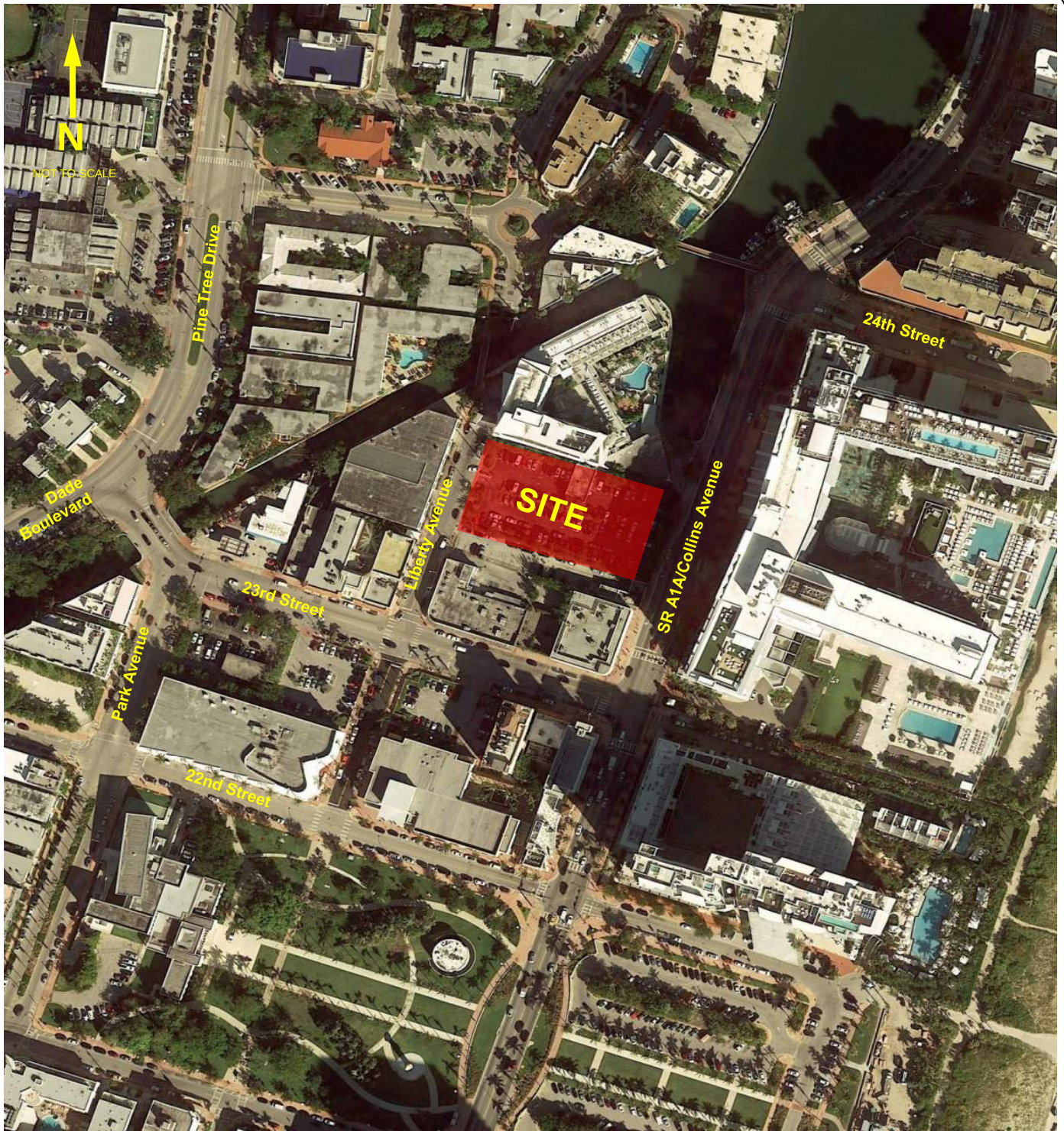
Date

Indicate N/A If Not Applicable

Initials: JFD

Attachment B

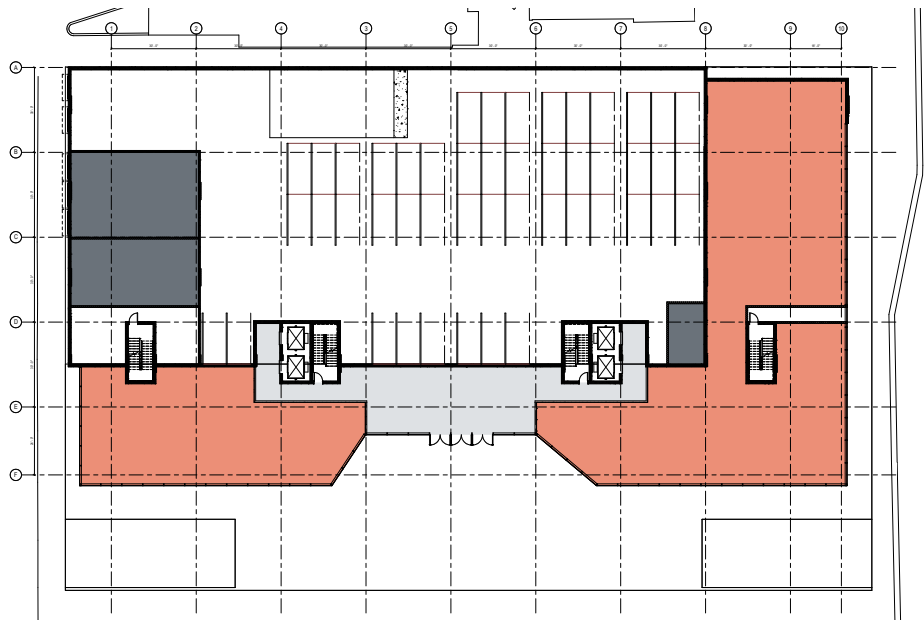
Conceptual Site Plan and Location Map



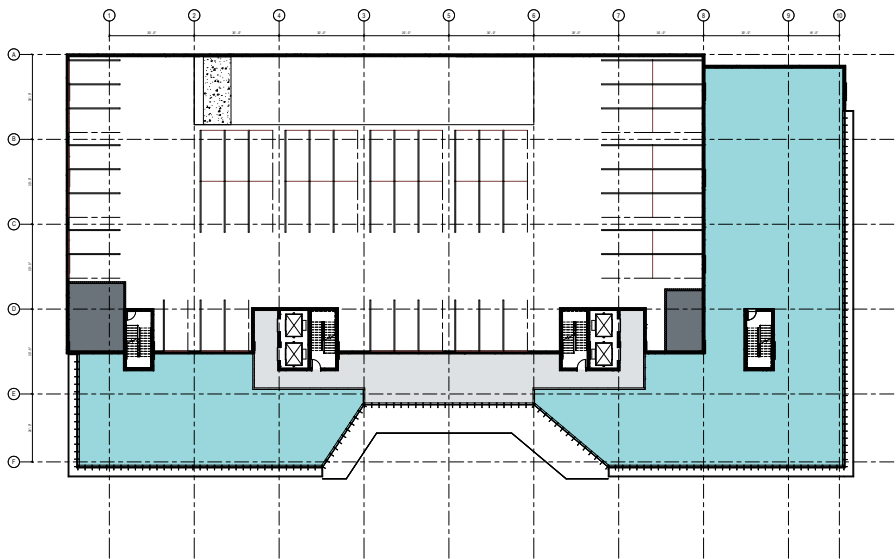
CORE STUDY 01

ALL LEVELS

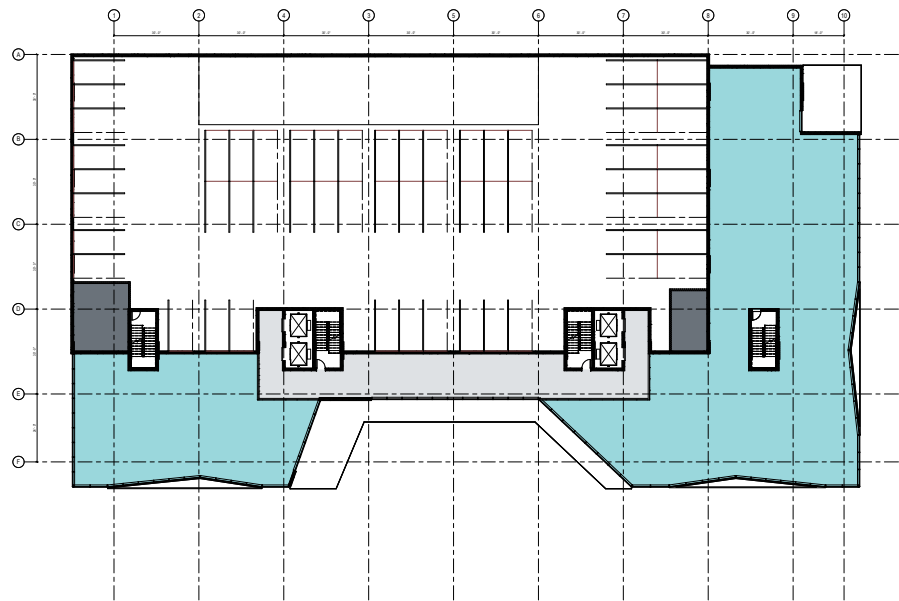
	STALLS	LIFTS	
LEVEL P01	47	47	
LEVEL P02	57	0	
LEVEL P03	57	0	
LEVEL P04	57	57	
TOTAL	218	104	322 TOTAL



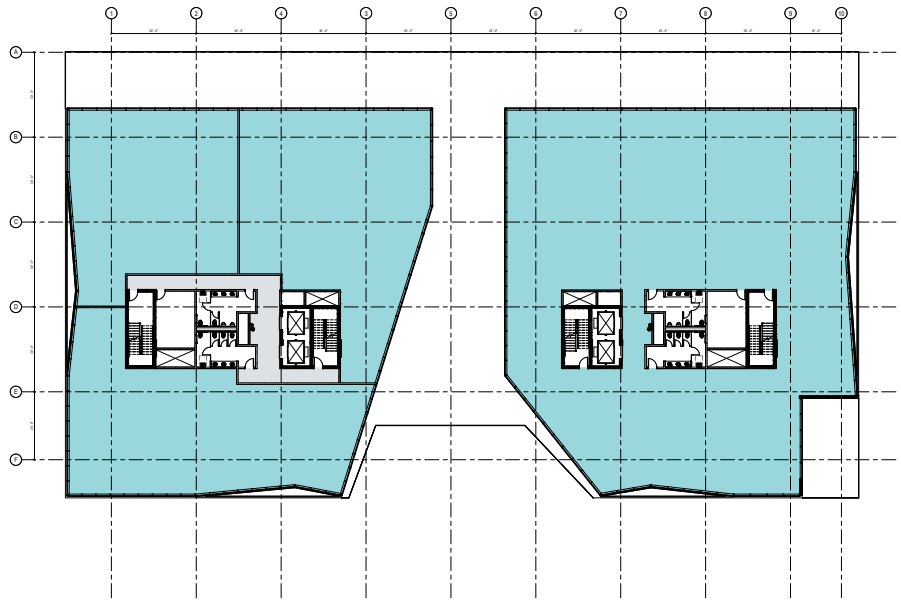
LEVEL 01



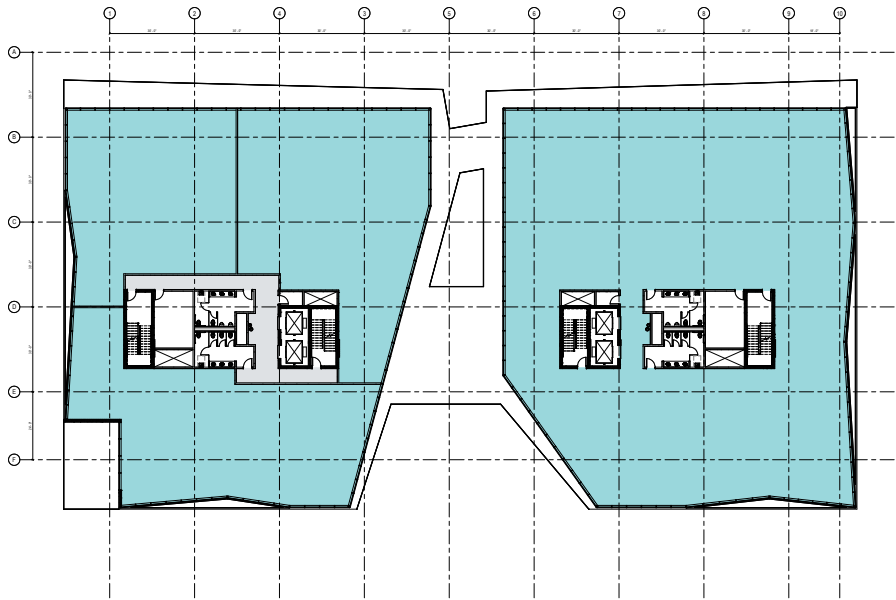
LEVEL 02



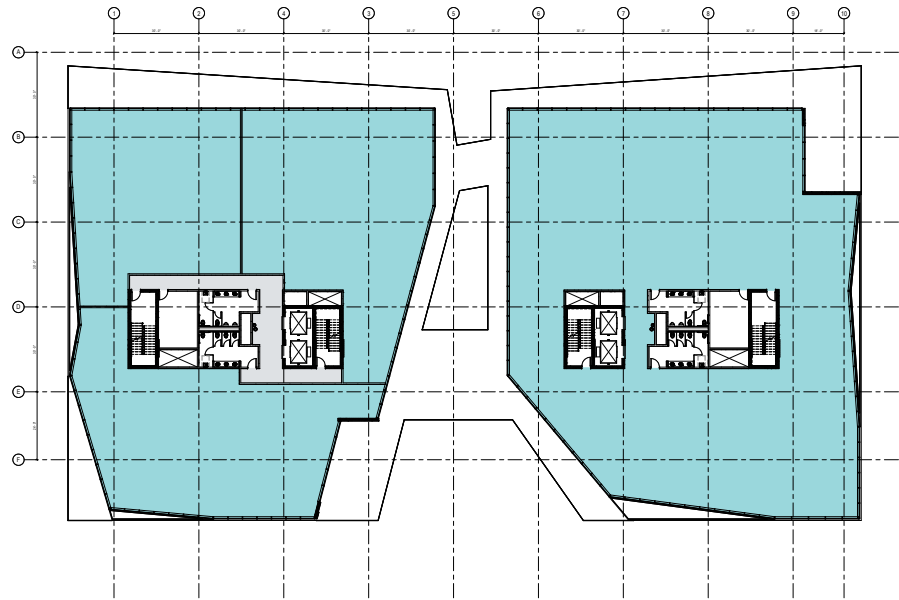
LEVEL 03



LEVEL 04



LEVEL 05



LEVEL 06

Attachment C

Trip Generation Calculations

AM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

	ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS		
	Land Use	ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total
						In	Out																		
R	1																								
O	6																								
U	7																								
P	8																								
	9																								
	10																								
1	11																								
	12																								
	13																								
	14																								
	15																								
ITE Land Use Code		Rate or Equation		Total:																					

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION ⁽¹⁾		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS			
Land Use		ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total	
						In	Out																			
R O U P 2	1	General Office Building	10	710	132.6	ksf	86%	14%	130	21	151	20.0%	30	104	17	121	2.5%	3	103	15	118	0.0%	0	103	15	118
	6	Shopping Center	10	820	11.146	ksf	62%	38%	6	4	10	20.0%	2	5	3	8	37.5%	3	3	2	5	0.0%	0	3	2	5
	7																									
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
15																										
ITE Land Use Code		Rate or Equation				Total:		136	25	161	20.0%	32	109	20	129	4.7%	6	106	17	123	0.0%	0	106	17	123	
710		Y=0.94*(X)+26.49																								
820		Y=0.94(X)																								
																								IN	OUT	TOTAL

Note: ⁽¹⁾Multimodal reduction based on census tract data from the US Census Bureau's *Means of Transportation to Work* survey.

	IN	OUT	TOTAL
NET NEW TRIPS	106	17	123

PM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS			
					Percent																				
					In	Out	In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total	
R O U P 1	1																								
	6																								
	7																								
	8																								
	9																								
	10																								
	11																								
	12																								
	13																								
	14																								
15																									
ITE Land Use Code		Rate or Equation			Total:																				
0																									
0																									

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION ⁽¹⁾		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS					
Land Use		ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total		
GROUP 2	1	General Office Building	10	710	132.6	ksf	16%	84%	24	125	149	20.0%	30	19	100	119	3.4%	4	18	97	115	0.0%	0	18	97	115	
	6	Shopping Center	10	820	11.146	ksf	48%	52%	51	56	107	20.0%	21	41	45	86	4.7%	4	38	44	82	34.0%	28	25	29	54	
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
15																											
ITE Land Use Code		Rate or Equation				Total:		75	181	256	20.0%	51	60	145	205	3.9%	8	56	141	197	14.1%	28	43	126	169		
710		LN(Y) = 0.95*LN(X)+0.36																									
820		LN(Y) = 0.74*LN(X)+2.89																									
																						IN		OUT		TOTAL	
NET NEW TRIPS																						43		126		169	

Note: ⁽¹⁾Multimodal reduction based on census tract data from the US Census Bureau's *Means of Transportation to Work* survey.

	IN	OUT	TOTAL
NET NEW TRIPS	43	126	169

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (PROPOSED)

A.M. PEAK GROSS TRIP GENERATION					
INPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit		
	Office	104	17	19	100
	Retail	5	3	41	45
	Restaurant				
	Cinema/Entertainment				
	Residential				
	Hotel				
		109	20	60	145

INTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	1	2	1	3
	Retail	2	1	3	1
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		3	3	4	4

OUTPUT	Total % Reduction	4.7%		3.9%	
	Office	2.5%		3.4%	
	Retail	37.5%		4.7%	
	Restaurant				
	Cinema/Entertainment				
	Residential				
	Hotel				

EXTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	103	15	18	97
	Retail	3	2	38	44
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		106	17	56	141

B08301

MEANS OF TRANSPORTATION TO WORK

Universe: Workers 16 years and over

2012-2016 American Community Survey 5-Year Estimates

Supporting documentation on code lists, subject definitions, data accuracy, and statistical testing can be found on the American Community Survey website in the Data and Documentation section.

Sample size and data quality measures (including coverage rates, allocation rates, and response rates) can be found on the American Community Survey website in the Methodology section.

Tell us what you think. Provide feedback to help make American Community Survey data more useful for you.

Although the American Community Survey (ACS) produces population, demographic and housing unit estimates, it is the Census Bureau's Population Estimates Program that produces and disseminates the official estimates of the population for the nation, states, counties, cities and towns and estimates of housing units for states and counties.

$$(164 + 48 + 115)/1,434 = 22.8\%$$

	Census Tract 41.05, Miami-Dade County, Florida	
	Estimate	Margin of Error
Total:	1,434	+/-243
Car, truck, or van:	868	+/-194
Drove alone	814	+/-194
Carpooled:	54	+/-54
In 2-person carpool	33	+/-39
In 3-person carpool	16	+/-23
In 4-person carpool	5	+/-8
In 5- or 6-person carpool	0	+/-13
In 7-or-more-person carpool	0	+/-13
Public transportation (excluding taxicab):	164	+/-137
Bus or trolley bus	164	+/-137
Streetcar or trolley car (carro publico in Puerto Rico)	0	+/-13
Subway or elevated	0	+/-13
Railroad	0	+/-13
Ferryboat	0	+/-13
Taxicab	21	+/-34
Motorcycle	27	+/-43
Bicycle	48	+/-39
Walked	115	+/-73
Other means	25	+/-23
Worked at home	166	+/-81

Data are based on a sample and are subject to sampling variability. The degree of uncertainty for an estimate arising from sampling variability is represented through the use of a margin of error. The value shown here is the 90 percent margin of error. The margin of error can be interpreted roughly as providing a 90 percent probability that the interval defined by the estimate minus the margin of error and the estimate plus the margin of error (the lower and upper confidence bounds) contains the true value. In addition to sampling variability, the ACS estimates are subject to nonsampling error (for a discussion of nonsampling variability, see Accuracy of the Data). The effect of nonsampling error is not represented in these tables.

Workers include members of the Armed Forces and civilians who were at work last week.

While the 2012-2016 American Community Survey (ACS) data generally reflect the February 2013 Office of Management and Budget (OMB) definitions of metropolitan and micropolitan statistical areas; in certain instances the names, codes, and boundaries of the principal cities shown in ACS tables may differ from the OMB definitions due to differences in the effective dates of the geographic entities.

Estimates of urban and rural population, housing units, and characteristics reflect boundaries of urban areas defined based on Census 2010 data. As a result, data for urban and rural areas from the ACS do not necessarily reflect the results of ongoing urbanization.

Source: U.S. Census Bureau, 2012-2016 American Community Survey 5-Year Estimates

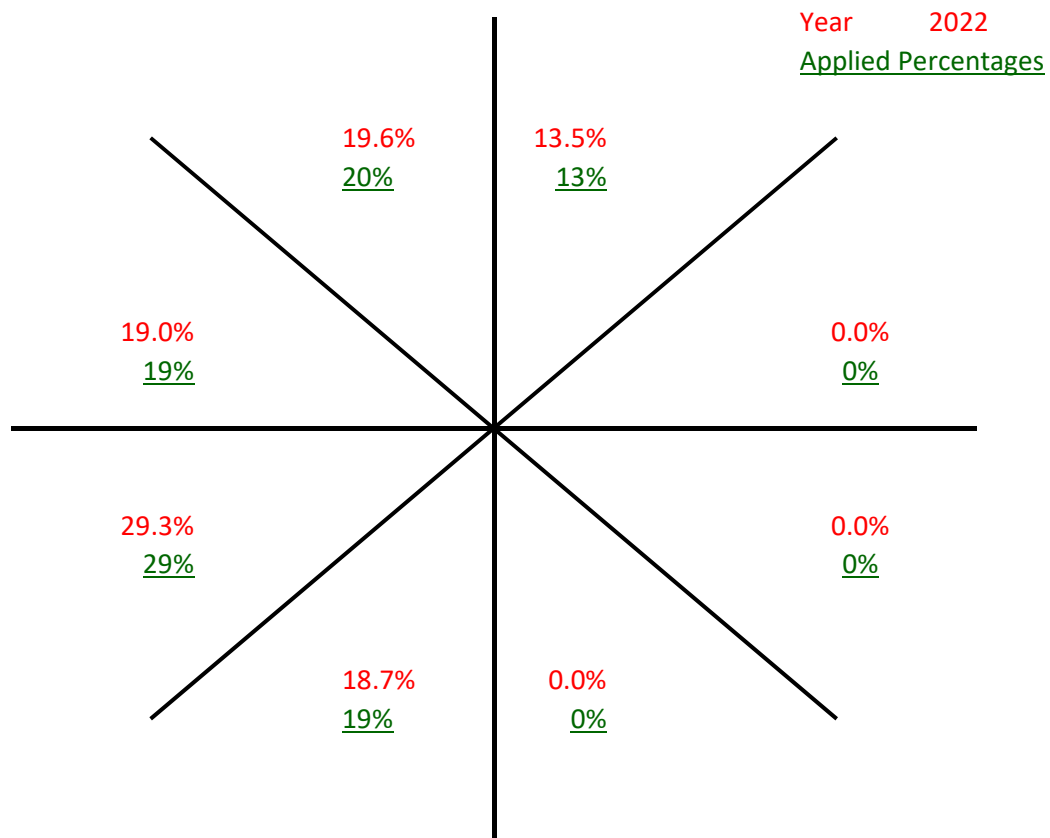
Explanation of Symbols:

1. An '***' entry in the margin of error column indicates that either no sample observations or too few sample observations were available to compute a standard error and thus the margin of error. A statistical test is not appropriate.
2. An '-' entry in the estimate column indicates that either no sample observations or too few sample observations were available to compute an estimate, or a ratio of medians cannot be calculated because one or both of the median estimates falls in the lowest interval or upper interval of an open-ended distribution.
3. An '-' following a median estimate means the median falls in the lowest interval of an open-ended distribution.
4. An '+' following a median estimate means the median falls in the upper interval of an open-ended distribution.
5. An '***' entry in the margin of error column indicates that the median falls in the lowest interval or upper interval of an open-ended distribution. A statistical test is not appropriate.
6. An '*****' entry in the margin of error column indicates that the estimate is controlled. A statistical test for sampling variability is not appropriate.
7. An 'N' entry in the estimate and margin of error columns indicates that data for this geographic area cannot be displayed because the number of sample cases is too small.
8. An '(X)' means that the estimate is not applicable or not available.

Attachment D

Cardinal Trip Distribution

Cardinal Distribution for TAZ 635



Cardinal Trip Distribution

Cardinal Direction	Percentage of Trips		2022 Interpolated	2022 Rounded
	2010	2040		
North-Northeast	12.2%	15.4%	13.5%	13%
East-Northeast	0.0%	0.0%	0.0%	0%
East-Southeast	0.0%	0.0%	0.0%	0%
South-Southeast	0.0%	0.0%	0.0%	0%
South-Southwest	17.5%	20.5%	18.7%	19%
West-Southwest	30.2%	27.9%	29.3%	29%
West-Northwest	20.3%	17.0%	19.0%	19%
North-Northwest	19.8%	19.2%	19.6%	20%
Total	100%	100%	100%	100%

Miami-Dade 2010 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
616	3516	TRIPS	703	540	0	1,630	1,842	1,537	1,127	1,812	9,191
616	3516	PERCENT	7.7	5.9	0.0	17.7	20.0	16.7	12.3	19.7	
617	3517	TRIPS	0	10	0	0	10	0	0	20	40
617	3517	PERCENT	0.0	25.0	0.0	0.0	25.0	0.0	0.0	50.0	
618	3518	TRIPS	330	165	0	322	542	490	234	755	2,838
618	3518	PERCENT	11.6	5.8	0.0	11.4	19.1	17.3	8.3	26.6	
619	3519	TRIPS	158	0	0	588	1,822	1,431	915	2,017	6,931
619	3519	PERCENT	2.3	0.0	0.0	8.5	26.3	20.7	13.2	29.1	
620	3520	TRIPS	173	0	0	481	2,563	2,285	1,185	2,715	9,402
620	3520	PERCENT	1.8	0.0	0.0	5.1	27.3	24.3	12.6	28.9	
621	3521	TRIPS	750	0	271	730	1,325	1,008	570	1,178	5,832
621	3521	PERCENT	12.9	0.0	4.7	12.5	22.7	17.3	9.8	20.2	
622	3522	TRIPS	846	0	0	547	1,669	2,238	881	1,779	7,960
622	3522	PERCENT	10.6	0.0	0.0	6.9	21.0	28.1	11.1	22.4	
623	3523	TRIPS	865	314	362	1,036	918	2,053	953	915	7,416
623	3523	PERCENT	11.7	4.2	4.9	14.0	12.4	27.7	12.9	12.3	
624	3524	TRIPS	1,510	1,185	279	1,139	2,348	3,798	2,999	2,480	15,738
624	3524	PERCENT	9.6	7.5	1.8	7.2	14.9	24.1	19.1	15.8	
625	3525	TRIPS	904	151	0	713	469	1,573	902	1,029	5,741
625	3525	PERCENT	15.8	2.6	0.0	12.4	8.2	27.4	15.7	17.9	
626	3526	TRIPS	86	0	0	0	2,128	2,780	1,523	2,730	9,247
626	3526	PERCENT	0.9	0.0	0.0	0.0	23.0	30.1	16.5	29.5	
627	3527	TRIPS	268	0	0	0	2,782	2,384	1,028	1,982	8,444
627	3527	PERCENT	3.2	0.0	0.0	0.0	33.0	28.2	12.2	23.5	
628	3528	TRIPS	572	0	107	174	1,417	1,412	675	755	5,112
628	3528	PERCENT	11.2	0.0	2.1	3.4	27.7	27.6	13.2	14.8	
629	3529	TRIPS	2,040	549	224	1,939	1,885	5,257	2,755	2,552	17,201
629	3529	PERCENT	11.9	3.2	1.3	11.3	11.0	30.6	16.0	14.8	
630	3530	TRIPS	1,018	0	101	231	1,694	2,664	1,198	1,047	7,953
630	3530	PERCENT	12.8	0.0	1.3	2.9	21.3	33.5	15.1	13.2	
631	3531	TRIPS	422	0	0	0	1,119	1,636	433	741	4,351
631	3531	PERCENT	9.7	0.0	0.0	0.0	25.7	37.6	10.0	17.0	
632	3532	TRIPS	250	0	0	0	528	1,486	568	688	3,520
632	3532	PERCENT	7.1	0.0	0.0	0.0	15.0	42.2	16.1	19.6	
633	3533	TRIPS	330	0	0	0	1,045	1,375	758	776	4,284
633	3533	PERCENT	7.7	0.0	0.0	0.0	24.4	32.1	17.7	18.1	
634	3534	TRIPS	1,649	138	246	667	1,620	2,236	1,335	1,553	9,444
634	3534	PERCENT	17.5	1.5	2.6	7.1	17.2	23.7	14.1	16.4	
635	3535	TRIPS	768	0	0	0	1,106	1,912	1,284	1,253	6,323
635	3535	PERCENT	12.2	0.0	0.0	0.0	17.5	30.2	20.3	19.8	
636	3536	TRIPS	775	0	0	320	731	2,473	1,515	1,466	7,280

Miami-Dade 2040 Directional Distribution Summary

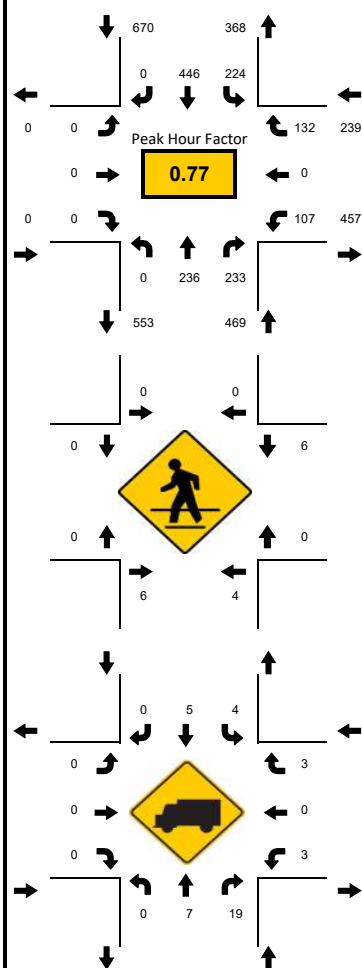
Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
616	3516	TRIPS	887	556	0	1,876	1,859	1,836	1,423	2,112	10,549
616	3516	PERCENT	8.4	5.3	0.0	17.8	17.6	17.4	13.5	20.0	
617	3517	TRIPS	81	36	8	61	50	65	48	56	405
617	3517	PERCENT	20.0	8.9	2.0	15.1	12.4	16.1	11.9	13.8	
618	3518	TRIPS	245	194	0	283	618	438	292	527	2,597
618	3518	PERCENT	9.4	7.5	0.0	10.9	23.8	16.9	11.2	20.3	
619	3519	TRIPS	297	0	0	1,202	2,738	1,949	1,188	3,411	10,785
619	3519	PERCENT	2.8	0.0	0.0	11.2	25.4	18.1	11.0	31.6	
620	3520	TRIPS	59	0	0	691	2,586	2,659	1,388	3,229	10,612
620	3520	PERCENT	0.6	0.0	0.0	6.5	24.4	25.1	13.1	30.4	
621	3521	TRIPS	641	0	207	652	1,069	897	507	931	4,904
621	3521	PERCENT	13.1	0.0	4.2	13.3	21.8	18.3	10.3	19.0	
622	3522	TRIPS	1,041	0	0	1,013	1,705	2,290	939	1,768	8,756
622	3522	PERCENT	11.9	0.0	0.0	11.6	19.5	26.2	10.7	20.2	
623	3523	TRIPS	660	379	254	1,131	910	1,892	857	961	7,044
623	3523	PERCENT	9.4	5.4	3.6	16.1	12.9	26.9	12.2	13.6	
624	3524	TRIPS	1,731	1,417	382	1,244	2,520	3,891	3,312	2,764	17,261
624	3524	PERCENT	10.0	8.2	2.2	7.2	14.6	22.5	19.2	16.0	
625	3525	TRIPS	919	266	0	846	669	1,872	1,085	1,165	6,822
625	3525	PERCENT	13.5	3.9	0.0	12.4	9.8	27.4	15.9	17.1	
626	3526	TRIPS	108	0	0	0	3,832	3,818	1,879	4,428	14,065
626	3526	PERCENT	0.8	0.0	0.0	0.0	27.2	27.2	13.4	31.5	
627	3527	TRIPS	667	0	0	0	4,525	3,711	1,836	3,520	14,259
627	3527	PERCENT	4.7	0.0	0.0	0.0	31.7	26.0	12.9	24.7	
628	3528	TRIPS	555	0	175	168	1,097	1,212	405	514	4,126
628	3528	PERCENT	13.5	0.0	4.2	4.1	26.6	29.4	9.8	12.5	
629	3529	TRIPS	1,948	557	335	1,556	1,577	4,662	2,347	1,892	14,874
629	3529	PERCENT	13.1	3.7	2.3	10.5	10.6	31.3	15.8	12.7	
630	3530	TRIPS	1,398	0	223	373	1,797	2,860	1,105	1,164	8,920
630	3530	PERCENT	15.7	0.0	2.5	4.2	20.2	32.1	12.4	13.1	
631	3531	TRIPS	802	0	0	0	2,347	2,348	855	1,454	7,806
631	3531	PERCENT	10.3	0.0	0.0	0.0	30.1	30.1	11.0	18.6	
632	3532	TRIPS	603	0	0	0	1,583	2,022	1,057	919	6,184
632	3532	PERCENT	9.8	0.0	0.0	0.0	25.6	32.7	17.1	14.9	
633	3533	TRIPS	573	0	0	0	1,534	1,830	876	1,027	5,840
633	3533	PERCENT	9.8	0.0	0.0	0.0	26.3	31.3	15.0	17.6	
634	3534	TRIPS	1,445	71	167	680	1,389	1,930	1,212	1,265	8,159
634	3534	PERCENT	17.7	0.9	2.1	8.3	17.0	23.7	14.9	15.5	
635	3535	TRIPS	1,380	0	0	0	1,833	2,491	1,518	1,720	8,942
635	3535	PERCENT	15.4	0.0	0.0	0.0	20.5	27.9	17.0	19.2	
636	3536	TRIPS	1,729	0	0	727	1,308	2,610	1,308	1,181	8,863

Appendix C

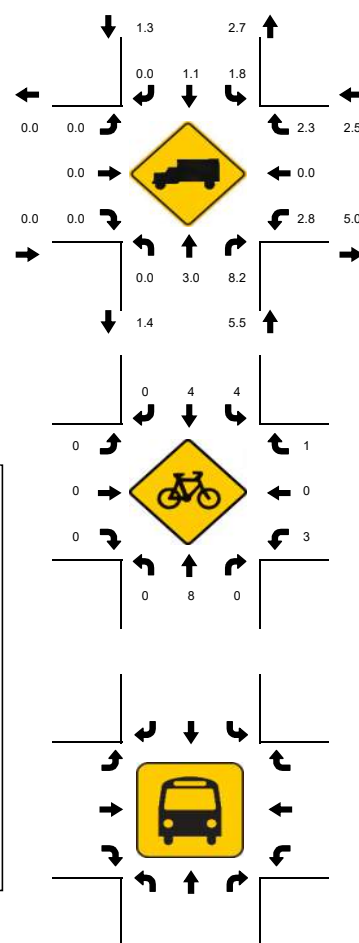
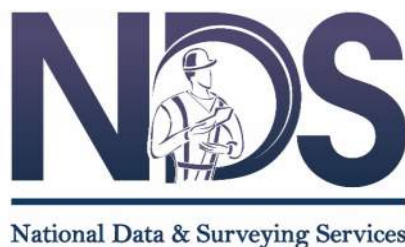
Traffic Data

Turning Movement Counts

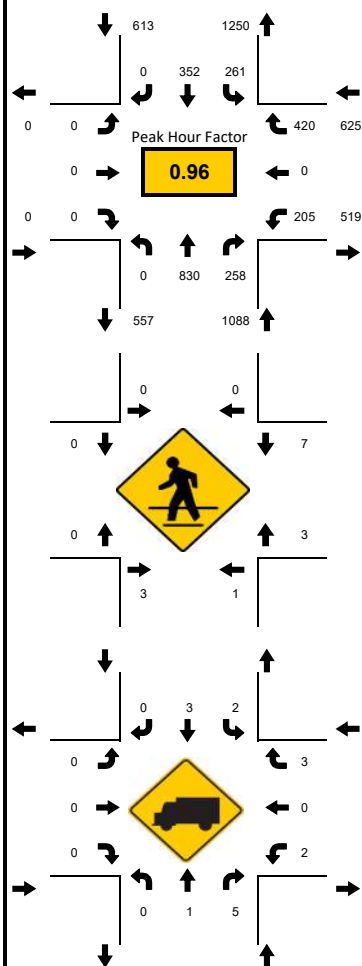
PROJECT ID: 18-03367-001
DATE: 08/16/2018



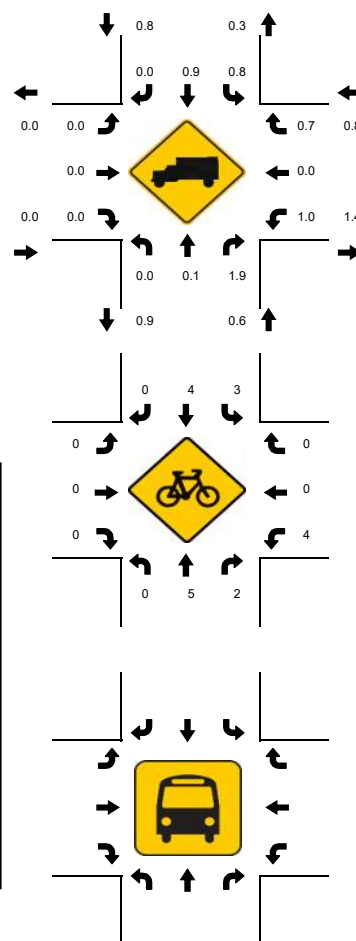
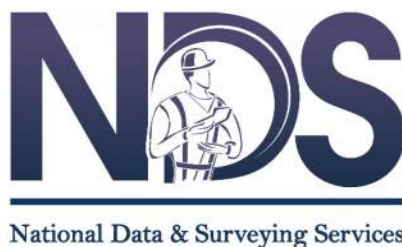
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

[illegible]

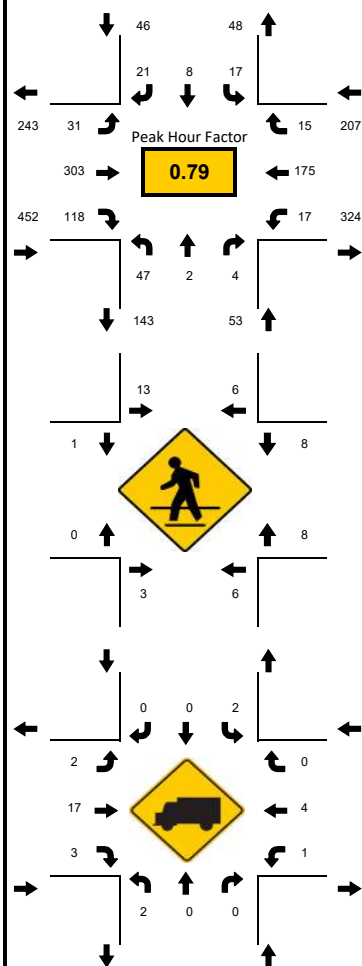
PROJECT ID: 18-03367-001
DATE: 08/16/2018



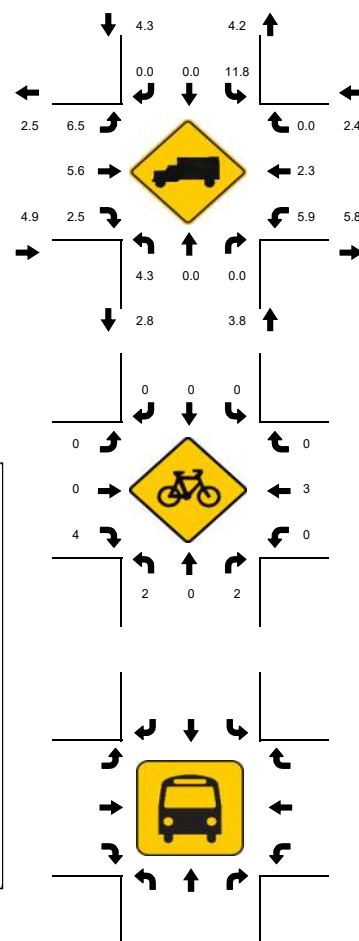
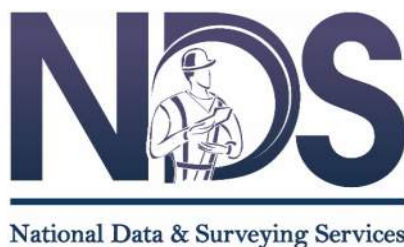
Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:45 PM - 06:00 PM

[illegible]

PROJECT ID: 18-03367-002
DATE: 08/16/2018

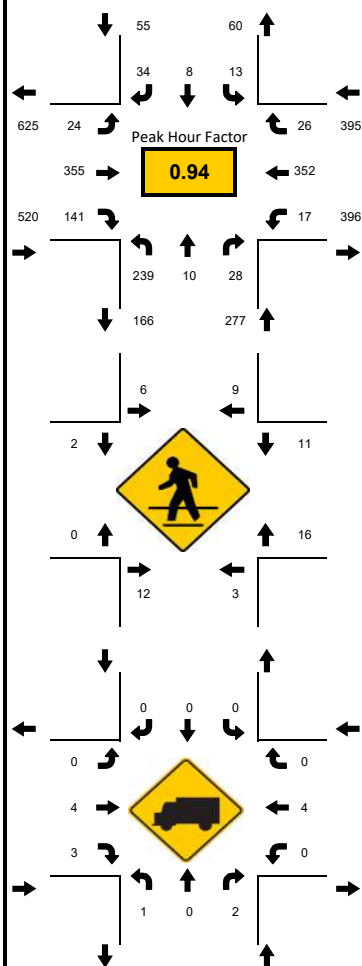


Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

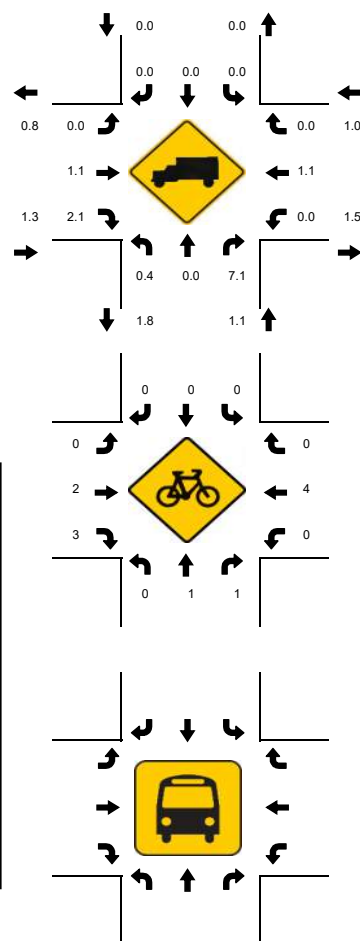
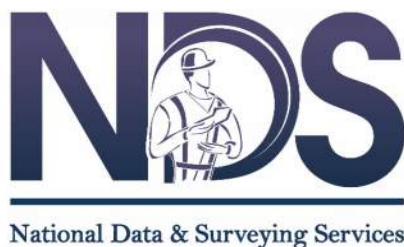


15-Min Count Period Beginning At	Park Ave Northbound					Park Ave Southbound					23rd St Eastbound					23rd St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	9	0	1	0		5	2	2	0		5	48	21	0		2	22	5	0		122	639
07:15 AM	8	2	2	0		5	1	8	0		11	51	28	1		2	32	4	0		155	682
07:30 AM	5	0	2	0		7	1	3	0		6	60	29	1		1	40	5	1		161	700
07:45 AM	6	2	2	0		6	0	4	1		5	86	39	0		2	46	2	0		201	718
08:00 AM	8	0	1	0		6	3	2	0		5	64	23	0		3	44	6	0		165	758
08:15 AM	12	0	1	0		0	1	6	0		11	75	18	0		1	44	4	0		173	593
08:30 AM	9	1	0	0		4	2	8	0		7	77	29	0		3	39	0	0		179	420
08:45 AM	18	1	2	0		7	2	5	0		8	87	48	0		9	48	5	1		241	241
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound						
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Total	
All Vehicles	72	4	8	0		28	12	32	0		44	348	192	0		36	192	24	4		996	
Heavy Trucks	4	0	0			4	0	0			8	20	8			4	8	0			56	
Pedestrians		28						32				4					24				88	
Bicycles	4	0	4			0	0	0			0	0	8			0	8	0			24	
Railroad Stopped Buses																						

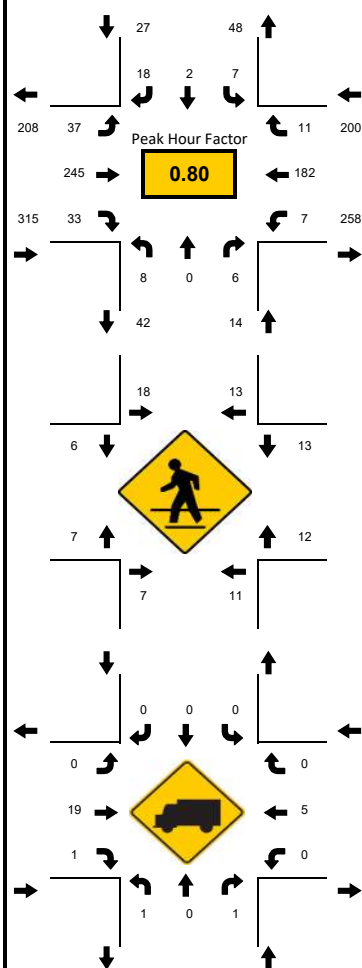
PROJECT ID: 18-03367-002
DATE: 08/16/2018



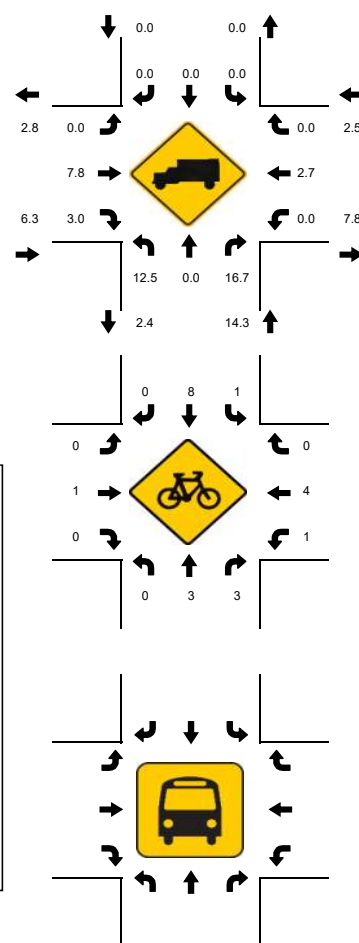
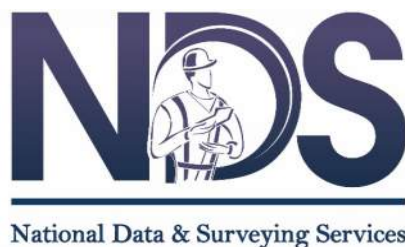
Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:45 PM - 06:00 PM

[illegible]

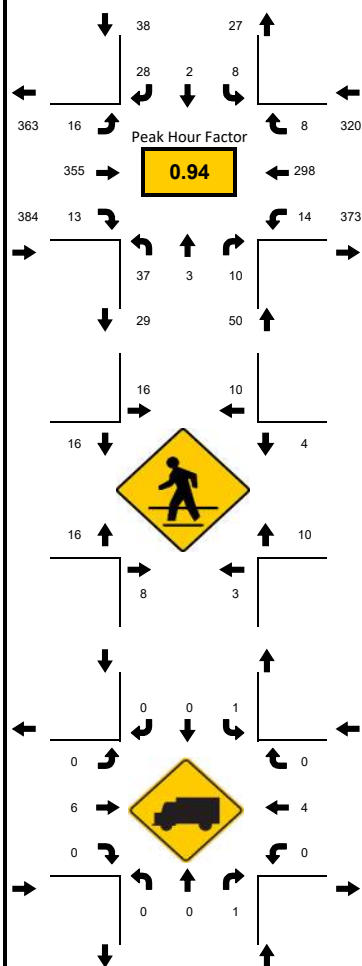
PROJECT ID: 18-03367-003
DATE: 08/16/2018



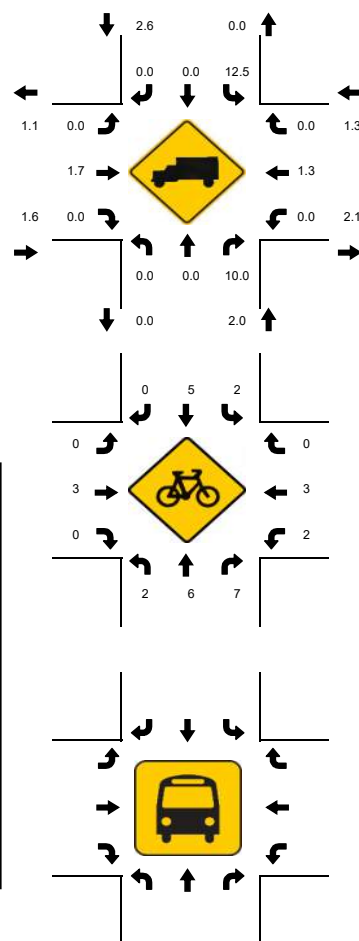
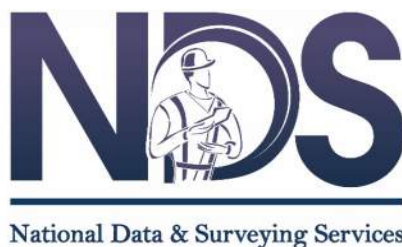
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

[illegible]

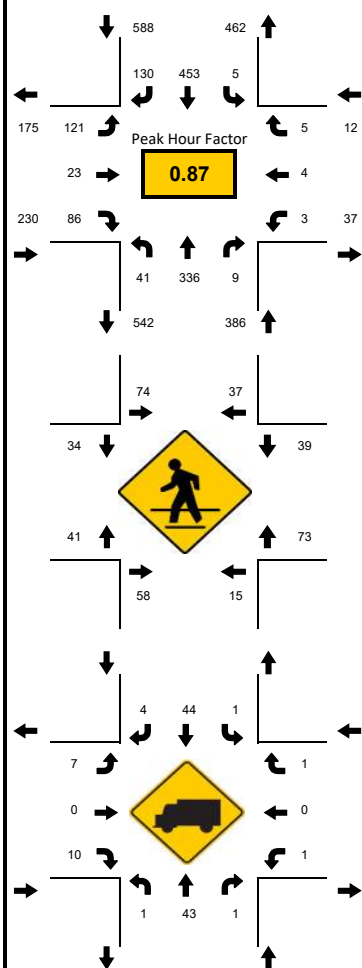
PROJECT ID: 18-03367-003
DATE: 08/16/2018



Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:00 PM - 05:15 PM

[illegible]

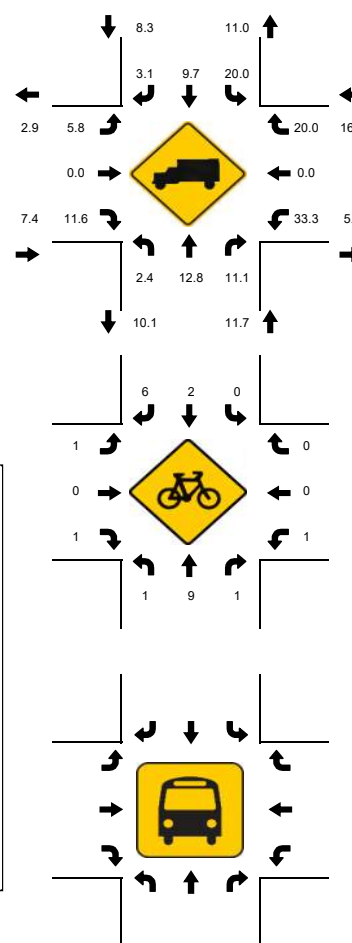
PROJECT ID: 18-03367-004
DATE: 08/16/2018



Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

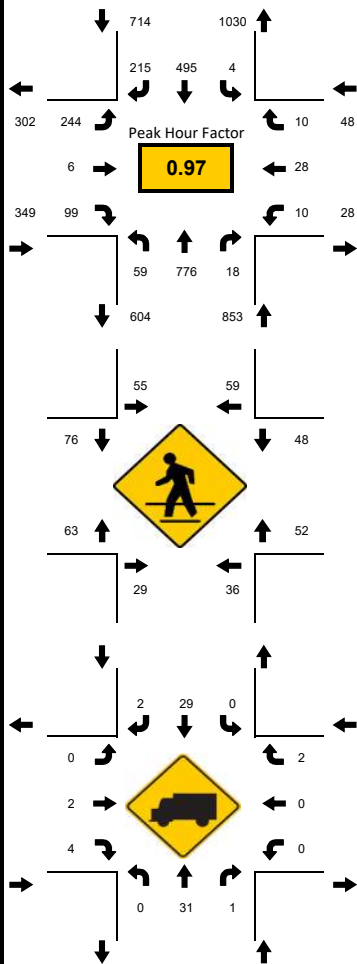


National Data & Surveying Services

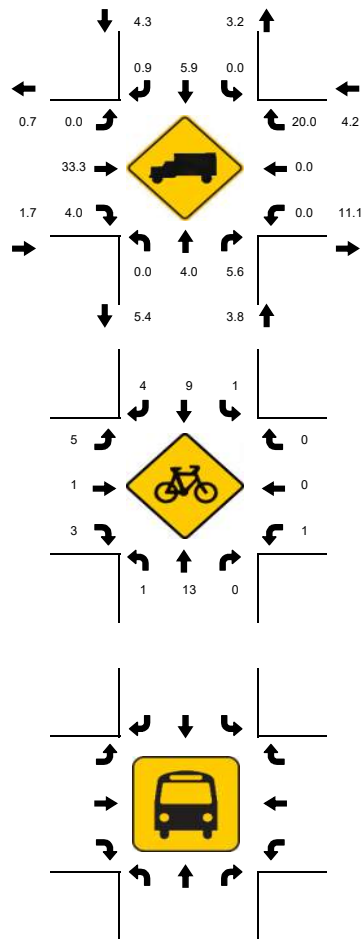
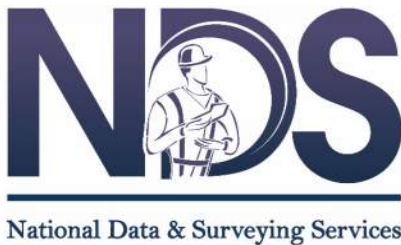
[illegible]

LOCATION: Collins Ave & 23rd St
CITY/STATE: Miami Beach, FL

PROJECT ID: 18-03367-004
DATE: 08/16/2018



Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 04:45 PM - 05:00 PM

[illegible]

National Data & Surveying Services

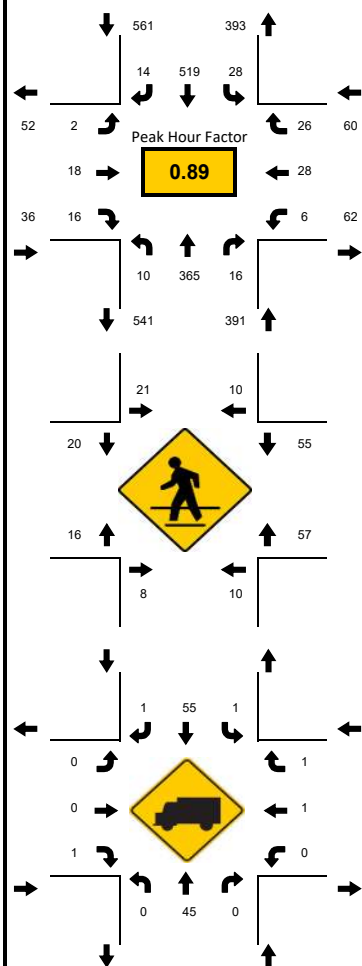
Intersection Turning Movement Count

Location: Collins Ave & 23rd St
City: Miami Beach
Control:

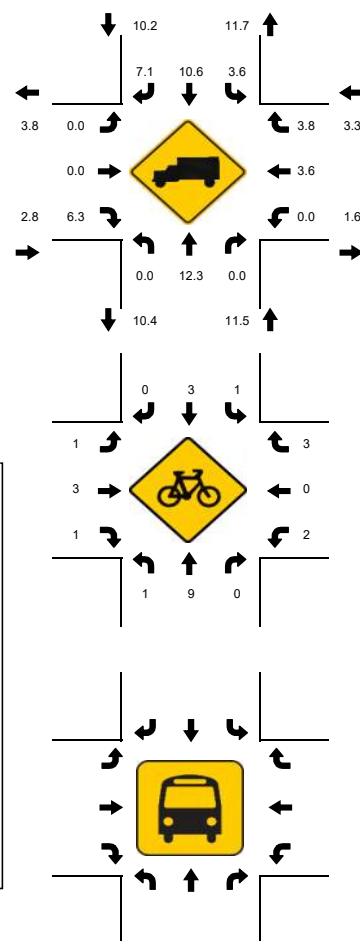
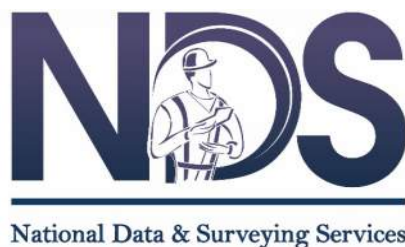
Project ID: 18-03367-004
Date: 8/16/2018

		Total																										
NS/EW Streets:		Collins Ave					Collins Ave					23rd St					23rd St											
AM		NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2						
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2U	S2L2	S2T2	S2R2	S2U2	
7:00 AM	11	64	2	0	2	0	99	13	0	0	18	4	15	0	4	2	1	1	0	0		0	0	0	5	5	246	
7:15 AM	10	67	1	0	1	1	83	23	0	1	20	3	24	0	5	2	3	2	0	0		0	0	0	2	3	251	
7:30 AM	13	67	1	0	0	4	96	18	1	0	23	9	30	0	1	1	3	2	0	0		0	0	0	3	1	273	
7:45 AM	11	81	1	0	2	0	112	30	0	0	28	8	27	0	4	3	0	0	0	0		0	0	0	5	2	314	
8:00 AM	11	71	1	0	0	0	127	31	0	2	27	5	18	0	2	0	1	1	0	1		0	0	1	2	6	307	
8:15 AM	10	89	2	0	0	1	94	25	0	0	32	4	20	0	4	0	2	3	0	0		0	0	0	8	6	300	
8:30 AM	9	91	4	0	3	2	105	32	0	1	27	4	22	0	6	1	1	1	0	0		0	0	1	3	2	315	
8:45 AM	11	85	2	0	2	2	127	42	0	0	35	10	26	0	10	2	0	0	0	0		1	0	5	7	6	373	
TOTAL VOLUMES :		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
APPROACH %'s :		11.86	615	84.83%	1.93%	0.00%	1.38%	0.93%	78.64%	19.96%	0.09%	0.37%	44.21%	9.89%	38.32%	0.00%	7.58%	33.33%	33.33%	30.30%	0.00%	3.03%	0.00%	1.35%	0.00%	9.46%	47.30%	41.89%
PEAK HR :		08:00 AM - 09:00 AM																									TOTAL	
PEAK HR VOL :		41	336	9	0	5	5	453	130	0	3	121	23	86	0	22	3	4	5	0	1	0	1	0	7	20	20	1295
PEAK HR FACTOR :		0.932	0.923	0.563	0.000	0.417	0.625	0.892	0.774	0.000	0.375	0.864	0.575	0.827	0.000	0.550	0.375	0.500	0.417	0.000	0.250	0.000	0.250	0.000	0.350	0.625	0.833	0.868
		0.914					0.864					0.778					0.650					0.632						
PM		NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					SOUTHBOUND2						
		0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2U	S2L2	S2T2	S2R2	S2U2	
4:00 PM	17	146	3	1	2	2	141	63	0	2	60	2	20	0	10	1	3	1	0	0		0	0	1	5	6	486	
4:15 PM	20	183	5	0	3	3	133	46	1	1	49	2	20	0	8	1	2	3	0	1		0	0	3	7	8	499	
4:30 PM	18	183	3	0	1	1	124	47	0	2	59	2	28	0	2	2	8	5	0	1		0	0	1	6	4	497	
4:45 PM	7	207	4	1	3	1	123	53	0	1	67	3	26	0	5	2	8	1	0	1		0	0	2	6	3	524	
5:00 PM	10	186	5	0	2	0	113	57	0	1	65	1	26	0	6	3	9	3	0	0		0	0	2	3	6	498	
5:15 PM	22	200	6	1	6	1	135	58	1	1	53	0	19	0	3	3	3	1	0	0		0	0	1	3	6	523	
5:30 PM	12	157	5	0	2	0	108	41	1	0	47	3	31	0	12	2	6	2	0	0		0	0	4	7	3	443	
5:45 PM	18	180	5	0	1	0	135	50	0	4	61	3	27	0	5	6	8	3	0	1		0	0	1	7	6	521	
TOTAL VOLUMES :		NL	NT	NR	NU	NT2	SL	ST	SR	SU	SU2	EL	ET	ER	EU	EL2	WL	WT	WR	WU	WR2	S2L	S2U	S2L2	S2T2	S2R2	S2U2	TOTAL
APPROACH %'s :		124	1442	36	3	20	8	1012	415	3	12	461	16	197	0	51	20	47	19	0	4	0	0	0	15	44	42	3991
PEAK HR :		04:30 PM - 05:30 PM																									TOTAL	
PEAK HR VOL :		57	776	18	2	12	3	495	215	1	5	244	6	99	0	16	10	28	10	0	2	0	0	0	6	18	19	2042
PEAK HR FACTOR :		0.648	0.937	0.750	0.500	0.500	0.750	0.917	0.927	0.250	0.625	0.910	0.500	0.884	0.000	0.667	0.833	0.778	0.500	0.000	0.500	0.000	0.000	0.750	0.750	0.792	0.974	
		0.920					0.917					0.903					0.781					0.977						

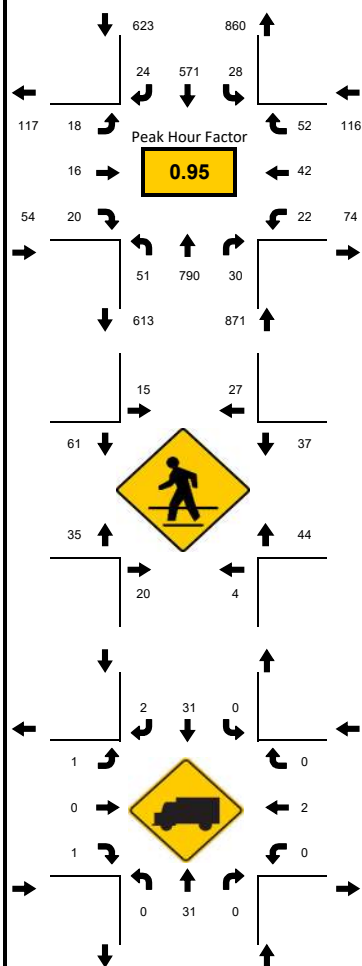
PROJECT ID: 18-03367-005
DATE: 08/16/2018



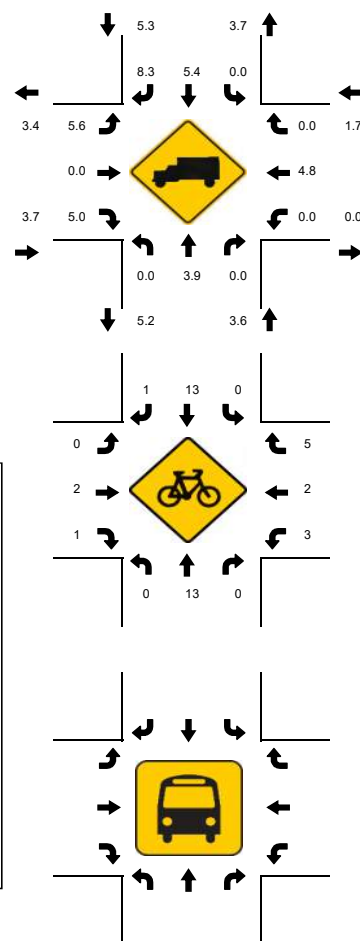
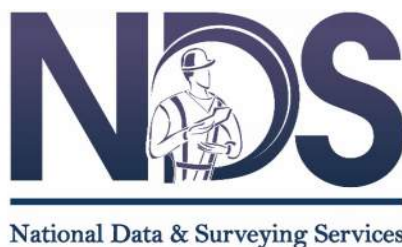
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

[illegible]

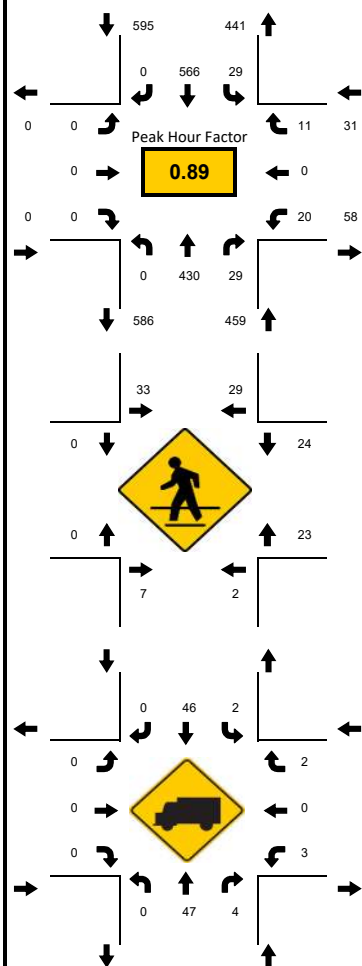
PROJECT ID: 18-03367-005
DATE: 08/16/2018



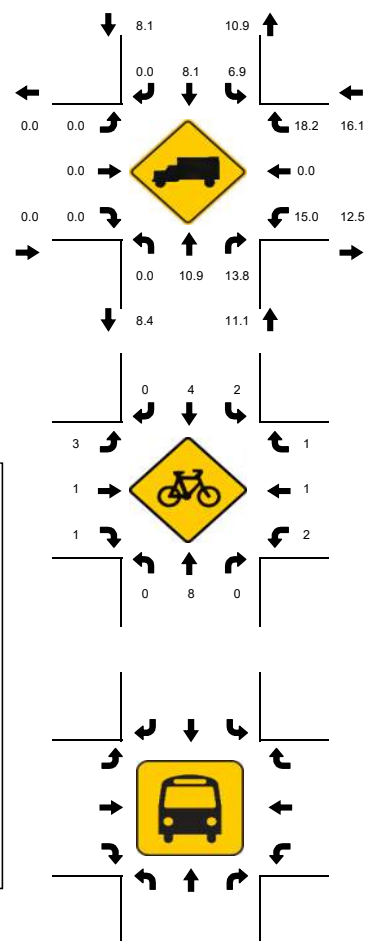
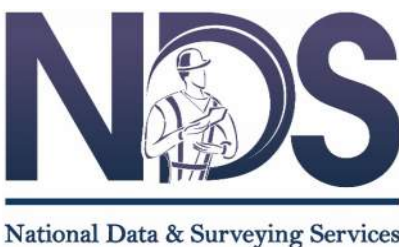
Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 05:15 PM - 05:30 PM

[illegible]

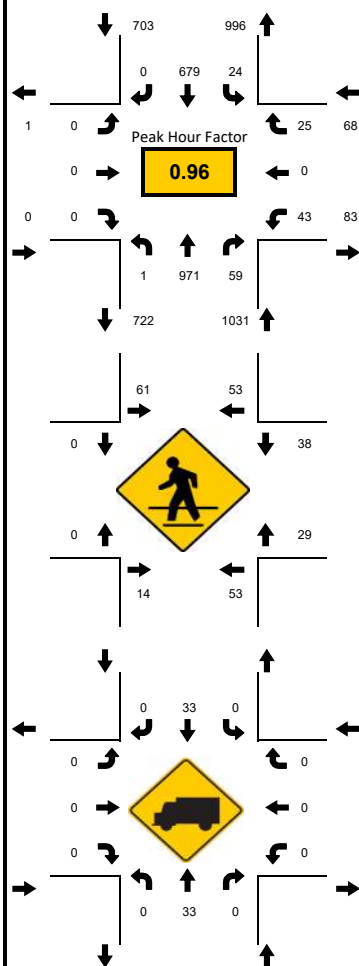
PROJECT ID: 18-03367-006
DATE: 08/16/2018



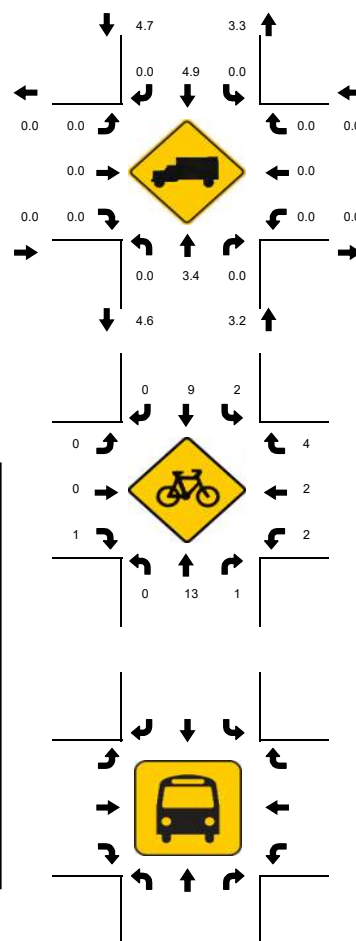
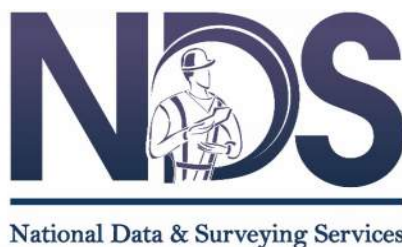
Peak-Hour: 08:00 AM - 09:00 AM
Peak 15-Minute: 08:45 AM - 09:00 AM

[illegible]

PROJECT ID: 18-03367-006
DATE: 08/16/2018



Peak-Hour: 04:30 PM - 05:30 PM
Peak 15-Minute: 04:45 PM - 05:00 PM

[illegible]

Signal Timings

TOD Schedule Report
for 2698: Dade Blvd&23 St

Print Date:
5/22/2018

Print Time:
11:02 AM

<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>
2698	Dade Blvd&23 St	DOW-3		N/A	0	0	N/A	0	Max 0

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	NWT	SWL	NBT	-	-
0	0	0	0	0	0	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	5 - 5 - 0	25 - 25 - 0	5 - 7 - 7	1 - 1 - 1	20 - 20 - 20	0 - 22 - 22	4	2.9
3 PED	5 - 5 - 5	24 - 24 - 24	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 NWT	0 - 0 - 0	0 - 0 - 0	7 - 7 - 7	2.5 - 2.5 - 2.5	7 - 7 - 7	47 - 32 - 32	4	2.2
5 SWL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	5 - 5 - 5	20 - 20 - 7	3.7	2.9
6 NBT	5 - 5 - 5	25 - 25 - 25	5 - 7 - 7	1 - 1 - 1	20 - 20 - 20	0 - 22 - 22	4	2.9
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	-23456-8
External Permit 0	-23456-8
External Permit 1	-23456-8
External Permit 2	-23456-8

<u>Current</u>	<u>Green Time</u>											
<u>TOD Schedule</u>	<u>Plan</u>	<u>Cycle</u>	1	2	3	4	5	6	7	8	<u>Ring Offset</u>	<u>Offset</u>
			-	SWT	PED	NWT	SWL	NBT	-	-		
	2	100	0	45	29	13	6	32	0	0	0	23
	3	100	0	45	29	13	6	32	0	0	0	50
	4	130	0	65	29	23	6	52	0	0	0	29
	6	120	0	65	29	13	6	52	0	0	0	70
	13	120	0	58	29	20	19	32	0	0	0	35
	14	130	0	68	29	20	7	54	0	0	0	23

Local TOD Schedule

<u>Time</u>	<u>Plan</u>	<u>DOW</u>
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 S
1415	14	M T W Th F
1500	4	F
1645	4	M T W Th
1830	13	M T W Th F
2200	Free	Su S
2200	Free	M T W Th F

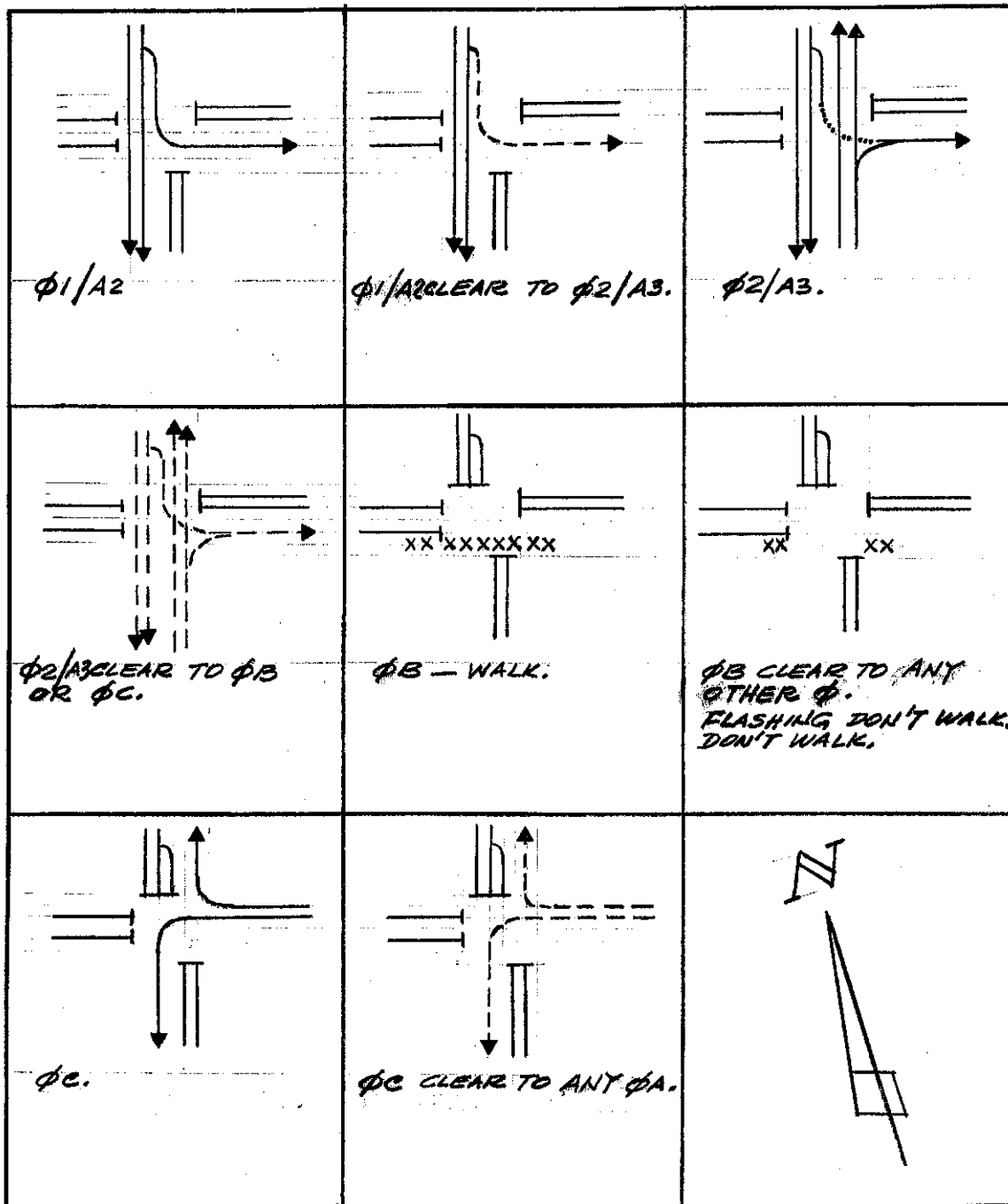
TOD Schedule Report
for 2698: Dade Blvd&23 St

Print Date:
5/22/2018

Print Time:
11:02 AM

Current Time of Day Function				Local Time of Day Function				* Settings
Time	Function	Settings *	Day of Week	Time	Function	Settings *	Day of Week	
0000	TOD OUTPUTS	-----1	SuM T W ThF S	0000	TOD OUTPUTS	-----1	SuM T W ThF S	Blank - FREE - Phase Bank 1, Max 1
0000	TOD LOCAL MULTIFU	----4---	SuM T W ThF S	0000	TOD LOCAL MULTIFUNCT	----4---	SuM T W ThF S	Blank - Plan - Phase Bank 1, Max 2
0500	TOD LOCAL MULTIFU	-----	SuM T W ThF S	0500	TOD LOCAL MULTIFUNCT	-----	SuM T W ThF S	1 - Phase Bank 2, Max 1
0600	TOD OUTPUTS	-----2-	SuM T W ThF S	0600	TOD OUTPUTS	-----2-	SuM T W ThF S	2 - Phase Bank 2, Max 2
0630	TOD OUTPUTS	-----	M T W ThF	0630	TOD OUTPUTS	-----	M T W ThF	3 - Phase Bank 3, Max 1
0845	TOD OUTPUTS	-----2-	M T W ThF	0700	TOD OUTPUTS	-----1	Su S	4 - Phase Bank 3, Max 2
1415	TOD OUTPUTS	-----	M T W ThF	0845	TOD OUTPUTS	-----2-	M T W ThF	5 - EXTERNAL PERMIT 1
1600	TOD OUTPUTS	----3--	M T W Th	1000	TOD OUTPUTS	-----2-	Su S	6 - EXTERNAL PERMIT 2
1830	TOD OUTPUTS	-----	M T W ThF	1415	TOD OUTPUTS	-----	M T W ThF	7 - X-PED OMIT
2200	TOD OUTPUTS	-----1	SuM T W ThF S	1500	TOD OUTPUTS	-----	F	8 - TBA
				1600	TOD OUTPUTS	----3--	M T W Th	
				1830	TOD OUTPUTS	-----	M T W ThF	
				2200	TOD OUTPUTS	-----1	SuM T W ThF S	
No Calendar Defined/Enabled								

TRAFFIC SIGNAL INTERVAL DIAGRAMS



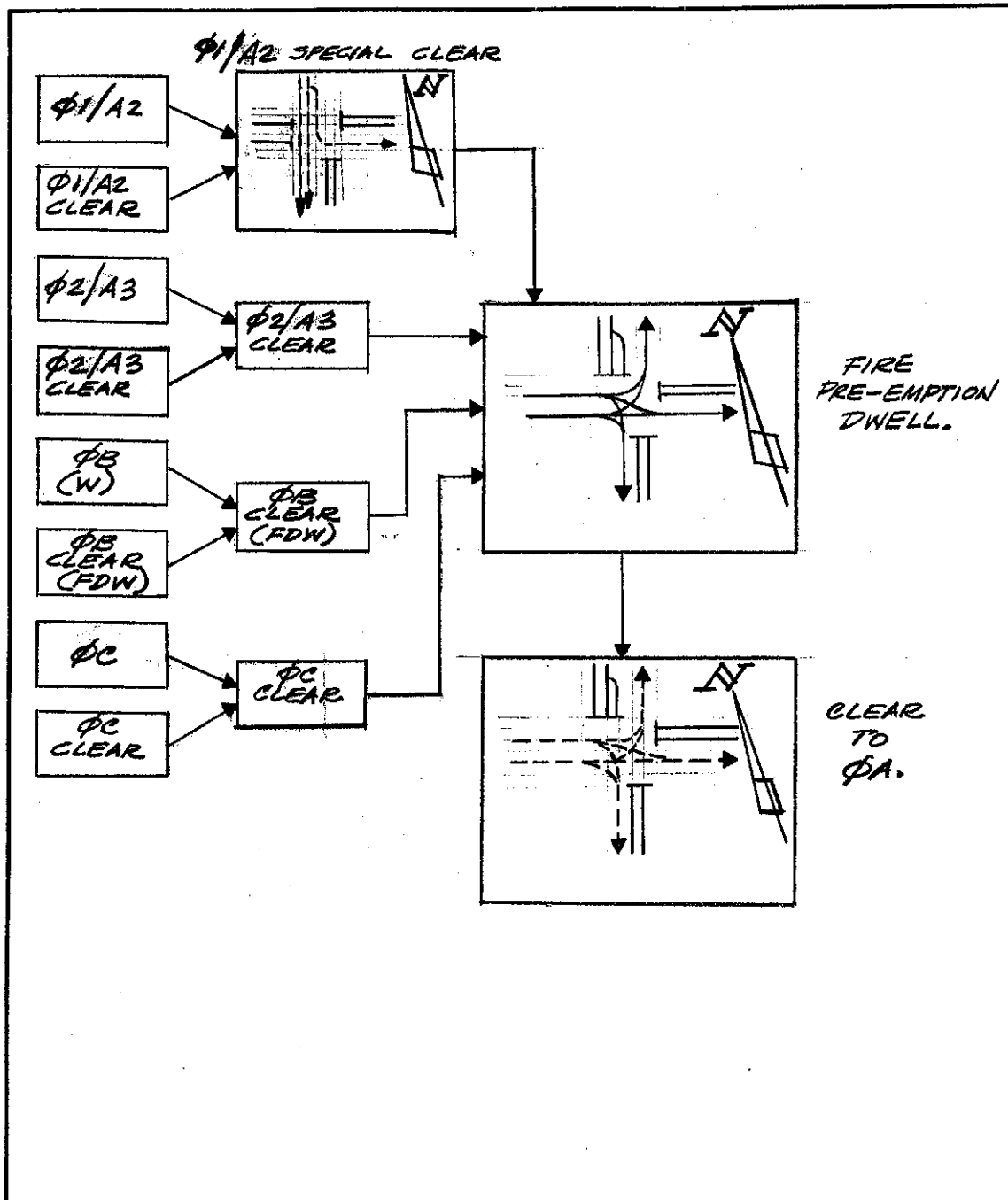
LEGEND

- | | |
|---|---|
| <p>— A legal movement on green indication.</p> <p>— A movement that must yield to green indication.</p> <p>— Movement on yellow indication.</p> | <p>— Stopped condition on red indication.</p> <p>XXXXXXXXXX Pedestrian movement</p> <p>xx xx Pedestrian clearance</p> |
|---|---|

ASSET # 3269B

Drawn C.L. ROQUE	Date 3/30/76	METROPOLITAN DADE COUNTY DEPARTMENT OF TRAFFIC AND TRANSPORTATION		
Check Wadsworth	Date 3/31/76	DADE BOULEVARD & 23 STREET		
Division Engineer	Date	Placed in Service Date: 11/19/75	Timing Number By: CONTRACTOR	Phasing Number 3

TRAFFIC SIGNAL INTERVAL DIAGRAMS



LEGEND

- ← A legal movement on green indication.
- ←..... A movement that must yield to green indication.
- ←----- Movement on yellow indication.
- Stopped condition on red indication.
- XXXXXXXXXX Pedestrian movement
- XX XX Pedestrian clearance

ASSET # 3269B

Drawn C.L. ROQUE		Date 3/30/76		METROPOLITAN DADE COUNTY DEPARTMENT OF TRAFFIC AND TRANSPORTATION	
Check Wadsworth		Date 3/31/76		DADE BOULEVARD & 23 STREET	
Division Engineer		Date		Placed in Service	
				Timing Number	
				Phasing Number	
		Date: 11/19/75		By: CONTRACTOR	

FIRE PRE-EMPTION.

TOD Schedule Report
for 2670: Collins Av&23 St

Print Date:
5/22/2018

Print Time:
10:57 AM

<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>
2670	Collins Av&23 St	DOW-3		N/A	0	0	N/A	0	Max 0

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>
WB (S)	SBT	EBT	WB (N)	-	NBT	-	-
0	0	0	0	0	0	0	0
N/A			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 WB (	0	-	0 - 0	0	-	0 - 0	7	-	7 - 7	2.5	-	2.5 - 2.5	7	-	7 - 7	14	-	10 - 10	4	2
2 SBT	7	-	7 - 7	20	-	20 - 20	5	-	5 - 5	1	-	1 - 1	27	-	27 - 27	0	-	27 - 27	4	2.5
3 EBT	7	-	7 - 7	12	-	12 - 12	7	-	7 - 7	2.5	-	2.5 - 2.5	8	-	8 - 8	30	-	15 - 15	4	2
4 WB (	7	-	7 - 7	16	-	16 - 16	7	-	7 - 7	2.5	-	2.5 - 2.5	7	-	7 - 7	40	-	12 - 12	4	2
5 -	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	0
6 NBT	7	-	7 - 7	20	-	20 - 20	5	-	5 - 5	1	-	1 - 1	27	-	27 - 27	0	-	27 - 27	4	2.5
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	1234-6--
External Permit 0	1234-6--
External Permit 1	1234-6--
External Permit 2	1234-6--

TOD Schedule Report
for 2670: Collins Av&23 St

Print Date:
5/22/2018

Print Time:
10:57 AM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 WB (	2 SBT	3 EBT	4 WB (N)	5 -	6 NBT	7 -	8 -		
1		110	9	34	20	23	0	34	0	0	0	28
2		110	9	34	20	23	0	34	0	0	0	21
3		130	9	54	20	23	0	54	0	0	0	3
4		110	9	34	20	23	0	34	0	0	0	28
5		110	9	34	20	23	0	34	0	0	0	41
6		130	7	52	24	23	0	52	0	0	0	83
7		120	9	44	20	23	0	44	0	0	0	83
8		110	9	34	20	23	0	34	0	0	0	46
11		110	6	42	17	21	0	42	0	0	0	28
12		110	6	42	17	21	0	42	0	0	0	28
13		110	6	42	17	21	0	42	0	0	0	28
14		120	8	50	17	21	0	50	0	0	0	9
15		120	6	52	17	21	0	52	0	0	0	9
16		110	6	42	17	21	0	42	0	0	0	28
17		110	6	42	17	21	0	42	0	0	0	28
18		100	9	24	20	23	0	24	0	0	0	97
21		110	9	34	20	23	0	34	0	0	0	28
22		110	9	34	20	23	0	34	0	0	0	65
23		110	9	34	20	23	0	34	0	0	0	65
25		140	9	64	20	23	0	64	0	0	0	98

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th
0000	7	F S
0300	1	F S
0300	22	M T W Th
0300	4	Su
0700	5	Su
0700	1	M T W Th F S
0930	2	M T W Th
1000	8	Su F S
1500	14	Su F S
1500	3	M T W Th
1800	18	M T W Th F
1800	6	Su S
2200	1	M T W Th
2200	6	F

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S
1800	PED RECALL	8---4---	M T W Th F
2200	PED RECALL	-----	M T W Th F

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S
1000	PED RECALL	8---4---	Su S
1800	PED RECALL	-----	Su S
1800	PED RECALL	8---4---	M T W Th F
2200	PED RECALL	-----	M T W Th F

*** 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 2670: Collins Av&23 St

Print Date:
5/22/2018

Print Time:
10:57 AM

<i>No Calendar Defined/Enabled</i>

SIGNAL OPERATING PLAN

	Direction	NB	SB	EB	WB	WB	Ped Heads								
Timing Phases	Head No.	6	2	2R	3	8	4	4/7	10	9/10	P6	P2	P8	P4	Movements/Display/Actuation
(2+6)	Dwell	G	G	G	<R	R	R	R	R	R	W/F	W/F	DW	DW	
N/SB Collins Av (RECALL)	Clear to	3	Y	Y	Y	<R	R	R	R	R	DW	DW	DW	DW	
		4	Y	Y	Y	<R	R	R	R	R	DW	DW	DW	DW	
		1	Y	Y	Y	<R	R	R	R	R	DW	DW	DW	DW	
	Clear to														
	Clear to														
3	Dwell	R	R	R/G>	<G	G	R	R	R	R	DW	DW	W/F	DW	
EB 23 STREET (ACTUATED)	Clear to	4	R	R	R/Y>	<Y	Y	R	R	R	DW	DW	DW	DW	
		1	R	R	R/Y>	<Y	Y	R	R	R	DW	DW	DW	DW	
		(2+6)	R	R	R/Y>	<Y	Y	R	R	R	DW	DW	DW	DW	
	Clear to														
4	Dwell	R	R	R	<R	R	R	R	G	<G/G	DW	DW	DW	W/F	
WB NORTHSIDE (ACTUATED)	Clear to	1	R	R	R	<R	R	R	Y	Y	DW	DW	DW	DW	
		(2+6)	R	R	R	<R	R	R	Y	Y	DW	DW	DW	DW	
	Clear to														
1	Dwell	R	R	R	<R	R	G	<G/G	R	R	DW	DW	W/F	W/F	
WB SOUTHSIDE (ACTUATED)	Clear to	(2+6)	R	R	R	<R	R	Y	Y	R	R	DW	DW	DW	
	Clear to														
	Dwell														
	Clear to														
	Clear to														
	Clear to														
Flashing Operation		FY	FY	FY	FR	FR	FR	FR	FR	FR					Page 1 of 1
Miami-Dade County Public Works Department															
Drawn		Date													
WILLIAM RIVERA PAZ		04/30/13		Collins Av & 23 Street											
Checked		Date		Placed in Service				Phasing No.				Asset Number			
H. HERNANDEZ		4/30/13		Date: 5/1/13				BY UND				7 2670			

TOD Schedule Report
for 2669: Collins Av&22 St

Print Date:
5/22/2018

Print Time:
10:57 AM

<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>
2669	Collins Av&22 St	DOW-3		N/A	0	0	N/A	0	Max 0

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>
-	SBT	-	WBT	-	NBT	-	EBT
0	0	0	0	0	0	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 2 3	
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 SBT	10 - 10 - 10	6 - 6 - 6	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	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	7 - 7 - 7	12 - 12 - 12	7 - 7 - 7	2.5 - 2.5 - 2.5	10 - 10 - 10	45 - 14 - 14	4	2
5 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
6 NBT	10 - 10 - 10	6 - 6 - 6	7 - 7 - 7	1 - 1 - 1	40 - 40 - 40	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	12 - 12 - 12	7 - 7 - 7	2.5 - 2.5 - 2.5	10 - 10 - 10	45 - 14 - 14	4	2

Last In Service Date: unknown

Permitted Phases

12345678

Default -2-4-6-8
External Permit 0 -2-4-6-8
External Permit 1 -2-4-6-8
External Permit 2 -2-4-6-8

TOD Schedule Report
for 2669: Collins Av&22 St

Print Date:
5/22/2018

Print Time:
10:57 AM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 -	2 SBT	3 -	4 WBT	5 -	6 NBT	7 -	8 EBT		
1		110	0	74	0	24	0	74	0	24	0	66
2		110	0	74	0	24	0	74	0	24	0	38
3		100	0	64	0	24	0	64	0	24	0	40
4		110	0	74	0	24	0	74	0	24	0	29
5		110	0	74	0	24	0	74	0	24	0	42
6		130	0	94	0	24	0	94	0	24	0	114
7		120	0	84	0	24	0	84	0	24	0	43
8		110	0	74	0	24	0	74	0	24	0	63
11		110	0	74	0	24	0	74	0	24	0	10
12		110	0	74	0	24	0	74	0	24	0	65
13		110	0	74	0	24	0	74	0	24	0	67
14		120	0	84	0	24	0	84	0	24	0	30
15		120	0	84	0	24	0	84	0	24	0	96
16		110	0	74	0	24	0	74	0	24	0	67
17		110	0	74	0	24	0	74	0	24	0	67
18		110	0	74	0	24	0	74	0	24	0	13
21		110	0	74	0	24	0	74	0	24	0	61
22		110	0	74	0	24	0	74	0	24	0	97
23		110	0	74	0	24	0	74	0	24	0	71
25		140	0	103	0	25	0	103	0	25	0	95

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th
0000	7	F S
0300	1	F S
0300	22	M T W Th
0300	4	Su
0700	5	Su
0700	1	M T W Th F S
0930	2	M T W Th
1000	8	Su F S
1500	14	Su F S
1500	3	M T W Th
1800	18	M T W Th F
1800	6	Su S
2200	1	M T W Th
2200	6	F

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S
1800	PED RECALL	8---4---	M T W Th F
2200	PED RECALL	-----	M T W Th F

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W Th F S
1000	PED RECALL	8---4---	Su S
1800	PED RECALL	-----	Su S
1800	PED RECALL	8---4---	M T W Th F
2200	PED RECALL	-----	M T W Th F

*** 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 2669: Collins Av&22 St

Print Date:
5/22/2018

Print Time:
10:57 AM

<i>No Calendar Defined/Enabled</i>

SIGNAL OPERATING PLAN



Direction		NB	SB	EB	WB	Ped Heads					
Timing Phases	Head No.	6	2	8	4	P6	P2	P8	P4	Movements/Display/Actuation	
	Dwell										
	C										
	l										
	e										
	a										
	r										
	t										
	o										
	Dwell										
	C										
	l										
	e										
	a										
	r										
	t										
	o										
(2+6) N/SB Collins Av (RECALL)	Dwell	G	G	R	R	W/F	W/F	DW	DW		
	C	4+8	Y	Y	R	R	DW	DW	DW		DW
	l										
	e										
	a										
	r										
	t										
	o										
(4+8) E/WB 22 Street (ACTUATED)	Dwell	R	R	G	G	DW	DW	W/F	W/F		
	C	2+6	R	R	Y	Y	DW	DW	DW		DW
	l										
	e										
	a										
	r										
	t										
	o										
	Dwell										
	C										
	l										
	e										
	a										
	r										
	t										
	o										

Flashing Operation

FY FY FR FR

Page 1 of 1

Miami-Dade County Public Works Department

Drawn	Date	COLLINS AV & 22 STREET		
WILLIAM RIVERA PAZ	3/14/2013			
Checked	Date	Placed in Service	Phasing No.	Asset Number
		By UND	5	2669

TOD Schedule Report
for 2671: Collins Av&24 St

Print Date:
5/22/2018

Print Time:
10:58 AM

<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>
2671	Collins Av&24 St	DOW-3		N/A	0	0	N/A	0	Max 0

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>
-	SBT	-	WBT	-	NBT	-	-
0	0	0	0	0	0	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 -	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	0
2 SBT	7	-	7 - 7	12	-	12 - 12	7	-	7 - 7	1	-	1 - 1	45	-	45 - 45	0	-	45 - 45	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	7	-	7 - 7	17	-	17 - 17	7	-	7 - 7	3.5	-	2.5 - 2.5	10	-	10 - 10	45	-	24 - 24	4	3.3
5 -	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	0
6 NBT	7	-	7 - 7	12	-	12 - 12	7	-	7 - 7	1	-	1 - 1	45	-	45 - 45	0	-	45 - 45	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 -2-4-6--
External Permit 0 -2-4-6--
External Permit 1 -2-4-6--
External Permit 2 -2-4-6--

TOD Schedule Report
for 2671: Collins Av&24 St

Print Date:
5/22/2018

Print Time:
10:58 AM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 -	2 SBT	3 -	4 WBT	5 -	6 NBT	7 -	8 -		
1		110	0	73	0	24	0	73	0	0	0	49
2		110	0	73	0	24	0	73	0	0	0	85
3		130	0	93	0	24	0	93	0	0	0	24
4		110	0	73	0	24	0	73	0	0	0	10
5		110	0	73	0	24	0	73	0	0	0	32
6		110	0	73	0	24	0	73	0	0	0	73
7		120	0	83	0	24	0	83	0	0	0	31
8		110	0	73	0	24	0	73	0	0	0	62
11		110	0	66	0	31	0	66	0	0	0	4
12		110	0	66	0	31	0	66	0	0	0	72
13		110	0	66	0	31	0	66	0	0	0	42
14		120	0	83	0	24	0	83	0	0	0	30
15		120	0	76	0	31	0	76	0	0	0	22
16		110	0	66	0	31	0	66	0	0	0	27
17		110	0	66	0	31	0	66	0	0	0	25
18		100	0	58	0	29	0	58	0	0	0	13
22		110	0	66	0	31	0	66	0	0	0	0
25		140	0	96	0	31	0	96	0	0	0	0

Local TOD Schedule

Time	Plan	DOW
0000	1	Su M T W Th
0000	7	F S
0300	1	F S
0300	22	M T W Th
0300	4	Su
0700	5	Su
0700	1	M T W Th F S
0930	2	M T W Th
1000	8	Su F S
1500	14	Su F S
1500	3	M T W Th
1800	18	M T W Th F
1800	6	Su S
2200	1	M T W Th
2200	6	F

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W ThF S
1800	PED RECALL	8---4---	M T W ThF
2200	PED RECALL	-----	M T W ThF

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	Su M T W ThF S
1000	PED RECALL	8---4---	Su S
1800	PED RECALL	-----	Su S
1800	PED RECALL	8---4---	M T W ThF
2200	PED RECALL	-----	M T W ThF

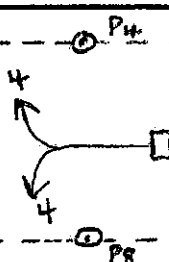
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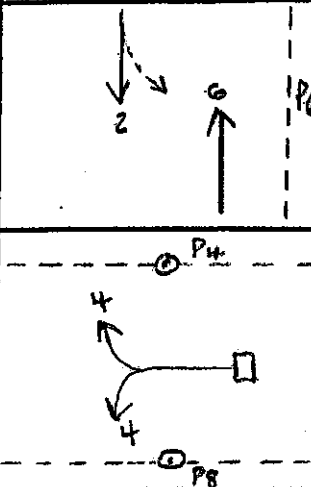
Blank - FREE - Phase Bank 1, Max 1
Blank - Plan - Phase Bank 1, Max 2
1 - Phase Bank 2, Max 1
2 - Phase Bank 2, Max 2
3 - Phase Bank 3, Max 1
4 - Phase Bank 3, Max 2
5 - EXTERNAL PERMIT 1
6 - EXTERNAL PERMIT 2
7 - X-PED OMIT
8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN



	Direction	SB	NB	WB	ed Heads			N
Timing Phases	Head No.	Z	G	4	P6	P4	P2	Movements/Display/Actuation
Z+6 N/S Collins A-V RECALL	Dwell	G	G	R	W/F	DW	DW	
	C	4	Y	Y	R	DW	DW	
	Clear							
	Ar							
	to							
4 WBND 24 ST ACTUATED	Dwell	R	R	G	DW	W/F	W/F	
	C	2+6	R	R	Y	DW	DW	
	Clear							
	Ar							
	to							
	Dwell							
	C							
	Clear							
	Ar							
	to							
	Dwell							
	C							
	Clear							
	Ar							
	to							
	Dwell							
	C							
	Clear							
	Ar							
	to							
	Dwell							
	C							
	Clear							
	Ar							
	to							



Flashing Operation

Fy Fy FR

Page 1 of 1

Miami-Dade County Public Works Department

Drawn
H. FRANCHILLON

Date
10/11/02

Collins Av & 24 St

Checked
H. HERNANDEZ

Date
10/15/02

Placed in Service

Phasing No.

Asset Number

Date

By STI

6

2671

Peak Season Conversion Factor

I-195 Peak Season Conversion Factor				
Week	Weekly Volume	PSCF	Month	Days
1	103657	1.27	Jan	1-2
2	118133	1.12		5-9
3	116803	1.13		12-16
4	117632	1.12		19-23
5	115429	1.14		26-30
6	116486	1.13	Feb	2-6
7	118570	1.11		9-13
8	121138	1.09		16-20
9	121579	1.09		23-27
10	119121	1.11	Mar	2-6
11	123996	1.07		9-13
12	122332	1.08		16-20
13	123477	1.07		23-27
14	123280	1.07	Apr	30-3
15	122197	1.08		6-10
16	122168	1.08		13-17
17	117178	1.13		20-24
18	117485	1.12	May	27-1
19	118214	1.12		4-8
20	122625	1.08		11-15
21	115777	1.14		18-22
22	111920	1.18		25-29
23	119378	1.11	June	1-5
24	119407	1.11		8-12
25	119270	1.11		15-19
26	121686	1.09		22-26
27	116696	1.13	July	29-3
28	118989	1.11		6-10
29	120243	1.10		13-17
30	119679	1.10		20-24
31	119616	1.10		27-31
32	122915	1.07	Aug	3-7
33	119112	1.11		10-14
34	119316	1.11		17-21
35	117869	1.12		24-28
36	115663	1.14	Sept	1-4
37	112700	1.17		7-11
38	115471	1.14		14-18
39	115641	1.14		21-25
40	119049	1.11	Oct	28-2
41	113439	1.16		5-9
42	118812	1.11		12-16
43	121438	1.09		19-23
44	121647	1.09		26-30
45	117841	1.12	Nov	2-6
46	110428	1.20		9-13
47	123139	1.07		16-20
48	108529	1.22		23-27
49	132077	1.00	Dec	30-4
50	122158	1.08		7-11
51	113709	1.16		14-18
52	107344	1.23		21-25
53	123058	1.07		28-31

Appendix D

Growth Rate Calculations

FDOT Historic Growth Trends

FDOT Growth Rate Summary

Station Number	Location	Linear				Exponential				Decaying Exponential			
		5-year	R-squared	10-year	R-squared	5-year	R-squared	10-year	R-squared	5-year	R-squared	10-year	R-squared
5170	SR A1A/Collins Avenue -- North of 21st Street	2.88%	36.84%	-0.04%	0.04%	2.96%	37.91%	-0.04%	0.04%	3.52%	56.47%	-0.30%	2.87%
8531	17th Street -- 200 feet east of Meridian Avenue	0.00%	0.00%	-	-	0.00%	0.00%	-	-	0.00%	0.00%	-	-
8676	PRAIRIE AVE -- 400' SOUTH OF W 23 STREET	5.15%	94.12%	-	-	4.79%	94.44%	-	-	4.15%	79.46%	-	-
Total		2.68%	43.65%	-0.04%	0.04%	2.58%	44.12%	-0.04%	0.04%	2.56%	45.31%	-0.30%	2.87%

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5170 - SR A1A/COLLINS AV, N OF 21 ST (MIAMI BEACH)

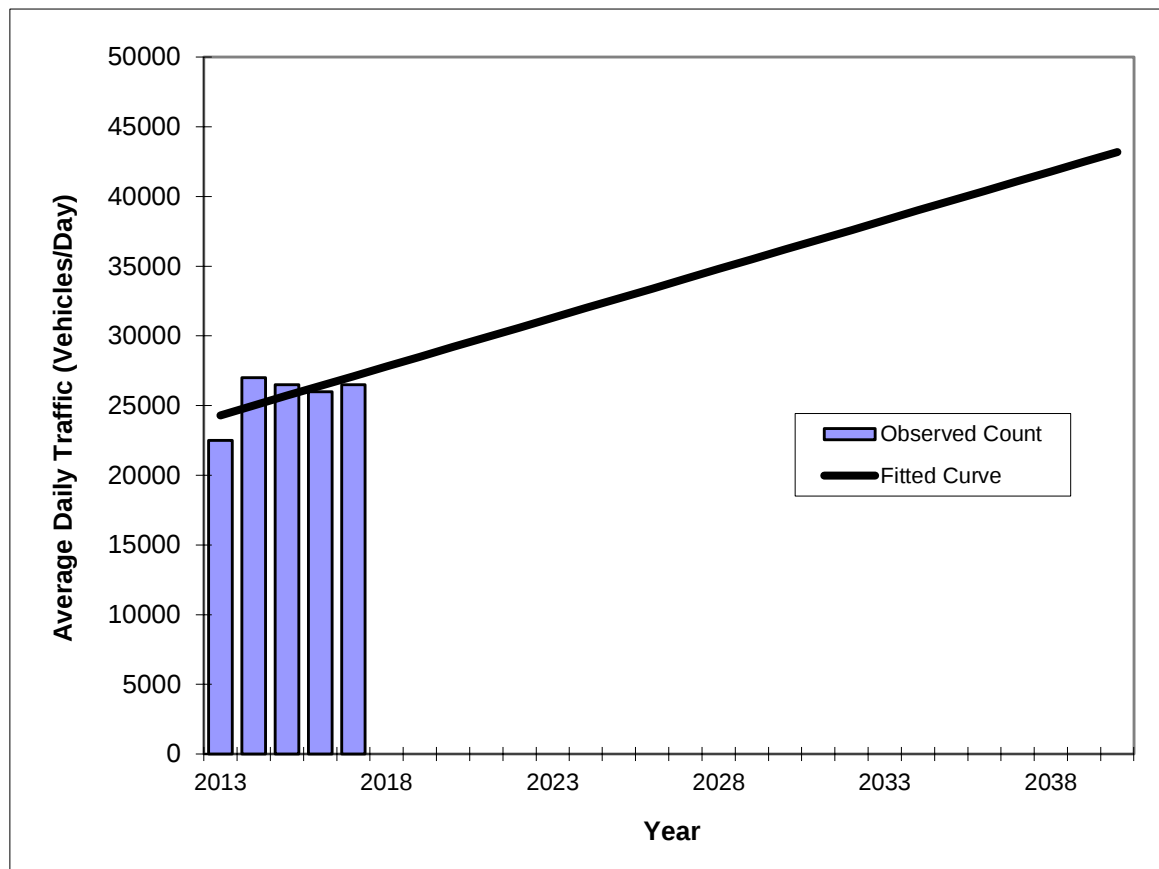
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----	-----	-----	-----	-----	-----
2017	26500 C	N 13000	S 13500	9.00	55.00	6.60
2016	26000 C	N 13500	S 12500	9.00	54.50	20.20
2015	26500 C	N 12500	S 14000	9.00	54.70	4.20
2014	27000 C	N 12500	S 14500	9.00	54.50	4.10
2013	22500 C	N 10500	S 12000	9.00	52.40	9.00
2012	25000 C	N 12000	S 13000	9.00	55.70	4.30
2011	26500 C	N 13500	S 13000	9.00	55.10	2.80
2010	25000 C	N 12500	S 12500	8.98	54.08	2.80
2009	26500 C	N 13000	S 13500	8.99	53.24	2.70
2008	27000 C	N 13500	S 13500	9.09	55.75	4.60
2007	25500 C	N 12500	S 13000	8.01	54.34	5.10
2006	25500 C	N 12500	S 13000	7.97	54.22	2.70
2005	25500 C	N 13000	S 12500	8.80	53.80	11.60
2004	30500 C	N 15000	S 15500	9.00	53.30	11.60
2003	23500 C	N 11500	S 12000	8.80	53.40	6.90
2002	31500 C	N 16000	S 15500	9.80	52.30	4.00

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

SR A1A/COLLINS AV -- N OF 21 ST

County:	Miami (87)
Station #:	5170
Highway:	SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	22500	24300
2014	27000	25000
2015	26500	25700
2016	26000	26400
2017	26500	27100

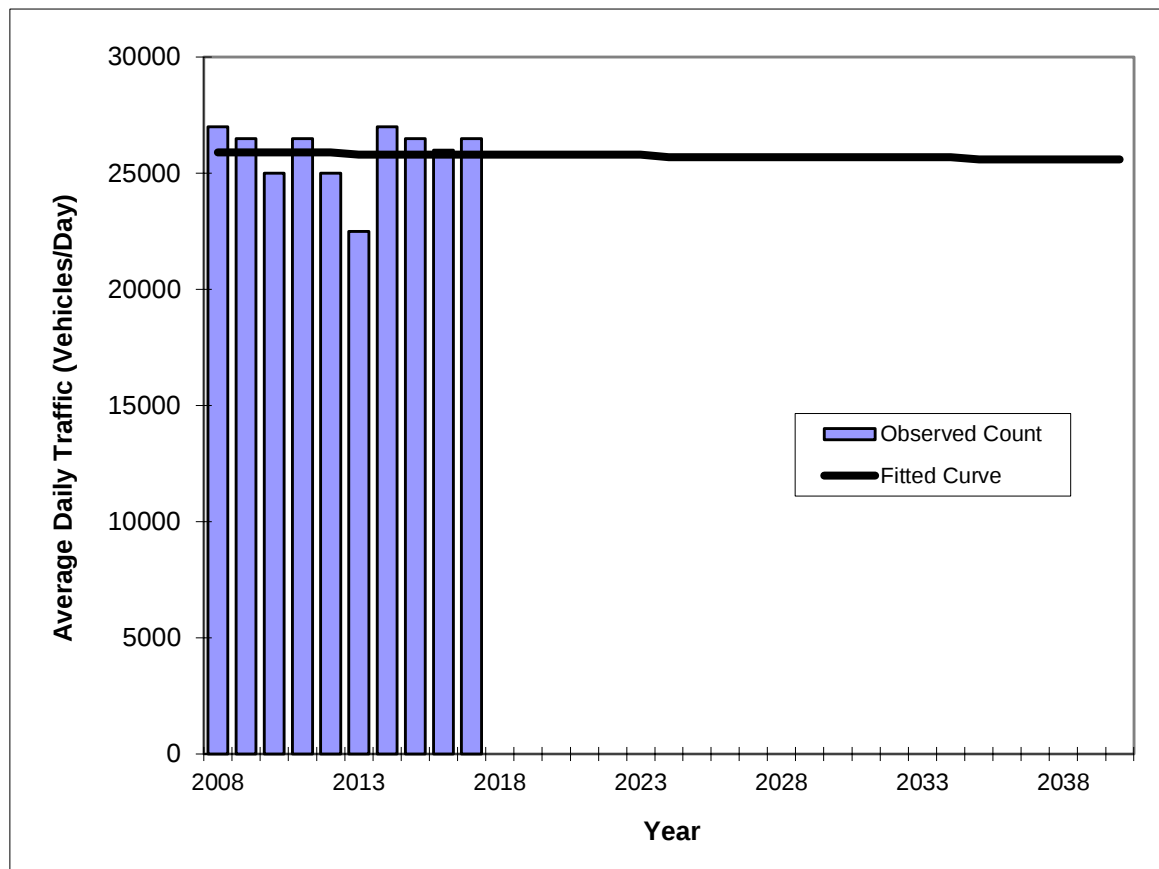
Trend R-squared:	36.84%
Trend Annual Historic Growth Rate:	2.88%
Printed:	25-Jun-18
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SR A1A/COLLINS AV -- N OF 21 ST

County:	Miami (87)
Station #:	5170
Highway:	SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2008	27000	25900
2009	26500	25900
2010	25000	25900
2011	26500	25900
2012	25000	25900
2013	22500	25800
2014	27000	25800
2015	26500	25800
2016	26000	25800
2017	26500	25800

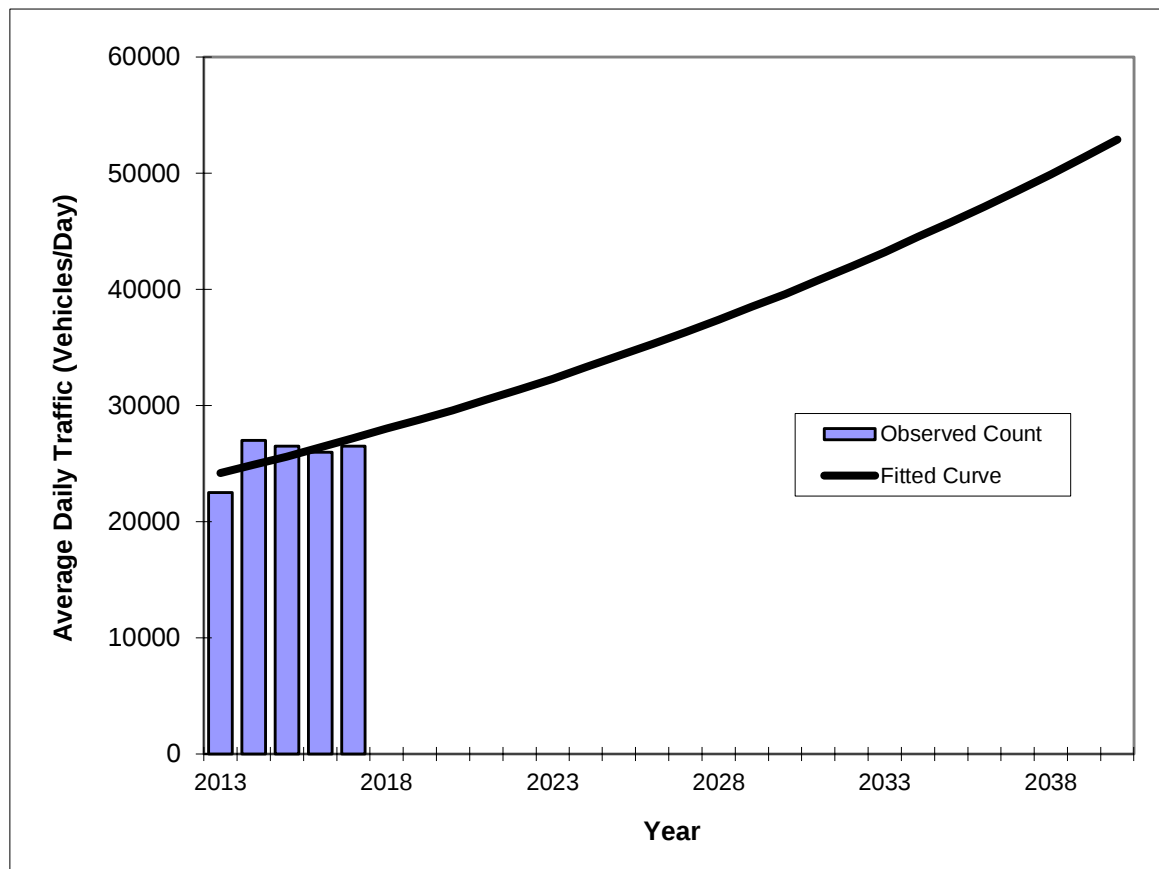
Trend R-squared:	0.04%
Trend Annual Historic Growth Rate:	-0.04%
Printed:	25-Jun-18
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

SR A1A/COLLINS AV -- N OF 21 ST

County:	Miami (87)
Station #:	5170
Highway:	SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	22500	24200
2014	27000	24900
2015	26500	25600
2016	26000	26400
2017	26500	27200

Trend R-squared:	37.91%
Compounded Annual Historic Growth Rate:	2.96%
Printed:	25-Jun-18
Exponential Growth Option	

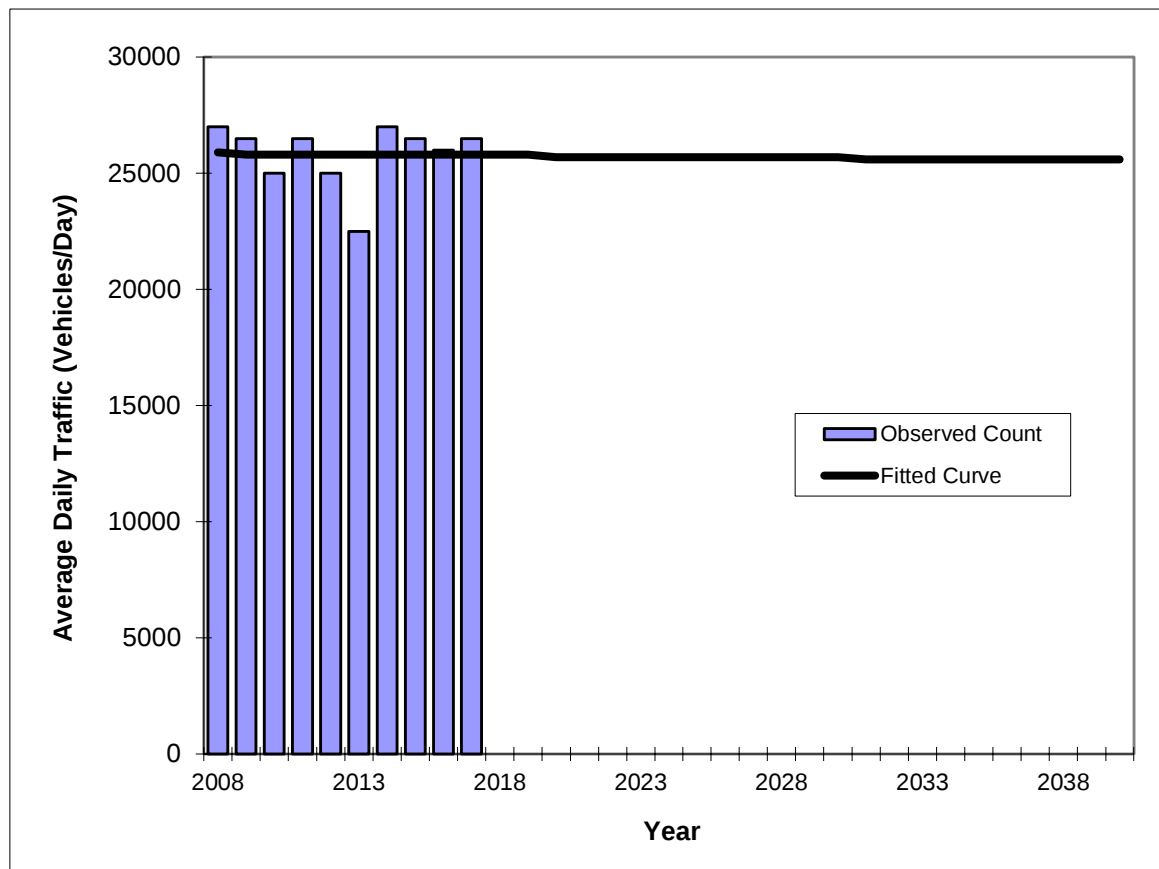
*Axle-Adjusted

Traffic Trends

SR A1A/COLLINS AV -- N OF 21 ST

County:
Station #:
Highway:

Miami (87)
5170
SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2008	27000	25900
2009	26500	25800
2010	25000	25800
2011	26500	25800
2012	25000	25800
2013	22500	25800
2014	27000	25800
2015	26500	25800
2016	26000	25800
2017	26500	25800

Trend R-squared: 0.04%
Compounded Annual Historic Growth Rate: -0.04%
Printed: 25-Jun-18

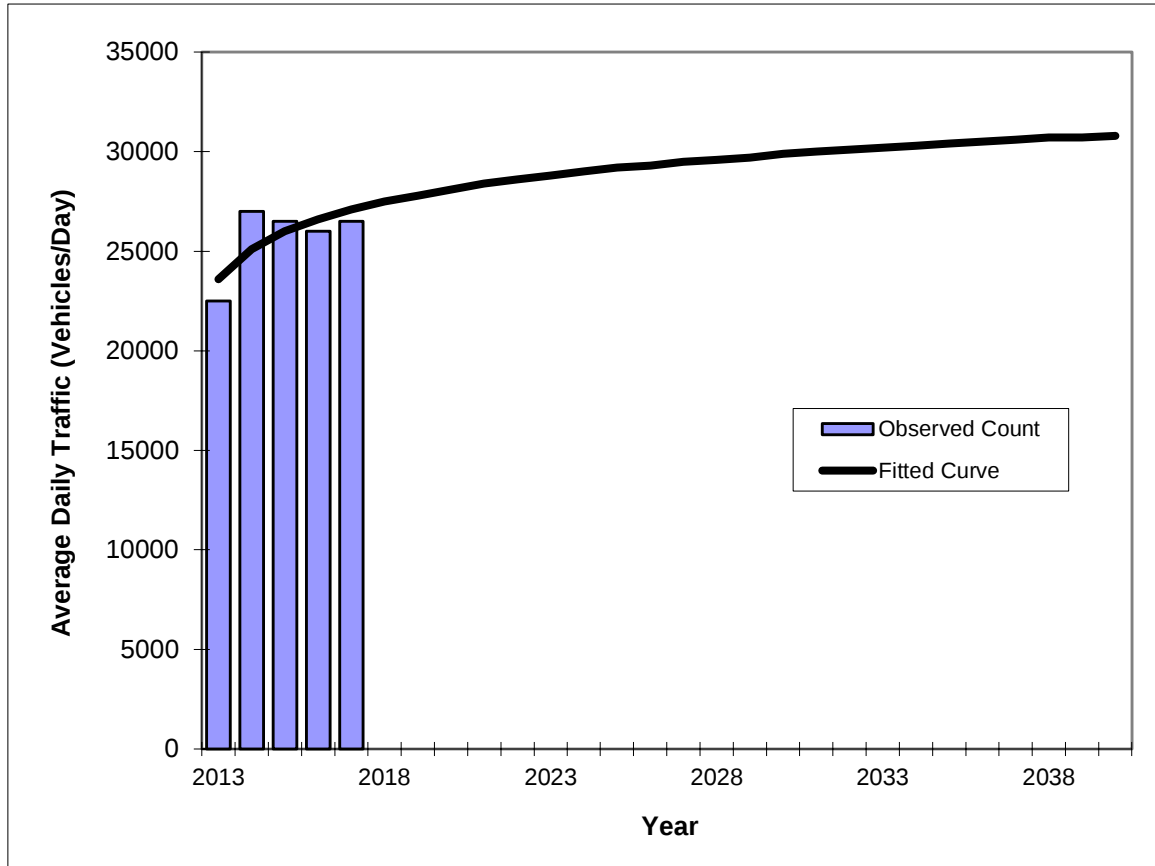
Exponential Growth Option

*Axle-Adjusted

Traffic Trends

SR A1A/COLLINS AV -- N OF 21 ST

County:	Miami (87)
Station #:	5170
Highway:	SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	22500	23600
2014	27000	25100
2015	26500	26000
2016	26000	26600
2017	26500	27100

Trend R-squared:	56.47%
Compounded Annual Historic Growth Rate:	3.52%
Printed:	25-Jun-18
Decaying Exponential Growth Option	

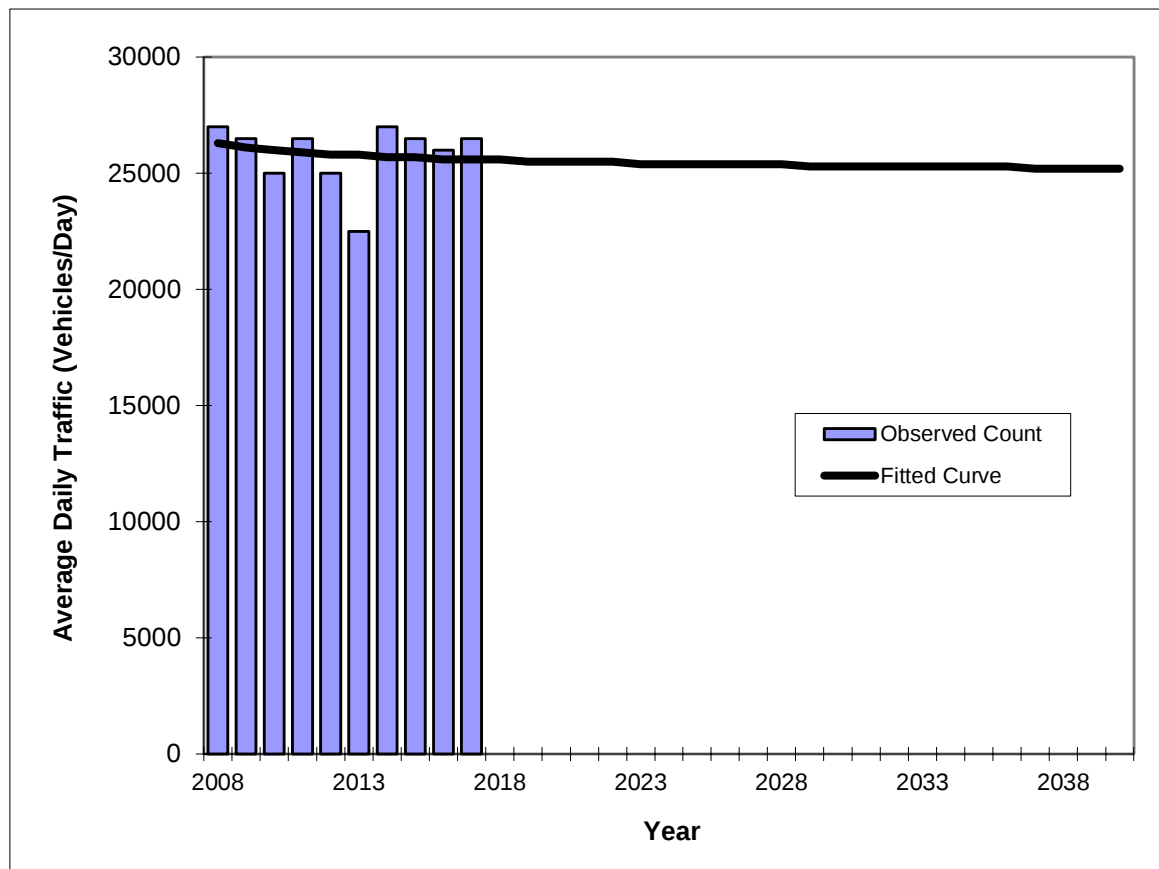
*Axle-Adjusted

Traffic Trends

SR A1A/COLLINS AV -- N OF 21 ST

County:
Station #:
Highway:

Miami (87)
5170
SR A1A/COLLINS AV



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2008	27000	26300
2009	26500	26100
2010	25000	26000
2011	26500	25900
2012	25000	25800
2013	22500	25800
2014	27000	25700
2015	26500	25700
2016	26000	25600
2017	26500	25600

Trend R-squared: 2.87%
Compounded Annual Historic Growth Rate: -0.30%
Printed: 25-Jun-18

Decaying Exponential Growth Option

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8422 - 23 ST, 200 FT W OF LIBERTY AVE (2011 OFF SYSTEM CYCLE)

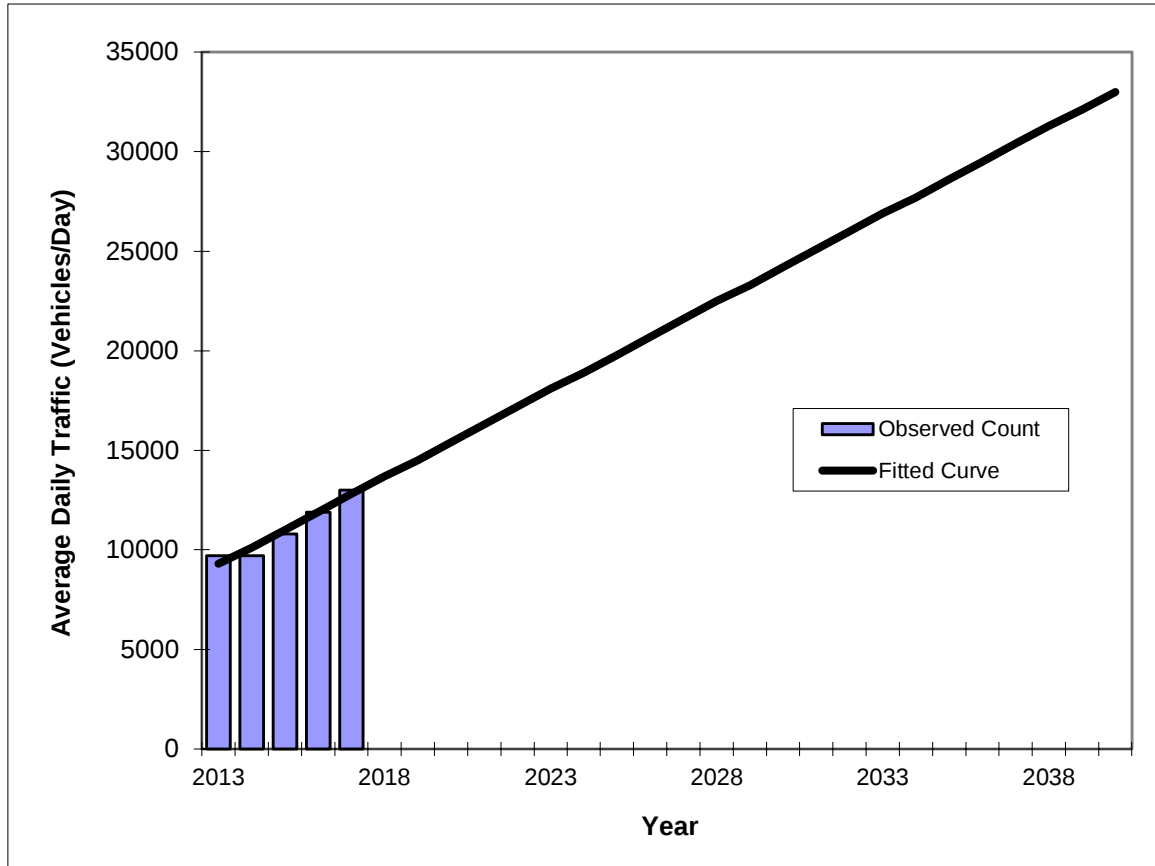
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----	-----	-----	-----	-----	-----
2017	13000 C	E 6500	W 6500	9.00	55.70	1.80
2016	11900 C	E 6000	W 5900	9.00	56.10	15.70
2015	10800 C	E 6300	W 4500	9.00	57.40	7.20
2014	9700 C	E 5000	W 4700	9.00	59.30	21.20
2013	9700 F	E 5400	W 4300	9.00	58.90	16.20
2012	9700 C	E 5400	W 4300	9.00	59.70	16.00

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

23 ST -- 200 FT W OF LIBERTY AVE

County:	Miami (87)
Station #:	8422
Highway:	23 ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	9700	9300
2014	9700	10100
2015	10800	11000
2016	11900	11900
2017	13000	12800

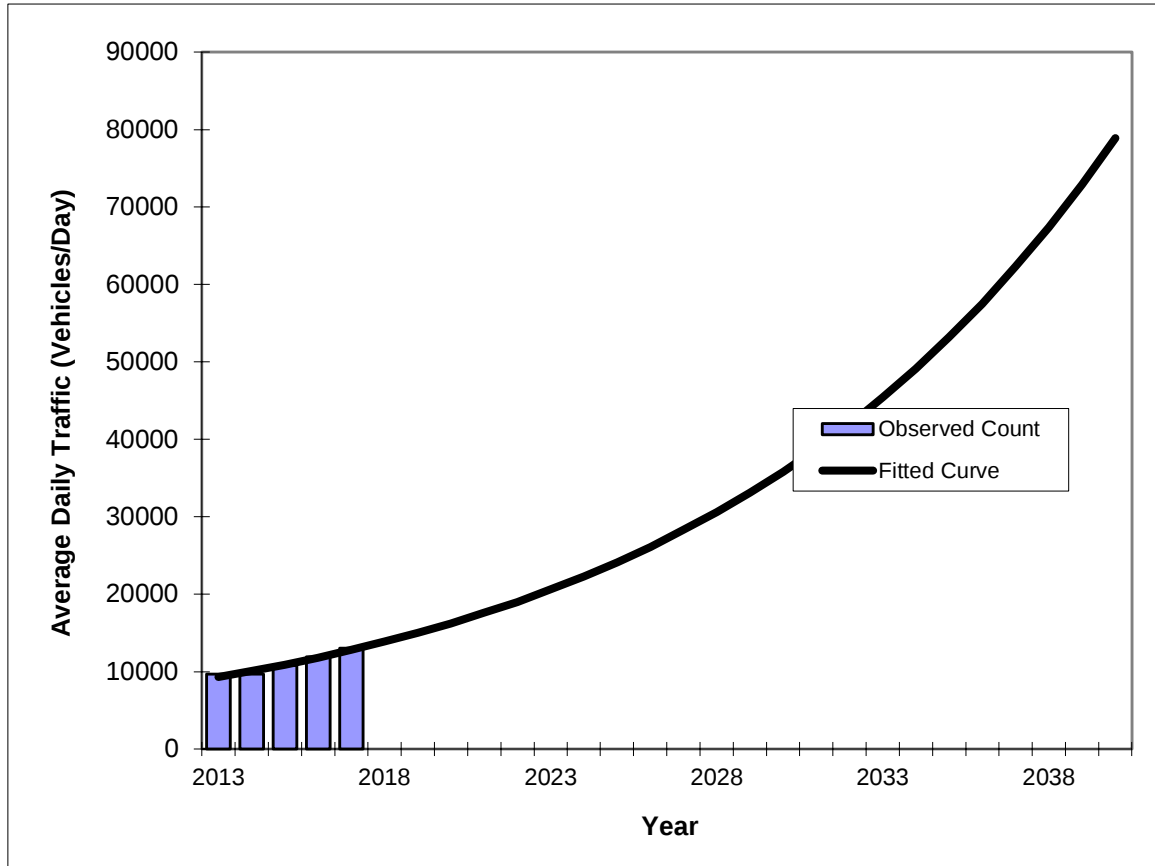
Trend R-squared:	94.12%
Trend Annual Historic Growth Rate:	9.41%
Printed:	25-Jun-18
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

23 ST -- 200 FT W OF LIBERTY AVE

County:	Miami (87)
Station #:	8422
Highway:	23 ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	9700	9300
2014	9700	10100
2015	10800	10900
2016	11900	11800
2017	13000	12800

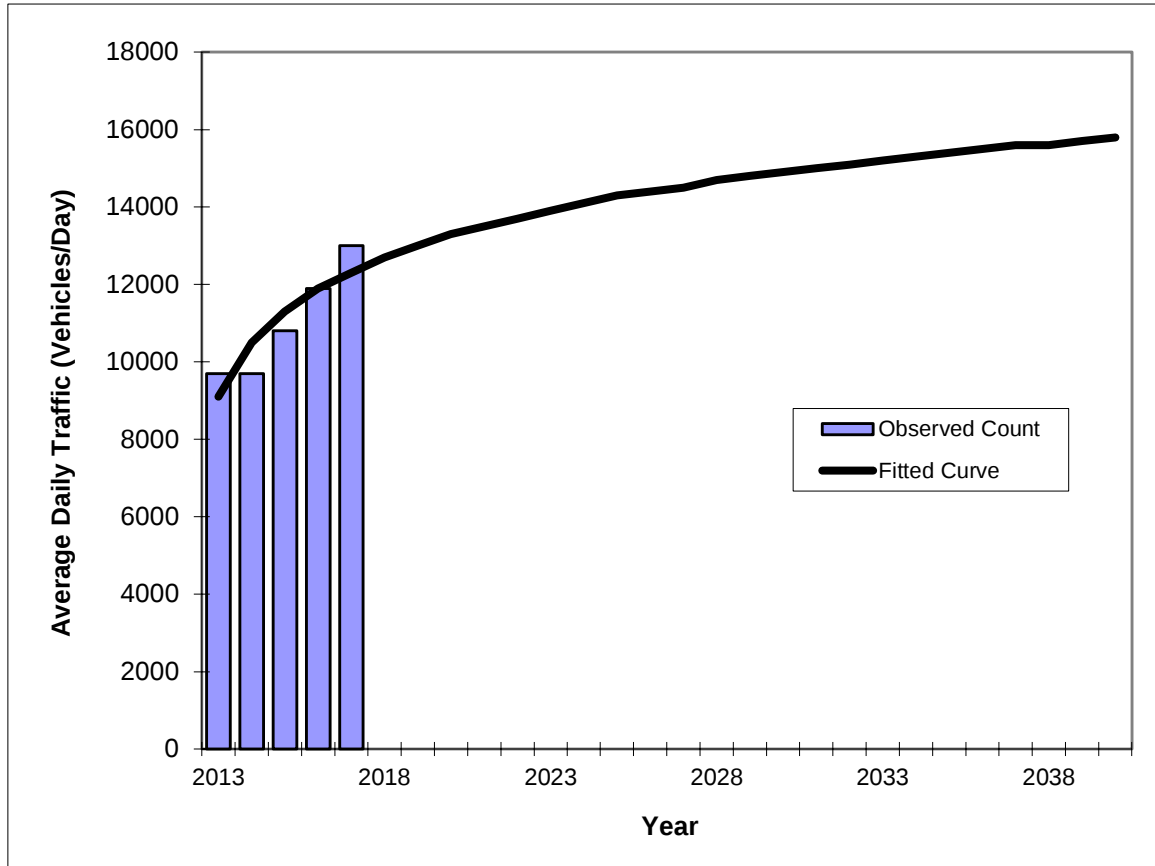
Trend R-squared:	94.65%
Compounded Annual Historic Growth Rate:	8.31%
Printed:	25-Jun-18
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

23 ST -- 200 FT W OF LIBERTY AVE

County:	Miami (87)
Station #:	8422
Highway:	23 ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	9700	9100
2014	9700	10500
2015	10800	11300
2016	11900	11900
2017	13000	12300

Trend R-squared:	79.46%
Compounded Annual Historic Growth Rate:	7.82%
Printed:	25-Jun-18
Decaying Exponential Growth Option	

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8531 - 17TH ST, 200' EAST OF MERIDIAN AVE (2011 OFF SYSTEM CYCLE)

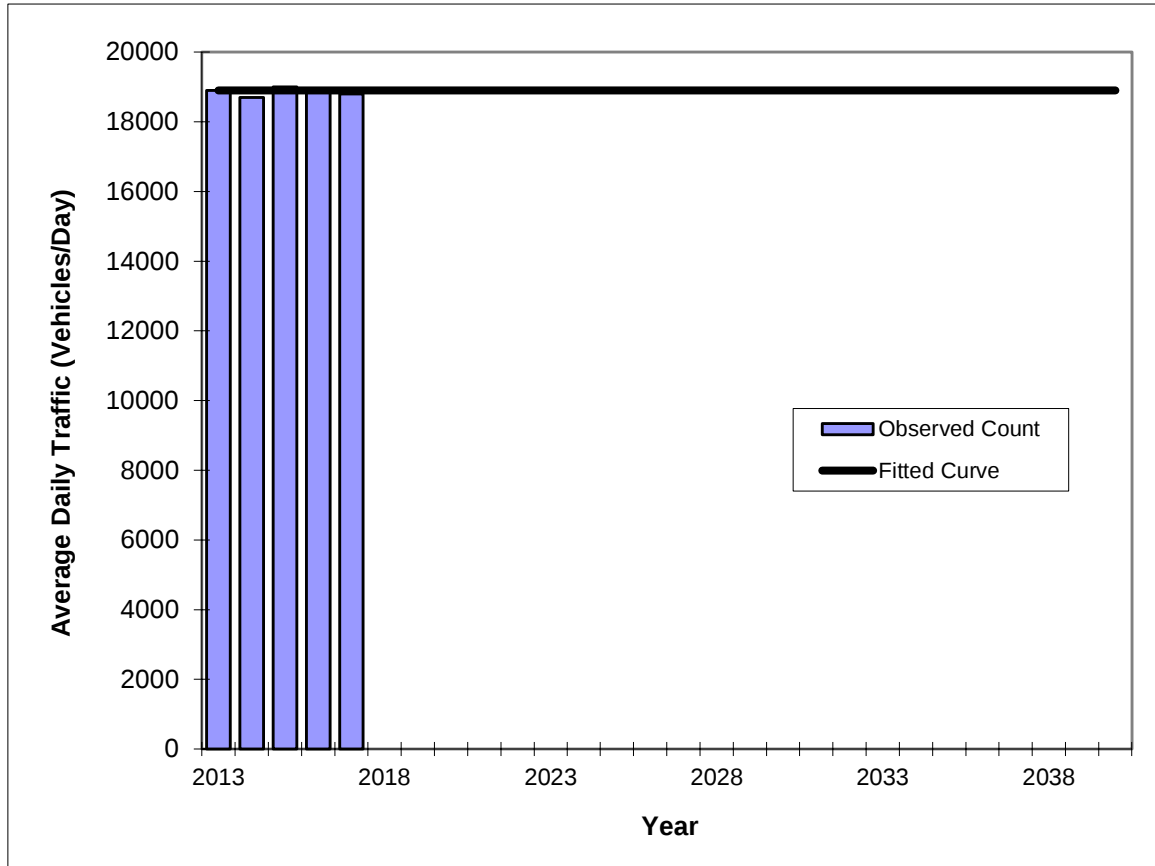
YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----	-----	-----	-----	-----	-----
2017	18800 S	E 8300	W 10500	9.00	59.30	2.50
2016	18900 F	E 8400	W 10500	9.00	56.10	5.10
2015	19000 C	E 8500	W 10500	9.00	57.40	7.10
2014	18700 S	E 9600	W 9100	9.00	59.30	10.70
2013	18900 F	E 9700	W 9200	9.00	58.90	16.20
2012	19000 C	E 9800	W 9200	9.00	59.70	16.00

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

17TH ST -- 200' EAST OF MERIDIAN AVE

County:	Miami (87)
Station #:	8531
Highway:	17TH ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	18900	18900
2014	18700	18900
2015	19000	18900
2016	18900	18900
2017	18800	18900

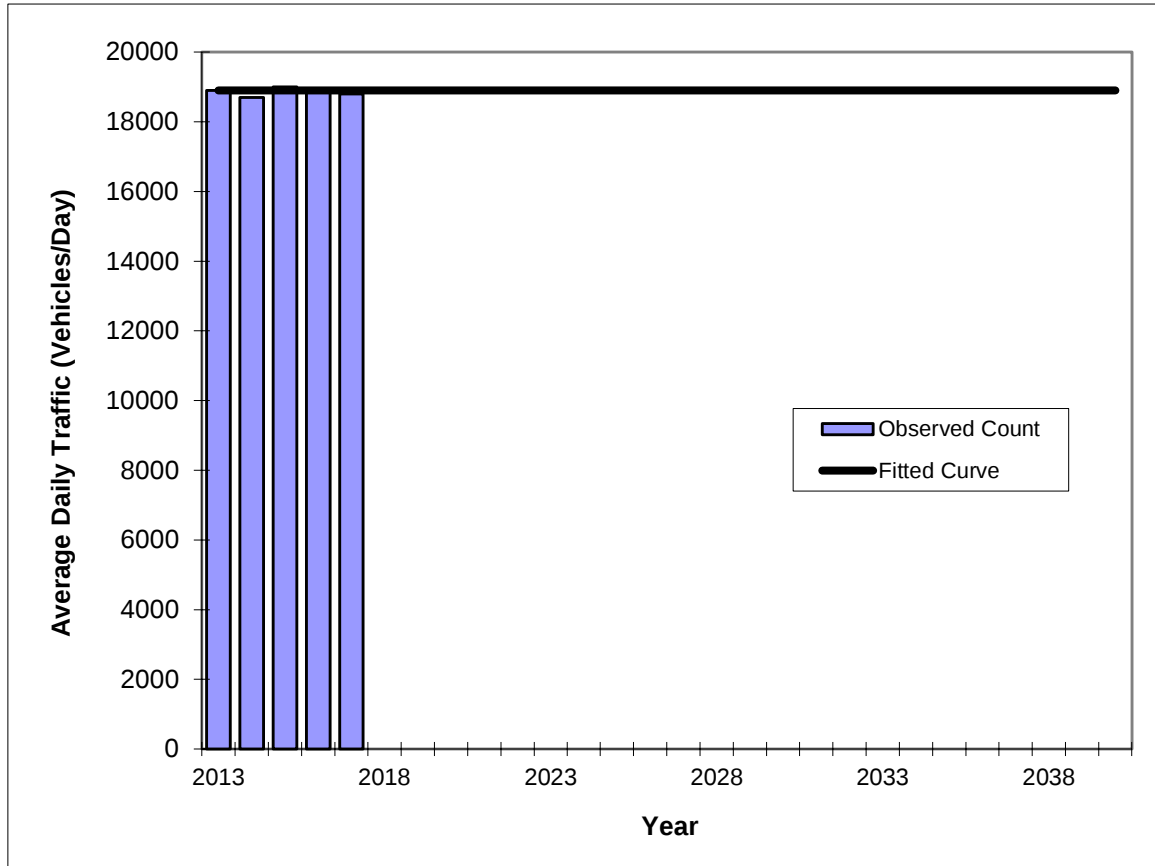
Trend R-squared:	0.00%
Compounded Annual Historic Growth Rate:	0.00%
Printed:	25-Jun-18
Exponential Growth Option	

*Axle-Adjusted

Traffic Trends

17TH ST -- 200' EAST OF MERIDIAN AVE

County:	Miami (87)
Station #:	8531
Highway:	17TH ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	18900	18900
2014	18700	18900
2015	19000	18900
2016	18900	18900
2017	18800	18900

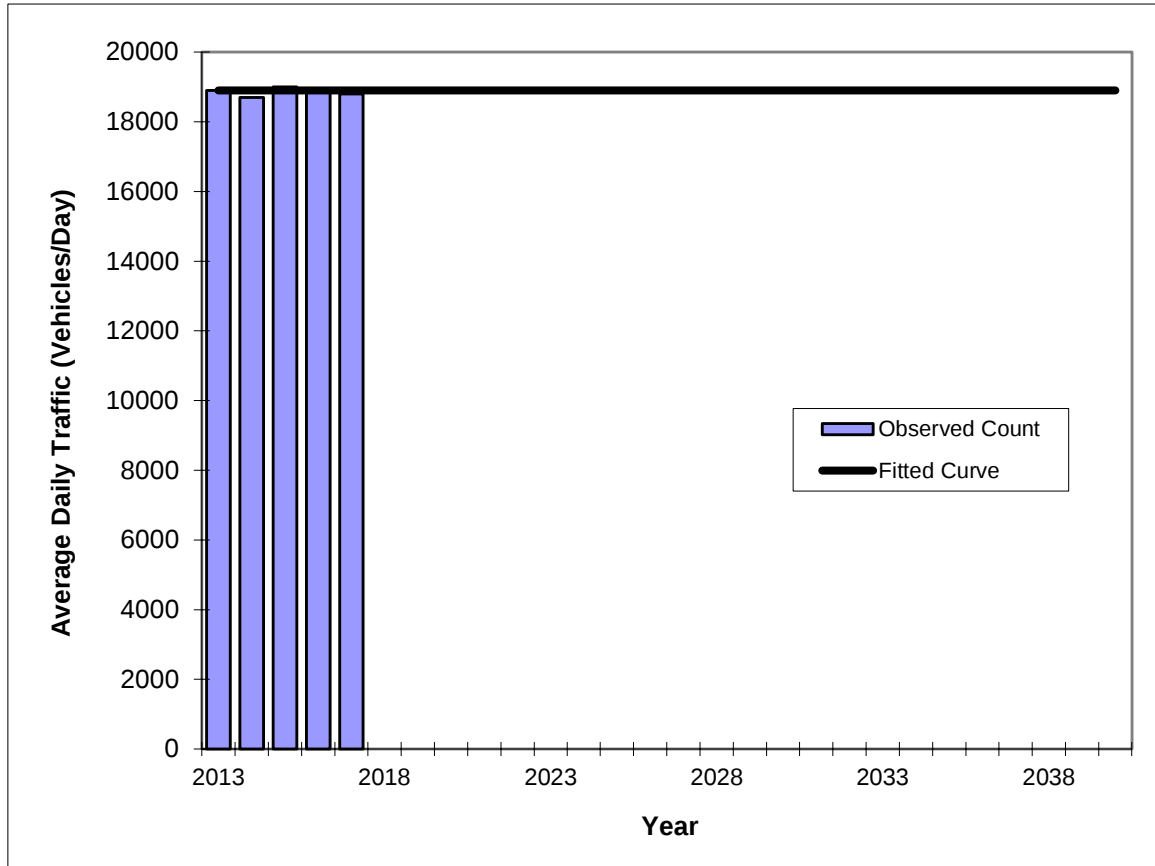
Trend R-squared:	0.00%
Trend Annual Historic Growth Rate:	0.00%
Printed:	25-Jun-18
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

17TH ST -- 200' EAST OF MERIDIAN AVE

County:	Miami (87)
Station #:	8531
Highway:	17TH ST



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	18900	18900
2014	18700	18900
2015	19000	18900
2016	18900	18900
2017	18800	18900

Trend R-squared:	0.00%
Compounded Annual Historic Growth Rate:	0.00%
Printed:	25-Jun-18
Decaying Exponential Growth Option	

*Axle-Adjusted

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2017 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8676 - PRAIRIE AVE 400' SOUTH OF W 23 STREET

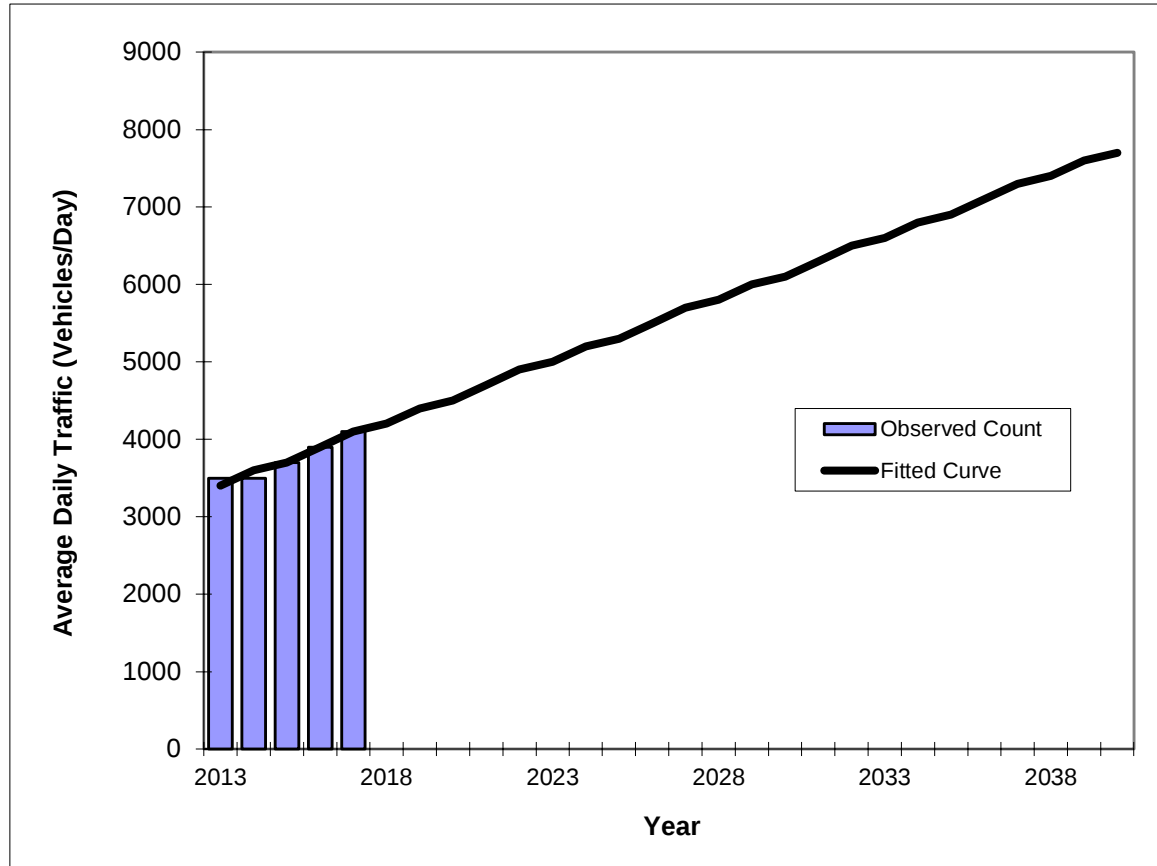
YEAR	AADT		DIRECTION 1		DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
----	-----		-----		-----	-----	-----	-----
2017	4100 R	N	2200	S	1900	9.00	55.00	2.50
2016	3900 T	N	2100	S	1800	9.00	54.50	5.10
2015	3700 S	N	2000	S	1700	9.00	54.70	7.10
2014	3500 F	N	1900	S	1600	9.00	54.50	10.70
2013	3500 C	N	1900	S	1600	9.00	52.40	6.10

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

PRAIRIE AVE -- 400' SOUTH OF W 23 STREET

County:	Miami (87)
Station #:	8676
Highway:	PRAIRIE AVE



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	3500	3400
2014	3500	3600
2015	3700	3700
2016	3900	3900
2017	4100	4100

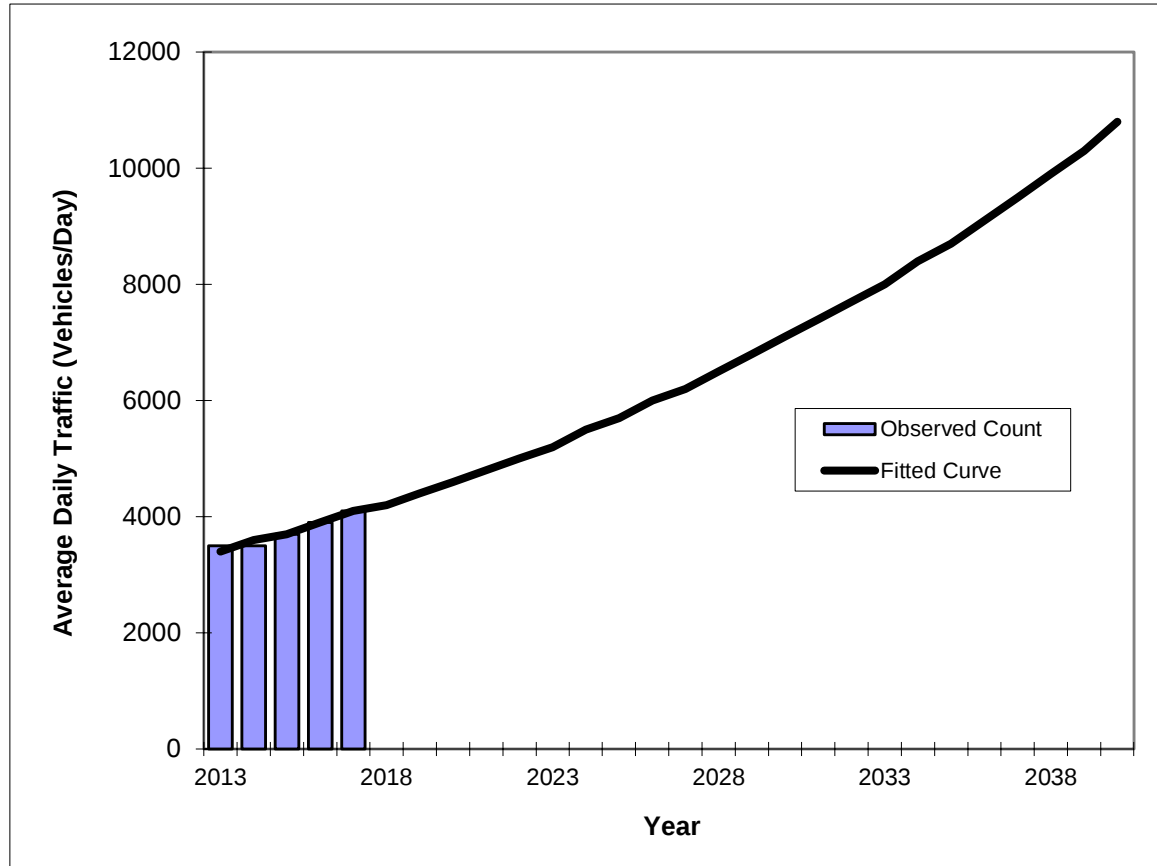
Trend R-squared:	94.12%
Trend Annual Historic Growth Rate:	5.15%
Printed:	25-Jun-18
Straight Line Growth Option	

*Axle-Adjusted

Traffic Trends

PRAIRIE AVE -- 400' SOUTH OF W 23 STREET

County:	Miami (87)
Station #:	8676
Highway:	PRAIRIE AVE



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	3500	3400
2014	3500	3600
2015	3700	3700
2016	3900	3900
2017	4100	4100

Trend R-squared:	94.44%
Compounded Annual Historic Growth Rate:	4.79%
Printed:	25-Jun-18
Exponential Growth Option	

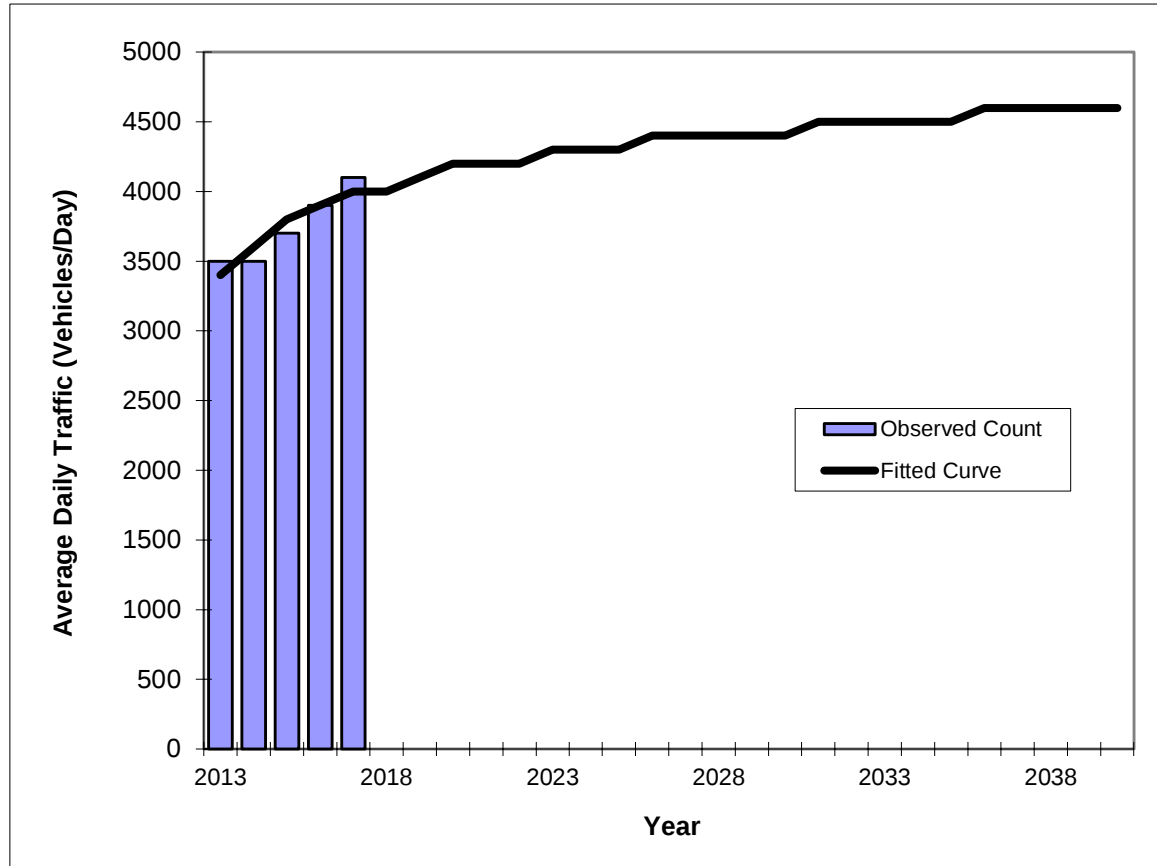
*Axle-Adjusted

Traffic Trends

PRAIRIE AVE -- 400' SOUTH OF W 23 STREET

County:
Station #:
Highway:

Miami (87)
8676
PRAIRIE AVE



Year	Traffic (ADT/AADT)	
	Count*	Trend**
2013	3500	3400
2014	3500	3600
2015	3700	3800
2016	3900	3900
2017	4100	4000

Trend R-squared: 79.46%
Compounded Annual Historic Growth Rate: 4.15%
Printed: 25-Jun-18

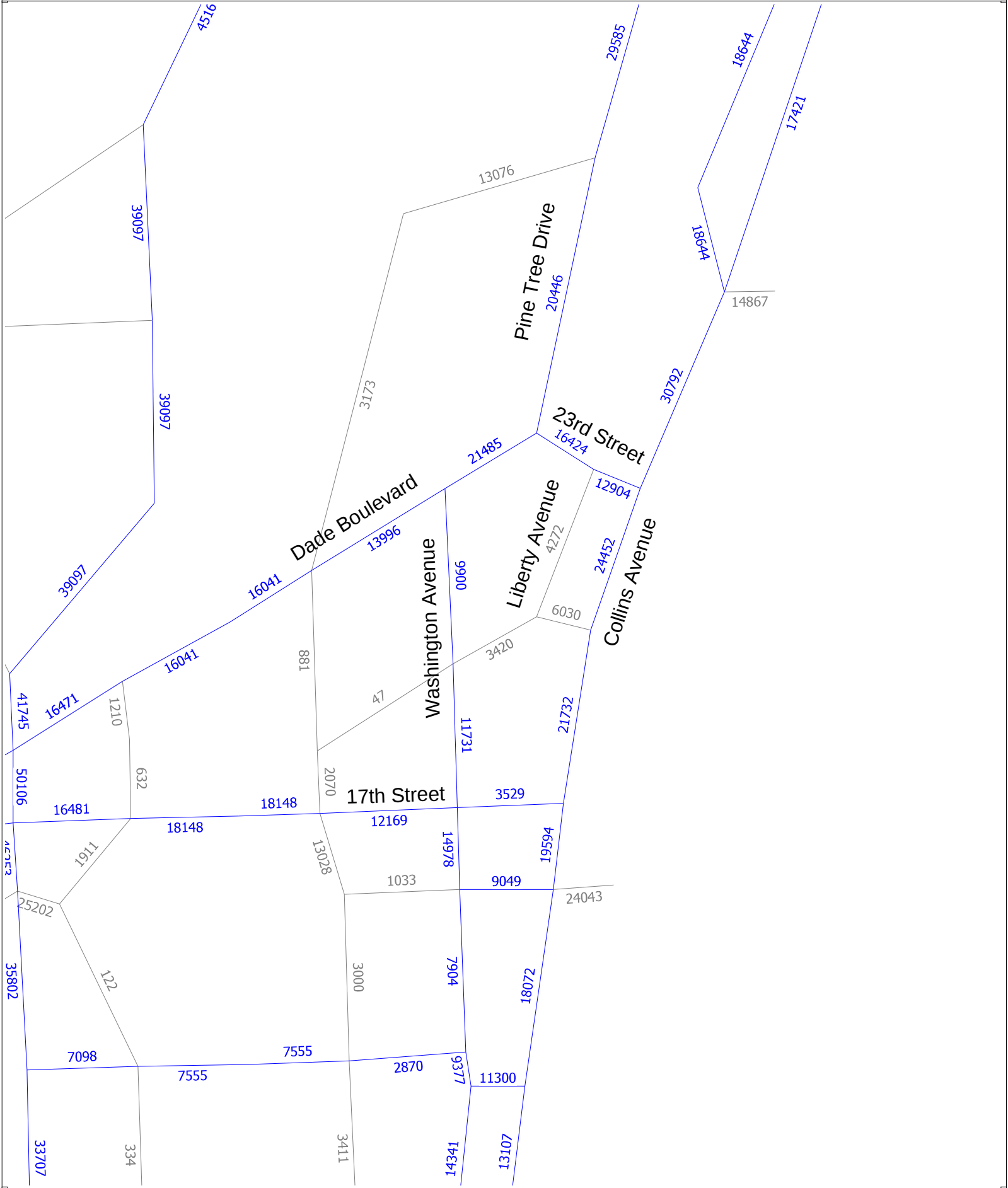
Decaying Exponential Growth Option

*Axle-Adjusted

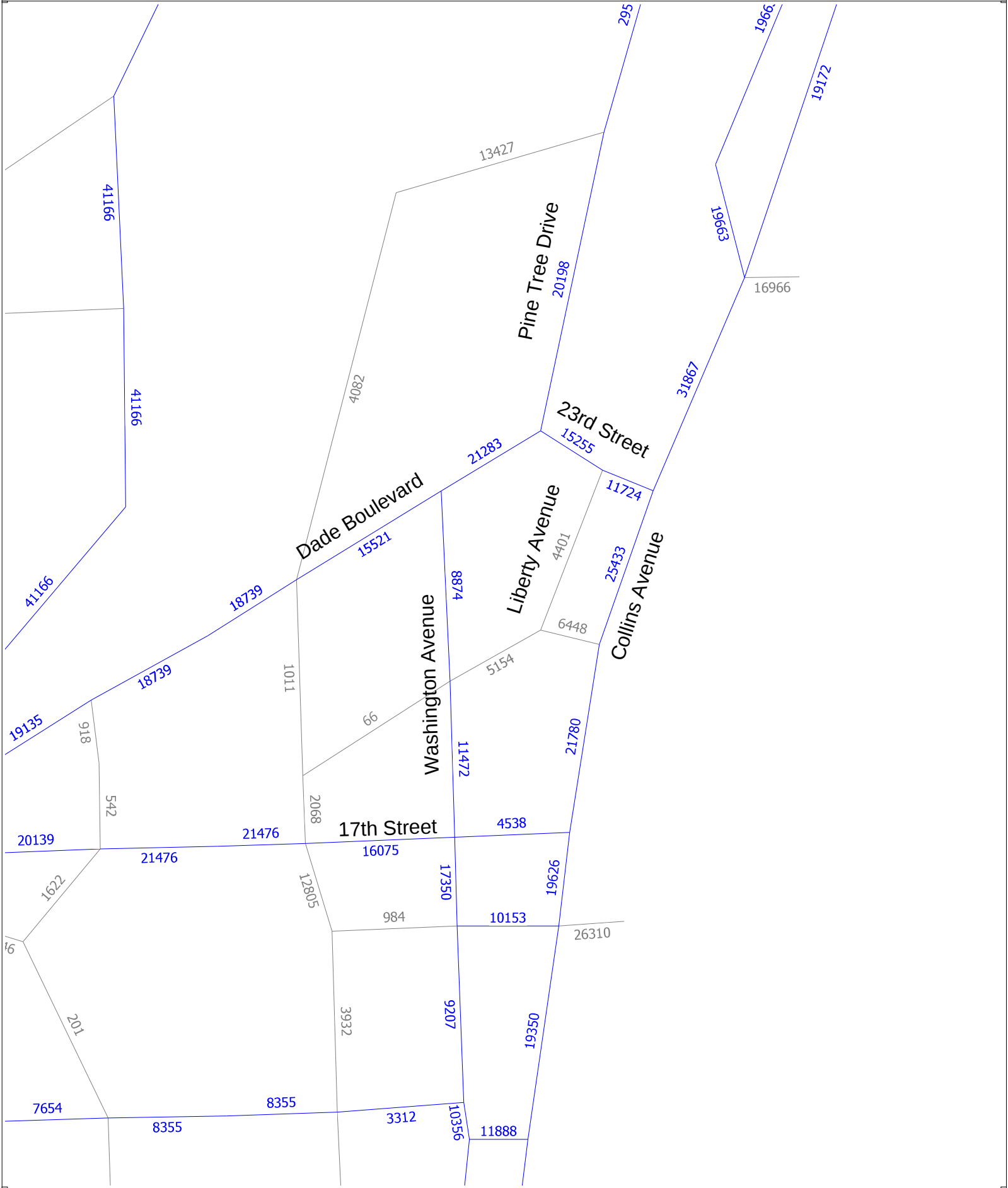
SERPM Analysis

SERPM Growth Rate Summary				
Street Name	2010	2040	Difference	Annual Growth Rate
23rd Street	12,904	11,724	-1,180	-0.30%
	16,424	15,255	-1,169	-0.24%
Collins Avenue	24,452	25,433	981	0.13%
	30,792	31,867	1,075	0.12%
Liberty Avenue	4,272	4,401	129	0.10%
Washington Avenue	9,900	8,874	-1,026	-0.35%
Dade Boulevard	13,996	15,521	1,525	0.36%
	21,485	21,283	-202	-0.03%
Pine Tree Drive	20,446	20,198	-248	-0.04%
Total	154,671	154,556	-115	0.00%

Starwood Properties Office Building
2010 Volumes
SERPM 7.071



Starwood Properties Office Building
CF2040 Volumes
SERPM7.071



Appendix E

Committed Development

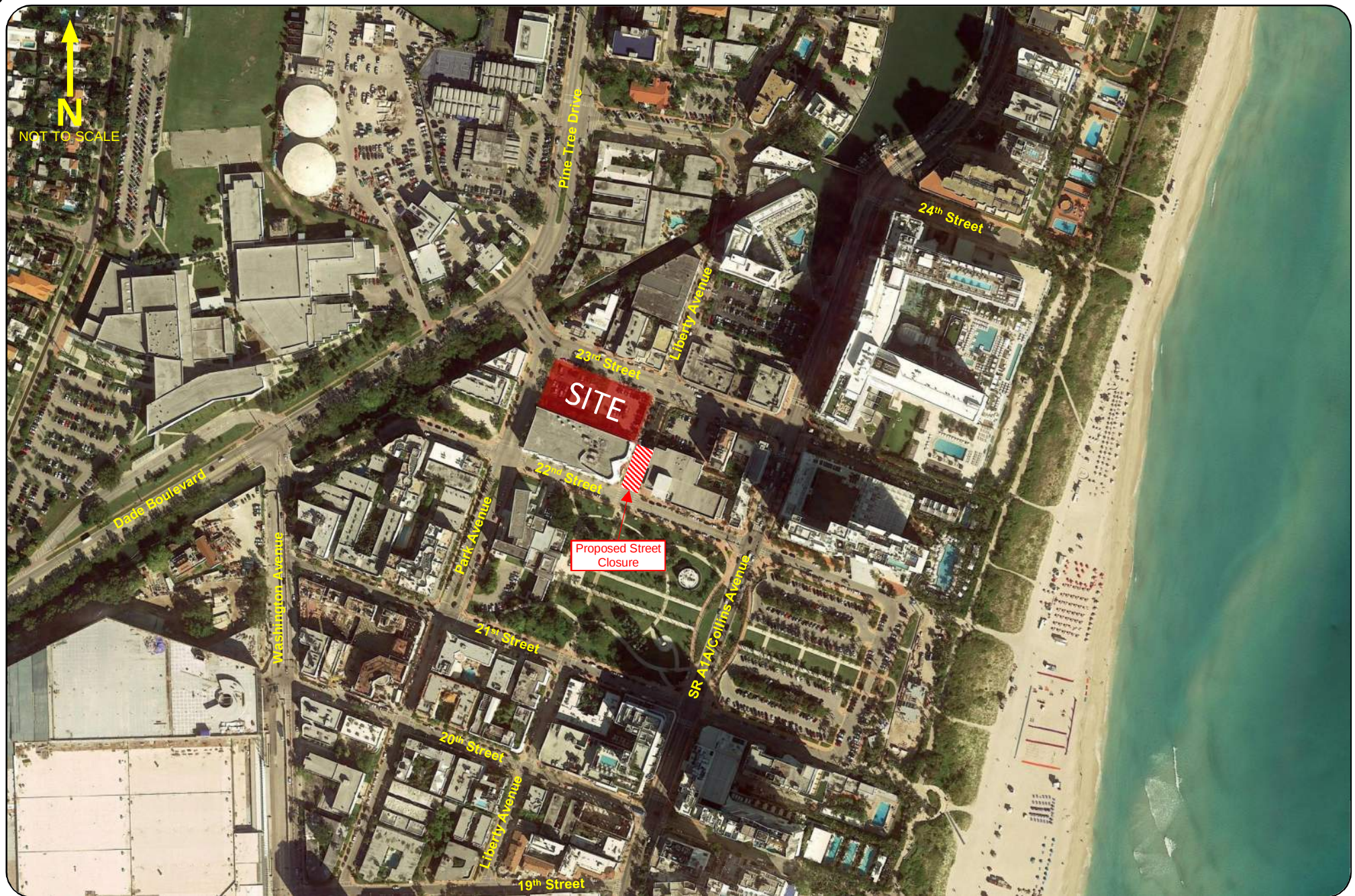
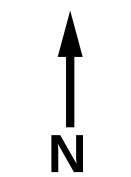


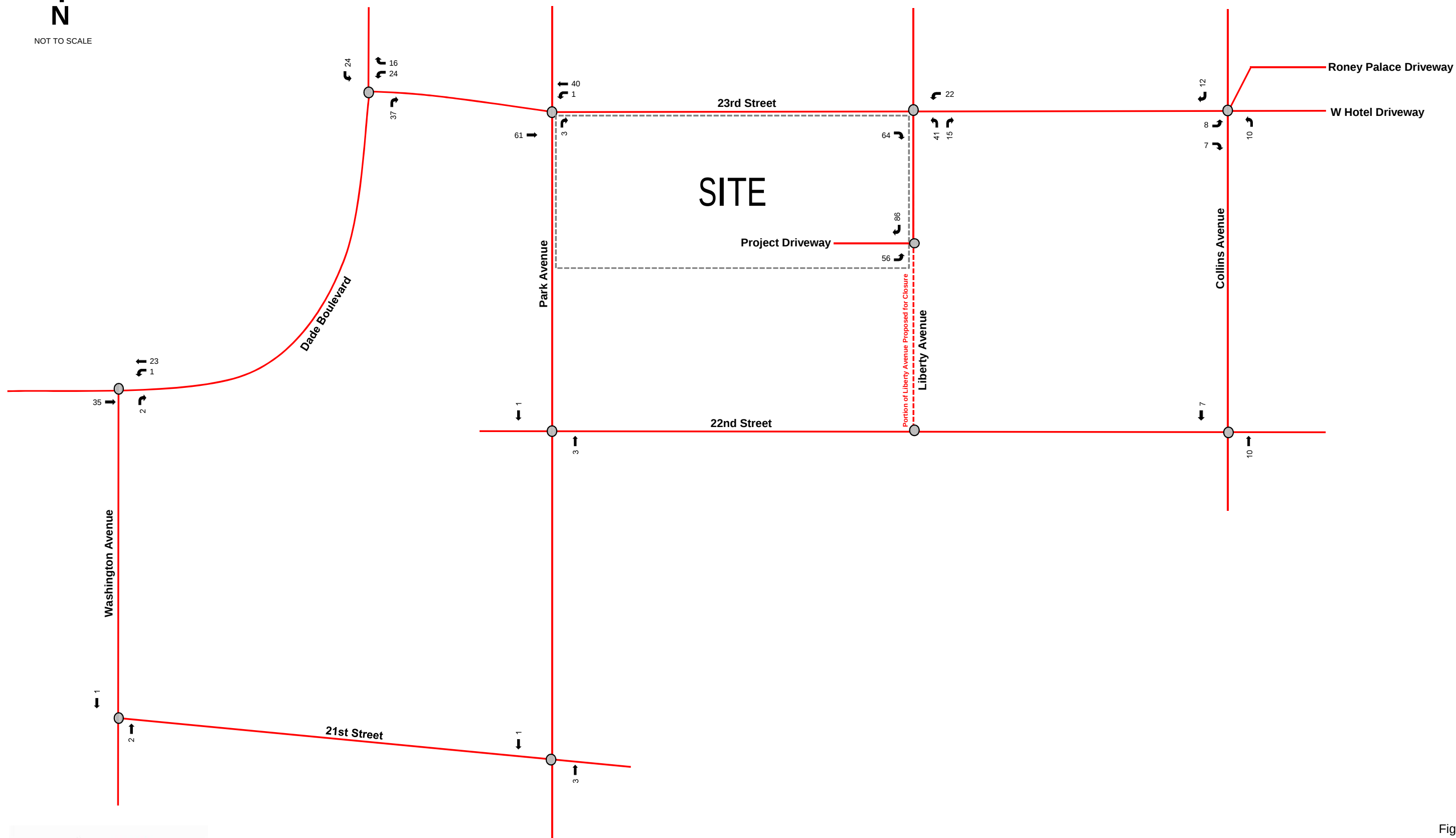
Figure 1
Location Map
Collins Park Garage
Miami Beach, Florida



NOT TO SCALE

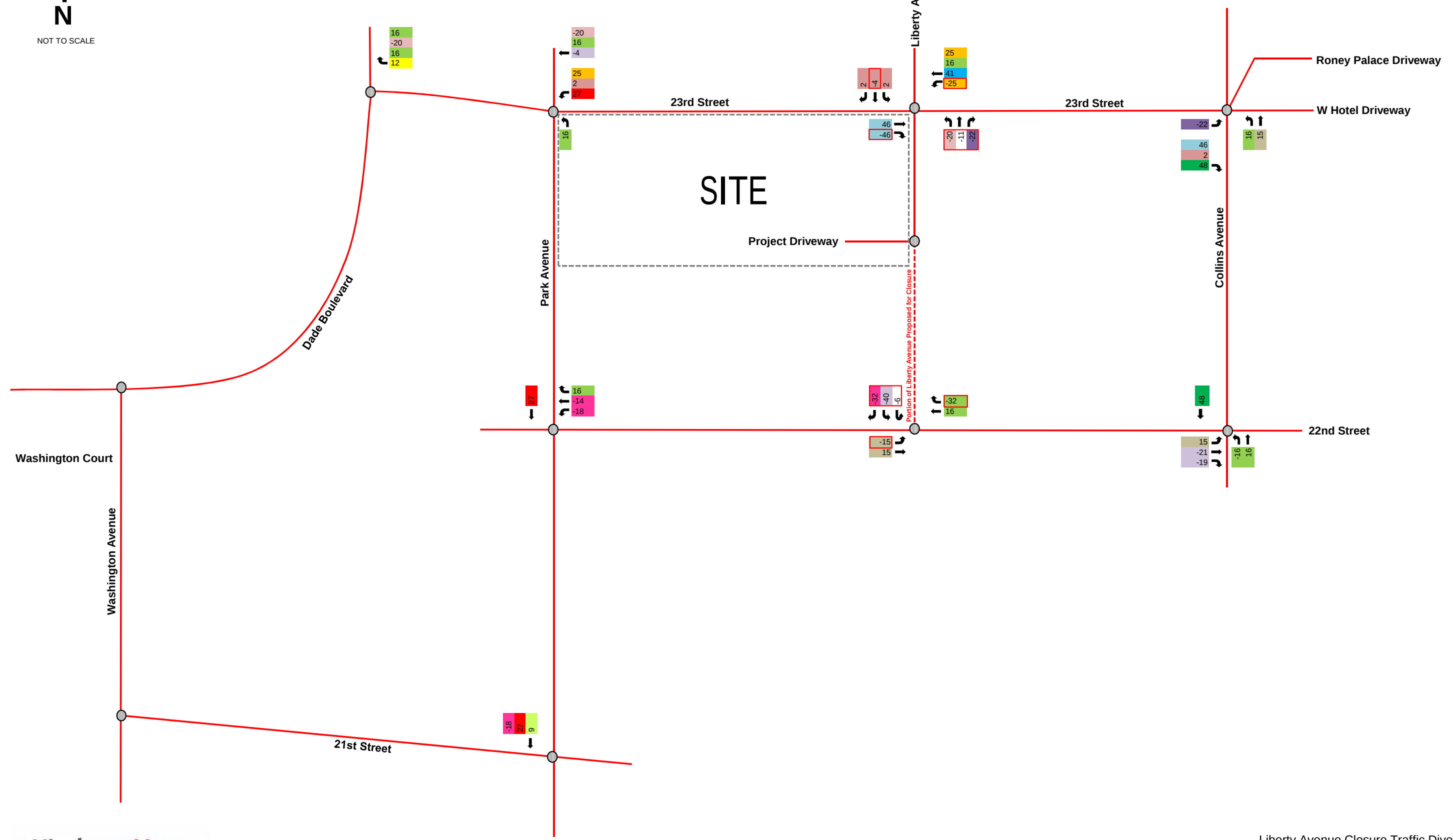
Legend

- Study Roadway
- Study Intersection
- XX Peak Hour Assignment





- Legend**
- Study Roadway
 - Study Intersection
 - XX Peak Hour Traffic





Appendix F

Trip Generation, Avis Traffic Counts, and
Transit Service Data

Trip Generation

AM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY AM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS						
					Percent					MR					IC					PB								
Land Use					ITE Edition	ITE Code	Scale	ITE Units	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total		
GROUP 1	1	Avis Car-Rental ⁽¹⁾			n/a	n/a	n/a	n/a	58%	42%	7	5	12	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7	5	12		
	6																											
	7																											
	8																											
	9																											
	10																											
	11																											
	12																											
	13																											
	14																											
	15																											
	ITE Land Use Code					Rate or Equation					Total:		7	5	12	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7	5	12		
	n/a					n/a																						

Note: ⁽¹⁾Avis Car-Rental trip generation manually gathered on-site

PROPOSED WEEKDAY AM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS						DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION ⁽²⁾		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS			
Land Use		ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total	
GROUP 2	1	General Office Building	10	710	132.6	ksf	86%	14%	130	21	151	20.0%	30	104	17	121	2.5%	3	103	15	118	0.0%	0	103	15	118
	6	Shopping Center	10	820	11.146	ksf	62%	38%	6	4	10	20.0%	2	5	3	8	37.5%	3	3	2	5	0.0%	0	3	2	5
	7	Avis Car-Rental ⁽¹⁾	n/a	n/a	n/a	n/a	58%	42%	7	5	12	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7	5	12
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
15																										
ITE Land Use Code		Rate or Equation				Total:		136	25	161	20.0%	32	109	20	129	4.7%	6	106	17	123	0.0%	0	113	22	135	
710		Y=0.94*(X)+26.49																								
820		Y=0.94(X)																								
n/a		n/a																								
																						NET NEW TRIPS		IN	OUT	TOTAL
																								106	17	123

Note: ⁽¹⁾Avis Car-Rental trip generation manually gathered on-site

⁽²⁾Multimodal reduction based on census tract data from the US Census Bureau's *Means of Transportation to Work* survey.

PM PEAK HOUR TRIP GENERATION COMPARISON

EXISTING WEEKDAY PM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS					DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS					
					Percent					MR					IC					PB							
Land Use					ITE Edition	ITE Code	Scale	ITE Units	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	Percent	Trips	In	Out	Total	
GROUP 1	1	Avis Car-Rental ⁽¹⁾				n/a	n/a	n/a	n/a	54%	46%	7		6	13	n/a		n/a	n/a	n/a	n/a	n/a	n/a	7	6	13	
	6																										
	7																										
	8																										
	9																										
	10																										
	11																										
	12																										
	13																										
	14																										
	15																										
	ITE Land Use Code					Rate or Equation					Total:		7	6	13	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7	6	13	
n/a					n/a																						

Note: ⁽¹⁾Avis Car-Rental trip generation manually gathered on-site

PROPOSED WEEKDAY PM PEAK HOUR TRIP GENERATION

ITE TRIP GENERATION CHARACTERISTICS							DIRECTIONAL DISTRIBUTION		GROSS VOLUMES			MULTIMODAL REDUCTION ⁽¹⁾		BASELINE TRIPS			INTERNAL CAPTURE		EXTERNAL TRIPS			PASS-BY CAPTURE		NET NEW TRIPS		
Land Use		ITE Edition	ITE Code	Scale	ITE Units	Percent		In	Out	Total	Percent	MR Trips	In	Out	Total	Percent	IC Trips	In	Out	Total	Percent	PB Trips	In	Out	Total	
GROUP 2	1	General Office Building	10	710	132.6	ksf	16%	84%	24	125	149	20.0%	30	19	100	119	3.4%	4	18	97	115	0.0%	0	18	97	115
	6	Shopping Center	10	820	11.146	ksf	48%	52%	51	56	107	20.0%	21	41	45	86	4.7%	4	38	44	82	34.0%	28	25	29	54
	7	Avis Car-Rental ⁽¹⁾	n/a	n/a	n/a	n/a	54%	46%	7	6	13	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	7	6	13
	8																									
	9																									
	10																									
	11																									
	12																									
	13																									
	14																									
	15																									
	ITE Land Use Code		Rate or Equation					Total:	75	181	256	20.0%	51	60	145	205	3.9%	8	56	141	197	14.1%	28	50	132	182
	710		LN(Y) = 0.95*LN(X)+0.36																							
	820		LN(Y) = 0.74*LN(X)+2.89																							
	n/a		n/a																							
																						NET NEW TRIPS		43	126	169

Note: ⁽¹⁾Avis Car-Rental trip generation manually gathered on-site

⁽²⁾Multimodal reduction based on census tract data from the US Census Bureau's *Means of Transportation to Work* survey.

Internal Capture Reduction Calculations

Methodology for A.M. Peak Hour and P.M. Peak Hour
based on the *Trip Generation Handbook* , 3rd Edition, published by the Institute of Transportation Engineers

Methodology for Daily
based on the average of the Unconstrained Rates for the A.M. Peak Hour and P.M. Peak Hour

SUMMARY (PROPOSED)

A.M. PEAK GROSS TRIP GENERATION					
INPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit		
	Office	104	17	19	100
	Retail	5	3	41	45
	Restaurant				
	Cinema/Entertainment				
	Residential				
	Hotel				
		109	20	60	145
INTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	1	2	1	3
	Retail	2	1	3	1
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		3	3	4	4
OUTPUT	Total % Reduction	4.7%		3.9%	
	Office	2.5%		3.4%	
	Retail	37.5%		4.7%	
	Restaurant				
	Cinema/Entertainment				
	Residential				
	Hotel				
EXTERNAL TRIPS					
OUTPUT	Land Use	A.M. Peak Hour		P.M. Peak Hour	
		Enter	Exit	Enter	Exit
	Office	103	15	18	97
	Retail	3	2	38	44
	Restaurant	0	0	0	0
	Cinema/Entertainment	0	0	0	0
	Residential	0	0	0	0
	Hotel	0	0	0	0
		106	17	56	141

Avis Traffic Counts

Drwy In & Out

Location: AVIS alley drwy Bet. Collins &

Date: 08/16/2018

City: Miami Beach

Day: Thursday

TIME		
	In	Out
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	0	0
7:45 AM	2	0
8:00 AM	0	0
8:15 AM	0	0
8:30 AM	0	0
8:45 AM	1	0
Totals	3	0
4:00 PM	0	0
4:15 PM	0	1
4:30 PM	2	0
4:45 PM	0	1
5:00 PM	0	0
5:15 PM	1	1
5:30 PM	0	2
5:45 PM	0	0
Totals	3	5
Grand Totals	6	5

Drwy In & Out

Location: AVIS alley drwy Bet. Collins &

Date: 08/16/2018

City: Miami Beach

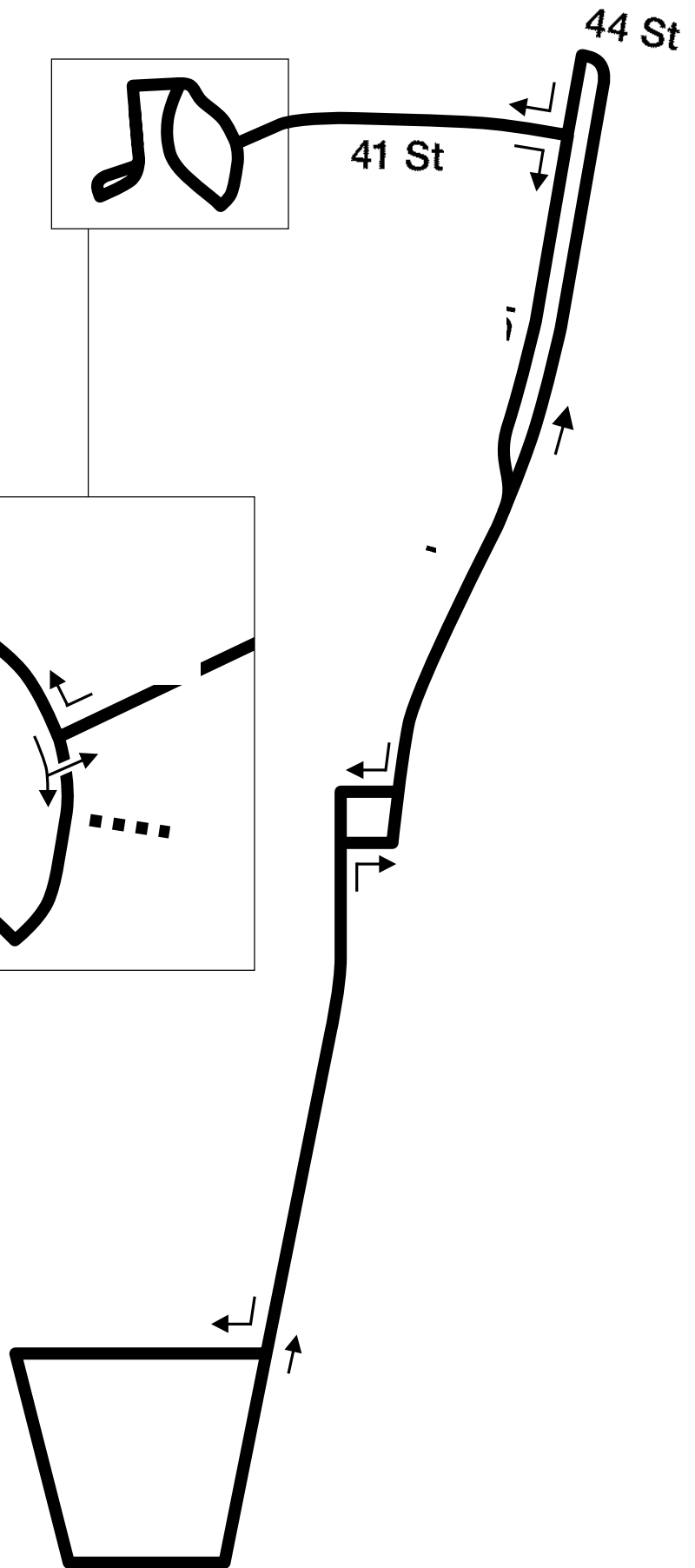
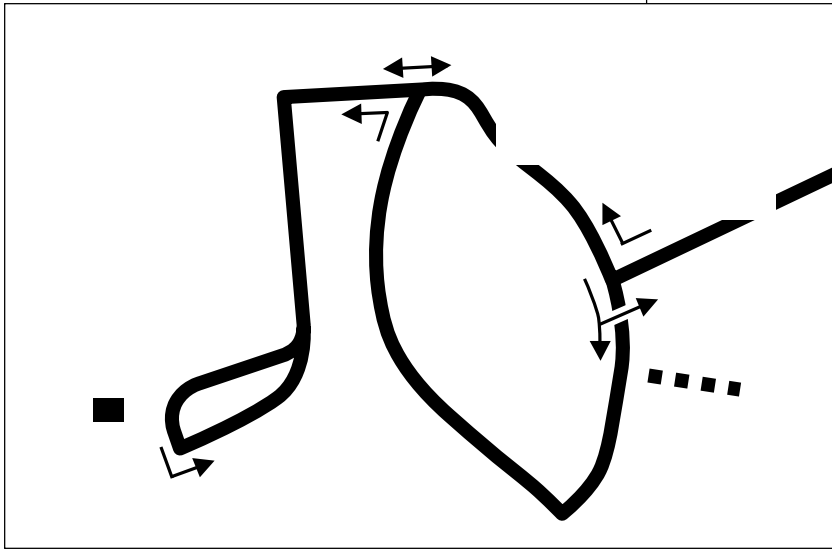
Day: Thursday

TIME		
	In	Out
7:00 AM	0	0
7:15 AM	0	0
7:30 AM	1	0
7:45 AM	0	0
8:00 AM	3	1
8:15 AM	2	0
8:30 AM	0	3
8:45 AM	1	1
Totals	7	5
4:00 PM	2	0
4:15 PM	0	0
4:30 PM	1	0
4:45 PM	1	0
5:00 PM	0	0
5:15 PM	1	0
5:30 PM	2	2
5:45 PM	3	1
Totals	10	3
Grand Totals	17	8

Transit Service Data



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NORTH
08/2017



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Miami-Dade County Transportation and Public Works

Routes Schedule



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103 (Northbound) WEEKDAY

ALTON RD & 2 ST	LINCOLN RD & JAMES AV	INDIAN CREEK DR & 43 ST	MT SINAI HOSPITAL	ALTON RD & 39 ST
06:11AM	06:28AM	06:38AM	06:48AM	06:51AM
06:41AM	06:58AM	07:09AM	07:20AM	07:23AM
07:11AM	07:29AM	07:40AM	07:51AM	07:54AM
07:41AM	07:59AM	08:11AM	08:22AM	08:25AM
08:11AM	08:29AM	08:41AM	08:52AM	08:55AM
08:41AM	08:59AM	09:13AM	09:25AM	09:28AM
09:11AM	09:31AM	09:45AM	09:57AM	10:00AM
09:41AM	10:01AM	10:15AM	10:27AM	10:30AM
10:11AM	10:31AM	10:45AM	10:57AM	11:00AM
10:41AM	11:01AM	11:15AM	11:27AM	11:30AM
11:11AM	11:31AM	11:45AM	11:57AM	12:00PM
11:41AM	12:01PM	12:15PM	12:27PM	12:30PM
12:11PM	12:31PM	12:45PM	12:57PM	01:00PM
12:41PM	01:01PM	01:15PM	01:27PM	01:30PM
01:11PM	01:31PM	01:45PM	01:57PM	02:00PM
01:41PM	02:01PM	02:15PM	02:27PM	02:30PM
02:11PM	02:31PM	02:45PM	02:57PM	03:00PM
02:41PM	03:01PM	03:15PM	03:27PM	03:30PM
03:11PM	03:31PM	03:45PM	03:57PM	04:00PM
03:41PM	04:01PM	04:15PM	04:28PM	04:31PM
04:11PM	04:31PM	04:45PM	04:58PM	05:01PM

04:41PM	05:01PM	05:15PM	05:28PM	05:31PM
05:11PM	05:31PM	05:45PM	05:58PM	06:01PM
05:41PM	06:01PM	06:15PM	06:28PM	06:31PM
06:11PM	06:31PM	06:45PM	06:58PM	-
06:41PM	07:01PM	07:11PM	07:22PM	07:25PM
07:11PM	07:29PM	07:39PM	07:50PM	-
07:41PM	07:59PM	08:09PM	08:20PM	08:23PM
08:26PM	08:44PM	08:54PM	09:05PM	09:08PM
09:11PM	09:29PM	09:39PM	09:50PM	09:53PM
09:56PM	10:14PM	10:25PM	10:34PM	-

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Miami-Dade County Transportation and Public Works

Routes Schedule



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<https://www.instagram.com/gomiamidade>

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103 (Southbound) WEEKDAY

ALTON RD & 39 ST	MT SINAI HOSPITAL	INDIAN CREEK DR & 40 ST	WASHINGTON AV & LINCOLN RD	ALTON RD & 2 ST
-	06:12AM	06:20AM	06:28AM	06:40AM
-	06:41AM	06:49AM	06:57AM	07:10AM
07:05AM	07:08AM	07:18AM	07:27AM	07:40AM
07:34AM	07:37AM	07:47AM	07:56AM	08:10AM
-	08:05AM	08:16AM	08:26AM	08:40AM
08:29AM	08:32AM	08:43AM	08:53AM	09:10AM
08:57AM	09:00AM	09:12AM	09:23AM	09:40AM
09:27AM	09:30AM	09:42AM	09:53AM	10:10AM
09:57AM	10:00AM	10:12AM	10:23AM	10:40AM
10:27AM	10:30AM	10:42AM	10:53AM	11:10AM
10:57AM	11:00AM	11:12AM	11:23AM	11:40AM
11:27AM	11:30AM	11:42AM	11:53AM	12:10PM
11:57AM	12:00PM	12:12PM	12:23PM	12:40PM
12:27PM	12:30PM	12:42PM	12:53PM	01:10PM
12:57PM	01:00PM	01:12PM	01:23PM	01:40PM
01:27PM	01:30PM	01:42PM	01:53PM	02:10PM
01:57PM	02:00PM	02:12PM	02:23PM	02:40PM
02:27PM	02:30PM	02:42PM	02:53PM	03:10PM
02:57PM	03:00PM	03:12PM	03:23PM	03:40PM
03:27PM	03:30PM	03:42PM	03:53PM	04:10PM
03:56PM	03:59PM	04:11PM	04:23PM	04:40PM

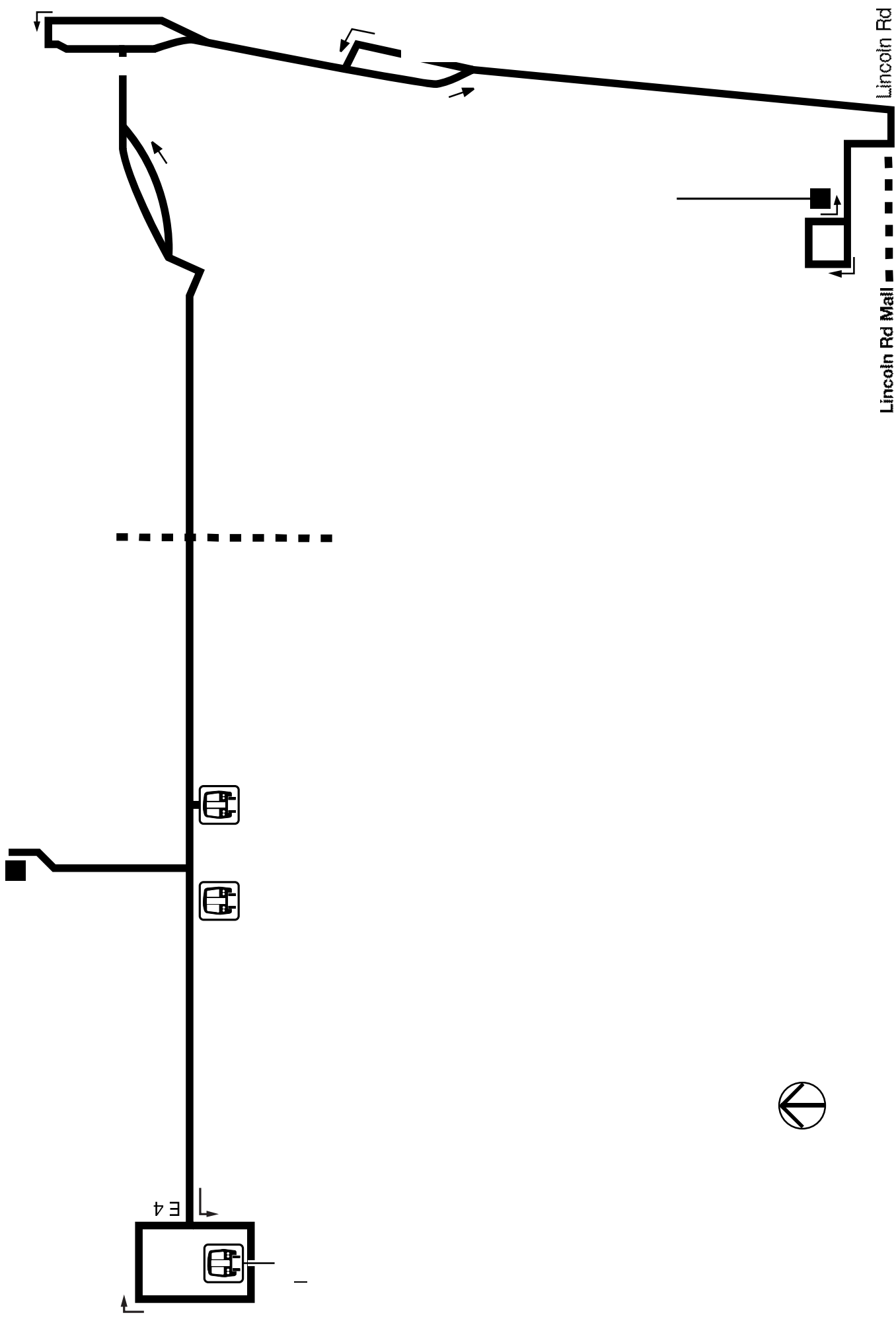
04:25PM	04:29PM	04:41PM	04:53PM	05:10PM
04:55PM	04:59PM	05:11PM	05:23PM	05:40PM
05:25PM	05:29PM	05:41PM	05:53PM	06:10PM
05:55PM	05:59PM	06:11PM	06:23PM	06:40PM
06:25PM	06:29PM	06:41PM	06:53PM	07:10PM
07:03PM	07:06PM	07:16PM	07:26PM	07:40PM
07:48PM	07:51PM	08:01PM	08:11PM	08:25PM
08:33PM	08:36PM	08:46PM	08:56PM	09:10PM
09:18PM	09:21PM	09:31PM	09:41PM	09:55PM
10:06PM	10:09PM	10:18PM	10:27PM	10:40PM

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Miami-Dade County Transportation and Public Works

Routes Schedule



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112 (Eastbound) WEEKDAY

HIALEAH METRORAIL STATION	NW 37 AV AMTRAK STATION	NORTHSIDE METRORAIL STATION	NW 79 ST & NW 7 AV	NE 79 ST & BISCAYNE BLVD	ABBOTT AV & 69 ST	INDIAN CREEK DR & 40 ST	LINCOLN RD & WASHINGTON AV	17 ST & CONVENTION CENTER DR
04:49AM	-	04:59AM	05:09AM	05:16AM	05:28AM	05:37AM	05:44AM	05:47AM
05:10AM	-	05:20AM	05:30AM	05:37AM	05:49AM	06:00AM	06:09AM	06:12AM
05:31AM	-	05:41AM	05:51AM	05:58AM	06:13AM	06:24AM	06:33AM	06:36AM
05:39AM	-	05:49AM	06:01AM	06:10AM	06:25AM	06:36AM	06:45AM	06:48AM
05:47AM	-	06:01AM	06:13AM	06:22AM	06:37AM	06:48AM	06:57AM	07:00AM
05:57AM	-	06:11AM	06:23AM	06:32AM	06:47AM	07:00AM	07:09AM	07:12AM
06:09AM	-	06:23AM	06:35AM	06:44AM	06:59AM	07:12AM	07:21AM	07:24AM
06:19AM	-	06:33AM	06:45AM	06:54AM	07:11AM	07:24AM	07:33AM	07:36AM
06:29AM	-	06:43AM	06:55AM	07:06AM	07:23AM	07:36AM	07:45AM	07:48AM
06:38AM	-	06:52AM	07:07AM	07:18AM	07:35AM	07:48AM	07:57AM	08:00AM
06:47AM	-	07:04AM	07:19AM	07:30AM	07:47AM	08:00AM	08:09AM	08:12AM
06:59AM	-	07:16AM	07:31AM	07:42AM	07:59AM	08:12AM	08:21AM	08:24AM
07:08AM	-	07:25AM	07:40AM	07:51AM	08:11AM	08:24AM	08:33AM	08:36AM
-	07:29AM	07:36AM	07:51AM	08:03AM	08:23AM	08:36AM	08:45AM	08:48AM
07:30AM	-	07:47AM	08:03AM	08:15AM	08:35AM	08:48AM	08:57AM	09:00AM
-	07:52AM	07:59AM	08:15AM	08:27AM	08:47AM	09:00AM	09:09AM	09:12AM
07:54AM	-	08:11AM	08:27AM	08:39AM	08:59AM	09:12AM	09:21AM	09:24AM
-	08:17AM	08:23AM	08:39AM	08:51AM	09:11AM	09:24AM	09:33AM	09:36AM
08:20AM	-	08:37AM	08:53AM	09:05AM	09:23AM	09:36AM	09:45AM	09:48AM

-	08:44AM	08:50AM	09:06AM	09:17AM	09:35AM	09:48AM	09:57AM	10:00AM
08:46AM	-	09:04AM	09:20AM	09:31AM	09:49AM	10:02AM	10:11AM	10:14AM
-	09:13AM	09:19AM	09:35AM	09:46AM	10:04AM	10:17AM	10:26AM	10:29AM
09:16AM	-	09:34AM	09:50AM	10:01AM	10:19AM	10:32AM	10:41AM	10:44AM
-	09:43AM	09:49AM	10:05AM	10:16AM	10:34AM	10:47AM	10:56AM	10:59AM
09:46AM	-	10:04AM	10:20AM	10:31AM	10:49AM	11:02AM	11:11AM	11:14AM
-	10:13AM	10:19AM	10:35AM	10:46AM	11:04AM	11:17AM	11:26AM	11:29AM
10:16AM	-	10:34AM	10:50AM	11:01AM	11:19AM	11:32AM	11:41AM	11:44AM
-	10:43AM	10:49AM	11:05AM	11:16AM	11:34AM	11:47AM	11:56AM	11:59AM
10:46AM	-	11:04AM	11:20AM	11:31AM	11:49AM	12:02PM	12:11PM	12:14PM
-	11:13AM	11:19AM	11:35AM	11:46AM	12:04PM	12:17PM	12:26PM	12:29PM
11:16AM	-	11:34AM	11:50AM	12:01PM	12:19PM	12:32PM	12:41PM	12:44PM
-	11:43AM	11:49AM	12:05PM	12:16PM	12:34PM	12:47PM	12:56PM	12:59PM
11:46AM	-	12:04PM	12:20PM	12:31PM	12:49PM	01:02PM	01:11PM	01:14PM
-	12:13PM	12:19PM	12:35PM	12:46PM	01:04PM	01:17PM	01:26PM	01:29PM
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01:17PM	-	01:35PM	01:51PM	02:02PM	02:20PM	02:33PM	02:42PM	02:45PM
01:45PM	-	02:03PM	02:19PM	02:30PM	02:48PM	03:01PM	03:09PM	03:12PM
-	01:45PM	01:51PM	02:07PM	02:18PM	02:36PM	02:49PM	02:58PM	03:01PM
-	-	02:14PM	02:30PM	02:41PM	02:59PM	03:12PM	03:20PM	03:23PM
-	02:19PM	02:25PM	02:41PM	02:52PM	03:10PM	03:23PM	03:31PM	03:34PM
02:19PM	-	02:37PM	02:53PM	03:05PM	03:22PM	03:35PM	03:43PM	03:46PM
02:43PM	-	03:02PM	03:19PM	03:31PM	03:48PM	04:01PM	04:09PM	04:12PM
-	02:43PM	02:49PM	03:06PM	03:18PM	03:35PM	03:48PM	03:56PM	03:59PM
03:07PM	-	03:26PM	03:43PM	03:55PM	04:12PM	04:25PM	04:33PM	04:36PM
-	03:08PM	03:14PM	03:31PM	03:43PM	04:00PM	04:13PM	04:21PM	04:24PM
03:31PM	-	03:50PM	04:07PM	04:19PM	04:36PM	04:49PM	04:57PM	05:00PM
-	03:33PM	03:39PM	03:56PM	04:08PM	04:25PM	04:38PM	04:46PM	04:49PM
03:55PM	-	04:14PM	04:31PM	04:43PM	05:00PM	05:13PM	05:21PM	05:24PM
-	03:56PM	04:02PM	04:19PM	04:31PM	04:48PM	05:01PM	05:09PM	05:12PM
04:19PM	-	04:38PM	04:55PM	05:07PM	05:24PM	05:37PM	05:45PM	05:48PM
-	04:20PM	04:26PM	04:43PM	04:55PM	05:12PM	05:25PM	05:33PM	05:36PM
04:43PM	-	05:02PM	05:19PM	05:31PM	05:48PM	06:01PM	06:09PM	06:12PM
-	04:44PM	04:50PM	05:07PM	05:19PM	05:36PM	05:49PM	05:57PM	06:00PM

05:07PM	-	05:26PM	05:43PM	05:55PM	06:12PM	06:25PM	06:33PM	06:36PM
-	05:08PM	05:14PM	05:31PM	05:43PM	06:00PM	06:13PM	06:21PM	06:24PM
05:32PM	-	05:51PM	06:08PM	06:20PM	06:37PM	06:50PM	06:58PM	07:01PM
-	05:33PM	05:39PM	05:56PM	06:08PM	06:25PM	06:38PM	06:46PM	06:49PM
-	05:56PM	06:02PM	06:19PM	06:31PM	06:48PM	-	-	-
05:57PM	-	06:16PM	06:33PM	06:45PM	07:02PM	07:13PM	07:22PM	07:25PM
-	06:25PM	06:31PM	06:48PM	07:00PM	07:15PM	07:26PM	07:35PM	07:38PM
06:30PM	-	06:49PM	07:06PM	07:16PM	07:31PM	07:42PM	07:51PM	07:54PM
-	06:56PM	07:02PM	07:17PM	07:27PM	07:42PM	-	-	-
07:02PM	-	07:17PM	07:32PM	07:42PM	07:57PM	08:08PM	08:17PM	08:20PM
-	07:30PM	07:35PM	07:50PM	08:00PM	08:14PM	-	-	-
07:41PM	-	07:56PM	08:11PM	08:20PM	08:34PM	08:44PM	08:53PM	08:56PM
08:08PM	08:21PM	08:25PM	08:38PM	08:47PM	09:01PM	09:11PM	09:20PM	09:23PM
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09:45PM	-	09:58PM	10:11PM	10:20PM	10:34PM	10:44PM	10:53PM	10:56PM
10:25PM	-	10:38PM	10:51PM	11:00PM	11:14PM	11:24PM	11:33PM	11:36PM
11:05PM	-	11:18PM	11:31PM	11:40PM	11:54PM	12:04AM	12:10AM	12:13AM
11:51PM	-	12:04AM	12:14AM	12:20AM	12:31AM	-	-	-
-	-	12:40AM	12:50AM	12:56AM	01:07AM	01:15AM	01:21AM	01:24AM
-	-	01:40AM	01:50AM	01:56AM	02:07AM	02:15AM	02:21AM	02:24AM
-	-	02:40AM	02:50AM	02:56AM	03:07AM	03:15AM	03:21AM	03:24AM
-	-	03:40AM	03:50AM	03:56AM	04:07AM	04:15AM	04:21AM	04:24AM
-	04:40AM	04:44AM	04:54AM	05:00AM	05:11AM	05:19AM	05:25AM	05:28AM

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Miami-Dade County Transportation and Public Works

Routes Schedule



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(<https://www.instagram.com/gomiamidade>)



112 (Westbound) WEEKDAY

17 ST & PENNSYLVANIA AV	LINCOLN RD & JAMES AV	COLLINS AVE & 41 ST	HARDING AV & 72 ST	NE 79 ST & BISCAYNE BLVD	NW 79 ST & 7 AV	NW 79 ST & 32 AV	NW 37 AV AMTRAK STATION	HIALEAH METRORAIL STATION
04:38AM	04:40AM	-	04:58AM	05:10AM	05:17AM	05:27AM	-	05:35AM
05:20AM	05:22AM	-	05:40AM	05:52AM	06:03AM	06:15AM	06:21AM	06:31AM
-	-	-	05:27AM	05:39AM	05:46AM	05:56AM	-	06:06AM
06:05AM	06:07AM	-	06:28AM	06:42AM	06:53AM	07:06AM	07:12AM	-
-	-	-	06:11AM	06:25AM	06:36AM	06:48AM	-	06:58AM
06:22AM	06:24AM	-	06:45AM	06:59AM	07:10AM	07:23AM	07:29AM	-
06:34AM	06:36AM	-	06:57AM	07:12AM	07:23AM	07:36AM	-	07:49AM
-	-	-	06:43AM	06:57AM	07:08AM	07:21AM	-	07:34AM
06:46AM	06:48AM	-	07:10AM	07:25AM	07:36AM	07:49AM	07:55AM	-
06:58AM	07:00AM	-	07:22AM	07:37AM	07:48AM	08:02AM	-	08:15AM
07:10AM	07:12AM	-	07:34AM	07:49AM	08:00AM	08:14AM	08:20AM	-
07:22AM	07:24AM	-	07:46AM	08:04AM	08:15AM	08:29AM	-	08:42AM
07:34AM	07:36AM	-	07:58AM	08:16AM	08:27AM	08:41AM	08:47AM	-
07:46AM	07:48AM	-	08:10AM	08:28AM	08:39AM	08:53AM	-	09:06AM
07:58AM	08:00AM	-	08:23AM	08:41AM	08:52AM	09:07AM	09:14AM	-
08:10AM	08:12AM	-	08:35AM	08:53AM	09:06AM	09:21AM	-	09:34AM
08:22AM	08:24AM	-	08:47AM	09:05AM	09:18AM	09:33AM	09:40AM	-
08:34AM	08:36AM	-	08:59AM	09:17AM	09:30AM	09:45AM	-	09:58AM
08:46AM	08:48AM	-	09:12AM	09:29AM	09:42AM	09:57AM	10:04AM	-

08:58AM	09:00AM	-	09:25AM	09:42AM	09:55AM	10:10AM	-	10:23AM
09:10AM	09:12AM	-	09:37AM	09:54AM	10:07AM	10:22AM	10:29AM	-
09:22AM	09:24AM	-	09:49AM	10:06AM	10:19AM	10:34AM	-	10:47AM
09:34AM	09:36AM	-	10:01AM	10:18AM	10:31AM	10:46AM	10:53AM	-
09:46AM	09:48AM	-	10:13AM	10:30AM	10:43AM	10:58AM	-	11:11AM
09:58AM	10:00AM	-	10:25AM	10:42AM	10:55AM	11:10AM	11:17AM	-
10:13AM	10:15AM	-	10:40AM	10:57AM	11:10AM	11:25AM	-	11:38AM
10:28AM	10:30AM	-	10:55AM	11:12AM	11:25AM	11:40AM	11:47AM	-
10:43AM	10:45AM	-	11:10AM	11:27AM	11:40AM	11:55AM	-	12:08PM
10:58AM	11:00AM	-	11:25AM	11:42AM	11:55AM	12:10PM	12:17PM	-
11:13AM	11:15AM	-	11:40AM	11:57AM	12:10PM	12:25PM	-	12:38PM
11:28AM	11:30AM	-	11:55AM	12:12PM	12:25PM	12:40PM	12:47PM	-
11:43AM	11:45AM	-	12:10PM	12:27PM	12:40PM	12:55PM	-	01:08PM
11:58AM	12:00PM	-	12:25PM	12:42PM	12:55PM	01:10PM	01:17PM	-
12:13PM	12:15PM	-	12:40PM	12:57PM	01:10PM	01:25PM	-	01:38PM
12:28PM	12:30PM	-	12:55PM	01:12PM	01:25PM	01:40PM	01:47PM	-
12:43PM	12:45PM	-	01:10PM	01:27PM	01:40PM	01:55PM	-	02:08PM
12:58PM	01:00PM	-	01:25PM	01:42PM	01:55PM	02:10PM	02:17PM	-
01:13PM	01:15PM	-	01:40PM	01:57PM	02:10PM	02:25PM	-	02:38PM
01:28PM	01:30PM	-	01:55PM	02:12PM	02:25PM	02:40PM	02:47PM	-
01:43PM	01:45PM	-	02:10PM	02:27PM	02:40PM	02:55PM	-	03:08PM
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02:13PM	02:15PM	-	02:40PM	02:57PM	03:10PM	03:27PM	-	03:39PM
02:28PM	02:30PM	-	02:55PM	03:15PM	03:28PM	03:45PM	03:51PM	-
02:43PM	02:45PM	-	03:12PM	03:32PM	03:45PM	04:02PM	-	04:14PM
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03:11PM	03:13PM	-	03:41PM	04:01PM	04:14PM	04:31PM	-	04:43PM
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03:34PM	03:36PM	-	04:04PM	04:24PM	04:37PM	04:54PM	-	05:06PM
03:46PM	03:48PM	-	04:16PM	04:36PM	04:49PM	05:06PM	05:12PM	-
03:58PM	04:00PM	-	04:28PM	04:48PM	05:01PM	05:18PM	-	05:30PM
04:10PM	04:12PM	-	04:40PM	05:00PM	05:13PM	05:30PM	05:36PM	-
04:22PM	04:24PM	-	04:52PM	05:12PM	05:25PM	05:42PM	-	05:54PM
04:34PM	04:36PM	-	05:04PM	05:24PM	05:37PM	05:54PM	06:00PM	-
04:46PM	04:48PM	-	05:16PM	05:36PM	05:49PM	06:06PM	-	06:18PM
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05:22PM	05:24PM	-	05:52PM	06:12PM	06:25PM	06:42PM	-	06:54PM
05:34PM	05:36PM	-	06:04PM	06:24PM	06:37PM	06:54PM	07:00PM	-
05:46PM	05:48PM	-	06:16PM	06:36PM	06:49PM	07:06PM	-	07:16PM
05:58PM	06:00PM	-	06:28PM	06:48PM	07:01PM	07:13PM	07:18PM	-
06:10PM	06:12PM	-	06:40PM	07:00PM	07:09PM	07:21PM	-	07:31PM
06:22PM	06:24PM	-	06:52PM	07:12PM	07:21PM	07:33PM	-	-
06:37PM	06:39PM	-	07:07PM	07:23PM	07:32PM	07:44PM	-	07:54PM
06:52PM	06:54PM	-	07:20PM	07:36PM	07:45PM	07:57PM	-	08:07PM
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07:22PM	07:24PM	-	07:48PM	08:04PM	08:12PM	08:22PM	-	08:30PM
07:38PM	07:40PM	-	08:04PM	08:18PM	08:26PM	08:36PM	-	-
07:58PM	08:00PM	-	08:23PM	08:37PM	08:45PM	08:55PM	-	09:03PM
08:18PM	08:20PM	-	08:43PM	08:57PM	09:05PM	09:15PM	-	09:23PM
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09:28PM	09:30PM	-	09:53PM	10:07PM	10:15PM	10:25PM	-	10:33PM
10:08PM	10:10PM	-	10:33PM	10:47PM	10:55PM	11:05PM	-	11:13PM
10:48PM	10:50PM	-	11:13PM	11:27PM	11:35PM	11:45PM	-	11:53PM
11:28PM	11:30PM	-	11:53PM	12:07AM	12:14AM	12:24AM	-	-
12:08AM	12:10AM	-	12:30AM	12:42AM	12:49AM	12:59AM	-	01:06AM
12:40AM	12:42AM	-	01:02AM	01:14AM	01:21AM	01:31AM	-	-
01:40AM	01:42AM	-	02:02AM	02:14AM	02:21AM	02:31AM	-	-
02:40AM	02:42AM	-	03:02AM	03:14AM	03:21AM	03:31AM	-	-
03:40AM	03:42AM	-	04:02AM	04:14AM	04:21AM	04:31AM	04:35AM	-

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Miami-Dade County Transportation and Public Works

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113 (Eastbound) WEEKDAY

NW 21 AV & 22 ST	NW 12 AV & 15 ST	OMNI TERMINAL / ARSHT METROMOVER	ALTON RD & 2 ST	5 ST & LENOX AV	ALTON RD & LINCOLN RD MALL	LINCOLN RD & JAMES AV	INDIAN CREEK DR & 43 ST	41 ST & MERIDIAN AV	41 ST & ALTON RD	MT SINAI HOSPITAL	ALTON RD & 39 ST
05:42AM	05:48AM	05:58AM	06:08AM	06:13AM	06:21AM	06:26AM	06:35AM	06:42AM	06:43AM	06:45AM	06:47AM
06:20AM	06:27AM	06:39AM	06:49AM	06:54AM	07:04AM	07:10AM	07:20AM	07:27AM	07:29AM	07:31AM	07:33AM
06:55AM	07:03AM	07:16AM	07:27AM	07:33AM	07:43AM	07:49AM	07:59AM	08:06AM	08:08AM	08:10AM	08:12AM
07:45AM	07:53AM	08:06AM	08:17AM	08:23AM	08:33AM	08:39AM	08:51AM	08:58AM	09:00AM	09:02AM	09:04AM
08:30AM	08:38AM	08:51AM	09:02AM	09:08AM	09:18AM	09:25AM	09:37AM	09:44AM	09:46AM	09:48AM	09:50AM
09:15AM	09:23AM	09:37AM	09:48AM	09:54AM	10:04AM	10:11AM	10:23AM	10:30AM	10:32AM	10:34AM	-
09:55AM	10:03AM	10:17AM	10:28AM	10:34AM	10:44AM	10:51AM	11:03AM	11:10AM	11:12AM	11:14AM	-
10:55AM	11:03AM	11:17AM	11:28AM	11:34AM	11:44AM	11:51AM	12:03PM	12:10PM	12:12PM	12:14PM	-
11:55AM	12:03PM	12:17PM	12:28PM	12:34PM	12:44PM	12:51PM	01:03PM	01:10PM	01:12PM	01:14PM	-
12:55PM	01:03PM	01:17PM	01:28PM	01:34PM	01:44PM	01:51PM	02:03PM	02:10PM	02:12PM	02:14PM	-
01:55PM	02:03PM	02:17PM	02:28PM	02:34PM	02:44PM	02:51PM	03:03PM	03:10PM	03:12PM	03:14PM	-
02:55PM	03:03PM	03:17PM	03:28PM	03:34PM	03:44PM	03:51PM	04:03PM	04:11PM	04:13PM	04:15PM	04:17PM
03:40PM	03:48PM	04:02PM	04:14PM	04:20PM	04:30PM	04:37PM	04:49PM	04:57PM	04:59PM	05:01PM	05:03PM
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05:15PM	05:23PM	05:37PM	05:49PM	05:55PM	06:05PM	06:12PM	06:24PM	06:32PM	06:34PM	06:36PM	06:38PM
06:00PM	06:08PM	06:22PM	06:34PM	06:40PM	06:50PM	06:57PM	07:09PM	07:16PM	07:17PM	07:19PM	-
06:45PM	06:53PM	07:07PM	07:18PM	07:24PM	07:32PM	07:38PM	07:49PM	07:56PM	07:57PM	07:59PM	08:01PM
07:35PM	07:42PM	07:55PM	08:06PM	08:12PM	08:20PM	08:26PM	08:37PM	08:44PM	08:45PM	08:47PM	08:49PM
08:35PM	08:42PM	08:55PM	09:06PM	09:12PM	09:20PM	09:26PM	09:37PM	09:44PM	09:45PM	09:47PM	-

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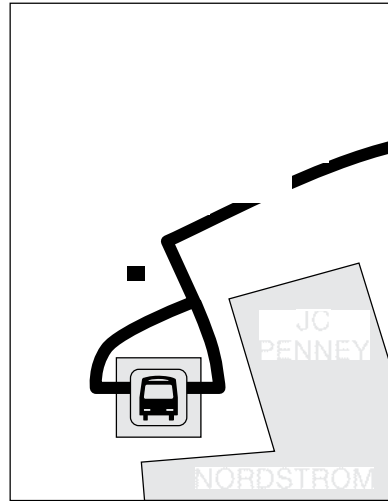
[\). \(https://www.instagram.com/gomiamide](https://www.instagram.com/gomiamidade)



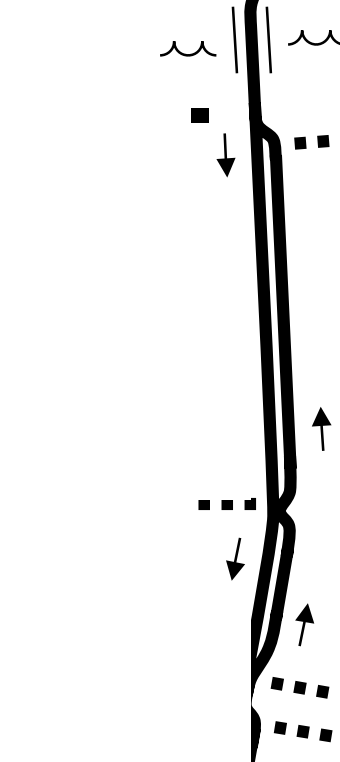
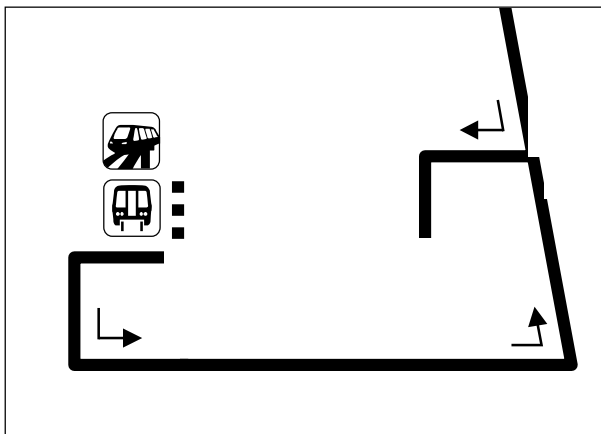
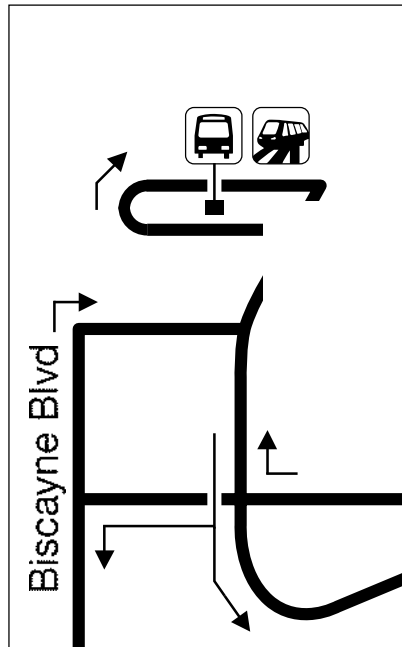
113 (Westbound) WEEKDAY

ALTON RD & 39 ST	MT SINAI HOSPITAL	41 ST & ALTON RD	41 ST & MERIDIAN AV	INDIAN CREEK DR & 40 ST	LINCOLN RD & WASHINGTON AV	ALTON RD & LINCOLN RD	ALTON RD & 2 ST	5 ST & LENOX AV	OMNI TERMINAL / ARSHT METROMOVER	NW 12 AV & 16 ST	NW 21 AV & 22 ST
-	05:43AM	05:45AM	05:46AM	05:50AM	05:56AM	06:01AM	06:08AM	06:13AM	06:21AM	06:34AM	06:44AM
-	06:26AM	06:28AM	06:30AM	06:34AM	06:42AM	06:47AM	06:54AM	06:59AM	07:07AM	07:20AM	07:30AM
07:02AM	07:05AM	07:07AM	07:09AM	07:14AM	07:24AM	07:29AM	07:38AM	07:44AM	07:52AM	08:05AM	08:15AM
07:43AM	07:46AM	07:48AM	07:50AM	07:55AM	08:06AM	08:11AM	08:21AM	08:27AM	08:37AM	08:50AM	09:00AM
08:25AM	08:28AM	08:30AM	08:32AM	08:38AM	08:49AM	08:54AM	09:05AM	09:11AM	09:21AM	09:35AM	09:45AM
09:17AM	09:20AM	09:23AM	09:25AM	09:31AM	09:43AM	09:49AM	10:00AM	10:06AM	10:16AM	10:30AM	10:40AM
10:13AM	10:16AM	10:19AM	10:21AM	10:27AM	10:39AM	10:45AM	10:56AM	11:02AM	11:12AM	11:26AM	11:36AM
-	11:16AM	11:19AM	11:21AM	11:27AM	11:39AM	11:45AM	11:56AM	12:02PM	12:12PM	12:26PM	12:36PM
-	12:16PM	12:19PM	12:21PM	12:27PM	12:39PM	12:45PM	12:56PM	01:02PM	01:12PM	01:26PM	01:36PM
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08:57PM	09:00PM	09:02PM	09:04PM	09:10PM	09:21PM	09:26PM	09:35PM	09:41PM	09:49PM	10:01PM	10:09PM

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Miami-Dade County Transportation and Public Works

Routes Schedule



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119 (Northbound) WEEKDAY

STEPHEN P CLARK CENTER	OMNI TERMINAL / ARSHT METROMOVER	ALTON RD & 6 ST	17 ST & LENOX AV	LINCOLN RD & JAMES AV	COLLINS AV & 43 ST	COLLINS AV & 69 ST	COLLINS AV & 96 ST	COLLINS AV AT 16900 BLK	COLLINS AV & 193 ST	BUS TERMINAL AT AVENTURA MALL
05:00AM	05:09AM	05:16AM	05:22AM	05:27AM	05:33AM	05:41AM	05:49AM	05:55AM	06:03AM	06:10AM
05:24AM	05:33AM	05:40AM	05:46AM	05:51AM	05:57AM	06:08AM	06:18AM	06:26AM	06:34AM	06:41AM
05:36AM	05:45AM	05:52AM	05:58AM	06:04AM	06:12AM	06:23AM	06:33AM	06:41AM	06:49AM	06:56AM
05:48AM	05:57AM	06:05AM	06:12AM	06:18AM	06:26AM	06:37AM	06:47AM	06:55AM	07:05AM	07:13AM
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Miami-Dade County Transportation and Public Works

Routes Schedule



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[\). \(https://twitter.com/gomiamidade \)](https://twitter.com/gomiamidade)



<https://www.instagram.com/gomiamidade>

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119 (Southbound) WEEKDAY

BUS TERMINAL AT AVENTURA MALL	COLLINS AV & 193 ST	COLLINS AV & 163 ST	BAL HARBOUR SHOPS	ABBOTT AV & 69 ST	INDIAN CREEK DR & 40 ST	LINCOLN RD & WASHINGTON AV	ALTON RD & LINCOLN RD	ALTON RD & 6 ST	OMNI TERMINAL / ARSHT METROMOVER	STEPHEN P CLARK CENTER
04:16AM	04:23AM	04:29AM	04:35AM	04:44AM	04:52AM	04:58AM	05:03AM	05:08AM	05:14AM	05:24AM
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07:01PM	07:16PM	07:25PM	07:32PM	07:42PM	07:53PM	08:02PM	08:09PM	08:15PM	08:22PM	08:34PM
07:15PM	07:30PM	07:39PM	07:46PM	07:56PM	08:07PM	08:16PM	08:23PM	08:29PM	08:36PM	08:48PM
07:29PM	07:44PM	07:53PM	08:00PM	08:10PM	08:21PM	08:30PM	08:37PM	08:43PM	08:50PM	09:02PM
07:44PM	07:59PM	08:08PM	08:15PM	08:25PM	08:36PM	08:45PM	08:52PM	08:58PM	09:05PM	09:17PM
07:59PM	08:14PM	08:23PM	08:30PM	08:40PM	08:51PM	09:00PM	09:07PM	09:13PM	09:20PM	09:32PM
08:14PM	08:29PM	08:38PM	08:45PM	08:55PM	09:06PM	09:15PM	09:22PM	09:28PM	09:35PM	09:47PM
08:29PM	08:44PM	08:53PM	09:00PM	09:10PM	09:21PM	09:30PM	09:37PM	09:43PM	09:50PM	10:02PM
08:44PM	08:59PM	09:08PM	09:15PM	09:25PM	09:36PM	09:45PM	09:52PM	09:58PM	10:05PM	10:15PM
08:59PM	09:14PM	09:23PM	09:30PM	09:40PM	09:51PM	10:00PM	10:07PM	10:12PM	10:19PM	10:29PM
09:15PM	09:30PM	09:39PM	09:46PM	09:56PM	10:07PM	10:15PM	10:22PM	10:27PM	10:34PM	10:44PM
09:32PM	09:47PM	09:56PM	10:03PM	10:12PM	10:22PM	10:30PM	10:37PM	10:42PM	10:49PM	10:59PM
09:54PM	10:09PM	10:17PM	10:23PM	10:32PM	10:42PM	10:50PM	10:57PM	11:02PM	11:09PM	11:19PM
10:22PM	10:34PM	10:42PM	10:48PM	10:57PM	11:07PM	11:15PM	11:22PM	11:27PM	11:34PM	11:44PM
10:47PM	10:59PM	11:07PM	11:13PM	11:22PM	11:32PM	11:40PM	11:47PM	11:52PM	11:59PM	12:09AM
11:12PM	11:24PM	11:32PM	11:38PM	11:47PM	11:57PM	12:05AM	12:11AM	12:16AM	12:22AM	12:32AM
11:42PM	11:54PM	12:02AM	12:08AM	12:16AM	12:24AM	12:30AM	12:36AM	12:41AM	12:47AM	12:57AM
12:13AM	12:23AM	12:30AM	12:36AM	12:44AM	12:52AM	12:58AM	01:04AM	01:09AM	01:15AM	01:25AM
12:43AM	12:53AM	01:00AM	01:06AM	01:14AM	01:22AM	01:28AM	01:34AM	01:39AM	01:45AM	01:55AM
01:43AM	01:53AM	02:00AM	02:06AM	02:14AM	02:22AM	02:28AM	02:34AM	02:39AM	02:45AM	02:55AM
02:43AM	02:53AM	03:00AM	03:06AM	03:14AM	03:22AM	03:28AM	03:34AM	03:39AM	03:45AM	03:55AM
03:43AM	03:53AM	04:00AM	04:06AM	04:14AM	04:22AM	04:28AM	04:34AM	04:39AM	04:45AM	04:55AM

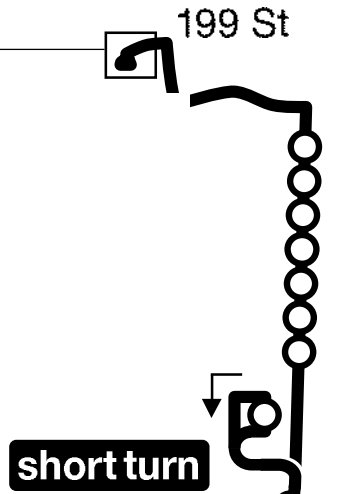
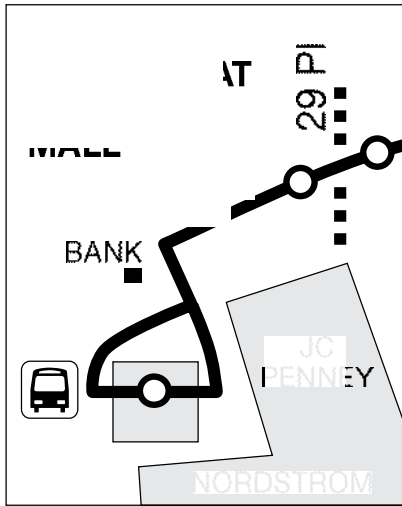
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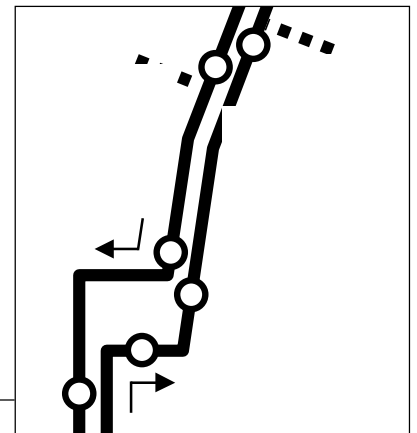
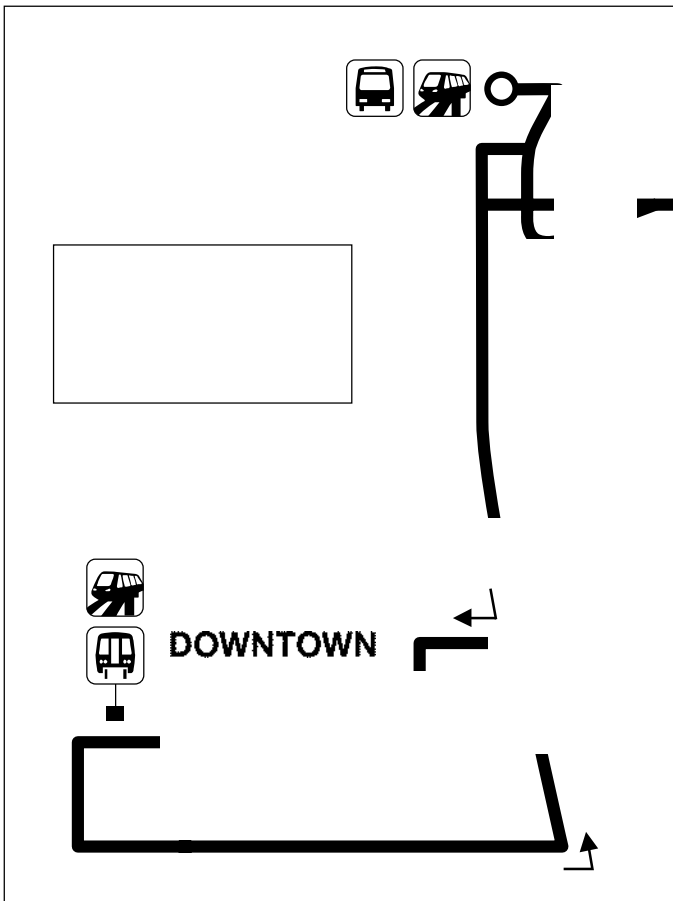


120

BEACH MAX



**LIMITED
STOPS**



1
Miami-Dade County Transportation and Public Works

Routes Schedule



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120 (Northbound) WEEKDAY

STEPHEN P CLARK CENTER	OMNI TERMINAL / ARSHT METROMOVER	LINCOLN RD & JAMES AV	COLLINS AV & 43 ST	COLLINS AV & 69 ST	COLLINS AV & # 9701	HAUOVER CLUB PARKING LOT	COLLINS AV AT 16900 BLK	BUS TERMINAL AT AVENTURA MALL
05:00AM	05:10AM	05:26AM	05:33AM	05:40AM	05:47AM	-	05:53AM	05:59AM
05:45AM	05:55AM	06:12AM	06:20AM	06:28AM	06:36AM	-	06:42AM	06:50AM
06:15AM	06:26AM	06:43AM	06:51AM	06:59AM	07:08AM	07:13AM	-	-
06:45AM	06:56AM	07:14AM	07:22AM	07:31AM	07:40AM	-	07:47AM	07:59AM
07:00AM	07:15AM	07:33AM	07:41AM	07:50AM	07:59AM	08:04AM	-	-
07:13AM	07:28AM	07:46AM	07:54AM	08:04AM	08:13AM	-	08:21AM	08:33AM
07:24AM	07:39AM	07:57AM	08:06AM	08:16AM	08:25AM	-	08:33AM	08:45AM
07:35AM	07:50AM	08:10AM	08:19AM	08:29AM	08:38AM	-	08:46AM	08:58AM
07:45AM	08:03AM	08:23AM	08:32AM	08:42AM	08:52AM	08:57AM	-	-
08:00AM	08:18AM	08:38AM	08:47AM	08:57AM	09:07AM	-	09:15AM	09:27AM
08:15AM	08:33AM	08:53AM	09:03AM	09:13AM	09:23AM	09:28AM	-	-
08:30AM	08:48AM	09:10AM	09:20AM	09:30AM	09:40AM	-	09:48AM	10:00AM
08:45AM	09:03AM	09:25AM	09:35AM	09:45AM	09:55AM	10:00AM	-	-
09:00AM	09:18AM	09:40AM	09:50AM	10:00AM	10:10AM	-	10:18AM	10:30AM
09:15AM	09:33AM	09:55AM	10:05AM	10:15AM	10:25AM	10:30AM	-	-
09:30AM	09:48AM	10:10AM	10:20AM	10:30AM	10:40AM	-	10:48AM	11:00AM
09:45AM	10:03AM	10:25AM	10:35AM	10:45AM	10:55AM	11:00AM	-	-
10:00AM	10:18AM	10:40AM	10:50AM	11:00AM	11:10AM	-	11:18AM	11:30AM
10:12AM	10:30AM	10:52AM	11:02AM	11:12AM	11:22AM	11:27AM	-	-

10:25AM	10:43AM	11:05AM	11:15AM	11:25AM	11:35AM	-	11:43AM	11:55AM
10:37AM	10:55AM	11:17AM	11:27AM	11:37AM	11:47AM	11:52AM	-	-
10:48AM	11:06AM	11:28AM	11:38AM	11:48AM	11:58AM	-	12:06PM	12:18PM
11:00AM	11:18AM	11:40AM	11:50AM	12:00PM	12:10PM	12:15PM	-	-
11:12AM	11:30AM	11:52AM	12:02PM	12:12PM	12:22PM	-	12:30PM	12:42PM
11:24AM	11:42AM	12:04PM	12:14PM	12:24PM	12:34PM	12:39PM	-	-
11:35AM	11:53AM	12:15PM	12:25PM	12:35PM	12:45PM	-	12:53PM	01:05PM
11:48AM	12:06PM	12:28PM	12:38PM	12:48PM	12:58PM	01:03PM	-	-
12:00PM	12:18PM	12:40PM	12:50PM	01:00PM	01:10PM	-	01:18PM	01:30PM
12:12PM	12:30PM	12:52PM	01:02PM	01:12PM	01:22PM	01:27PM	-	-
12:24PM	12:42PM	01:04PM	01:14PM	01:24PM	01:34PM	-	01:42PM	01:54PM
12:36PM	12:54PM	01:16PM	01:26PM	01:36PM	01:46PM	01:51PM	-	-
12:48PM	01:06PM	01:28PM	01:38PM	01:48PM	01:58PM	-	02:06PM	02:18PM
01:00PM	01:18PM	01:40PM	01:50PM	02:00PM	02:10PM	02:15PM	-	-
01:12PM	01:30PM	01:52PM	02:02PM	02:12PM	02:22PM	-	02:30PM	02:42PM
01:24PM	01:42PM	02:04PM	02:14PM	02:24PM	02:34PM	02:39PM	-	-
01:36PM	01:54PM	02:16PM	02:26PM	02:36PM	02:46PM	-	02:54PM	03:07PM
01:48PM	02:06PM	02:28PM	02:38PM	02:48PM	02:58PM	03:03PM	-	-
02:00PM	02:18PM	02:40PM	02:50PM	03:01PM	03:11PM	-	03:19PM	03:32PM
02:12PM	02:30PM	02:52PM	03:02PM	03:13PM	03:23PM	03:28PM	-	-
02:24PM	02:42PM	03:04PM	03:14PM	03:25PM	03:35PM	-	03:43PM	03:56PM
02:36PM	02:54PM	03:16PM	03:26PM	03:37PM	03:47PM	03:52PM	-	-
02:48PM	03:07PM	03:29PM	03:39PM	03:50PM	04:00PM	-	04:08PM	04:21PM
03:00PM	03:19PM	03:41PM	03:51PM	04:02PM	04:12PM	04:17PM	-	-
03:12PM	03:31PM	03:53PM	04:03PM	04:14PM	04:24PM	-	04:32PM	04:45PM
03:24PM	03:43PM	04:05PM	04:15PM	04:26PM	04:36PM	04:41PM	-	-
03:36PM	03:55PM	04:17PM	04:27PM	04:38PM	04:48PM	-	04:56PM	05:09PM
03:48PM	04:07PM	04:29PM	04:39PM	04:50PM	05:00PM	05:05PM	-	-
04:00PM	04:19PM	04:41PM	04:51PM	05:02PM	05:12PM	-	05:20PM	05:33PM
04:12PM	04:31PM	04:53PM	05:03PM	05:14PM	05:24PM	05:29PM	-	-
04:24PM	04:43PM	05:05PM	05:15PM	05:26PM	05:36PM	-	05:44PM	05:57PM
04:36PM	04:55PM	05:17PM	05:27PM	05:38PM	05:48PM	05:53PM	-	-
04:48PM	05:07PM	05:29PM	05:39PM	05:50PM	06:00PM	-	06:08PM	06:21PM
05:00PM	05:19PM	05:41PM	05:51PM	06:02PM	06:12PM	06:17PM	-	-
05:15PM	05:34PM	05:56PM	06:06PM	06:17PM	06:27PM	-	06:35PM	06:48PM
05:30PM	05:49PM	06:11PM	06:21PM	06:32PM	06:42PM	06:47PM	-	-
05:46PM	06:05PM	06:27PM	06:37PM	06:48PM	06:58PM	-	07:06PM	07:17PM

5/15/2018

Routes Schedule - Miami-Dade County

06:02PM	06:21PM	06:43PM	06:53PM	07:04PM	07:12PM	07:17PM	-	-
06:20PM	06:39PM	07:01PM	07:11PM	07:20PM	07:28PM	-	07:35PM	07:46PM
06:40PM	06:59PM	07:21PM	07:31PM	07:40PM	07:48PM	-	07:55PM	08:06PM
07:05PM	07:18PM	07:38PM	07:48PM	07:57PM	08:05PM	-	08:12PM	08:23PM
07:35PM	07:48PM	08:08PM	08:18PM	08:27PM	08:35PM	-	08:42PM	08:53PM
08:15PM	08:28PM	08:48PM	08:58PM	09:07PM	09:15PM	-	09:22PM	09:33PM
08:55PM	09:08PM	09:28PM	09:38PM	09:47PM	09:55PM	-	10:02PM	10:12PM
09:30PM	09:43PM	10:03PM	10:12PM	10:20PM	10:28PM	10:32PM	-	-

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Miami-Dade County Transportation and Public Works

Routes Schedule



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<https://www.instagram.com/gomiamidade>

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120 (Southbound) WEEKDAY

BUS TERMINAL AT AVENTURA MALL	COLLINS AV & # 16830	HAULOVER CLUB PARKING LOT	BAL HARBOUR SHOPS	ABBOTT AV & 69 ST	INDIAN CREEK DR & 40 ST	WASHINGTON AV & LINCOLN RD	OMNI TERMINAL / ARSHT METROMOVER	STEPHEN P CLARK CENTER
-	-	06:00AM	06:05AM	06:14AM	06:23AM	06:31AM	06:46AM	06:56AM
06:00AM	06:13AM	-	06:19AM	06:28AM	06:37AM	06:45AM	07:02AM	07:13AM
06:30AM	06:43AM	-	06:49AM	06:58AM	07:08AM	07:17AM	07:34AM	07:45AM
-	-	06:30AM	06:35AM	06:44AM	06:53AM	07:02AM	07:19AM	07:30AM
06:54AM	07:09AM	-	07:16AM	07:28AM	07:38AM	07:47AM	08:06AM	08:17AM
-	-	06:55AM	07:02AM	07:14AM	07:24AM	07:33AM	07:50AM	08:01AM
07:21AM	07:36AM	-	07:43AM	07:55AM	08:06AM	08:15AM	08:34AM	08:45AM
-	-	07:23AM	07:30AM	07:42AM	07:52AM	08:01AM	08:20AM	08:31AM
07:33AM	07:48AM	-	07:55AM	08:10AM	08:21AM	08:30AM	08:49AM	09:01AM
07:45AM	08:02AM	-	08:09AM	08:24AM	08:35AM	08:44AM	09:04AM	09:16AM
08:00AM	08:17AM	-	08:24AM	08:39AM	08:50AM	08:59AM	09:19AM	09:31AM
08:27AM	08:44AM	-	08:51AM	09:06AM	09:19AM	09:29AM	09:49AM	10:01AM
-	-	08:29AM	08:36AM	08:51AM	09:04AM	09:14AM	09:34AM	09:46AM
08:59AM	09:16AM	-	09:23AM	09:34AM	09:47AM	09:57AM	10:17AM	10:29AM
-	-	09:02AM	09:09AM	09:20AM	09:33AM	09:43AM	10:03AM	10:15AM
09:31AM	09:48AM	-	09:55AM	10:06AM	10:19AM	10:29AM	10:49AM	11:01AM
-	-	09:32AM	09:39AM	09:50AM	10:03AM	10:13AM	10:33AM	10:45AM
-	-	10:00AM	10:07AM	10:18AM	10:31AM	10:41AM	11:01AM	11:13AM
10:05AM	10:22AM	-	10:29AM	10:40AM	10:53AM	11:03AM	11:23AM	11:35AM

-	-	10:11AM	10:18AM	10:29AM	10:42AM	10:52AM	11:12AM	11:24AM
10:31AM	10:48AM	-	10:55AM	11:06AM	11:19AM	11:29AM	11:49AM	12:01PM
-	-	10:35AM	10:42AM	10:53AM	11:06AM	11:16AM	11:36AM	11:48AM
10:56AM	11:13AM	-	11:20AM	11:31AM	11:44AM	11:54AM	12:14PM	12:26PM
-	-	11:01AM	11:08AM	11:19AM	11:32AM	11:42AM	12:02PM	12:14PM
11:20AM	11:37AM	-	11:44AM	11:55AM	12:08PM	12:18PM	12:38PM	12:50PM
-	-	11:25AM	11:32AM	11:43AM	11:56AM	12:06PM	12:26PM	12:38PM
11:44AM	12:01PM	-	12:08PM	12:19PM	12:32PM	12:42PM	01:02PM	01:14PM
-	-	11:49AM	11:56AM	12:07PM	12:20PM	12:30PM	12:50PM	01:02PM
12:08PM	12:25PM	-	12:32PM	12:43PM	12:56PM	01:06PM	01:26PM	01:38PM
-	-	12:13PM	12:20PM	12:31PM	12:44PM	12:54PM	01:14PM	01:26PM
12:32PM	12:49PM	-	12:56PM	01:07PM	01:20PM	01:30PM	01:50PM	02:02PM
-	-	12:37PM	12:44PM	12:55PM	01:08PM	01:18PM	01:38PM	01:50PM
12:56PM	01:13PM	-	01:20PM	01:31PM	01:44PM	01:54PM	02:14PM	02:26PM
-	-	01:01PM	01:08PM	01:19PM	01:32PM	01:42PM	02:02PM	02:14PM
01:20PM	01:37PM	-	01:44PM	01:55PM	02:08PM	02:18PM	02:38PM	02:50PM
-	-	01:25PM	01:32PM	01:43PM	01:56PM	02:06PM	02:26PM	02:38PM
01:44PM	02:01PM	-	02:08PM	02:19PM	02:32PM	02:42PM	03:02PM	03:14PM
-	-	01:49PM	01:56PM	02:07PM	02:20PM	02:30PM	02:50PM	03:02PM
02:08PM	02:25PM	-	02:32PM	02:43PM	02:56PM	03:06PM	03:26PM	03:38PM
-	-	02:13PM	02:20PM	02:31PM	02:44PM	02:54PM	03:14PM	03:26PM
02:31PM	02:48PM	-	02:55PM	03:06PM	03:19PM	03:29PM	03:49PM	04:02PM
-	-	02:37PM	02:44PM	02:55PM	03:08PM	03:18PM	03:38PM	03:50PM
02:51PM	03:08PM	-	03:15PM	03:26PM	03:39PM	03:49PM	04:13PM	04:26PM
-	-	02:56PM	03:03PM	03:14PM	03:27PM	03:37PM	04:01PM	04:14PM
03:15PM	03:32PM	-	03:39PM	03:50PM	04:03PM	04:13PM	04:37PM	04:50PM
-	-	03:20PM	03:27PM	03:38PM	03:51PM	04:01PM	04:25PM	04:38PM
03:38PM	03:55PM	-	04:03PM	04:14PM	04:27PM	04:37PM	05:01PM	05:14PM
-	-	03:44PM	03:51PM	04:02PM	04:15PM	04:25PM	04:49PM	05:02PM
03:58PM	04:17PM	-	04:25PM	04:36PM	04:49PM	04:59PM	05:23PM	05:36PM
-	-	04:07PM	04:14PM	04:25PM	04:38PM	04:48PM	05:12PM	05:25PM
04:24PM	04:43PM	-	04:51PM	05:02PM	05:15PM	05:25PM	05:49PM	06:02PM
-	-	04:31PM	04:38PM	04:49PM	05:02PM	05:12PM	05:36PM	05:49PM
-	-	04:59PM	05:06PM	05:17PM	05:30PM	05:40PM	06:04PM	06:15PM
04:59PM	05:18PM	-	05:26PM	05:37PM	05:50PM	06:00PM	06:19PM	06:30PM
05:33PM	05:52PM	-	06:00PM	06:10PM	06:20PM	06:30PM	06:49PM	07:00PM
-	-	05:34PM	05:41PM	05:52PM	06:05PM	06:15PM	06:34PM	06:45PM

-	-	06:06PM	06:15PM	06:25PM	06:35PM	06:45PM	07:04PM	07:15PM
06:12PM	06:28PM	-	06:35PM	06:45PM	06:55PM	07:05PM	07:24PM	07:35PM
06:37PM	06:53PM	-	07:00PM	07:10PM	07:20PM	07:30PM	07:49PM	08:00PM
07:07PM	07:23PM	-	07:30PM	07:40PM	07:50PM	08:00PM	08:19PM	08:30PM
07:47PM	08:03PM	-	08:10PM	08:20PM	08:30PM	08:40PM	08:59PM	09:10PM
08:27PM	08:43PM	-	08:50PM	09:00PM	09:10PM	09:20PM	09:39PM	09:50PM
09:07PM	09:23PM	-	09:30PM	09:40PM	09:50PM	10:00PM	10:17PM	10:27PM
09:49PM	10:05PM	-	10:11PM	10:20PM	10:29PM	10:38PM	10:55PM	11:05PM
10:31PM	10:45PM	-	10:51PM	11:00PM	11:09PM	11:18PM	11:35PM	11:45PM

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Miami-Dade County Transportation and Public Works

Routes Schedule



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150 (Eastbound) WEEKDAY

AIRPORT STATION	41 ST & ALTON RD	INDIAN CREEK DR & 40 ST	WASHINGTON AV & LINCOLN RD	WASHINGTON AV & SOUTH POINTE DR
06:00AM	06:15AM	06:21AM	06:31AM	06:41AM
06:20AM	06:35AM	06:41AM	06:51AM	07:01AM
06:40AM	06:55AM	07:01AM	07:11AM	07:21AM
07:00AM	07:15AM	07:21AM	07:31AM	07:41AM
07:20AM	07:35AM	07:41AM	07:51AM	08:01AM
07:40AM	07:55AM	08:01AM	08:11AM	08:21AM
08:00AM	08:15AM	08:21AM	08:31AM	08:41AM
08:20AM	08:35AM	08:41AM	08:51AM	09:02AM
08:40AM	08:55AM	09:01AM	09:12AM	09:23AM
09:00AM	09:14AM	09:20AM	09:31AM	09:42AM
09:20AM	09:34AM	09:40AM	09:51AM	10:02AM
09:40AM	09:54AM	10:00AM	10:11AM	10:22AM
10:00AM	10:14AM	10:20AM	10:31AM	10:42AM
10:20AM	10:34AM	10:40AM	10:51AM	11:02AM
10:40AM	10:54AM	11:00AM	11:11AM	11:22AM
11:00AM	11:14AM	11:20AM	11:31AM	11:42AM
11:20AM	11:34AM	11:40AM	11:51AM	12:02PM
11:40AM	11:54AM	12:00PM	12:11PM	12:22PM
12:00PM	12:14PM	12:20PM	12:31PM	12:42PM
12:20PM	12:34PM	12:40PM	12:51PM	01:02PM

12:40PM	12:54PM	01:00PM	01:11PM	01:22PM
01:00PM	01:14PM	01:20PM	01:31PM	01:42PM
01:20PM	01:34PM	01:40PM	01:51PM	02:02PM
01:40PM	01:54PM	02:00PM	02:11PM	02:22PM
02:00PM	02:14PM	02:20PM	02:31PM	02:42PM
02:16PM	02:30PM	02:36PM	02:47PM	02:58PM
02:36PM	02:50PM	02:56PM	03:07PM	03:20PM
02:53PM	03:09PM	03:16PM	03:27PM	03:40PM
03:13PM	03:29PM	03:36PM	03:47PM	04:00PM
03:33PM	03:49PM	03:56PM	04:07PM	04:20PM
03:53PM	04:09PM	04:16PM	04:27PM	04:40PM
04:13PM	04:29PM	04:36PM	04:47PM	05:00PM
04:33PM	04:49PM	04:56PM	05:07PM	05:20PM
04:53PM	05:09PM	05:16PM	05:27PM	05:40PM
05:13PM	05:29PM	05:36PM	05:47PM	06:00PM
05:33PM	05:49PM	05:56PM	06:07PM	06:20PM
05:53PM	06:09PM	06:16PM	06:27PM	06:40PM
06:13PM	06:29PM	06:36PM	06:47PM	07:00PM
06:37PM	06:53PM	07:00PM	07:09PM	07:20PM
07:00PM	07:14PM	07:20PM	07:29PM	07:40PM
07:20PM	07:34PM	07:40PM	07:49PM	08:00PM
07:40PM	07:54PM	08:00PM	08:09PM	08:20PM
08:00PM	08:14PM	08:20PM	08:29PM	08:40PM
08:20PM	08:34PM	08:40PM	08:49PM	09:00PM
08:40PM	08:54PM	09:00PM	09:09PM	09:20PM
09:00PM	09:14PM	09:20PM	09:29PM	09:40PM
09:30PM	09:44PM	09:50PM	09:59PM	10:10PM
10:00PM	10:13PM	10:18PM	10:27PM	10:37PM
10:30PM	10:43PM	10:48PM	10:57PM	11:07PM
11:10PM	11:23PM	11:28PM	11:37PM	11:47PM
11:40PM	11:53PM	11:58PM	12:07AM	12:17AM

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Miami-Dade County Transportation and Public Works

Routes Schedule



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[\).](https://www.instagram.com/gomiamidade)



150 (Westbound) WEEKDAY

WASHINGTON AV & SOUTH POINTE DR	LINCOLN RD & JAMES AV	INDIAN CREEK DR & 43 ST	41 ST & ALTON RD	AIRPORT STATION
05:10AM	05:20AM	05:29AM	05:33AM	05:45AM
05:30AM	05:40AM	05:49AM	05:53AM	06:07AM
05:50AM	06:01AM	06:11AM	06:16AM	06:30AM
06:10AM	06:21AM	06:31AM	06:36AM	06:50AM
06:30AM	06:41AM	06:51AM	06:56AM	07:10AM
06:50AM	07:01AM	07:11AM	07:16AM	07:30AM
07:10AM	07:21AM	07:31AM	07:36AM	07:50AM
07:30AM	07:41AM	07:51AM	07:56AM	08:10AM
07:50AM	08:01AM	08:11AM	08:16AM	08:30AM
08:10AM	08:21AM	08:31AM	08:36AM	08:50AM
08:30AM	08:41AM	08:51AM	08:56AM	09:11AM
08:50AM	09:02AM	09:15AM	09:20AM	09:35AM
09:10AM	09:22AM	09:35AM	09:40AM	09:55AM
09:30AM	09:42AM	09:55AM	10:00AM	10:15AM
09:50AM	10:02AM	10:15AM	10:20AM	10:35AM
10:10AM	10:22AM	10:35AM	10:40AM	10:55AM
10:30AM	10:42AM	10:55AM	11:00AM	11:15AM
10:50AM	11:02AM	11:15AM	11:20AM	11:35AM
11:10AM	11:22AM	11:35AM	11:40AM	11:55AM
11:30AM	11:42AM	11:55AM	12:00PM	12:15PM

11:50AM	12:02PM	12:15PM	12:20PM	12:35PM
12:10PM	12:22PM	12:35PM	12:40PM	12:55PM
12:30PM	12:42PM	12:55PM	01:00PM	01:15PM
12:50PM	01:02PM	01:15PM	01:20PM	01:35PM
01:10PM	01:22PM	01:35PM	01:40PM	01:55PM
01:30PM	01:42PM	01:55PM	02:00PM	02:15PM
01:50PM	02:02PM	02:15PM	02:20PM	02:35PM
02:10PM	02:22PM	02:35PM	02:40PM	02:55PM
02:30PM	02:42PM	02:55PM	03:01PM	03:20PM
02:50PM	03:04PM	03:17PM	03:23PM	03:42PM
03:10PM	03:24PM	03:37PM	03:43PM	04:02PM
03:30PM	03:44PM	03:57PM	04:03PM	04:22PM
03:50PM	04:04PM	04:17PM	04:23PM	04:42PM
04:10PM	04:24PM	04:37PM	04:43PM	05:02PM
04:30PM	04:44PM	04:57PM	05:03PM	05:22PM
04:50PM	05:04PM	05:17PM	05:23PM	05:42PM
05:10PM	05:24PM	05:37PM	05:43PM	06:02PM
05:30PM	05:44PM	05:57PM	06:03PM	06:22PM
05:50PM	06:04PM	06:17PM	06:23PM	06:42PM
06:10PM	06:24PM	06:37PM	06:43PM	07:02PM
06:30PM	06:44PM	06:57PM	07:03PM	07:17PM
06:50PM	07:04PM	07:14PM	07:19PM	07:33PM
07:10PM	07:22PM	07:32PM	07:37PM	07:51PM
07:30PM	07:42PM	07:52PM	07:57PM	08:11PM
07:50PM	08:02PM	08:12PM	08:17PM	08:31PM
08:10PM	08:22PM	08:32PM	08:37PM	08:51PM
08:30PM	08:42PM	08:52PM	08:57PM	09:11PM
08:50PM	09:02PM	09:12PM	09:17PM	09:31PM
09:20PM	09:32PM	09:42PM	09:47PM	10:01PM
09:50PM	10:02PM	10:11PM	10:15PM	10:27PM
10:20PM	10:30PM	10:39PM	10:43PM	10:55PM
10:55PM	11:05PM	11:14PM	11:18PM	11:30PM

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MIDDLE BEACH LOOP

TROLLEY CONNECTIONS

COLLINS EXPRESS  **MIDDLE BEACH LOOP**

MIDDLE BEACH LOOP  **SOUTH BEACH LOOP**

COLLINS EXPRESS  **SOUTH BEACH LOOP**



New Route Segment Added





COLLINS EXPRESS



**New Route
Segment Added**



TROLLEY CONNECTIONS

**NORTH
BEACH
LOOP**



**COLLINS
EXPRESS**

**COLLINS
EXPRESS**



**MIDDLE
BEACH
LOOP**

**MIDDLE
BEACH
LOOP**



**SOUTH
BEACH
LOOP**

**COLLINS
EXPRESS**



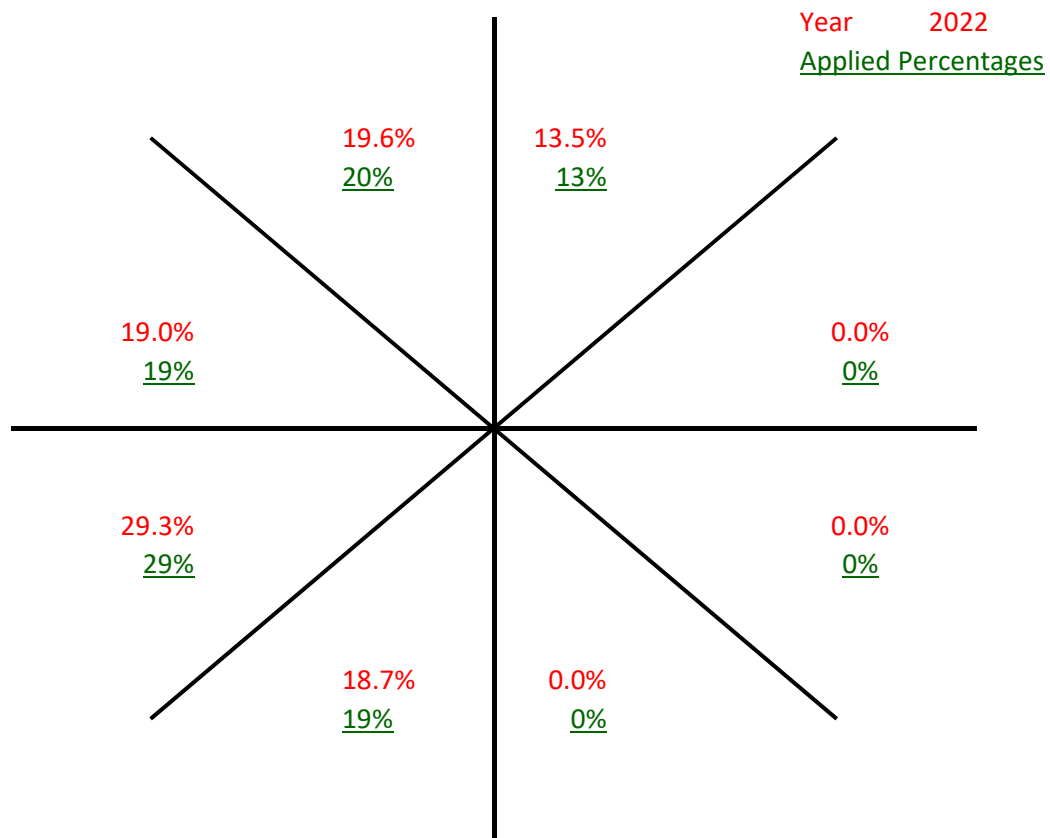
**SOUTH
BEACH
LOOP**



Appendix G

Cardinal Trip Distribution

Cardinal Distribution for TAZ 635



Cardinal Trip Distribution

Cardinal Direction	Percentage of Trips		2022 Interpolated	2022 Rounded
	2010	2040		
North-Northeast	12.2%	15.4%	13.5%	13%
East-Northeast	0.0%	0.0%	0.0%	0%
East-Southeast	0.0%	0.0%	0.0%	0%
South-Southeast	0.0%	0.0%	0.0%	0%
South-Southwest	17.5%	20.5%	18.7%	19%
West-Southwest	30.2%	27.9%	29.3%	29%
West-Northwest	20.3%	17.0%	19.0%	19%
North-Northwest	19.8%	19.2%	19.6%	20%
Total	100%	100%	100%	100%

Miami-Dade 2010 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
616	3516	TRIPS	703	540	0	1,630	1,842	1,537	1,127	1,812	9,191
616	3516	PERCENT	7.7	5.9	0.0	17.7	20.0	16.7	12.3	19.7	
617	3517	TRIPS	0	10	0	0	10	0	0	20	40
617	3517	PERCENT	0.0	25.0	0.0	0.0	25.0	0.0	0.0	50.0	
618	3518	TRIPS	330	165	0	322	542	490	234	755	2,838
618	3518	PERCENT	11.6	5.8	0.0	11.4	19.1	17.3	8.3	26.6	
619	3519	TRIPS	158	0	0	588	1,822	1,431	915	2,017	6,931
619	3519	PERCENT	2.3	0.0	0.0	8.5	26.3	20.7	13.2	29.1	
620	3520	TRIPS	173	0	0	481	2,563	2,285	1,185	2,715	9,402
620	3520	PERCENT	1.8	0.0	0.0	5.1	27.3	24.3	12.6	28.9	
621	3521	TRIPS	750	0	271	730	1,325	1,008	570	1,178	5,832
621	3521	PERCENT	12.9	0.0	4.7	12.5	22.7	17.3	9.8	20.2	
622	3522	TRIPS	846	0	0	547	1,669	2,238	881	1,779	7,960
622	3522	PERCENT	10.6	0.0	0.0	6.9	21.0	28.1	11.1	22.4	
623	3523	TRIPS	865	314	362	1,036	918	2,053	953	915	7,416
623	3523	PERCENT	11.7	4.2	4.9	14.0	12.4	27.7	12.9	12.3	
624	3524	TRIPS	1,510	1,185	279	1,139	2,348	3,798	2,999	2,480	15,738
624	3524	PERCENT	9.6	7.5	1.8	7.2	14.9	24.1	19.1	15.8	
625	3525	TRIPS	904	151	0	713	469	1,573	902	1,029	5,741
625	3525	PERCENT	15.8	2.6	0.0	12.4	8.2	27.4	15.7	17.9	
626	3526	TRIPS	86	0	0	0	2,128	2,780	1,523	2,730	9,247
626	3526	PERCENT	0.9	0.0	0.0	0.0	23.0	30.1	16.5	29.5	
627	3527	TRIPS	268	0	0	0	2,782	2,384	1,028	1,982	8,444
627	3527	PERCENT	3.2	0.0	0.0	0.0	33.0	28.2	12.2	23.5	
628	3528	TRIPS	572	0	107	174	1,417	1,412	675	755	5,112
628	3528	PERCENT	11.2	0.0	2.1	3.4	27.7	27.6	13.2	14.8	
629	3529	TRIPS	2,040	549	224	1,939	1,885	5,257	2,755	2,552	17,201
629	3529	PERCENT	11.9	3.2	1.3	11.3	11.0	30.6	16.0	14.8	
630	3530	TRIPS	1,018	0	101	231	1,694	2,664	1,198	1,047	7,953
630	3530	PERCENT	12.8	0.0	1.3	2.9	21.3	33.5	15.1	13.2	
631	3531	TRIPS	422	0	0	0	1,119	1,636	433	741	4,351
631	3531	PERCENT	9.7	0.0	0.0	0.0	25.7	37.6	10.0	17.0	
632	3532	TRIPS	250	0	0	0	528	1,486	568	688	3,520
632	3532	PERCENT	7.1	0.0	0.0	0.0	15.0	42.2	16.1	19.6	
633	3533	TRIPS	330	0	0	0	1,045	1,375	758	776	4,284
633	3533	PERCENT	7.7	0.0	0.0	0.0	24.4	32.1	17.7	18.1	
634	3534	TRIPS	1,649	138	246	667	1,620	2,236	1,335	1,553	9,444
634	3534	PERCENT	17.5	1.5	2.6	7.1	17.2	23.7	14.1	16.4	
635	3535	TRIPS	768	0	0	0	1,106	1,912	1,284	1,253	6,323
635	3535	PERCENT	12.2	0.0	0.0	0.0	17.5	30.2	20.3	19.8	
636	3536	TRIPS	775	0	0	320	731	2,473	1,515	1,466	7,280

Miami-Dade 2040 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
616	3516	TRIPS	887	556	0	1,876	1,859	1,836	1,423	2,112	10,549
616	3516	PERCENT	8.4	5.3	0.0	17.8	17.6	17.4	13.5	20.0	
617	3517	TRIPS	81	36	8	61	50	65	48	56	405
617	3517	PERCENT	20.0	8.9	2.0	15.1	12.4	16.1	11.9	13.8	
618	3518	TRIPS	245	194	0	283	618	438	292	527	2,597
618	3518	PERCENT	9.4	7.5	0.0	10.9	23.8	16.9	11.2	20.3	
619	3519	TRIPS	297	0	0	1,202	2,738	1,949	1,188	3,411	10,785
619	3519	PERCENT	2.8	0.0	0.0	11.2	25.4	18.1	11.0	31.6	
620	3520	TRIPS	59	0	0	691	2,586	2,659	1,388	3,229	10,612
620	3520	PERCENT	0.6	0.0	0.0	6.5	24.4	25.1	13.1	30.4	
621	3521	TRIPS	641	0	207	652	1,069	897	507	931	4,904
621	3521	PERCENT	13.1	0.0	4.2	13.3	21.8	18.3	10.3	19.0	
622	3522	TRIPS	1,041	0	0	1,013	1,705	2,290	939	1,768	8,756
622	3522	PERCENT	11.9	0.0	0.0	11.6	19.5	26.2	10.7	20.2	
623	3523	TRIPS	660	379	254	1,131	910	1,892	857	961	7,044
623	3523	PERCENT	9.4	5.4	3.6	16.1	12.9	26.9	12.2	13.6	
624	3524	TRIPS	1,731	1,417	382	1,244	2,520	3,891	3,312	2,764	17,261
624	3524	PERCENT	10.0	8.2	2.2	7.2	14.6	22.5	19.2	16.0	
625	3525	TRIPS	919	266	0	846	669	1,872	1,085	1,165	6,822
625	3525	PERCENT	13.5	3.9	0.0	12.4	9.8	27.4	15.9	17.1	
626	3526	TRIPS	108	0	0	0	3,832	3,818	1,879	4,428	14,065
626	3526	PERCENT	0.8	0.0	0.0	0.0	27.2	27.2	13.4	31.5	
627	3527	TRIPS	667	0	0	0	4,525	3,711	1,836	3,520	14,259
627	3527	PERCENT	4.7	0.0	0.0	0.0	31.7	26.0	12.9	24.7	
628	3528	TRIPS	555	0	175	168	1,097	1,212	405	514	4,126
628	3528	PERCENT	13.5	0.0	4.2	4.1	26.6	29.4	9.8	12.5	
629	3529	TRIPS	1,948	557	335	1,556	1,577	4,662	2,347	1,892	14,874
629	3529	PERCENT	13.1	3.7	2.3	10.5	10.6	31.3	15.8	12.7	
630	3530	TRIPS	1,398	0	223	373	1,797	2,860	1,105	1,164	8,920
630	3530	PERCENT	15.7	0.0	2.5	4.2	20.2	32.1	12.4	13.1	
631	3531	TRIPS	802	0	0	0	2,347	2,348	855	1,454	7,806
631	3531	PERCENT	10.3	0.0	0.0	0.0	30.1	30.1	11.0	18.6	
632	3532	TRIPS	603	0	0	0	1,583	2,022	1,057	919	6,184
632	3532	PERCENT	9.8	0.0	0.0	0.0	25.6	32.7	17.1	14.9	
633	3533	TRIPS	573	0	0	0	1,534	1,830	876	1,027	5,840
633	3533	PERCENT	9.8	0.0	0.0	0.0	26.3	31.3	15.0	17.6	
634	3534	TRIPS	1,445	71	167	680	1,389	1,930	1,212	1,265	8,159
634	3534	PERCENT	17.7	0.9	2.1	8.3	17.0	23.7	14.9	15.5	
635	3535	TRIPS	1,380	0	0	0	1,833	2,491	1,518	1,720	8,942
635	3535	PERCENT	15.4	0.0	0.0	0.0	20.5	27.9	17.0	19.2	
636	3536	TRIPS	1,729	0	0	727	1,308	2,610	1,308	1,181	8,863

Appendix H

Volume Development Worksheets

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Dade Boulevard and 23rd Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.77
PM PEAK HOUR FACTOR: 0.96

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			0	0	0		107	0	132		0	236	233		224	446	0		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS			0	0	0		119	0	147		0	262	259		249	495	0		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			0	0	0		205	0	420		0	830	258		261	352	0		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS			0	0	0		228	0	466		0	921	286		290	391	0		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH			0	0	0		13	0	16		0	29	29		28	55	0		
AM NON-PROJECT TRAFFIC			0	0	0		132	0	163		0	291	288		277	550	0		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
Collins Park Garage							24		16				37		24				
TOTAL "VESTED" TRAFFIC			0	0	0		24	0	16		0	0	37		24	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH			0	0	0		25	0	52		0	103	32		32	44	0		
PM NON-PROJECT TRAFFIC			0	0	0		277	0	534		0	1,024	355		346	435	0		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering													19.0%			30.0%		
	Exiting							19.0%			30.0%								
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering													19.0%			30.0%		
	Exiting							19.0%			30.0%								
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New								3		5				20		32		
AM TOTAL PROJECT TRAFFIC				0	0	0			3	0	5		0	0	20		32	0	0
AM TOTAL TRAFFIC				0	0	0			135	0	168		0	291	308		309	550	0
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By										1								
	Net New								24		38				8		13		
PM TOTAL PROJECT TRAFFIC									24		39				8		13		
PM TOTAL TRAFFIC				0	0	0			301	0	573		0	1,024	363		359	435	0

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Park Avenue and 23rd Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.79
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			31	303	118		17	175	15		47	2	4		17	8	21		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS			34	336	131		19	194	17		52	2	4		19	9	23		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			24	355	141		17	352	26		239	10	28		13	8	34		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS			27	394	157		19	391	29		265	11	31		14	9	38		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion				-37	37		1						7						
TOTAL "VESTED" TRAFFIC			0	-37	37		1	0	0		0	0	7		0	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH			4	37	15		2	22	2		6	0	0		2	1	3		
AM NON-PROJECT TRAFFIC			38	336	183		22	216	19		58	2	11		21	10	26		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion				-14	14		1						12						
Collins Park Garage				61			1	40					3						
TOTAL "VESTED" TRAFFIC			0	47	14		2	40	0		0	0	15		0	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH			3	44	18		2	44	3		30	1	3		2	1	4		
PM NON-PROJECT TRAFFIC			30	485	189		23	475	32		295	12	49		16	10	42		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution		Entering																	
		Exiting																	
Net New Distribution		Entering				49.0%													
		Exiting							49.0%										
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution		Entering																	
		Exiting																	
Net New Distribution		Entering				49.0%													
		Exiting							49.0%										
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips		Pass - By																	
		Net New				52				8									
AM TOTAL PROJECT TRAFFIC				0	52	0		0	8	0		0	0	0		0	0	0	
AM TOTAL TRAFFIC			38	388	183		22	224	19		58	2	11		21	10	26		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips		Pass - By								1									
		Net New				21				62									
PM TOTAL PROJECT TRAFFIC				21						63									
PM TOTAL TRAFFIC			30	506	189		23	538	32		295	12	49		16	10	42		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Liberty Avenue and 23rd Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.8
PM PEAK HOUR FACTOR: 0.94

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			37	245	33		7	182	11		8	0	6		7	2	18		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS			41	272	37		8	202	12		9	0	7		8	2	20		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			16	355	13		14	298	8		37	3	10		8	2	28		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS			18	394	14		16	331	9		41	3	11		9	2	31		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion				7	-37		-8	9			-9		-7		1	-2	1		
TOTAL "VESTED" TRAFFIC			0	7	-37		-8	9	0		-9	0	-7		1	-2	1		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH			5	30	4		1	23	1		1	0	1		1	0	2		
AM NON-PROJECT TRAFFIC			46	309	4		1	234	13		1	0	1		10	0	23		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion			1	11	-14		-16	41	2		-41	-3	-11		1	-2	1		
Collins Park Garage					64		22				41		15						
TOTAL "VESTED" TRAFFIC			1	11	50		6	41	2		0	-3	4		1	-2	1		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH			2	44	2		2	37	1		5	0	1		1	0	3		
PM NON-PROJECT TRAFFIC			21	449	66		24	409	12		46	0	16		11	0	35		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution		Entering																	
		Exiting																	
Net New Distribution		Entering		49.0%							51.0%								
		Exiting														51.0%			49.0%
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution		Entering		55.0%	-55.0%					-45.0%	45.0%								
		Exiting														55.0%			45.0%
Net New Distribution		Entering		49.0%							51.0%								
		Exiting														51.0%			49.0%
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips		Pass - By																	
		Net New		52							54						9		8
AM TOTAL PROJECT TRAFFIC			52	0	0		0	0	54		0	0	0		9	0	8		
AM TOTAL TRAFFIC			98	309	4		1	234	67		1	0	1		19	0	31		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips		Pass - By		7	-7					-6	6						8		7
		Net New		21							22						64		62
PM TOTAL PROJECT TRAFFIC			28	-7						-6	28					72		69	
PM TOTAL TRAFFIC			49	442	66		24	403	40		46	0	16		83	0	104		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Collins Avenue and 23rd Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.87
PM PEAK HOUR FACTOR: 0.97

"AM EXISTING TRAFFIC"		EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBL2	SBL	SBT	SBR	SB2L		
AM Raw Turning Movements		121	22	23	86	3	4	5	1	41	336	5	9	3	5	453	130	8		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS		134	24	26	95	3	4	6	1	46	373	6	10	3	6	503	144	9		
"PM EXISTING TRAFFIC"		EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBL2	SBL	SBT	SBR	SB2L		
PM Raw Turning Movements		244	16	6	99	10	28	10	2	59	778	12	18	5	4	496	215	6		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS		271	18	7	110	11	31	11	2	65	864	13	20	6	4	551	239	7		
"AM BACKGROUND TRAFFIC"		EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBL2	SBL	SBT	SBR	SB2L		
Liberty Avenue Closure Traffic Diversion					1					9						8	-8			
TOTAL "VESTED" TRAFFIC		0	0	0	1	0	0	0	0	9	0	0	0	0	0	8	-8	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH		15	3	3	11	0	0	1	0	5	42	1	1	0	1	56	16	1		
AM NON-PROJECT TRAFFIC		149	27	29	107	3	4	7	1	60	415	7	11	3	7	567	152	10		
"PM BACKGROUND TRAFFIC"		EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBL2	SBL	SBT	SBR	SB2L		
Liberty Avenue Closure Traffic Diversion					1					43						16	-16			
Collins Park Garage		8			7					10							12			
TOTAL "VESTED" TRAFFIC		8	0	0	8	0	0	0	0	53	0	0	0	0	0	16	-4	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH		30	2	1	12	1	3	1	0	7	96	1	2	1	0	61	27	1		
PM NON-PROJECT TRAFFIC		309	20	8	130	12	34	12	2	125	960	14	22	7	4	628	262	8		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBL2	SBL	SBT	SBR	SB2L
Pass-By	Entering																			
	Exiting																			
Net New	Entering											29.0%							22.0%	
	Exiting	22.0%			29.0%															
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBU	SBL	SBT	SBR	SB2L
Pass-By	Entering																			
	Exiting																			
Net New	Entering																			
	Exiting	22.0%			29.0%															
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBU	SBL	SBT	SBR	SB2L
Project	Pass - By																			
	Trips	4			5							31							23	
AM TOTAL PROJECT TRAFFIC		4	0	0	5	0	0	0	0	31	0	0	0	0	0	0	0	23	0	
AM TOTAL TRAFFIC		153	27	29	112	3	4	7	1	91	415	7	11	3	7	567	175	10		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBL	EBL2	EBT	EBR	WBL	WBT	WBR	WBR2	NBL	NBT	NBT2	NBR	SBU	SBL	SBT	SBR	SB2L
Project	Pass - By	1																		
	Trips	28			36							13							9	
PM TOTAL PROJECT TRAFFIC		29			36							13							9	
PM TOTAL TRAFFIC		338	20	8	166	12	34	12	2	138	960	14	22	7	4	628	271	8		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Collins Avenue and 22nd Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.89
PM PEAK HOUR FACTOR: 0.95

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			2	18	16		6	28	26		10	365	16		28	519	14		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS			2	20	18		7	31	29		11	405	18		31	576	16		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			18	16	20		22	42	52		51	790	30		28	571	24		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS			20	18	22		24	47	58		57	877	33		31	634	27		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion											-9	9				9			
Collins Park Garage																			
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		-9	9	0		0	9	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH			0	2	2		1	3	3		1	45	2		3	64	2		
AM NON-PROJECT TRAFFIC			2	22	20		8	34	32		3	459	20		34	649	18		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion											-41	43				17			
												10				7			
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		-41	53	0		0	24	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH			2	2	2		3	5	6		6	98	4		3	71	3		
PM NON-PROJECT TRAFFIC			22	20	24		27	52	64		22	1,028	37		34	729	30		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering												29.0%						
	Exiting																29.0%		
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering													29.0%					
	Exiting																	29.0%	
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New													31				5	
AM TOTAL PROJECT TRAFFIC			0	0	0		0	0	0		0	31	0		0	5	0		
AM TOTAL TRAFFIC			2	22	20		8	34	32		3	490	20		34	654	18		
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New													13				36	
PM TOTAL PROJECT TRAFFIC														13				36	
PM TOTAL TRAFFIC			22	20	24		27	52	64		22	1,041	37		34	765	30		

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Collins Avenue and 24th Street
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.89
PM PEAK HOUR FACTOR: 0.96

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements			0	0	0		20	0	11		0	430	29		29	566	0		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
AM EXISTING CONDITIONS			0	0	0		22	0	12		0	477	32		32	628	0		
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements			0	0	0		43	0	25		0	972	59		24	679	0		
Peak Season Correction Factor		1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110	1.110		
PM EXISTING CONDITIONS			0	0	0		48	0	28		0	1,079	65		27	754	0		
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
Collins Park Garage																			
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH			0	0	0		2	0	1		0	53	4		4	70	0		
AM NON-PROJECT TRAFFIC			0	0	0		24	0	13		0	530	36		36	698	0		
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
TOTAL "VESTED" TRAFFIC			0	0	0		0	0	0		0	0	0		0	0	0		
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH			0	0	0		5	0	3		0	120	7		3	84	0		
PM NON-PROJECT TRAFFIC			0	0	0		53	0	31		0	1,199	72		30	838	0		
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering																	22.0%	
	Exiting												22.0%						
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering																	22.0%	
	Exiting												22.0%						
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New													4				23	
AM TOTAL PROJECT TRAFFIC				0	0	0			0	0	0		0	4	0		0	23	0
AM TOTAL TRAFFIC				0	0	0			24	0	13		0	534	36		36	721	0
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New													1					
PM TOTAL PROJECT TRAFFIC														28				9	
														29				9	
PM TOTAL TRAFFIC				0	0	0			53	0	31		0	1,228	72		30	847	0

TRAFFIC VOLUMES AT STUDY INTERSECTIONS

INTERSECTION: Project Driveway
COUNT DATE: August 16, 2018
AM PEAK HOUR FACTOR: 0.92
PM PEAK HOUR FACTOR: 0.92

"AM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
AM Raw Turning Movements												48				27			
Peak Season Correction Factor		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
AM EXISTING CONDITIONS												48				27			
"PM EXISTING TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
PM Raw Turning Movements												27				38			
Peak Season Correction Factor		1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000	1.000		
PM EXISTING CONDITIONS												27				38			
"AM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
TOTAL "VESTED" TRAFFIC												0				0			
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
AM BACKGROUND TRAFFIC GROWTH												5				3			
AM NON-PROJECT TRAFFIC												53				30			
"PM BACKGROUND TRAFFIC"		EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
Liberty Avenue Closure Traffic Diversion																			
TOTAL "VESTED" TRAFFIC												0				0			
Years To Buildout		4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
Yearly Growth Rate		2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%	2.7%		
PM BACKGROUND TRAFFIC GROWTH												3				4			
PM NON-PROJECT TRAFFIC												30				42			
"AM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering																		
	Exiting																		
Net New Distribution	Entering													100.0%					
	Exiting							100.0%											
"PM PROJECT DISTRIBUTION"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Pass-By Distribution	Entering														100.0%				
	Exiting								100.0%										
Net New Distribution	Entering														100.0%				
	Exiting								100.0%										
"AM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By																		
	Net New								17						106				
AM TOTAL PROJECT TRAFFIC									17					0	106			0	
AM TOTAL TRAFFIC									17					53	106			30	
"PM PROJECT TRAFFIC"		LAND USE	TYPE	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
Project Trips	Pass - By								15						13				
	Net New								126						43				
PM TOTAL PROJECT TRAFFIC									141						56				
PM TOTAL TRAFFIC									141					30	56			42	

Appendix I

Intersection Capacity Analysis Worksheets

Existing Conditions

A.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

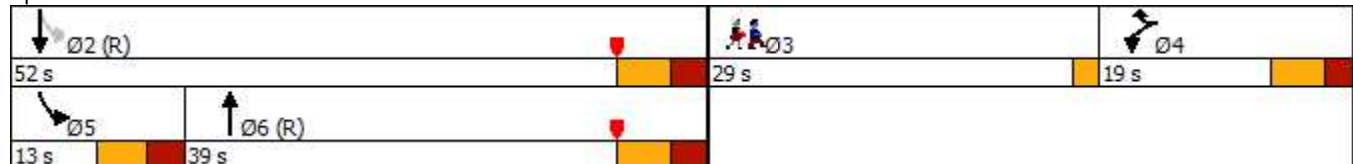
Existing
A.M. Peak Hour

						
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	119	147	262	249	495	
Future Volume (vph)	119	147	262	249	495	
Turn Type	Prot	Prot	NA	pm+pt	NA	
Protected Phases	4	4	6	5	2	3
Permitted Phases				2		
Detector Phase	4	4	6	5	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0
Minimum Split (s)	13.2	13.2	36.9	11.6	36.9	29.0
Total Split (s)	19.0	19.0	39.0	13.0	52.0	29.0
Total Split (%)	19.0%	19.0%	39.0%	13.0%	52.0%	29%
Yellow Time (s)	4.0	4.0	4.0	3.7	4.0	2.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.9	6.6	6.9	
Lead/Lag	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 23 (23%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 95
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST



Queues

1: Dade Blvd & 23rd ST

Existing

A.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	155	191	676	323	643
v/c Ratio	0.72	0.53	0.52	0.59	0.30
Control Delay	60.8	11.9	15.3	18.8	9.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	60.8	11.9	15.3	18.8	9.2
Queue Length 50th (ft)	94	0	90	62	65
Queue Length 95th (ft)	#150	36	129	#264	156
Internal Link Dist (ft)	74		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	226	366	1302	546	2151
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	0.69	0.52	0.52	0.59	0.30

Intersection Summary

- # 95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Existing

A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			
Traffic Volume (vph)	119	147	262	259	249	495
Future Volume (vph)	119	147	262	259	249	495
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	2915		1592	3185
Flt Permitted	0.95	1.00	1.00		0.26	1.00
Satd. Flow (perm)	1593	1425	2915		436	3185
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	155	191	340	336	323	643
RTOR Reduction (vph)	0	165	163	0	0	0
Lane Group Flow (vph)	155	26	513	0	323	643
Confl. Peds. (#/hr)	10			6	6	
Confl. Bikes (#/hr)				8		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	4	4	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	13.6	13.6	37.6		65.9	65.9
Effective Green, g (s)	13.6	13.6	37.6		65.9	65.9
Actuated g/C Ratio	0.14	0.14	0.38		0.66	0.66
Clearance Time (s)	6.2	6.2	6.9		6.6	6.9
Vehicle Extension (s)	2.5	2.5	1.0		2.0	1.0
Lane Grp Cap (vph)	216	193	1096		538	2098
v/s Ratio Prot	c0.10	0.02	0.18		c0.13	0.20
v/s Ratio Perm					c0.27	
v/c Ratio	0.72	0.13	0.47		0.60	0.31
Uniform Delay, d1	41.4	38.0	23.6		9.5	7.3
Progression Factor	1.00	1.00	1.00		1.00	1.00
Incremental Delay, d2	10.1	0.2	1.4		1.3	0.4
Delay (s)	51.5	38.3	25.1		10.8	7.7
Level of Service	D	D	C		B	A
Approach Delay (s)	44.2		25.1			8.7
Approach LOS	D		C			A
Intersection Summary						
HCM 2000 Control Delay			20.4		HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.61			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	21.7
Intersection Capacity Utilization			64.1%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Existing
A.M. Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		LT			LT		RT		LT			
Traffic Vol, veh/h	34	336	131	19	194	17	52	2	4	19	9	23
Future Vol, veh/h	34	336	131	19	194	17	52	2	4	19	9	23
Conflicting Peds, #/hr	19	0	9	9	0	19	1	0	16	16	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	43	425	166	24	246	22	66	3	5	24	11	29

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	287	0	0	600	0	0	775	938
Stage 1	-	-	-	-	-	-	603	603
Stage 2	-	-	-	-	-	-	172	335
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	1272	-	-	973	-	-	555	263
Stage 1	-	-	-	-	-	-	574	487
Stage 2	-	-	-	-	-	-	974	641
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1272	-	-	966	-	-	507	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	507	0
Stage 1	-	-	-	-	-	-	525	0
Stage 2	-	-	-	-	-	-	973	0

Approach	EB	WB	NB
HCM Control Delay, s	0.7	0.8	12.9
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	507	858	1272	-	-	966	-	-
HCM Lane V/C Ratio	0.13	0.006	0.034	-	-	0.025	-	-
HCM Control Delay (s)	13.2	9.2	7.9	0.2	-	8.8	0.1	-
HCM Lane LOS	B	A	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.4	0	0.1	-	-	0.1	-	-

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Existing
A.M. Peak Hour

Intersection

Int Delay, s/veh 1.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	41	272	37	8	202	12	9	0	7	8	2	20
Future Vol, veh/h	41	272	37	8	202	12	9	0	7	8	2	20
Conflicting Peds, #/hr	31	0	18	18	0	31	13	0	25	25	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	51	340	46	10	253	15	11	0	9	10	3	25

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	299	0	0	404	0	0	644	802	236	609	818	178
Stage 1	-	-	-	-	-	-	483	483	-	312	312	-
Stage 2	-	-	-	-	-	-	161	319	-	297	506	-
Critical Hdwy	4.14	-	-	4.14	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1259	-	-	1151	-	-	634	540	952	657	531	1008
Stage 1	-	-	-	-	-	-	606	693	-	773	843	-
Stage 2	-	-	-	-	-	-	957	836	-	790	675	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1226	-	-	1134	-	-	571	485	918	591	477	971
Mov Cap-2 Maneuver	-	-	-	-	-	-	571	485	-	591	477	-
Stage 1	-	-	-	-	-	-	565	647	-	713	813	-
Stage 2	-	-	-	-	-	-	910	806	-	726	630	-

Approach	EB		WB		NB		SB
HCM Control Delay, s	1.1		0.3		10.4		9.8
HCM LOS					B		A

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	684	1226	-	-	1134	-	-	783
HCM Lane V/C Ratio	0.029	0.042	-	-	0.009	-	-	0.048
HCM Control Delay (s)	10.4	8.1	0.2	-	8.2	0	-	9.8
HCM Lane LOS	B	A	A	-	A	A	-	A
HCM 95th %tile Q(veh)	0.1	0.1	-	-	0	-	-	0.2

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
A.M. Peak Hour

											
Lane Group	EBL	EBT	EBR2	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations											
Traffic Volume (vph)	134	24	95	22	46	373	3	6	503	144	4
Future Volume (vph)	134	24	95	22	46	373	3	6	503	144	4
Turn Type	Split	NA	Perm	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3		4		6			2	3	1
Permitted Phases			3		6		2	2		2	
Detector Phase	3	3	3	4	6	6	2	2	2	3	1
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	26.0	29.0	40.0	40.0	40.0	40.0	40.0	26.0	15.0
Total Split (%)	23.6%	23.6%	23.6%	26.4%	36.4%	36.4%	36.4%	36.4%	36.4%	23.6%	13.6%
Yellow Time (s)	4.0	4.0	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	2.0	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 28 (25%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)	 Ø3	 Ø4	 Ø1
40 s	26 s	29 s	15 s
 Ø6 (R)			
40 s			

Queues

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing

A.M. Peak Hour

								
Lane Group	EBL	EBT	EBR2	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	108	104	109	60	500	588	166	16
v/c Ratio	0.47	0.50	0.36	0.20	0.49	0.47	0.26	0.23
Control Delay	48.2	50.6	5.6	38.0	24.4	23.3	2.5	56.3
Queue Delay	0.0	0.0	0.0	0.0	0.5	0.0	0.0	0.0
Total Delay	48.2	50.6	5.6	38.0	24.8	23.3	2.5	56.3
Queue Length 50th (ft)	72	70	0	35	88	84	0	11
Queue Length 95th (ft)	124	123	16	71	214	242	27	33
Internal Link Dist (ft)		267		26	241	597		49
Turn Bay Length (ft)	110						160	
Base Capacity (vph)	275	244	327	305	1028	1249	676	82
Starvation Cap Reductn	0	0	0	0	191	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.39	0.43	0.33	0.20	0.60	0.47	0.25	0.20
Intersection Summary								

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
A.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	134	24	26	95	9	22	22	46	373	6	10	3
Future Volume (vph)	134	24	26	95	9	22	22	46	373	6	10	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0			6.5			
Lane Util. Factor	0.95	0.95		1.00		1.00			0.95			
Frpb, ped/bikes	1.00	0.90		0.86		0.93			0.98			
Flpb, ped/bikes	1.00	1.00		1.00		1.00			0.99			
Frt	1.00	0.96		0.85		0.94			0.99			
Flt Protected	0.95	0.98		1.00		0.99			0.99			
Satd. Flow (prot)	1513	1346		1108		1459			3062			
Flt Permitted	0.95	0.98		1.00		0.99			0.80			
Satd. Flow (perm)	1513	1346		1108		1459			2464			
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	154	28	30	109	10	25	25	53	429	7	11	3
RTOR Reduction (vph)	0	0	0	92	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	108	104	0	17	0	60	0	0	499	0	0	0
Confl. Peds. (#/hr)	111		112	73	73		111	139		112	112	112
Confl. Bikes (#/hr)										9	9	
Parking (#/hr)				0								
Turn Type	Split	NA		Perm	Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases				3				6				2
Actuated Green, G (s)	16.9	16.9		16.9		23.0			42.2			
Effective Green, g (s)	16.9	16.9		16.9		23.0			42.2			
Actuated g/C Ratio	0.15	0.15		0.15		0.21			0.38			
Clearance Time (s)	6.0	6.0		6.0		6.0			6.5			
Vehicle Extension (s)	2.5	2.5		2.5		2.5			1.0			
Lane Grp Cap (vph)	232	206		170		305			945			
v/s Ratio Prot	0.07	c0.08				c0.04						
v/s Ratio Perm				0.02					c0.20			
v/c Ratio	0.47	0.50		0.10		0.20			0.53			
Uniform Delay, d1	42.4	42.7		40.0		35.9			26.2			
Progression Factor	1.00	1.00		1.00		1.00			0.86			
Incremental Delay, d2	1.1	1.4		0.2		0.2			2.1			
Delay (s)	43.5	44.1		40.2		36.1			24.7			
Level of Service	D	D		D		D			C			
Approach Delay (s)		42.6				36.1			24.7			
Approach LOS		D				D			C			
Intersection Summary												
HCM 2000 Control Delay			27.4									
HCM 2000 Volume to Capacity ratio			0.44									
Actuated Cycle Length (s)			110.0						24.5			
Intersection Capacity Utilization			90.7%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
A.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	6	503	144	3	4	6	1
Future Volume (vph)	6	503	144	3	4	6	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.70		0.55		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.93		
Flt Protected		1.00	1.00		0.98		
Satd. Flow (prot)		3171	1003		837		
Flt Permitted		0.94	1.00		0.98		
Satd. Flow (perm)		2995	1003		837		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	7	578	166	3	5	7	1
RTOR Reduction (vph)	0	0	77	0	0	0	0
Lane Group Flow (vph)	0	588	89	0	16	0	0
Confl. Peds. (#/hr)	112		139	73	139	111	112
Confl. Bikes (#/hr)			2				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		42.2	59.1		3.4		
Effective Green, g (s)		42.2	59.1		3.4		
Actuated g/C Ratio		0.38	0.54		0.03		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1148	538		25		
v/s Ratio Prot			0.03		0.02		
v/s Ratio Perm		0.20	0.06				
v/c Ratio		0.51	0.17		0.64		
Uniform Delay, d1		26.0	12.9		52.7		
Progression Factor		0.85	0.75		1.00		
Incremental Delay, d2		1.6	0.1		40.2		
Delay (s)		23.7	9.7		92.9		
Level of Service		C	A		F		
Approach Delay (s)		20.6			92.9		
Approach LOS		C			F		

Intersection Summary

Timings 5: Collins Ave & 22nd St

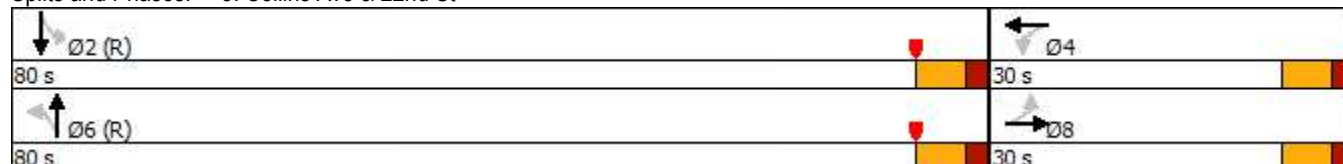
Existing
A.M. Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	2	20	7	31	11	405	31	576
Future Volume (vph)	2	20	7	31	11	405	31	576
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	25.0	22.0	22.0	22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	80.0	80.0	80.0	80.0
Total Split (%)	27.3%	27.3%	27.3%	27.3%	72.7%	72.7%	72.7%	72.7%
Yellow Time (s)	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 66 (60%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated

Splits and Phases: 5: Collins Ave & 22nd St



HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Existing
A.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	20	18	7	31	29	11	405	18	31	576	16
Future Volume (veh/h)	2	20	18	7	31	29	11	405	18	31	576	16
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.92	0.94		0.93	0.97		0.90	0.96		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	2	22	20	8	35	33	12	455	20	35	647	18
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	95	81	44	93	77	67	2218	97	124	2161	60
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	16	708	604	59	693	577	43	2929	128	116	2854	79
Grp Volume(v), veh/h	44	0	0	76	0	0	254	0	233	357	0	343
Grp Sat Flow(s),veh/h/ln	1329	0	0	1329	0	0	1612	0	1487	1547	0	1502
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.2	0.0	0.0	5.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.05		0.45	0.11		0.43	0.05		0.09	0.10		0.05
Lane Grp Cap(c), veh/h	212	0	0	214	0	0	1255	0	1126	1207	0	1137
V/C Ratio(X)	0.21	0.00	0.00	0.36	0.00	0.00	0.20	0.00	0.21	0.30	0.00	0.30
Avail Cap(c_a), veh/h	323	0	0	324	0	0	1255	0	1126	1207	0	1137
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.89	0.00	0.89
Uniform Delay (d), s/veh	42.7	0.0	0.0	43.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.7	0.0	0.0	0.4	0.0	0.4	0.6	0.0	0.6
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	2.2	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	43.0	0.0	0.0	44.5	0.0	0.0	0.4	0.0	0.4	0.6	0.0	0.6
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		44			76			487			700	
Approach Delay, s/veh		43.0			44.5			0.4			0.6	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.3		20.7		89.3		20.7				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		74.0		24.0		74.0		24.0				
Max Q Clear Time (g_c+l1), s		2.0		7.7		2.0		5.2				
Green Ext Time (p_c), s		1.6		0.2		1.1		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

Timings 6: Collins Ave & 24th St

Existing
A.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	22	477	32	628
Future Volume (vph)	22	477	32	628
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	79.0	79.0	79.0
Total Split (%)	28.2%	71.8%	71.8%	71.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St

 Ø2 (R)	 Ø4
79 s	31 s
 Ø6 (R)	
79 s	

HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Existing
A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	22	12	477	32	32	628
Future Volume (vph)	22	12	477	32	32	628
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.95		0.99			1.00
Flpb, ped/bikes	0.99		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1311		3124			3010
Flt Permitted	0.97		1.00			0.90
Satd. Flow (perm)	1311		3124			2715
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	25	13	536	36	36	706
RTOR Reduction (vph)	12	0	3	0	0	0
Lane Group Flow (vph)	26	0	569	0	0	742
Confl. Peds. (#/hr)	9	62		47	47	
Confl. Bikes (#/hr)		1		8		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	11.0		85.7			85.7
Effective Green, g (s)	11.0		85.7			85.7
Actuated g/C Ratio	0.10		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	131		2433			2115
v/s Ratio Prot			0.18			
v/s Ratio Perm	c0.02					c0.27
v/c Ratio	0.20		0.23			0.35
Uniform Delay, d1	45.5		3.3			3.7
Progression Factor	1.00		1.42			1.00
Incremental Delay, d2	0.8		0.2			0.5
Delay (s)	46.2		4.9			4.2
Level of Service	D		A			A
Approach Delay (s)	46.2		4.9			4.2
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			5.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.33			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			64.8%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

P.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

Existing
P.M. Peak Hour

						
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3
Lane Configurations						
Traffic Volume (vph)	228	466	921	290	391	
Future Volume (vph)	228	466	921	290	391	
Turn Type	Prot	Prot	NA	pm+pt	NA	
Protected Phases	4	4	6	5	2	3
Permitted Phases				2		
Detector Phase	4	4	6	5	2	
Switch Phase						
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0
Minimum Split (s)	13.2	13.2	36.9	11.6	36.9	29.0
Total Split (s)	29.0	29.0	59.0	13.0	72.0	29.0
Total Split (%)	22.3%	22.3%	45.4%	10.0%	55.4%	22%
Yellow Time (s)	4.0	4.0	4.0	3.7	4.0	2.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	
Total Lost Time (s)	6.2	6.2	6.9	6.6	6.9	
Lead/Lag	Lag	Lag	Lag	Lead		Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 29 (22%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 145
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST

 Ø2 (R)		 Ø3	 Ø4
72 s		29 s	29 s
 Ø5	 Ø6 (R)		
13 s	59 s		

Queues
1: Dade Blvd & 23rd ST

Existing
P.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	238	485	1257	302	407
v/c Ratio	0.83	0.77	1.01	0.74	0.19
Control Delay	77.2	19.1	65.5	44.6	10.0
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	77.2	19.1	65.5	44.6	10.0
Queue Length 50th (ft)	193	52	~553	178	55
Queue Length 95th (ft)	m#333	m162	#715	#557	134
Internal Link Dist (ft)	74		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	300	634	1245	409	2149
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	0.79	0.76	1.01	0.74	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.
- m Volume for 95th percentile queue is metered by upstream signal.

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Existing

P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	228	466	921	286	290	391
Future Volume (vph)	228	466	921	286	290	391
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.99		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	3052		1593	3185
Flt Permitted	0.95	1.00	1.00		0.07	1.00
Satd. Flow (perm)	1593	1425	3052		117	3185
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	238	485	959	298	302	407
RTOR Reduction (vph)	0	370	23	0	0	0
Lane Group Flow (vph)	238	115	1234	0	302	407
Confl. Peds. (#/hr)	4			10	10	
Confl. Bikes (#/hr)				5		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	4	4	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	23.4	23.4	50.5		86.1	86.1
Effective Green, g (s)	23.4	23.4	50.5		86.1	86.1
Actuated g/C Ratio	0.18	0.18	0.39		0.66	0.66
Clearance Time (s)	6.2	6.2	6.9		6.6	6.9
Vehicle Extension (s)	2.5	2.5	1.0		2.0	1.0
Lane Grp Cap (vph)	286	256	1185		406	2109
v/s Ratio Prot	c0.15	0.08	c0.40		c0.17	0.13
v/s Ratio Perm					0.32	
v/c Ratio	0.83	0.45	1.04		0.74	0.19
Uniform Delay, d1	51.4	47.6	39.8		36.4	8.5
Progression Factor	1.05	1.61	1.00		1.00	1.00
Incremental Delay, d2	17.8	0.9	37.5		6.3	0.2
Delay (s)	71.7	77.7	77.2		42.7	8.7
Level of Service	E	E	E		D	A
Approach Delay (s)	75.7		77.2			23.2
Approach LOS	E		E			C
Intersection Summary						
HCM 2000 Control Delay			62.6		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.87			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	21.7
Intersection Capacity Utilization			87.0%		ICU Level of Service	E
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Existing
P.M. Peak Hour

Intersection

Int Delay, s/veh 5.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔		↔			
Traffic Vol, veh/h	27	394	157	19	391	29	265	11	31	14	9	38
Future Vol, veh/h	27	394	157	19	391	29	265	11	31	14	9	38
Conflicting Peds, #/hr	15	0	15	15	0	15	2	0	27	27	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	29	419	167	20	416	31	282	12	33	15	10	40

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	462	0	0	601	0	0	826	1078
Stage 1	-	-	-	-	-	-	576	576
Stage 2	-	-	-	-	-	-	250	502
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	1095	-	-	972	-	-	527	217
Stage 1	-	-	-	-	-	-	594	500
Stage 2	-	-	-	-	-	-	886	540
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1095	-	-	960	-	-	485	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	485	0
Stage 1	-	-	-	-	-	-	548	0
Stage 2	-	-	-	-	-	-	884	0

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.5	20.9
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	485	834	1095	-	-	960	-	-
HCM Lane V/C Ratio	0.581	0.04	0.026	-	-	0.021	-	-
HCM Control Delay (s)	22.2	9.5	8.4	0.1	-	8.8	0.1	-
HCM Lane LOS	C	A	A	A	-	A	A	-
HCM 95th %tile Q(veh)	3.6	0.1	0.1	-	-	0.1	-	-

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Existing
P.M. Peak Hour

Intersection

Int Delay, s/veh 1.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔			↔			↔	
Traffic Vol, veh/h	18	394	14	16	331	9	41	3	11	9	2	31
Future Vol, veh/h	18	394	14	16	331	9	41	3	11	9	2	31
Conflicting Peds, #/hr	26	0	11	11	0	26	32	0	14	14	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	19	419	15	17	352	10	44	3	12	10	2	33

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	388	0	0	445	0	0	719	898	242	680	900	239
Stage 1	-	-	-	-	-	-	476	476	-	417	417	-
Stage 2	-	-	-	-	-	-	243	422	-	263	483	-
Critical Hdwy	4.14	-	-	4.14	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.54	5.54	-	6.54	5.54	-
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1167	-	-	1112	-	-	588	490	947	611	489	950
Stage 1	-	-	-	-	-	-	612	699	-	666	748	-
Stage 2	-	-	-	-	-	-	852	743	-	829	693	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1142	-	-	1102	-	-	527	456	927	562	455	905
Mov Cap-2 Maneuver	-	-	-	-	-	-	527	456	-	562	455	-
Stage 1	-	-	-	-	-	-	593	677	-	637	717	-
Stage 2	-	-	-	-	-	-	782	713	-	787	672	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.4	0.5	12	10
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	571	1142	-	-	1102	-	-	768
HCM Lane V/C Ratio	0.102	0.017	-	-	0.015	-	-	0.058
HCM Control Delay (s)	12	8.2	0.1	-	8.3	0.1	-	10
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.3	0.1	-	-	0	-	-	0.2

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
P.M. Peak Hour

											
Lane Group	EBL	EBT	EBR2	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations											
Traffic Volume (vph)	271	18	110	20	65	864	6	4	551	239	31
Future Volume (vph)	271	18	110	20	65	864	6	4	551	239	31
Turn Type	Split	NA	Perm	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3		4		6			2	3	1
Permitted Phases			3		6		2	2		2	
Detector Phase	3	3	3	4	6	6	2	2	2	3	1
Switch Phase											
Minimum Initial (s)	7.0	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	26.0	29.0	60.0	60.0	60.0	60.0	60.0	26.0	15.0
Total Split (%)	20.0%	20.0%	20.0%	22.3%	46.2%	46.2%	46.2%	46.2%	46.2%	20.0%	11.5%
Yellow Time (s)	4.0	4.0	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	2.0	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 3 (2%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)	 Ø3	 Ø4	 Ø1
60 s	26 s	29 s	15 s
 Ø6 (R)			
60 s			

Queues

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing

P.M. Peak Hour

								
Lane Group	EBL	EBT	EBR2	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	153	152	113	50	992	578	246	56
v/c Ratio	0.68	0.68	0.41	0.20	0.90	0.45	0.42	0.64
Control Delay	54.9	55.5	9.9	48.1	47.4	23.7	6.0	90.0
Queue Delay	0.0	0.0	0.0	0.0	47.4	0.0	0.0	0.0
Total Delay	54.9	55.5	9.9	48.1	94.7	23.7	6.0	90.0
Queue Length 50th (ft)	125	125	13	36	422	190	47	46
Queue Length 95th (ft)	m153	m151	m28	75	#575	245	49	#112
Internal Link Dist (ft)		267		26	241	597		49
Turn Bay Length (ft)	110						160	
Base Capacity (vph)	232	229	278	252	1098	1297	591	92
Starvation Cap Reductn	0	0	0	0	307	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.66	0.66	0.41	0.20	1.25	0.45	0.42	0.61

Intersection Summary

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	271	18	7	110	7	20	21	65	864	13	20	6
Future Volume (vph)	271	18	7	110	7	20	21	65	864	13	20	6
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0		6.0		6.0			6.5			
Lane Util. Factor	0.95	0.95		1.00		1.00			0.95			
Frpb, ped/bikes	1.00	0.98		0.86		0.91			0.98			
Flpb, ped/bikes	1.00	1.00		1.00		1.00			0.99			
Frt	1.00	0.99		0.85		0.94			0.99			
Flt Protected	0.95	0.96		1.00		0.99			1.00			
Satd. Flow (prot)	1513	1494		1098		1427			3077			
Flt Permitted	0.95	0.96		1.00		0.99			0.81			
Satd. Flow (perm)	1513	1494		1098		1427			2503			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	279	19	7	113	7	21	22	67	891	13	21	6
RTOR Reduction (vph)	0	0	0	96	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	153	152	0	17	0	50	0	0	991	0	0	0
Confl. Peds. (#/hr)	114		100	65	65		114	139		100	100	100
Confl. Bikes (#/hr)			1	1						13	13	
Parking (#/hr)				0								
Turn Type	Split	NA		Perm	Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases				3				6				2
Actuated Green, G (s)	19.4	19.4		19.4		23.0			55.7			
Effective Green, g (s)	19.4	19.4		19.4		23.0			55.7			
Actuated g/C Ratio	0.15	0.15		0.15		0.18			0.43			
Clearance Time (s)	6.0	6.0		6.0		6.0			6.5			
Vehicle Extension (s)	2.5	2.5		2.5		2.5			1.0			
Lane Grp Cap (vph)	225	222		163		252			1072			
v/s Ratio Prot	0.10	c0.10				c0.04						
v/s Ratio Perm				0.02					c0.40			
v/c Ratio	0.68	0.68		0.10		0.20			0.92			
Uniform Delay, d1	52.4	52.4		47.8		45.6			35.2			
Progression Factor	0.83	0.84		1.17		1.00			1.00			
Incremental Delay, d2	5.1	5.3		0.1		0.3			14.4			
Delay (s)	48.8	49.1		56.3		45.9			49.6			
Level of Service	D	D		E		D			D			
Approach Delay (s)		50.9				45.9			49.6			
Approach LOS		D				D			D			
Intersection Summary												
HCM 2000 Control Delay			40.2		HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio			0.71									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)				24.5			
Intersection Capacity Utilization			98.2%		ICU Level of Service				F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Existing
P.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations		 			 		
Traffic Volume (vph)	4	551	239	11	31	11	2
Future Volume (vph)	4	551	239	11	31	11	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.64		0.82		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.97		
Flt Protected		1.00	1.00		0.96		
Satd. Flow (prot)		3179	908		1281		
Flt Permitted		0.93	1.00		0.96		
Satd. Flow (perm)		2960	908		1281		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	568	246	11	32	11	2
RTOR Reduction (vph)	0	0	53	0	0	0	0
Lane Group Flow (vph)	0	578	193	0	56	0	0
Confl. Peds. (#/hr)	100		139	65	139	114	100
Confl. Bikes (#/hr)			9				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		55.7	75.1		7.4		
Effective Green, g (s)		55.7	75.1		7.4		
Actuated g/C Ratio		0.43	0.58		0.06		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1268	524		72		
v/s Ratio Prot			0.05		c0.04		
v/s Ratio Perm		0.20	0.16				
v/c Ratio		0.46	0.37		0.78		
Uniform Delay, d1		26.4	14.7		60.5		
Progression Factor		0.85	0.59		1.00		
Incremental Delay, d2		1.1	0.3		38.6		
Delay (s)		23.5	9.0		99.1		
Level of Service		C	A		F		
Approach Delay (s)		19.2			99.1		
Approach LOS		B			F		
Intersection Summary							

Timings 5: Collins Ave & 22nd St

Existing
P.M. Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	20	18	24	47	57	877	31	634
Future Volume (vph)	20	18	24	47	57	877	31	634
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	25.0	22.0	22.0	22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	70.0	70.0	70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 40 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 5: Collins Ave & 22nd St

	Ø2 (R)			Ø4
70 s			30 s	
	Ø6 (R)			Ø8
70 s			30 s	

HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Existing
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	20	18	22	24	47	58	57	877	33	31	634	27
Future Volume (veh/h)	20	18	22	24	47	58	57	877	33	31	634	27
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.91	0.94		0.91	0.98		0.91	0.99		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	21	19	23	25	49	61	60	923	35	33	667	28
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	81	77	66	94	97	135	1942	73	105	1960	81
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.95	0.95	0.95	0.95	0.95	0.95
Sat Flow, veh/h	313	482	457	141	559	577	133	2730	102	92	2755	114
Grp Volume(v), veh/h	63	0	0	135	0	0	506	0	512	363	0	365
Grp Sat Flow(s),veh/h/ln	1251	0	0	1277	0	0	1470	0	1495	1470	0	1492
Q Serve(g_s), s	0.0	0.0	0.0	3.1	0.0	0.0	0.0	0.0	3.4	0.0	0.0	2.0
Cycle Q Clear(g_c), s	4.0	0.0	0.0	9.6	0.0	0.0	2.7	0.0	3.4	1.6	0.0	2.0
Prop In Lane	0.33		0.37	0.19		0.45	0.12		0.07	0.09		0.08
Lane Grp Cap(c), veh/h	259	0	0	258	0	0	1086	0	1064	1085	0	1061
V/C Ratio(X)	0.24	0.00	0.00	0.52	0.00	0.00	0.47	0.00	0.48	0.33	0.00	0.34
Avail Cap(c_a), veh/h	343	0	0	347	0	0	1086	0	1064	1085	0	1061
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.90	0.00	0.90
Uniform Delay (d), s/veh	36.2	0.0	0.0	38.5	0.0	0.0	0.9	0.0	0.9	0.8	0.0	0.8
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.2	0.0	0.0	1.4	0.0	1.6	0.7	0.0	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	1.5	0.0	0.0	3.5	0.0	0.0	1.4	0.0	1.6	0.9	0.0	0.9
LnGrp Delay(d),s/veh	36.6	0.0	0.0	39.7	0.0	0.0	2.3	0.0	2.4	1.6	0.0	1.6
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		63			135			1018			728	
Approach Delay, s/veh		36.6			39.7			2.4			1.6	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		77.1		22.9		77.1		22.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		64.0		24.0		64.0		24.0				
Max Q Clear Time (g_c+l1), s		4.0		11.6		5.4		6.0				
Green Ext Time (p_c), s		1.8		0.4		2.7		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			5.8									
HCM 2010 LOS			A									

Timings 6: Collins Ave & 24th St

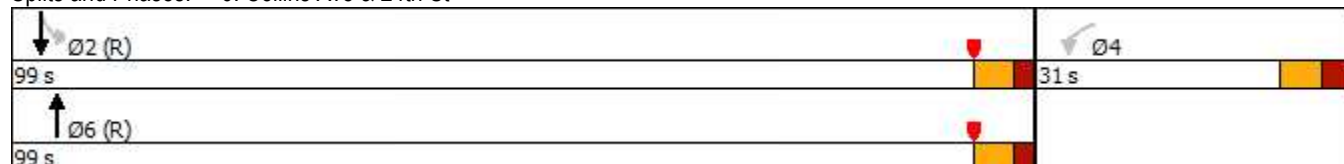
Existing
P.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	48	1079	27	754
Future Volume (vph)	48	1079	27	754
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	99.0	99.0	99.0
Total Split (%)	23.8%	76.2%	76.2%	76.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 24 (18%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St



HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Existing
P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	48	28	1079	65	27	754
Future Volume (vph)	48	28	1079	65	27	754
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.89		0.99			1.00
Flpb, ped/bikes	0.90		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1115		3113			3017
Flt Permitted	0.97		1.00			0.87
Satd. Flow (perm)	1115		3113			2621
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	50	29	1124	68	28	785
RTOR Reduction (vph)	18	0	3	0	0	0
Lane Group Flow (vph)	61	0	1189	0	0	813
Confl. Peds. (#/hr)	67	114		67	67	
Confl. Bikes (#/hr)		2		13		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	14.9		101.8			101.8
Effective Green, g (s)	14.9		101.8			101.8
Actuated g/C Ratio	0.11		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	127		2437			2052
v/s Ratio Prot			c0.38			
v/s Ratio Perm	c0.05					0.31
v/c Ratio	0.48		0.49			0.40
Uniform Delay, d1	53.9		5.0			4.4
Progression Factor	1.00		1.20			1.00
Incremental Delay, d2	2.9		0.4			0.6
Delay (s)	56.8		6.3			5.0
Level of Service	E		A			A
Approach Delay (s)	56.8		6.3			5.0
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			7.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.49			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			69.3%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

Future Background Conditions

A.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

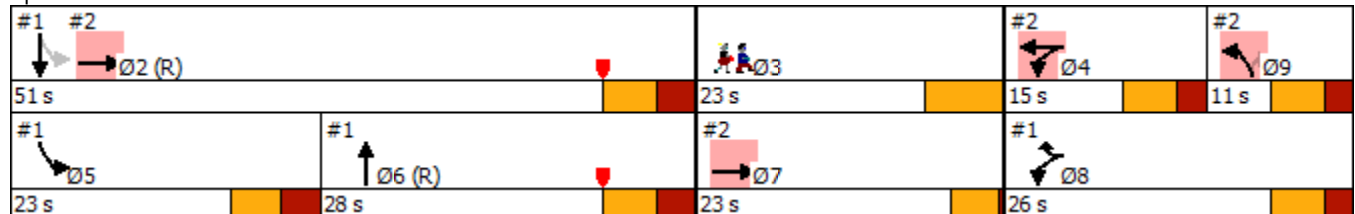
Future Background
A.M. Peak Hour

									
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø4	Ø7	Ø9
Lane Configurations									
Traffic Volume (vph)	132	163	291	277	550				
Future Volume (vph)	132	163	291	277	550				
Turn Type	Prot	Prot	NA	pm+pt	NA				
Protected Phases	8	8	6	5	2	3	4	7	9
Permitted Phases				2					
Detector Phase	8	8	6	5	2				
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0	7.0	4.0	7.0
Minimum Split (s)	13.2	13.2	11.9	11.6	11.9	7.0	13.2	8.0	13.2
Total Split (s)	26.0	26.0	28.0	23.0	51.0	23.0	15.0	23.0	11.0
Total Split (%)	26.0%	26.0%	28.0%	23.0%	51.0%	23%	15%	23%	11%
Yellow Time (s)	4.0	4.0	4.0	3.7	4.0	6.0	4.0	3.5	4.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0	2.2	0.5	2.2
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.2	6.2	6.9	6.6	6.9				
Lead/Lag			Lag	Lead			Lead		Lag
Lead-Lag Optimize?			Yes	Yes			Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None	None	None	None

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST



Queues

Future Background

1: Dade Blvd & 23rd ST

A.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	171	212	752	360	714
v/c Ratio	0.40	0.39	0.96	1.10	0.51
Control Delay	14.3	3.4	51.2	106.0	21.7
Queue Delay	2.2	2.6	0.3	1.2	0.0
Total Delay	16.5	6.0	51.5	107.2	21.7
Queue Length 50th (ft)	24	3	182	~215	167
Queue Length 95th (ft)	m33	m10	#199	#298	180
Internal Link Dist (ft)	74		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	430	539	786	328	1404
Starvation Cap Reductn	151	220	0	0	0
Spillback Cap Reductn	0	0	2	9	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.61	0.66	0.96	1.13	0.51

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

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Future Background

A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			
Traffic Volume (vph)	132	163	291	288	277	550
Future Volume (vph)	132	163	291	288	277	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.93		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	2878		1592	3185
Flt Permitted	0.95	1.00	1.00		0.14	1.00
Satd. Flow (perm)	1593	1425	2878		242	3185
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	171	212	378	374	360	714
RTOR Reduction (vph)	0	155	180	0	0	0
Lane Group Flow (vph)	171	57	572	0	360	714
Confl. Peds. (#/hr)	10			6	6	
Confl. Bikes (#/hr)				8		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	27.0	27.0	21.1		44.1	44.1
Effective Green, g (s)	27.0	27.0	21.1		44.1	44.1
Actuated g/C Ratio	0.27	0.27	0.21		0.44	0.44
Clearance Time (s)	6.2	6.2	6.9		6.6	6.9
Vehicle Extension (s)	2.5	2.5	1.0		2.0	1.0
Lane Grp Cap (vph)	430	384	607		328	1404
v/s Ratio Prot	c0.11	0.04	0.20		c0.18	0.22
v/s Ratio Perm					c0.30	
v/c Ratio	0.40	0.15	0.94		1.10	0.51
Uniform Delay, d1	29.9	27.8	38.9		28.1	20.1
Progression Factor	0.39	0.37	1.00		1.00	1.00
Incremental Delay, d2	0.3	0.1	24.8		78.5	1.3
Delay (s)	12.0	10.4	63.7		106.6	21.5
Level of Service	B	B	E		F	C
Approach Delay (s)	11.1		63.7			50.0
Approach LOS	B		E			D
Intersection Summary						
HCM 2000 Control Delay			47.9		HCM 2000 Level of Service	D
HCM 2000 Volume to Capacity ratio			0.81			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	31.9
Intersection Capacity Utilization			61.1%		ICU Level of Service	B
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Future Background
A.M. Peak Hour

Intersection

Int Delay, s/veh 1.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔		↔			
Traffic Vol, veh/h	38	336	183	22	216	19	58	2	11	21	10	26
Future Vol, veh/h	38	336	183	22	216	19	58	2	11	21	10	26
Conflicting Peds, #/hr	19	0	9	9	0	19	1	0	16	16	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	425	232	28	273	24	73	3	14	27	13	33

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	316	0	0	666	0	0	840	1018
Stage 1	-	-	-	-	-	-	646	646
Stage 2	-	-	-	-	-	-	194	372
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	1241	-	-	919	-	-	520	236
Stage 1	-	-	-	-	-	-	544	465
Stage 2	-	-	-	-	-	-	949	617
Platoon blocked, %		-	-		-	-		
Mov Cap-1 Maneuver	1241	-	-	912	-	-	465	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	465	0
Stage 1	-	-	-	-	-	-	487	0
Stage 2	-	-	-	-	-	-	948	0

Approach	EB	WB	NB
HCM Control Delay, s	0.7	0.9	13.4
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	465	829	1241	-	-	912	-	-
HCM Lane V/C Ratio	0.158	0.017	0.039	-	-	0.031	-	-
HCM Control Delay (s)	14.2	9.4	8	0.2	-	9.1	0.1	-
HCM Lane LOS	B	A	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0.1	-	-

Timings 2: Park Ave & 23rd ST

Future Background
A.M. Peak Hour

	→	←	↙	↘	↖						
Lane Group	EBT	WBT	NBL	NBR	SBR	Ø2	Ø3	Ø5	Ø6	Ø7	Ø8
Lane Configurations	↗	↖	↙	↘	↖						
Traffic Volume (vph)	336	216	60	11	26						
Future Volume (vph)	336	216	60	11	26						
Turn Type	NA	NA	Prot	Perm	Free						
Protected Phases	2 7	4	9			2	3	5	6	7	8
Permitted Phases				9	Free						
Detector Phase	2 7	4	9	9							
Switch Phase											
Minimum Initial (s)		7.0	7.0	7.0		5.0	1.0	5.0	5.0	4.0	7.0
Minimum Split (s)		13.2	13.2	13.2		11.9	7.0	11.6	11.9	8.0	13.2
Total Split (s)		15.0	11.0	11.0		51.0	23.0	23.0	28.0	23.0	26.0
Total Split (%)		15.0%	11.0%	11.0%		51%	23%	23%	28%	23%	26%
Yellow Time (s)		4.0	4.0	4.0		4.0	6.0	3.7	4.0	3.5	4.0
All-Red Time (s)		2.2	2.2	2.2		2.9	0.0	2.9	2.9	0.5	2.2
Lost Time Adjust (s)		0.0	0.0	0.0							
Total Lost Time (s)		6.2	6.2	6.2							
Lead/Lag		Lead	Lag	Lag				Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes				Yes	Yes		
Recall Mode		None	None	None		C-Max	None	None	C-Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 2: Park Ave & 23rd ST

#1 ↓ Ø2 (R)	#2 → Ø2 (R)	#3 ↘ Ø3	#4 ↙ Ø4	#5 ↖ Ø9
51 s		23 s	15 s	11 s
#1 ↙ Ø5	#1 ↑ Ø6 (R)	#2 → Ø7	#1 ↘ Ø8	
23 s	28 s	23 s	26 s	

HCM Signalized Intersection Capacity Analysis

2: Park Ave & 23rd ST

Future Background

A.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	0	336	183	22	216	0	60	0	11	0	0	26
Future Volume (vph)	0	336	183	22	216	0	60	0	11	0	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9			6.2		6.2		6.2			4.0
Lane Util. Factor		1.00			0.95		1.00		1.00			1.00
Frpb, ped/bikes		0.99			1.00		1.00		0.82			0.99
Flpb, ped/bikes		1.00			1.00		1.00		1.00			1.00
Frt		0.95			1.00		1.00		0.85			0.86
Flt Protected		1.00			1.00		0.95		1.00			1.00
Satd. Flow (prot)		1581			3012		1593		1047			1432
Flt Permitted		1.00			1.00		0.95		1.00			1.00
Satd. Flow (perm)		1581			3012		1593		1047			1432
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	0	425	232	28	273	0	76	0	14	0	0	33
RTOR Reduction (vph)	0	22	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	635	0	0	301	0	76	0	1	0	0	33
Confl. Peds. (#/hr)	19		9	9		19	1		16	16		1
Confl. Bikes (#/hr)						3						
Parking (#/hr)					0				0			
Turn Type		NA		Split	NA		Prot		Perm			Free
Protected Phases		2 7		4	4		9					
Permitted Phases									9			Free
Actuated Green, G (s)		62.8			16.0		4.8		4.8			100.0
Effective Green, g (s)		62.8			16.0		4.8		4.8			100.0
Actuated g/C Ratio		0.63			0.16		0.05		0.05			1.00
Clearance Time (s)					6.2		6.2		6.2			
Vehicle Extension (s)					2.5		2.5		2.5			
Lane Grp Cap (vph)		992			481		76		50			1432
v/s Ratio Prot		c0.40			c0.10		c0.05					
v/s Ratio Perm									0.00			0.02
v/c Ratio		0.64			0.63		1.00		0.01			0.02
Uniform Delay, d1		11.6			39.2		47.6		45.3			0.0
Progression Factor		0.13			1.00		1.00		1.00			1.00
Incremental Delay, d2		0.1			2.2		103.2		0.1			0.0
Delay (s)		1.7			41.4		150.8		45.4			0.0
Level of Service		A			D		F		D			A
Approach Delay (s)		1.7			41.4			134.4			0.0	
Approach LOS		A			D			F			A	
Intersection Summary												
HCM 2000 Control Delay			23.7			HCM 2000 Level of Service			C			
HCM 2000 Volume to Capacity ratio			0.81									
Actuated Cycle Length (s)			100.0			Sum of lost time (s)			31.9			
Intersection Capacity Utilization			49.1%			ICU Level of Service			A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Future Background
A.M. Peak Hour

Intersection

Int Delay, s/veh	1.1											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	46	309	4	1	234	13	1	0	1	10	0	23
Future Vol, veh/h	46	309	4	1	234	13	1	0	1	10	0	23
Conflicting Peds, #/hr	31	0	18	18	0	31	13	0	25	25	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	58	386	5	1	293	16	1	0	1	13	0	29

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	340	0	0	409	0	0	685	865	432	864	859	199
Stage 1	-	-	-	-	-	-	523	523	-	334	334	-
Stage 2	-	-	-	-	-	-	162	342	-	530	525	-
Critical Hdwy	4.13	-	-	4.13	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1217	-	-	1148	-	-	608	507	784	507	510	988
Stage 1	-	-	-	-	-	-	608	663	-	750	823	-
Stage 2	-	-	-	-	-	-	956	816	-	602	661	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1186	-	-	1131	-	-	547	455	756	459	458	952
Mov Cap-2 Maneuver	-	-	-	-	-	-	547	455	-	459	458	-
Stage 1	-	-	-	-	-	-	561	612	-	685	801	-
Stage 2	-	-	-	-	-	-	916	794	-	551	610	-

Approach	EB			WB			NB			SB		
HCM Control Delay, s	1			0			10.7			10.3		
HCM LOS							B			B		

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	635	1186	-	-	1131	-	-	718
HCM Lane V/C Ratio	0.004	0.048	-	-	0.001	-	-	0.057
HCM Control Delay (s)	10.7	8.2	0	-	8.2	0	-	10.3
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.2	-	-	0	-	-	0.2

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background

A.M. Peak Hour

										
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations										
Traffic Volume (vph)	149	27	24	60	415	3	7	567	152	4
Future Volume (vph)	149	27	24	60	415	3	7	567	152	4
Turn Type	Split	NA	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3	4		6			2	3	1
Permitted Phases				6		2	2		2	
Detector Phase	3	3	4	6	6	2	2	2	3	1
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	29.0	40.0	40.0	40.0	40.0	40.0	26.0	15.0
Total Split (%)	23.6%	23.6%	26.4%	36.4%	36.4%	36.4%	36.4%	36.4%	23.6%	13.6%
Yellow Time (s)	4.0	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	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 28 (25%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)		 Ø3	 Ø4	 Ø1
40 s		26 s	29 s	15 s
 Ø6 (R)				
40 s				

Queues

Future Background

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

A.M. Peak Hour

							
Lane Group	EBL	EBT	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	154	204	67	567	663	175	17
v/c Ratio	0.62	0.90	0.22	0.64	0.55	0.27	0.25
Control Delay	53.6	70.5	38.4	29.1	25.2	2.5	57.5
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	53.6	70.5	38.4	29.7	25.2	2.5	57.5
Queue Length 50th (ft)	105	105	40	102	95	0	12
Queue Length 95th (ft)	171	#227	77	#276	276	24	34
Internal Link Dist (ft)		267	26	241	597		49
Turn Bay Length (ft)	110					160	
Base Capacity (vph)	275	244	305	880	1212	670	79
Starvation Cap Reductn	0	0	0	88	0	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	0.56	0.84	0.22	0.72	0.55	0.26	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background

A.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	149	27	29	107	10	24	24	60	415	7	11	3
Future Volume (vph)	149	27	29	107	10	24	24	60	415	7	11	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0				6.0			6.5			
Lane Util. Factor	0.95	0.95				1.00			0.95			
Frpb, ped/bikes	1.00	0.76				0.93			0.98			
Flpb, ped/bikes	1.00	1.00				1.00			0.99			
Frt	1.00	0.89				0.94			0.99			
Flt Protected	0.95	1.00				0.99			0.99			
Satd. Flow (prot)	1513	1071				1459			3058			
Flt Permitted	0.95	1.00				0.99			0.71			
Satd. Flow (perm)	1513	1071				1459			2173			
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	171	31	33	123	11	28	28	69	477	8	13	3
RTOR Reduction (vph)	0	51	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	154	153	0	0	0	67	0	0	566	0	0	0
Confl. Peds. (#/hr)	111		112	73	73		111	139		112	112	112
Confl. Bikes (#/hr)										9	9	
Parking (#/hr)				0								
Turn Type	Split	NA			Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases								6				2
Actuated Green, G (s)	18.1	18.1				23.0			41.0			
Effective Green, g (s)	18.1	18.1				23.0			41.0			
Actuated g/C Ratio	0.16	0.16				0.21			0.37			
Clearance Time (s)	6.0	6.0				6.0			6.5			
Vehicle Extension (s)	2.5	2.5				2.5			1.0			
Lane Grp Cap (vph)	248	176				305			809			
v/s Ratio Prot	0.10	c0.14				c0.05						
v/s Ratio Perm									c0.26			
v/c Ratio	0.62	0.87				0.22			0.70			
Uniform Delay, d1	42.8	44.8				36.1			29.3			
Progression Factor	1.00	1.00				1.00			0.86			
Incremental Delay, d2	4.1	33.4				0.3			4.9			
Delay (s)	46.9	78.2				36.3			30.1			
Level of Service	D	E				D			C			
Approach Delay (s)		64.7				36.3			30.1			
Approach LOS		E				D			C			
Intersection Summary												
HCM 2000 Control Delay			34.3		HCM 2000 Level of Service				C			
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			110.0		Sum of lost time (s)				24.5			
Intersection Capacity Utilization			91.1%		ICU Level of Service				F			
Analysis Period (min)			15									
c Critical Lane Group												

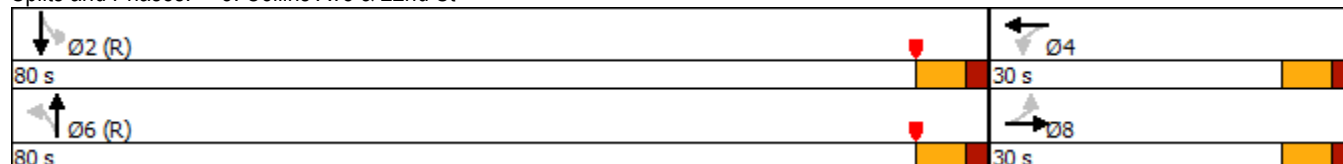
HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background
A.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	7	567	152	3	4	7	1
Future Volume (vph)	7	567	152	3	4	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.71		0.52		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.93		
Flt Protected		1.00	1.00		0.98		
Satd. Flow (prot)		3173	1015		795		
Flt Permitted		0.94	1.00		0.98		
Satd. Flow (perm)		2991	1015		795		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	8	652	175	3	5	8	1
RTOR Reduction (vph)	0	0	80	0	0	0	0
Lane Group Flow (vph)	0	663	95	0	17	0	0
Confl. Peds. (#/hr)	112		139	73	139	111	112
Confl. Bikes (#/hr)			2				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		41.0	59.1		3.4		
Effective Green, g (s)		41.0	59.1		3.4		
Actuated g/C Ratio		0.37	0.54		0.03		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1114	545		24		
v/s Ratio Prot			0.03		c0.02		
v/s Ratio Perm		0.22	0.07				
v/c Ratio		0.60	0.18		0.71		
Uniform Delay, d1		27.8	13.0		52.8		
Progression Factor		0.85	0.70		1.00		
Incremental Delay, d2		2.2	0.1		61.9		
Delay (s)		26.0	9.2		114.7		
Level of Service		C	A		F		
Approach Delay (s)		22.4			114.7		
Approach LOS		C			F		
Intersection Summary							

Future Background



HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Future Background
A.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	22	20	8	34	32	3	459	20	34	649	18
Future Volume (veh/h)	2	22	20	8	34	32	3	459	20	34	649	18
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.95		0.92	0.94		0.93	0.97		0.90	0.96		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	2	25	22	9	38	36	3	516	22	38	729	20
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	98	81	45	93	78	36	2285	97	119	2155	59
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	15	719	598	63	689	576	3	3026	128	111	2854	78
Grp Volume(v), veh/h	49	0	0	83	0	0	286	0	255	399	0	388
Grp Sat Flow(s),veh/h/ln	1332	0	0	1328	0	0	1671	0	1487	1540	0	1502
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Cycle Q Clear(g_c), s	3.6	0.0	0.0	6.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Prop In Lane	0.04		0.45	0.11		0.43	0.01		0.09	0.10		0.05
Lane Grp Cap(c), veh/h	215	0	0	217	0	0	1295	0	1123	1199	0	1135
V/C Ratio(X)	0.23	0.00	0.00	0.38	0.00	0.00	0.22	0.00	0.23	0.33	0.00	0.34
Avail Cap(c_a), veh/h	323	0	0	323	0	0	1295	0	1123	1199	0	1135
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.82	0.00	0.82
Uniform Delay (d), s/veh	42.6	0.0	0.0	43.8	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	0.8	0.0	0.0	0.4	0.0	0.5	0.6	0.0	0.7
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	2.4	0.0	0.0	0.1	0.0	0.1	0.2	0.0	0.2
LnGrp Delay(d),s/veh	43.0	0.0	0.0	44.6	0.0	0.0	0.4	0.0	0.5	0.6	0.0	0.7
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		49			83			541			787	
Approach Delay, s/veh		43.0			44.6			0.4			0.6	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		89.1		20.9		89.1		20.9				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		74.0		24.0		74.0		24.0				
Max Q Clear Time (g_c+I1), s		2.0		8.2		2.0		5.6				
Green Ext Time (p_c), s		1.9		0.3		1.2		0.1				
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

Timings 6: Collins Ave & 24th St

Future Background
A.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	24	530	36	698
Future Volume (vph)	24	530	36	698
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	79.0	79.0	79.0
Total Split (%)	28.2%	71.8%	71.8%	71.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 110
Actuated Cycle Length: 110
Offset: 49 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St

 Ø2 (R)	 Ø4
79 s	31 s
 Ø6 (R)	
79 s	

HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Future Background
A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	24	13	530	36	36	698
Future Volume (vph)	24	13	530	36	36	698
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.95		0.99			1.00
Flpb, ped/bikes	0.99		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1306		3124			3010
Flt Permitted	0.97		1.00			0.89
Satd. Flow (perm)	1306		3124			2688
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	15	596	40	40	784
RTOR Reduction (vph)	14	0	3	0	0	0
Lane Group Flow (vph)	29	0	633	0	0	824
Confl. Peds. (#/hr)	9	62		47	47	
Confl. Bikes (#/hr)		1		8		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	11.0		85.7			85.7
Effective Green, g (s)	11.0		85.7			85.7
Actuated g/C Ratio	0.10		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	130		2433			2094
v/s Ratio Prot			0.20			
v/s Ratio Perm	c0.02					c0.31
v/c Ratio	0.22		0.26			0.39
Uniform Delay, d1	45.5		3.4			3.9
Progression Factor	1.00		1.27			1.00
Incremental Delay, d2	0.9		0.2			0.6
Delay (s)	46.4		4.5			4.4
Level of Service	D		A			A
Approach Delay (s)	46.4		4.5			4.4
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			5.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.37			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			68.9%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

P.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

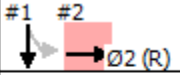
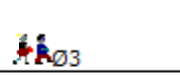
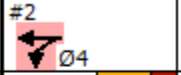
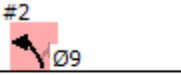
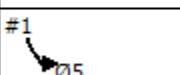
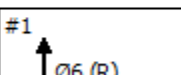
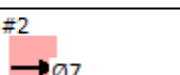
Future Background
P.M. Peak Hour

									
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø4	Ø7	Ø9
Lane Configurations									
Traffic Volume (vph)	277	534	1024	346	435				
Future Volume (vph)	277	534	1024	346	435				
Turn Type	Prot	Prot	NA	pm+pt	NA				
Protected Phases	8	8	6	5	2	3	4	7	9
Permitted Phases				2					
Detector Phase	8	8	6	5	2				
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0	7.0	4.0	5.0
Minimum Split (s)	13.2	13.2	11.9	11.6	11.9	7.0	13.0	8.0	11.9
Total Split (s)	36.0	36.0	24.0	17.0	41.0	23.0	13.0	23.0	23.0
Total Split (%)	36.0%	36.0%	24.0%	17.0%	41.0%	23%	13%	23%	23%
Yellow Time (s)	4.0	4.0	4.0	3.7	4.0	6.0	4.0	3.5	4.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0	2.0	0.5	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.2	6.2	6.9	6.6	6.9				
Lead/Lag			Lag	Lead			Lead		Lag
Lead-Lag Optimize?			Yes	Yes			Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None	None	None	Max

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 150
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST

					
41 s		23 s		13 s	23 s
					
17 s	24 s	23 s	36 s		

Queues

Future Background

1: Dade Blvd & 23rd ST

P.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	289	556	1437	360	453
v/c Ratio	0.54	0.66	2.61	1.55	0.42
Control Delay	6.9	12.4	750.8	290.2	26.8
Queue Delay	42.8	55.9	0.0	1.2	0.0
Total Delay	49.8	68.3	750.8	291.4	26.8
Queue Length 50th (ft)	20	279	~815	~281	115
Queue Length 95th (ft)	m15	m97	#954	#460	161
Internal Link Dist (ft)	83		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	536	848	550	233	1086
Starvation Cap Reductn	261	462	0	0	0
Spillback Cap Reductn	0	0	2	19	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.05	1.44	2.62	1.68	0.42

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

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Future Background

P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	277	534	1024	355	346	435
Future Volume (vph)	277	534	1024	355	346	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	3016		1592	3185
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1593	1425	3016		283	3185
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	289	556	1067	370	360	453
RTOR Reduction (vph)	0	369	35	0	0	0
Lane Group Flow (vph)	289	187	1402	0	360	453
Confl. Peds. (#/hr)	4			10	10	
Confl. Bikes (#/hr)				5		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	33.7	33.7	17.1		34.1	34.1
Effective Green, g (s)	33.7	33.7	17.1		34.1	34.1
Actuated g/C Ratio	0.34	0.34	0.17		0.34	0.34
Clearance Time (s)	6.2	6.2	6.9		6.6	6.9
Vehicle Extension (s)	2.5	2.5	1.0		2.0	1.0
Lane Grp Cap (vph)	536	480	515		232	1086
v/s Ratio Prot	c0.18	0.13	c0.46		c0.16	0.14
v/s Ratio Perm					0.37	
v/c Ratio	0.54	0.39	2.72		1.55	0.42
Uniform Delay, d1	26.9	25.3	41.5		28.8	25.3
Progression Factor	0.23	4.39	1.00		1.00	1.00
Incremental Delay, d2	0.1	0.0	780.7		268.5	1.2
Delay (s)	6.2	111.0	822.1		297.2	26.5
Level of Service	A	F	F		F	C
Approach Delay (s)	75.2		822.1			146.4
Approach LOS	E		F			F
Intersection Summary						
HCM 2000 Control Delay			440.7		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.21			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	32.4
Intersection Capacity Utilization			99.1%		ICU Level of Service	F
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Future Background
P.M. Peak Hour

Intersection

Int Delay, s/veh 8.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔		↔			
Traffic Vol, veh/h	30	485	189	23	475	32	295	12	49	16	10	42
Future Vol, veh/h	30	485	189	23	475	32	295	12	49	16	10	42
Conflicting Peds, #/hr	15	0	15	15	0	15	2	0	27	27	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	516	201	24	505	34	314	13	52	17	11	45

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	554	0	0	732	0	0	999	1298
Stage 1	-	-	-	-	-	-	696	696
Stage 2	-	-	-	-	-	-	303	602
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	1012	-	-	868	-	-	441	160
Stage 1	-	-	-	-	-	-	511	441
Stage 2	-	-	-	-	-	-	831	487
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1012	-	-	857	-	-	395	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	395	0
Stage 1	-	-	-	-	-	-	458	0
Stage 2	-	-	-	-	-	-	829	0

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.6	36.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	395	781	1012	-	-	857	-	-
HCM Lane V/C Ratio	0.795	0.067	0.032	-	-	0.029	-	-
HCM Control Delay (s)	41.3	9.9	8.7	0.2	-	9.3	0.2	-
HCM Lane LOS	E	A	A	A	-	A	A	-
HCM 95th %tile Q(veh)	6.9	0.2	0.1	-	-	0.1	-	-

Timings 2: Park Ave & 23rd ST

Future Background
P.M. Peak Hour

	→	←	↙	↘	↖						
Lane Group	EBT	WBT	NBL	NBR	SBR	Ø2	Ø3	Ø5	Ø6	Ø7	Ø8
Lane Configurations	↗	↖	↙	↘	↖						
Traffic Volume (vph)	485	475	295	49	42						
Future Volume (vph)	485	475	295	49	42						
Turn Type	NA	NA	Prot	Perm	Free						
Protected Phases	2 7	4	9			2	3	5	6	7	8
Permitted Phases				9	Free						
Detector Phase	2 7	4	9	9							
Switch Phase											
Minimum Initial (s)		7.0	5.0	5.0		5.0	1.0	5.0	5.0	4.0	7.0
Minimum Split (s)		13.0	11.9	11.9		11.9	7.0	11.6	11.9	8.0	13.2
Total Split (s)		13.0	23.0	23.0		41.0	23.0	17.0	24.0	23.0	36.0
Total Split (%)		13.0%	23.0%	23.0%		41%	23%	17%	24%	23%	36%
Yellow Time (s)		4.0	4.0	4.0		4.0	6.0	3.7	4.0	3.5	4.0
All-Red Time (s)		2.0	2.9	2.9		2.9	0.0	2.9	2.9	0.5	2.2
Lost Time Adjust (s)		0.0	0.0	0.0							
Total Lost Time (s)		6.0	6.9	6.9							
Lead/Lag		Lead	Lag	Lag				Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes				Yes	Yes		
Recall Mode		None	Max	Max		C-Max	None	None	C-Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 2: Park Ave & 23rd ST

#1 ↓ Ø2 (R)	#2 ↖ Ø3	#2 ↘ Ø4	#2 ↖ Ø9
41 s	23 s	13 s	23 s
#1 ↙ Ø5	#1 ↑ Ø6 (R)	#2 ↘ Ø7	#1 ↘ Ø8
17 s	24 s	23 s	36 s

HCM Signalized Intersection Capacity Analysis

2: Park Ave & 23rd ST

Future Background

P.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	0	485	189	23	475	0	295	0	49	0	0	42
Future Volume (vph)	0	485	189	23	475	0	295	0	49	0	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9			6.0		6.9		6.9			4.0
Lane Util. Factor		1.00			0.95		1.00		1.00			1.00
Frpb, ped/bikes		0.99			1.00		1.00		0.90			0.99
Flpb, ped/bikes		1.00			1.00		1.00		1.00			1.00
Frt		0.96			1.00		1.00		0.85			0.86
Flt Protected		1.00			1.00		0.95		1.00			1.00
Satd. Flow (prot)		1597			3019		1593		1149			1432
Flt Permitted		1.00			1.00		0.95		1.00			1.00
Satd. Flow (perm)		1597			3019		1593		1149			1432
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	516	201	24	505	0	314	0	52	0	0	45
RTOR Reduction (vph)	0	14	0	0	0	0	0	0	44	0	0	0
Lane Group Flow (vph)	0	703	0	0	529	0	314	0	8	0	0	45
Confl. Peds. (#/hr)	15		15	15		15	2		27	27		2
Confl. Bikes (#/hr)			2			4			1			
Parking (#/hr)					0				0			
Turn Type		NA		Split	NA		Prot		Perm			Free
Protected Phases		2 7		4	4		9					
Permitted Phases									9			Free
Actuated Green, G (s)		56.1			10.9		16.1		16.1			100.0
Effective Green, g (s)		56.1			10.9		16.1		16.1			100.0
Actuated g/C Ratio		0.56			0.11		0.16		0.16			1.00
Clearance Time (s)					6.0		6.9		6.9			
Vehicle Extension (s)					2.5		1.0		1.0			
Lane Grp Cap (vph)		895			329		256		184			1432
v/s Ratio Prot		c0.44			c0.18		c0.20					
v/s Ratio Perm									0.01			0.03
v/c Ratio		0.78			1.61		1.23		0.05			0.03
Uniform Delay, d1		17.2			44.5		42.0		35.5			0.0
Progression Factor		0.33			1.00		1.00		1.00			1.00
Incremental Delay, d2		0.4			287.3		131.5		0.5			0.0
Delay (s)		6.1			331.9		173.4		35.9			0.0
Level of Service		A			F		F		D			A
Approach Delay (s)		6.1			331.9			153.9			0.0	
Approach LOS		A			F			F			A	
Intersection Summary												
HCM 2000 Control Delay			142.6		HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio			1.20									
Actuated Cycle Length (s)			100.0		Sum of lost time (s)				32.4			
Intersection Capacity Utilization			71.2%		ICU Level of Service				C			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Future Background
P.M. Peak Hour

Intersection												
Int Delay, s/veh	1.6											
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	449	66	24	409	12	46	0	16	11	0	35
Future Vol, veh/h	21	449	66	24	409	12	46	0	16	11	0	35
Conflicting Peds, #/hr	26	0	11	11	0	26	32	0	14	14	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	22	478	70	26	435	13	49	0	17	12	0	37

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	474	0	0	559	0	0	870	1094	538	1100	1123	282
Stage 1	-	-	-	-	-	-	568	568	-	520	520	-
Stage 2	-	-	-	-	-	-	302	526	-	580	603	-
Critical Hdwy	4.13	-	-	4.13	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1086	-	-	1010	-	-	504	400	705	398	388	910
Stage 1	-	-	-	-	-	-	573	629	-	576	665	-
Stage 2	-	-	-	-	-	-	785	661	-	564	605	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1062	-	-	1001	-	-	443	363	690	357	352	867
Mov Cap-2 Maneuver	-	-	-	-	-	-	443	363	-	357	352	-
Stage 1	-	-	-	-	-	-	551	604	-	547	628	-
Stage 2	-	-	-	-	-	-	706	624	-	527	581	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.6	13.5	11
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	488	1062	-	-	1001	-	-	646
HCM Lane V/C Ratio	0.135	0.021	-	-	0.026	-	-	0.076
HCM Control Delay (s)	13.5	8.5	0	-	8.7	0.1	-	11
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0.5	0.1	-	-	0.1	-	-	0.2

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background

P.M. Peak Hour

										
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations										
Traffic Volume (vph)	309	20	22	125	960	7	4	628	262	34
Future Volume (vph)	309	20	22	125	960	7	4	628	262	34
Turn Type	Split	NA	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3	4		6			2	3	1
Permitted Phases				6		2	2		2	
Detector Phase	3	3	4	6	6	2	2	2	3	1
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	29.0	60.0	60.0	60.0	60.0	60.0	26.0	15.0
Total Split (%)	20.0%	20.0%	22.3%	46.2%	46.2%	46.2%	46.2%	46.2%	20.0%	11.5%
Yellow Time (s)	4.0	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	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 3 (2%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)	 Ø3	 Ø4	 Ø1
60 s	26 s	29 s	15 s
 Ø6 (R)			
60 s			

Queues

Future Background

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

P.M. Peak Hour

							
Lane Group	EBL	EBT	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	249	233	55	1156	658	270	61
v/c Ratio	1.07	1.09	0.22	1.26	0.53	0.46	0.71
Control Delay	131.3	128.5	48.5	159.7	25.2	6.7	98.9
Queue Delay	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Total Delay	131.3	128.5	48.5	160.8	25.2	6.7	98.9
Queue Length 50th (ft)	~244	~196	40	~668	225	35	51
Queue Length 95th (ft)	#425	#376	81	#808	288	45	#124
Internal Link Dist (ft)		267	26	241	597		49
Turn Bay Length (ft)	110					160	
Base Capacity (vph)	232	214	252	916	1245	588	90
Starvation Cap Reductn	0	0	0	151	0	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	1.07	1.09	0.22	1.51	0.53	0.46	0.68

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 Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	309	20	8	130	8	22	23	125	960	14	22	7
Future Volume (vph)	309	20	8	130	8	22	23	125	960	14	22	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0				6.0			6.5			
Lane Util. Factor	0.95	0.95				1.00			0.95			
Frpb, ped/bikes	1.00	0.81				0.91			0.98			
Flpb, ped/bikes	1.00	1.00				1.00			0.99			
Frt	1.00	0.91				0.94			1.00			
Flt Protected	0.95	0.99				0.99			0.99			
Satd. Flow (prot)	1513	1152				1429			3065			
Flt Permitted	0.95	0.99				0.99			0.68			
Satd. Flow (perm)	1513	1152				1429			2105			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	319	21	8	134	8	23	24	129	990	14	23	7
RTOR Reduction (vph)	0	37	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	249	196	0	0	0	55	0	0	1155	0	0	0
Confl. Peds. (#/hr)	114		100	65	65		114	139		100	100	100
Confl. Bikes (#/hr)			1	1						13	13	
Parking (#/hr)				0								
Turn Type	Split	NA			Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases								6				2
Actuated Green, G (s)	20.0	20.0				23.0			55.3			
Effective Green, g (s)	20.0	20.0				23.0			55.3			
Actuated g/C Ratio	0.15	0.15				0.18			0.43			
Clearance Time (s)	6.0	6.0				6.0			6.5			
Vehicle Extension (s)	2.5	2.5				2.5			1.0			
Lane Grp Cap (vph)	232	177				252			895			
v/s Ratio Prot	0.16	c0.17				c0.04						
v/s Ratio Perm									c0.55			
v/c Ratio	1.07	1.11				0.22			1.29			
Uniform Delay, d1	55.0	55.0				45.8			37.4			
Progression Factor	1.00	1.00				1.00			1.00			
Incremental Delay, d2	79.9	98.9				0.3			139.0			
Delay (s)	134.9	153.9				46.1			176.4			
Level of Service	F	F				D			F			
Approach Delay (s)		144.1				46.1			176.4			
Approach LOS		F				D			F			
Intersection Summary												
HCM 2000 Control Delay			112.8				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			0.99									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)		24.5			
Intersection Capacity Utilization			107.4%				ICU Level of Service		G			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Background

P.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	4	628	262	12	34	12	2
Future Volume (vph)	4	628	262	12	34	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.64		0.82		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.97		
Flt Protected		1.00	1.00		0.96		
Satd. Flow (prot)		3183	913		1280		
Flt Permitted		0.90	1.00		0.96		
Satd. Flow (perm)		2867	913		1280		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	647	270	12	35	12	2
RTOR Reduction (vph)	0	0	52	0	0	0	0
Lane Group Flow (vph)	0	658	218	0	61	0	0
Confl. Peds. (#/hr)	100		139	65	139	114	100
Confl. Bikes (#/hr)			9				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		55.3	75.3		7.2		
Effective Green, g (s)		55.3	75.3		7.2		
Actuated g/C Ratio		0.43	0.58		0.06		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1219	528		70		
v/s Ratio Prot			0.06		0.05		
v/s Ratio Perm		0.23	0.18				
v/c Ratio		0.54	0.41		0.87		
Uniform Delay, d1		27.9	15.1		60.9		
Progression Factor		0.84	0.56		1.00		
Incremental Delay, d2		1.6	0.3		64.7		
Delay (s)		25.0	8.8		125.6		
Level of Service		C	A		F		
Approach Delay (s)		20.3			125.6		
Approach LOS		C			F		
Intersection Summary							

Timings
5: Collins Ave & 22nd St

Future Background
P.M. Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	20	27	52	22	1028	34	729
Future Volume (vph)	22	20	27	52	22	1028	34	729
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	25.0	22.0	22.0	22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	70.0	70.0	70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 40 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 5: Collins Ave & 22nd St

 Ø2 (R)	 Ø4
70 s	30 s
 Ø6 (R)	 Ø8
70 s	30 s

HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Future Background
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	20	24	27	52	64	22	1028	37	34	729	30
Future Volume (veh/h)	22	20	24	27	52	64	22	1028	37	34	729	30
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.91	0.94		0.91	0.98		0.91	0.99		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	23	21	25	28	55	67	23	1082	39	36	767	32
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	82	76	68	96	98	59	2108	75	99	1937	80
Arrive On Green	0.17	0.17	0.17	0.17	0.17	0.17	0.94	0.94	0.94	0.94	0.94	0.94
Sat Flow, veh/h	304	474	442	147	559	570	30	2979	106	85	2738	113
Grp Volume(v), veh/h	69	0	0	150	0	0	596	0	548	412	0	423
Grp Sat Flow(s),veh/h/ln	1220	0	0	1277	0	0	1622	0	1494	1443	0	1492
Q Serve(g_s), s	0.0	0.0	0.0	4.5	0.0	0.0	0.0	0.0	4.2	0.0	0.0	2.7
Cycle Q Clear(g_c), s	4.5	0.0	0.0	10.8	0.0	0.0	4.0	0.0	4.2	2.2	0.0	2.7
Prop In Lane	0.33		0.36	0.19		0.45	0.04		0.07	0.09		0.08
Lane Grp Cap(c), veh/h	259	0	0	263	0	0	1185	0	1057	1060	0	1056
V/C Ratio(X)	0.27	0.00	0.00	0.57	0.00	0.00	0.50	0.00	0.52	0.39	0.00	0.40
Avail Cap(c_a), veh/h	338	0	0	347	0	0	1185	0	1057	1060	0	1056
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.84	0.00	0.84
Uniform Delay (d), s/veh	36.1	0.0	0.0	38.6	0.0	0.0	1.0	0.0	1.0	0.9	0.0	0.9
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.4	0.0	0.0	1.5	0.0	1.8	0.9	0.0	1.0
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	1.7	0.0	0.0	4.0	0.0	0.0	2.1	0.0	2.0	1.0	0.0	1.2
LnGrp Delay(d),s/veh	36.5	0.0	0.0	40.1	0.0	0.0	2.5	0.0	2.8	1.8	0.0	1.9
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		69			150			1144			835	
Approach Delay, s/veh		36.5			40.1			2.7			1.9	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		76.7		23.3		76.7		23.3				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		64.0		24.0		64.0		24.0				
Max Q Clear Time (g_c+l1), s		4.7		12.8		6.2		6.5				
Green Ext Time (p_c), s		2.2		0.5		3.0		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			6.0									
HCM 2010 LOS			A									

Timings 6: Collins Ave & 24th St

Future Background
P.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	53	1199	30	838
Future Volume (vph)	53	1199	30	838
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	99.0	99.0	99.0
Total Split (%)	23.8%	76.2%	76.2%	76.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 130
Actuated Cycle Length: 130
Offset: 24 (18%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St

 Ø2 (R)	 Ø4
99 s	31 s
 Ø6 (R)	
99 s	

HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Future Background

P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	53	31	1199	72	30	838
Future Volume (vph)	53	31	1199	72	30	838
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.89		0.99			1.00
Flpb, ped/bikes	0.90		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1115		3114			3018
Flt Permitted	0.97		1.00			0.85
Satd. Flow (perm)	1115		3114			2566
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	55	32	1249	75	31	873
RTOR Reduction (vph)	18	0	3	0	0	0
Lane Group Flow (vph)	69	0	1321	0	0	904
Confl. Peds. (#/hr)	67	114		67	67	
Confl. Bikes (#/hr)		2		13		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	15.2		101.5			101.5
Effective Green, g (s)	15.2		101.5			101.5
Actuated g/C Ratio	0.12		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	130		2431			2003
v/s Ratio Prot			c0.42			
v/s Ratio Perm	c0.06					0.35
v/c Ratio	0.53		0.54			0.45
Uniform Delay, d1	54.1		5.4			4.8
Progression Factor	1.00		1.02			1.00
Incremental Delay, d2	4.2		0.1			0.7
Delay (s)	58.2		5.6			5.6
Level of Service	E		A			A
Approach Delay (s)	58.2		5.6			5.6
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			7.6		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.54			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			74.3%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

Future Total Conditions

A.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

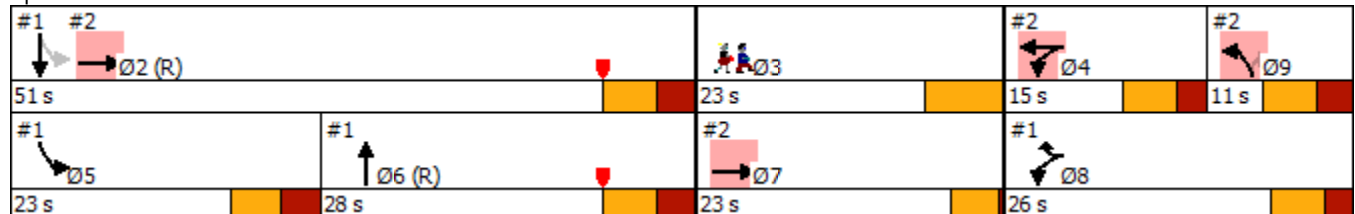
Future Total
A.M. Peak Hour

									
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø4	Ø7	Ø9
Lane Configurations									
Traffic Volume (vph)	135	168	291	309	550				
Future Volume (vph)	135	168	291	309	550				
Turn Type	Prot	Prot	NA	pm+pt	NA				
Protected Phases	8	8	6	5	2	3	4	7	9
Permitted Phases				2					
Detector Phase	8	8	6	5	2				
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0	7.0	4.0	5.0
Minimum Split (s)	13.2	13.2	11.9	11.6	11.9	7.0	13.2	8.0	11.9
Total Split (s)	26.0	26.0	28.0	23.0	51.0	23.0	15.0	23.0	11.0
Total Split (%)	26.0%	26.0%	28.0%	23.0%	51.0%	23%	15%	23%	11%
Yellow Time (s)	4.0	4.0	4.0	3.7	4.0	6.0	4.0	3.5	4.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0	2.2	0.5	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	6.2	6.2	6.9	6.6	6.9				
Lead/Lag			Lag	Lead			Lead		Lag
Lead-Lag Optimize?			Yes	Yes			Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None	None	None	Max

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST



Queues

Future Total

1: Dade Blvd & 23rd ST

A.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	175	218	778	401	714
v/c Ratio	0.44	0.42	0.98	1.22	0.51
Control Delay	14.1	4.3	54.8	151.0	21.7
Queue Delay	3.5	4.2	0.4	0.6	0.0
Total Delay	17.5	8.5	55.2	151.6	21.7
Queue Length 50th (ft)	23	4	188	~271	167
Queue Length 95th (ft)	m31	m30	#211	#352	180
Internal Link Dist (ft)	74		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	402	523	796	328	1404
Starvation Cap Reductn	147	227	0	0	0
Spillback Cap Reductn	0	0	2	17	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.69	0.74	0.98	1.29	0.51

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

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Future Total

A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			
Traffic Volume (vph)	135	168	291	308	309	550
Future Volume (vph)	135	168	291	308	309	550
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.2	6.2	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.92		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	2867		1592	3185
Flt Permitted	0.95	1.00	1.00		0.14	1.00
Satd. Flow (perm)	1593	1425	2867		242	3185
Peak-hour factor, PHF	0.77	0.77	0.77	0.77	0.77	0.77
Adj. Flow (vph)	175	218	378	400	401	714
RTOR Reduction (vph)	0	163	192	0	0	0
Lane Group Flow (vph)	175	55	586	0	401	714
Confl. Peds. (#/hr)	10			6	6	
Confl. Bikes (#/hr)				8		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	25.3	25.3	21.1		44.1	44.1
Effective Green, g (s)	25.3	25.3	21.1		44.1	44.1
Actuated g/C Ratio	0.25	0.25	0.21		0.44	0.44
Clearance Time (s)	6.2	6.2	6.9		6.6	6.9
Vehicle Extension (s)	2.5	2.5	1.0		2.0	1.0
Lane Grp Cap (vph)	403	360	604		328	1404
v/s Ratio Prot	c0.11	0.04	0.20		c0.20	0.22
v/s Ratio Perm					c0.34	
v/c Ratio	0.43	0.15	0.97		1.22	0.51
Uniform Delay, d1	31.3	29.0	39.1		28.2	20.1
Progression Factor	0.35	0.54	1.00		1.00	1.00
Incremental Delay, d2	0.4	0.1	30.1		124.4	1.3
Delay (s)	11.5	15.8	69.2		152.6	21.5
Level of Service	B	B	E		F	C
Approach Delay (s)	13.9		69.2			68.6
Approach LOS	B		E			E
Intersection Summary						
HCM 2000 Control Delay			59.4		HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio			0.90			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	32.6
Intersection Capacity Utilization			64.0%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Future Total
A.M. Peak Hour

Intersection

Int Delay, s/veh 1.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔		↔			
Traffic Vol, veh/h	38	388	183	22	224	19	58	2	11	21	10	26
Future Vol, veh/h	38	388	183	22	224	19	58	2	11	21	10	26
Conflicting Peds, #/hr	19	0	9	9	0	19	1	0	16	16	0	1
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	79	79	79	79	79	79	79	79	79	79	79	79
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	48	491	232	28	284	24	73	3	14	27	13	33

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	327	0	0	732	0	0	911	1095
Stage 1	-	-	-	-	-	-	712	712
Stage 2	-	-	-	-	-	-	199	383
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	1229	-	-	868	-	-	483	212
Stage 1	-	-	-	-	-	-	501	434
Stage 2	-	-	-	-	-	-	943	610
Platoon blocked, %		-	-		-	-		
Mov Cap-1 Maneuver	1229	-	-	861	-	-	429	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	429	0
Stage 1	-	-	-	-	-	-	445	0
Stage 2	-	-	-	-	-	-	942	0

Approach	EB	WB	NB
HCM Control Delay, s	0.6	0.9	14.2
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	429	803	1229	-	-	861	-	-
HCM Lane V/C Ratio	0.171	0.017	0.039	-	-	0.032	-	-
HCM Control Delay (s)	15.1	9.6	8	0.2	-	9.3	0.2	-
HCM Lane LOS	C	A	A	A	-	A	A	-
HCM 95th %tile Q(veh)	0.6	0.1	0.1	-	-	0.1	-	-

Timings 2: Park Ave & 23rd ST

Future Total
A.M. Peak Hour

	→	←	↙	↘	↖						
Lane Group	EBT	WBT	NBL	NBR	SBR	Ø2	Ø3	Ø5	Ø6	Ø7	Ø8
Lane Configurations	↗	↖	↙	↘	↖						
Traffic Volume (vph)	388	224	58	11	26						
Future Volume (vph)	388	224	58	11	26						
Turn Type	NA	NA	Prot	Perm	Free						
Protected Phases	2 7	4	9			2	3	5	6	7	8
Permitted Phases				9	Free						
Detector Phase	2 7	4	9	9							
Switch Phase											
Minimum Initial (s)		7.0	5.0	5.0		5.0	1.0	5.0	5.0	4.0	7.0
Minimum Split (s)		13.2	11.9	11.9		11.9	7.0	11.6	11.9	8.0	13.2
Total Split (s)		15.0	11.0	11.0		51.0	23.0	23.0	28.0	23.0	26.0
Total Split (%)		15.0%	11.0%	11.0%		51%	23%	23%	28%	23%	26%
Yellow Time (s)		4.0	4.0	4.0		4.0	6.0	3.7	4.0	3.5	4.0
All-Red Time (s)		2.2	2.9	2.9		2.9	0.0	2.9	2.9	0.5	2.2
Lost Time Adjust (s)		0.0	0.0	0.0							
Total Lost Time (s)		6.2	6.9	6.9							
Lead/Lag		Lead	Lag	Lag				Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes				Yes	Yes		
Recall Mode		None	Max	Max		C-Max	None	None	C-Max	None	None

Intersection Summary

Cycle Length: 100

Actuated Cycle Length: 100

Offset: 0 (0%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow

Natural Cycle: 90

Control Type: Actuated-Coordinated

Splits and Phases: 2: Park Ave & 23rd ST

#1 ↓	#2 → Ø2 (R)			#3 ↘ Ø3		#2 ↙ Ø4	#2 ↘ Ø9
51 s				23 s		15 s	11 s
#1 ↙ Ø5	#1 ↑ Ø6 (R)			#2 → Ø7		#1 ↘ Ø8	
23 s	28 s			23 s		26 s	

HCM Signalized Intersection Capacity Analysis

2: Park Ave & 23rd ST

Future Total

A.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	0	388	183	22	224	0	58	0	11	0	0	26
Future Volume (vph)	0	388	183	22	224	0	58	0	11	0	0	26
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9			6.2		6.9		6.9			4.0
Lane Util. Factor		1.00			0.95		1.00		1.00			1.00
Frpb, ped/bikes		0.99			1.00		1.00		0.79			0.99
Flpb, ped/bikes		1.00			1.00		1.00		1.00			1.00
Frt		0.96			1.00		1.00		0.85			0.86
Flt Protected		1.00			1.00		0.95		1.00			1.00
Satd. Flow (prot)		1590			3013		1593		1012			1432
Flt Permitted		1.00			1.00		0.95		1.00			1.00
Satd. Flow (perm)		1590			3013		1593		1012			1432
Peak-hour factor, PHF	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79	0.79
Adj. Flow (vph)	0	491	232	28	284	0	73	0	14	0	0	33
RTOR Reduction (vph)	0	18	0	0	0	0	0	0	13	0	0	0
Lane Group Flow (vph)	0	705	0	0	312	0	73	0	1	0	0	33
Confl. Peds. (#/hr)	19		9	9		19	1		16	16		1
Confl. Bikes (#/hr)						3						
Parking (#/hr)					0				0			
Turn Type		NA		Split	NA		Prot		Perm			Free
Protected Phases		2 7		4	4		9					
Permitted Phases									9			Free
Actuated Green, G (s)		64.5			14.3		4.1		4.1			100.0
Effective Green, g (s)		64.5			14.3		4.1		4.1			100.0
Actuated g/C Ratio		0.64			0.14		0.04		0.04			1.00
Clearance Time (s)					6.2		6.9		6.9			
Vehicle Extension (s)					2.5		1.0		1.0			
Lane Grp Cap (vph)		1025			430		65		41			1432
v/s Ratio Prot		c0.44			c0.10		c0.05					
v/s Ratio Perm									0.00			0.02
v/c Ratio		0.69			0.73		1.12		0.01			0.02
Uniform Delay, d1		11.3			41.0		48.0		46.0			0.0
Progression Factor		0.21			1.00		1.00		1.00			1.00
Incremental Delay, d2		0.2			5.6		149.2		0.6			0.0
Delay (s)		2.6			46.6		197.1		46.6			0.0
Level of Service		A			D		F		D			A
Approach Delay (s)		2.6			46.6			172.9			0.0	
Approach LOS		A			D			F			A	
Intersection Summary												
HCM 2000 Control Delay			27.2									
HCM 2000 Volume to Capacity ratio			0.88									
Actuated Cycle Length (s)			100.0						32.6			
Intersection Capacity Utilization			51.0%						A			
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Future Total
A.M. Peak Hour

Intersection

Int Delay, s/veh 1.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	98	309	4	1	234	67	1	0	1	19	0	31
Future Vol, veh/h	98	309	4	1	234	67	1	0	1	19	0	31
Conflicting Peds, #/hr	31	0	18	18	0	31	13	0	25	25	0	13
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	80	80	80	80	80	80	80	80	80	80	80	80
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	123	386	5	1	293	84	1	0	1	24	0	39

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	408	0	0	409	0	0	815	1063	432	1028	1023	233
Stage 1	-	-	-	-	-	-	653	653	-	368	368	-
Stage 2	-	-	-	-	-	-	162	410	-	660	655	-
Critical Hdwy	4.13	-	-	4.13	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1149	-	-	1148	-	-	533	413	784	428	431	955
Stage 1	-	-	-	-	-	-	512	571	-	715	792	-
Stage 2	-	-	-	-	-	-	956	755	-	507	569	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	1119	-	-	1131	-	-	443	340	756	363	355	920
Mov Cap-2 Maneuver	-	-	-	-	-	-	443	340	-	363	355	-
Stage 1	-	-	-	-	-	-	433	483	-	598	771	-
Stage 2	-	-	-	-	-	-	905	735	-	426	481	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	2.1	0	11.5	11.9
HCM LOS			B	B

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	559	1119	-	-	1131	-	-	581
HCM Lane V/C Ratio	0.004	0.109	-	-	0.001	-	-	0.108
HCM Control Delay (s)	11.5	8.6	0	-	8.2	0	-	11.9
HCM Lane LOS	B	A	A	-	A	A	-	B
HCM 95th %tile Q(veh)	0	0.4	-	-	0	-	-	0.4

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total

A.M. Peak Hour

										
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations										
Traffic Volume (vph)	153	27	24	91	415	3	7	567	175	4
Future Volume (vph)	153	27	24	91	415	3	7	567	175	4
Turn Type	Split	NA	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3	4		6			2	3	1
Permitted Phases				6		2	2		2	
Detector Phase	3	3	4	6	6	2	2	2	3	1
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	29.0	40.0	40.0	40.0	40.0	40.0	26.0	15.0
Total Split (%)	23.6%	23.6%	26.4%	36.4%	36.4%	36.4%	36.4%	36.4%	23.6%	13.6%
Yellow Time (s)	4.0	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	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 110

Actuated Cycle Length: 110

Offset: 28 (25%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 105

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)		 Ø3	 Ø4	 Ø1
40 s	26 s	29 s	15 s	
 Ø6 (R)				
40 s				

Queues

Future Total

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

A.M. Peak Hour

							
Lane Group	EBL	EBT	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	158	211	67	603	663	201	17
v/c Ratio	0.63	0.92	0.22	0.77	0.55	0.31	0.25
Control Delay	54.1	73.5	38.4	34.9	25.2	3.0	57.5
Queue Delay	0.0	0.0	0.0	0.6	0.0	0.0	0.0
Total Delay	54.1	73.5	38.4	35.5	25.2	3.0	57.5
Queue Length 50th (ft)	108	109	40	108	94	1	12
Queue Length 95th (ft)	174	#238	77	#335	277	29	34
Internal Link Dist (ft)		267	26	241	597		49
Turn Bay Length (ft)	110					160	
Base Capacity (vph)	275	246	305	781	1206	669	79
Starvation Cap Reductn	0	0	0	34	0	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	0.57	0.86	0.22	0.81	0.55	0.30	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total
A.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	153	27	29	112	10	24	24	91	415	7	11	3
Future Volume (vph)	153	27	29	112	10	24	24	91	415	7	11	3
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0				6.0			6.5			
Lane Util. Factor	0.95	0.95				1.00			0.95			
Frpb, ped/bikes	1.00	0.76				0.93			0.98			
Flpb, ped/bikes	1.00	1.00				1.00			0.98			
Frt	1.00	0.88				0.94			0.99			
Flt Protected	0.95	1.00				0.99			0.99			
Satd. Flow (prot)	1513	1069				1459			3040			
Flt Permitted	0.95	1.00				0.99			0.63			
Satd. Flow (perm)	1513	1069				1459			1932			
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	176	31	33	129	11	28	28	105	477	8	13	3
RTOR Reduction (vph)	0	53	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	158	158	0	0	0	67	0	0	602	0	0	0
Confl. Peds. (#/hr)	111		112	73	73		111	139		112	112	112
Confl. Bikes (#/hr)										9	9	
Parking (#/hr)				0								
Turn Type	Split	NA			Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases								6				2
Actuated Green, G (s)	18.3	18.3				23.0			40.8			
Effective Green, g (s)	18.3	18.3				23.0			40.8			
Actuated g/C Ratio	0.17	0.17				0.21			0.37			
Clearance Time (s)	6.0	6.0				6.0			6.5			
Vehicle Extension (s)	2.5	2.5				2.5			1.0			
Lane Grp Cap (vph)	251	177				305			716			
v/s Ratio Prot	0.10	c0.15				c0.05						
v/s Ratio Perm									c0.31			
v/c Ratio	0.63	0.90				0.22			0.84			
Uniform Delay, d1	42.7	44.9				36.1			31.6			
Progression Factor	1.00	1.00				1.00			0.85			
Incremental Delay, d2	4.2	39.1				0.3			11.2			
Delay (s)	46.9	84.0				36.3			38.2			
Level of Service	D	F				D			D			
Approach Delay (s)		68.1				36.3			38.2			
Approach LOS		E				D			D			
Intersection Summary												
HCM 2000 Control Delay			37.2		HCM 2000 Level of Service				D			
HCM 2000 Volume to Capacity ratio			0.68									
Actuated Cycle Length (s)			110.0		Sum of lost time (s)				24.5			
Intersection Capacity Utilization			91.4%		ICU Level of Service				F			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total
A.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	7	567	175	3	4	7	1
Future Volume (vph)	7	567	175	3	4	7	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.71		0.52		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.93		
Flt Protected		1.00	1.00		0.98		
Satd. Flow (prot)		3174	1017		795		
Flt Permitted		0.94	1.00		0.98		
Satd. Flow (perm)		2989	1017		795		
Peak-hour factor, PHF	0.87	0.87	0.87	0.87	0.87	0.87	0.87
Adj. Flow (vph)	8	652	201	3	5	8	1
RTOR Reduction (vph)	0	0	80	0	0	0	0
Lane Group Flow (vph)	0	663	121	0	17	0	0
Confl. Peds. (#/hr)	112		139	73	139	111	112
Confl. Bikes (#/hr)			2				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		40.8	59.1		3.4		
Effective Green, g (s)		40.8	59.1		3.4		
Actuated g/C Ratio		0.37	0.54		0.03		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1108	546		24		
v/s Ratio Prot			0.04		c0.02		
v/s Ratio Perm		0.22	0.08				
v/c Ratio		0.60	0.22		0.71		
Uniform Delay, d1		28.0	13.4		52.8		
Progression Factor		0.85	0.60		1.00		
Incremental Delay, d2		2.3	0.1		61.9		
Delay (s)		26.1	8.2		114.7		
Level of Service		C	A		F		
Approach Delay (s)		21.9			114.7		
Approach LOS		C			F		
Intersection Summary							

Future Total
A.M. Peak Hour

Intersection Summary
Cycle Length: 110
Actuated Cycle Length: 110
Offset: 66 (60%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 50
Control Type: Actuated-Coordinated

 Ø2 (R)	 Ø4
80 s	30 s
 Ø6 (R)	 Ø8
80 s	30 s

HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Future Total
A.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	22	20	8	34	32	3	490	20	34	654	18
Future Volume (veh/h)	2	22	20	8	34	32	3	490	20	34	654	18
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.64	0.95		0.64	0.97		0.90	0.97		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	2	25	22	9	38	36	3	551	22	38	735	20
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89	0.89
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	36	83	69	44	80	67	35	2278	90	118	2139	58
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	1.00	1.00	1.00	1.00	1.00	1.00
Sat Flow, veh/h	12	591	491	52	566	473	3	3037	121	109	2851	77
Grp Volume(v), veh/h	49	0	0	83	0	0	304	0	272	402	0	391
Grp Sat Flow(s),veh/h/ln	1095	0	0	1092	0	0	1671	0	1489	1534	0	1503
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.1
Cycle Q Clear(g_c), s	4.4	0.0	0.0	7.6	0.0	0.0	0.1	0.0	0.1	0.1	0.0	0.1
Prop In Lane	0.04		0.45	0.11		0.43	0.01		0.08	0.09		0.05
Lane Grp Cap(c), veh/h	188	0	0	190	0	0	1287	0	1117	1187	0	1127
V/C Ratio(X)	0.26	0.00	0.00	0.44	0.00	0.00	0.24	0.00	0.24	0.34	0.00	0.35
Avail Cap(c_a), veh/h	272	0	0	273	0	0	1287	0	1117	1187	0	1127
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.82	0.00	0.82
Uniform Delay (d), s/veh	42.5	0.0	0.0	43.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Incr Delay (d2), s/veh	0.5	0.0	0.0	1.2	0.0	0.0	0.4	0.0	0.5	0.6	0.0	0.7
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	2.4	0.0	0.0	0.2	0.0	0.2	0.2	0.0	0.2
LnGrp Delay(d),s/veh	43.0	0.0	0.0	45.1	0.0	0.0	0.5	0.0	0.5	0.7	0.0	0.7
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		49			83			576			793	
Approach Delay, s/veh		43.0			45.1			0.5			0.7	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		88.5		21.5		88.5		21.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		74.0		24.0		74.0		24.0				
Max Q Clear Time (g_c+l1), s		2.1		9.6		2.1		6.4				
Green Ext Time (p_c), s		1.9		0.3		1.3		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			4.5									
HCM 2010 LOS			A									

Timings
6: Collins Ave & 24th St

Future Total
A.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	24	534	36	721
Future Volume (vph)	24	534	36	721
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	79.0	79.0	79.0
Total Split (%)	28.2%	71.8%	71.8%	71.8%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 110
 Actuated Cycle Length: 110
 Offset: 49 (45%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 50
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St

 Ø2 (R)	 Ø4
79 s	31 s
 Ø6 (R)	
79 s	

HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Future Total
A.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations			 			 
Traffic Volume (vph)	24	13	534	36	36	721
Future Volume (vph)	24	13	534	36	36	721
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.95		0.99			1.00
Flpb, ped/bikes	0.99		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1306		3125			3011
Flt Permitted	0.97		1.00			0.89
Satd. Flow (perm)	1306		3125			2692
Peak-hour factor, PHF	0.89	0.89	0.89	0.89	0.89	0.89
Adj. Flow (vph)	27	15	600	40	40	810
RTOR Reduction (vph)	14	0	3	0	0	0
Lane Group Flow (vph)	29	0	637	0	0	850
Confl. Peds. (#/hr)	9	62		47	47	
Confl. Bikes (#/hr)		1		8		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	11.0		85.7			85.7
Effective Green, g (s)	11.0		85.7			85.7
Actuated g/C Ratio	0.10		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	130		2434			2097
v/s Ratio Prot			0.20			
v/s Ratio Perm	c0.02					c0.32
v/c Ratio	0.22		0.26			0.41
Uniform Delay, d1	45.5		3.4			3.9
Progression Factor	1.00		1.29			1.00
Incremental Delay, d2	0.9		0.2			0.6
Delay (s)	46.4		4.5			4.5
Level of Service	D		A			A
Approach Delay (s)	46.4		4.5			4.5
Approach LOS	D		A			A
Intersection Summary						
HCM 2000 Control Delay			5.7		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.38			
Actuated Cycle Length (s)			110.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			69.7%		ICU Level of Service	C
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
7: Liberty Ave & Project Driveway

Future Total
A.M. Peak Hour

Intersection

Int Delay, s/veh	0.7					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	17	0	53	106	0	30
Future Vol, veh/h	17	0	53	106	0	30
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, %	2	2	2	2	2	2
Mvmt Flow	18	0	58	115	0	33

Major/Minor	Minor1	Major1		Major2	
Conflicting Flow All	149	116	0	0	173
Stage 1	116	-	-	-	-
Stage 2	33	-	-	-	-
Critical Hdwy	5	5	-	-	5
Critical Hdwy Stg 1	5.42	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-
Follow-up Hdwy	3	3	-	-	3
Pot Cap-1 Maneuver	1038	1072	-	-	1013
Stage 1	1057	-	-	-	-
Stage 2	1158	-	-	-	-
Platoon blocked, %			-	-	-
Mov Cap-1 Maneuver	1038	1072	-	-	1013
Mov Cap-2 Maneuver	1038	-	-	-	-
Stage 1	1057	-	-	-	-
Stage 2	1158	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.5	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	- 1038	1013	-
HCM Lane V/C Ratio	-	- 0.018	-	-
HCM Control Delay (s)	-	- 8.5	0	-
HCM Lane LOS	-	- A	A	-
HCM 95th %tile Q(veh)	-	- 0.1	0	-

P.M. Peak Hour

Timings
1: Dade Blvd & 23rd ST

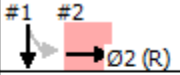
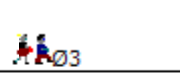
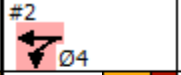
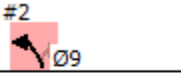
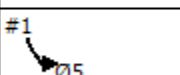
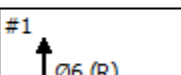
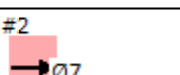
Future Total
P.M. Peak Hour

									
Lane Group	WBL	WBR	NBT	SBL	SBT	Ø3	Ø4	Ø7	Ø9
Lane Configurations									
Traffic Volume (vph)	301	573	1024	359	435				
Future Volume (vph)	301	573	1024	359	435				
Turn Type	Prot	Prot	NA	pm+pt	NA				
Protected Phases	8	8	6	5	2	3	4	7	9
Permitted Phases				2					
Detector Phase	8	8	6	5	2				
Switch Phase									
Minimum Initial (s)	7.0	7.0	5.0	5.0	5.0	1.0	4.0	4.0	5.0
Minimum Split (s)	13.2	13.2	11.9	11.6	11.9	7.0	13.0	8.0	11.9
Total Split (s)	36.0	36.0	24.0	17.0	41.0	23.0	13.0	23.0	23.0
Total Split (%)	36.0%	36.0%	24.0%	17.0%	41.0%	23%	13%	23%	23%
Yellow Time (s)	3.5	3.5	4.0	3.7	4.0	6.0	3.5	3.5	4.0
All-Red Time (s)	2.2	2.2	2.9	2.9	2.9	0.0	2.0	0.5	2.9
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0				
Total Lost Time (s)	5.7	5.7	6.9	6.6	6.9				
Lead/Lag			Lag	Lead			Lead		Lag
Lead-Lag Optimize?			Yes	Yes			Yes		Yes
Recall Mode	None	None	C-Max	None	C-Max	None	None	None	Max

Intersection Summary

Cycle Length: 100
 Actuated Cycle Length: 100
 Offset: 29 (29%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 150
 Control Type: Actuated-Coordinated

Splits and Phases: 1: Dade Blvd & 23rd ST

					
41 s		23 s		13 s	23 s
					
17 s	24 s	23 s	36 s		

Queues

1: Dade Blvd & 23rd ST

Future Total

P.M. Peak Hour

					
Lane Group	WBL	WBR	NBT	SBL	SBT
Lane Group Flow (vph)	314	597	1445	374	453
v/c Ratio	0.59	0.68	2.62	1.61	0.42
Control Delay	6.3	14.6	755.1	315.6	26.8
Queue Delay	59.9	55.9	0.0	3.7	0.0
Total Delay	66.2	70.5	755.1	319.3	26.8
Queue Length 50th (ft)	23	320	~821	~300	115
Queue Length 95th (ft)	m11	m98	#959	#484	161
Internal Link Dist (ft)	74		117		126
Turn Bay Length (ft)				100	
Base Capacity (vph)	533	874	551	233	1086
Starvation Cap Reductn	267	493	0	0	0
Spillback Cap Reductn	0	0	1	50	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	1.18	1.57	2.63	2.04	0.42

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

HCM Signalized Intersection Capacity Analysis

1: Dade Blvd & 23rd ST

Future Total

P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	301	573	1024	363	359	435
Future Volume (vph)	301	573	1024	363	359	435
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.7	5.7	6.9		6.6	6.9
Lane Util. Factor	1.00	1.00	0.95		1.00	0.95
Frpb, ped/bikes	1.00	1.00	0.98		1.00	1.00
Flpb, ped/bikes	1.00	1.00	1.00		1.00	1.00
Frt	1.00	0.85	0.96		1.00	1.00
Flt Protected	0.95	1.00	1.00		0.95	1.00
Satd. Flow (prot)	1593	1425	3013		1592	3185
Flt Permitted	0.95	1.00	1.00		0.17	1.00
Satd. Flow (perm)	1593	1425	3013		283	3185
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	314	597	1067	378	374	453
RTOR Reduction (vph)	0	397	36	0	0	0
Lane Group Flow (vph)	314	200	1409	0	374	453
Confl. Peds. (#/hr)	4			10	10	
Confl. Bikes (#/hr)				5		
Turn Type	Prot	Prot	NA		pm+pt	NA
Protected Phases	8	8	6		5	2
Permitted Phases					2	
Actuated Green, G (s)	33.5	33.5	17.1		34.1	34.1
Effective Green, g (s)	33.5	33.5	17.1		34.1	34.1
Actuated g/C Ratio	0.34	0.34	0.17		0.34	0.34
Clearance Time (s)	5.7	5.7	6.9		6.6	6.9
Vehicle Extension (s)	3.0	3.0	1.0		2.0	1.0
Lane Grp Cap (vph)	533	477	515		232	1086
v/s Ratio Prot	c0.20	0.14	c0.47		c0.17	0.14
v/s Ratio Perm					0.38	
v/c Ratio	0.59	0.42	2.74		1.61	0.42
Uniform Delay, d1	27.5	25.7	41.5		28.8	25.3
Progression Factor	0.20	5.33	1.00		1.00	1.00
Incremental Delay, d2	0.2	0.1	786.9		294.5	1.2
Delay (s)	5.6	137.0	828.4		323.3	26.5
Level of Service	A	F	F		F	C
Approach Delay (s)	91.7		828.4			160.7
Approach LOS	F		F			F
Intersection Summary						
HCM 2000 Control Delay			444.1		HCM 2000 Level of Service	F
HCM 2000 Volume to Capacity ratio			1.24			
Actuated Cycle Length (s)			100.0		Sum of lost time (s)	31.9
Intersection Capacity Utilization			101.2%		ICU Level of Service	G
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
2: Park Ave & 23rd ST

Future Total
P.M. Peak Hour

Intersection

Int Delay, s/veh 9.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔↔			↔↔		↔		↔			
Traffic Vol, veh/h	30	506	189	23	538	32	295	12	49	16	10	42
Future Vol, veh/h	30	506	189	23	538	32	295	12	49	16	10	42
Conflicting Peds, #/hr	15	0	15	15	0	15	2	0	27	27	0	2
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	0	-	0	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	-	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	32	538	201	24	572	34	314	13	52	17	11	45

Major/Minor	Major1		Major2		Minor1			
Conflicting Flow All	621	0	0	754	0	0	1054	1387
Stage 1	-	-	-	-	-	-	718	718
Stage 2	-	-	-	-	-	-	336	669
Critical Hdwy	4.14	-	-	4.14	-	-	5	6.54
Critical Hdwy Stg 1	-	-	-	-	-	-	5.84	5.54
Critical Hdwy Stg 2	-	-	-	-	-	-	5.84	5.54
Follow-up Hdwy	2.22	-	-	2.22	-	-	3	4.02
Pot Cap-1 Maneuver	956	-	-	852	-	-	417	142
Stage 1	-	-	-	-	-	-	498	431
Stage 2	-	-	-	-	-	-	798	454
Platoon blocked, %	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	956	-	-	841	-	-	370	0
Mov Cap-2 Maneuver	-	-	-	-	-	-	370	0
Stage 1	-	-	-	-	-	-	443	0
Stage 2	-	-	-	-	-	-	796	0

Approach	EB	WB	NB
HCM Control Delay, s	0.5	0.5	44.6
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBL	EBT	EBR	WBL	WBT	WBR
Capacity (veh/h)	370	772	956	-	-	841	-	-
HCM Lane V/C Ratio	0.848	0.068	0.033	-	-	0.029	-	-
HCM Control Delay (s)	50.4	10	8.9	0.2	-	9.4	0.2	-
HCM Lane LOS	F	B	A	A	-	A	A	-
HCM 95th %tile Q(veh)	7.9	0.2	0.1	-	-	0.1	-	-

Timings 2: Park Ave & 23rd ST

Future Total
P.M. Peak Hour

											
Lane Group	EBT	WBT	NBL	NBR	SBR	Ø2	Ø3	Ø5	Ø6	Ø7	Ø8
Lane Configurations											
Traffic Volume (vph)	506	538	295	49	42						
Future Volume (vph)	506	538	295	49	42						
Turn Type	NA	NA	Prot	Perm	Free						
Protected Phases	2 7	4	9			2	3	5	6	7	8
Permitted Phases				9	Free						
Detector Phase	2 7	4	9	9							
Switch Phase											
Minimum Initial (s)		4.0	5.0	5.0		5.0	1.0	5.0	5.0	4.0	7.0
Minimum Split (s)		13.0	11.9	11.9		11.9	7.0	11.6	11.9	8.0	13.2
Total Split (s)		13.0	23.0	23.0		41.0	23.0	17.0	24.0	23.0	36.0
Total Split (%)		13.0%	23.0%	23.0%		41%	23%	17%	24%	23%	36%
Yellow Time (s)		3.5	4.0	4.0		4.0	6.0	3.7	4.0	3.5	3.5
All-Red Time (s)		2.0	2.9	2.9		2.9	0.0	2.9	2.9	0.5	2.2
Lost Time Adjust (s)		0.0	0.0	0.0							
Total Lost Time (s)		5.5	6.9	6.9							
Lead/Lag		Lead	Lag	Lag				Lead	Lag		
Lead-Lag Optimize?		Yes	Yes	Yes				Yes	Yes		
Recall Mode		None	Max	Max		C-Max	None	None	C-Max	None	None

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 29 (29%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
Natural Cycle: 150
Control Type: Actuated-Coordinated

Splits and Phases: 2: Park Ave & 23rd ST

 #1  #2 41 s		 #3  #4 23 s		 #5  #6 13 s		 #7  #8 23 s	
 #1  #2 17 s		 #3  #4 24 s		 #5  #6 23 s		 #7  #8 36 s	

HCM Signalized Intersection Capacity Analysis

2: Park Ave & 23rd ST

Future Total

P.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations					 							
Traffic Volume (vph)	0	506	189	23	538	0	295	0	49	0	0	42
Future Volume (vph)	0	506	189	23	538	0	295	0	49	0	0	42
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.9			5.5		6.9		6.9			4.0
Lane Util. Factor		1.00			0.95		1.00		1.00			1.00
Frpb, ped/bikes		0.99			1.00		1.00		0.90			0.99
Flpb, ped/bikes		1.00			1.00		1.00		1.00			1.00
Frt		0.96			1.00		1.00		0.85			0.86
Flt Protected		1.00			1.00		0.95		1.00			1.00
Satd. Flow (prot)		1600			3020		1593		1149			1432
Flt Permitted		1.00			1.00		0.95		1.00			1.00
Satd. Flow (perm)		1600			3020		1593		1149			1432
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Adj. Flow (vph)	0	538	201	24	572	0	314	0	52	0	0	45
RTOR Reduction (vph)	0	13	0	0	0	0	0	0	44	0	0	0
Lane Group Flow (vph)	0	726	0	0	596	0	314	0	8	0	0	45
Confl. Peds. (#/hr)	15		15	15		15	2		27	27		2
Confl. Bikes (#/hr)			2			4			1			
Parking (#/hr)					0				0			
Turn Type		NA		Split	NA		Prot		Perm			Free
Protected Phases		2 7		4	4		9					
Permitted Phases									9			Free
Actuated Green, G (s)		56.8			10.7		16.1		16.1			100.0
Effective Green, g (s)		56.8			10.7		16.1		16.1			100.0
Actuated g/C Ratio		0.57			0.11		0.16		0.16			1.00
Clearance Time (s)					5.5		6.9		6.9			
Vehicle Extension (s)					3.0		1.0		1.0			
Lane Grp Cap (vph)		908			323		256		184			1432
v/s Ratio Prot		c0.45			c0.20		c0.20					
v/s Ratio Perm									0.01			0.03
v/c Ratio		0.80			1.85		1.23		0.05			0.03
Uniform Delay, d1		17.1			44.6		42.0		35.5			0.0
Progression Factor		0.35			1.00		1.00		1.00			1.00
Incremental Delay, d2		0.5			392.1		131.5		0.5			0.0
Delay (s)		6.4			436.8		173.4		35.9			0.0
Level of Service		A			F		F		D			A
Approach Delay (s)		6.4			436.8			153.9			0.0	
Approach LOS		A			F			F			A	
Intersection Summary												
HCM 2000 Control Delay			184.1									
HCM 2000 Volume to Capacity ratio			1.25									
Actuated Cycle Length (s)			100.0									
Intersection Capacity Utilization			72.4%									
Analysis Period (min)			15									
c Critical Lane Group												

HCM 2010 TWSC
3: Liberty Ave & 23rd St

Future Total
P.M. Peak Hour

Intersection

Int Delay, s/veh 3.8

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
----------	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

Lane Configurations		↕			↕			↕			↕	
Traffic Vol, veh/h	49	442	66	24	403	40	46	0	16	83	0	104
Future Vol, veh/h	49	442	66	24	403	40	46	0	16	83	0	104
Conflicting Peds, #/hr	26	0	11	11	0	26	32	0	14	14	0	32
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	150	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	94	94	94	94	94	94	94	94	94	94	94	94
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	52	470	70	26	429	43	49	0	17	88	0	111

Major/Minor	Major1		Major2		Minor1		Minor2					
Conflicting Flow All	498	0	0	551	0	0	919	1170	530	1161	1184	294
Stage 1	-	-	-	-	-	-	620	620	-	529	529	-
Stage 2	-	-	-	-	-	-	299	550	-	632	655	-
Critical Hdwy	4.13	-	-	4.13	-	-	5	5	5	5	5	5
Critical Hdwy Stg 1	-	-	-	-	-	-	6.13	5.53	-	6.53	5.53	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.53	5.53	-	6.13	5.53	-
Follow-up Hdwy	2.219	-	-	2.219	-	-	3	3	3	3	3	3
Pot Cap-1 Maneuver	1064	-	-	1017	-	-	479	370	711	373	365	899
Stage 1	-	-	-	-	-	-	535	593	-	568	658	-
Stage 2	-	-	-	-	-	-	788	643	-	526	569	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	1041	-	-	1008	-	-	370	321	696	324	317	856
Mov Cap-2 Maneuver	-	-	-	-	-	-	370	321	-	324	317	-
Stage 1	-	-	-	-	-	-	492	546	-	516	621	-
Stage 2	-	-	-	-	-	-	644	607	-	471	523	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.8	0.5	15.1	17.1
HCM LOS			C	C

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	421	1041	-	-	1008	-	-	495
HCM Lane V/C Ratio	0.157	0.05	-	-	0.025	-	-	0.402
HCM Control Delay (s)	15.1	8.6	0	-	8.7	0.1	-	17.1
HCM Lane LOS	C	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0.6	0.2	-	-	0.1	-	-	1.9

Timings

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total

P.M. Peak Hour

										
Lane Group	EBL	EBT	WBT	NBL	NBT	SBL2	SBL	SBT	SBR	NWL
Lane Configurations										
Traffic Volume (vph)	338	20	22	138	960	7	4	628	271	34
Future Volume (vph)	338	20	22	138	960	7	4	628	271	34
Turn Type	Split	NA	NA	Perm	NA	Perm	Perm	NA	pm+ov	Prot
Protected Phases	3	3	4		6			2	3	1
Permitted Phases				6		2	2		2	
Detector Phase	3	3	4	6	6	2	2	2	3	1
Switch Phase										
Minimum Initial (s)	7.0	7.0	7.0	5.0	5.0	5.0	5.0	5.0	7.0	7.0
Minimum Split (s)	25.0	25.0	29.0	33.5	33.5	33.5	33.5	33.5	25.0	13.0
Total Split (s)	26.0	26.0	29.0	60.0	60.0	60.0	60.0	60.0	26.0	15.0
Total Split (%)	20.0%	20.0%	22.3%	46.2%	46.2%	46.2%	46.2%	46.2%	20.0%	11.5%
Yellow Time (s)	4.0	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	2.5	2.5	2.5	2.5	2.5	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0			0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0		6.5			6.5	6.0	6.0
Lead/Lag	Lead	Lead	Lag						Lead	
Lead-Lag Optimize?	Yes	Yes	Yes						Yes	
Recall Mode	None	None	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 3 (2%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow

Natural Cycle: 145

Control Type: Actuated-Coordinated

Splits and Phases: 4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

 Ø2 (R)	 Ø3	 Ø4	 Ø1
60 s	26 s	29 s	15 s
 Ø6 (R)			
60 s			

Queues

Future Total

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

P.M. Peak Hour

							
Lane Group	EBL	EBT	WBT	NBT	SBT	SBR	NWL
Lane Group Flow (vph)	285	263	55	1169	658	279	61
v/c Ratio	1.23	1.18	0.22	1.29	0.53	0.47	0.71
Control Delay	180.1	155.6	48.5	172.6	25.2	7.1	98.9
Queue Delay	0.0	0.0	0.0	1.0	0.0	0.0	0.0
Total Delay	180.1	155.6	48.5	173.6	25.2	7.1	98.9
Queue Length 50th (ft)	~310	~231	40	~686	226	47	51
Queue Length 95th (ft)	#501	#418	81	#826	289	49	#124
Internal Link Dist (ft)		267	26	241	597		49
Turn Bay Length (ft)	110					160	
Base Capacity (vph)	232	222	252	904	1238	588	90
Starvation Cap Reductn	0	0	0	142	0	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	1.23	1.18	0.22	1.53	0.53	0.47	0.68

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 Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	EBR2	WBL	WBT	WBR	NBL	NBT	NBR	NBR2	SBL2
Lane Configurations												
Traffic Volume (vph)	338	20	8	166	8	22	23	138	960	14	22	7
Future Volume (vph)	338	20	8	166	8	22	23	138	960	14	22	7
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.0	6.0				6.0			6.5			
Lane Util. Factor	0.95	0.95				1.00			0.95			
Frpb, ped/bikes	1.00	0.79				0.91			0.98			
Flpb, ped/bikes	1.00	1.00				1.00			0.99			
Frt	1.00	0.90				0.94			1.00			
Flt Protected	0.95	0.99				0.99			0.99			
Satd. Flow (prot)	1513	1110				1429			3061			
Flt Permitted	0.95	0.99				0.99			0.67			
Satd. Flow (perm)	1513	1110				1429			2078			
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	348	21	8	171	8	23	24	142	990	14	23	7
RTOR Reduction (vph)	0	52	0	0	0	0	0	0	1	0	0	0
Lane Group Flow (vph)	285	211	0	0	0	55	0	0	1168	0	0	0
Confl. Peds. (#/hr)	114		100	65	65		114	139		100	100	100
Confl. Bikes (#/hr)			1	1						13	13	
Parking (#/hr)				0								
Turn Type	Split	NA			Split	NA		Perm	NA			Perm
Protected Phases	3	3			4	4			6			
Permitted Phases								6				2
Actuated Green, G (s)	20.0	20.0				23.0			55.3			
Effective Green, g (s)	20.0	20.0				23.0			55.3			
Actuated g/C Ratio	0.15	0.15				0.18			0.43			
Clearance Time (s)	6.0	6.0				6.0			6.5			
Vehicle Extension (s)	2.5	2.5				2.5			1.0			
Lane Grp Cap (vph)	232	170				252			883			
v/s Ratio Prot	0.19	c0.19				c0.04						
v/s Ratio Perm									c0.56			
v/c Ratio	1.23	1.24				0.22			1.32			
Uniform Delay, d1	55.0	55.0				45.8			37.4			
Progression Factor	1.00	1.00				1.00			1.00			
Incremental Delay, d2	134.7	149.2				0.3			153.1			
Delay (s)	189.7	204.2				46.1			190.4			
Level of Service	F	F				D			F			
Approach Delay (s)		196.7				46.1			190.4			
Approach LOS		F				D			F			
Intersection Summary												
HCM 2000 Control Delay			129.8		HCM 2000 Level of Service				F			
HCM 2000 Volume to Capacity ratio			1.03									
Actuated Cycle Length (s)			130.0		Sum of lost time (s)				24.5			
Intersection Capacity Utilization			110.1%		ICU Level of Service				H			
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

4: Collins Ave & W Hotel Driveway & 23rd St/23rd St (Rooney Palace)

Future Total
P.M. Peak Hour

							
Movement	SBL	SBT	SBR	NWL2	NWL	NWR	NWR2
Lane Configurations							
Traffic Volume (vph)	4	628	271	12	34	12	2
Future Volume (vph)	4	628	271	12	34	12	2
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.5	6.0		6.0		
Lane Util. Factor		0.95	1.00		1.00		
Frpb, ped/bikes		1.00	0.64		0.82		
Flpb, ped/bikes		1.00	1.00		1.00		
Frt		1.00	0.85		0.97		
Flt Protected		1.00	1.00		0.96		
Satd. Flow (prot)		3183	913		1280		
Flt Permitted		0.89	1.00		0.96		
Satd. Flow (perm)		2849	913		1280		
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	4	647	279	12	35	12	2
RTOR Reduction (vph)	0	0	52	0	0	0	0
Lane Group Flow (vph)	0	658	227	0	61	0	0
Confl. Peds. (#/hr)	100		139	65	139	114	100
Confl. Bikes (#/hr)			9				
Parking (#/hr)							
Turn Type	Perm	NA	pm+ov	Prot	Prot		
Protected Phases		2	3	1	1		
Permitted Phases	2		2				
Actuated Green, G (s)		55.3	75.3		7.2		
Effective Green, g (s)		55.3	75.3		7.2		
Actuated g/C Ratio		0.43	0.58		0.06		
Clearance Time (s)		6.5	6.0		6.0		
Vehicle Extension (s)		1.0	2.5		2.5		
Lane Grp Cap (vph)		1211	528		70		
v/s Ratio Prot			0.07		0.05		
v/s Ratio Perm		0.23	0.18				
v/c Ratio		0.54	0.43		0.87		
Uniform Delay, d1		27.9	15.3		60.9		
Progression Factor		0.84	0.57		1.00		
Incremental Delay, d2		1.6	0.4		64.7		
Delay (s)		25.1	9.1		125.6		
Level of Service		C	A		F		
Approach Delay (s)		20.3			125.6		
Approach LOS		C			F		
Intersection Summary							

Timings 5: Collins Ave & 22nd St

Future Total
P.M. Peak Hour

								
Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations								
Traffic Volume (vph)	22	20	27	52	22	1041	34	765
Future Volume (vph)	22	20	27	52	22	1041	34	765
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	NA
Protected Phases		8		4		6		2
Permitted Phases	8		4		6		2	
Detector Phase	8	8	4	4	6	6	2	2
Switch Phase								
Minimum Initial (s)	7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0
Minimum Split (s)	25.0	25.0	25.0	25.0	22.0	22.0	22.0	22.0
Total Split (s)	30.0	30.0	30.0	30.0	70.0	70.0	70.0	70.0
Total Split (%)	30.0%	30.0%	30.0%	30.0%	70.0%	70.0%	70.0%	70.0%
Yellow Time (s)	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	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)		0.0		0.0		0.0		0.0
Total Lost Time (s)		6.0		6.0		6.0		6.0
Lead/Lag								
Lead-Lag Optimize?								
Recall Mode	None	None	None	None	C-Max	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 100
Actuated Cycle Length: 100
Offset: 40 (40%), Referenced to phase 2:SBTL and 6:NBTL, Start of Yellow
Natural Cycle: 60
Control Type: Actuated-Coordinated

Splits and Phases: 5: Collins Ave & 22nd St

			
Ø2 (R)		Ø4	
70 s		30 s	
			
Ø6 (R)		Ø8	
70 s		30 s	

HCM 2010 Signalized Intersection Summary

5: Collins Ave & 22nd St

Future Total
P.M. Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	22	20	24	27	52	64	22	1041	37	34	765	30
Future Volume (veh/h)	22	20	24	27	52	64	22	1041	37	34	765	30
Number	3	8	18	7	4	14	1	6	16	5	2	12
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.96		0.81	0.94		0.81	0.98		0.91	0.99		0.91
Parking Bus, Adj	1.00	1.00	0.90	1.00	1.00	0.90	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1710	1676	1710	1710	1676	1710	1710	1676	1710	1710	1676	1710
Adj Flow Rate, veh/h	23	21	25	28	55	67	23	1096	39	36	805	32
Adj No. of Lanes	0	1	0	0	1	0	0	2	0	0	2	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	99	79	74	67	92	94	58	2100	74	95	1945	76
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.94	0.94	0.94	0.94	0.94	0.94
Sat Flow, veh/h	292	450	422	138	525	535	30	2979	105	80	2758	108
Grp Volume(v), veh/h	69	0	0	150	0	0	603	0	555	431	0	442
Grp Sat Flow(s),veh/h/ln	1164	0	0	1199	0	0	1620	0	1494	1453	0	1493
Q Serve(g_s), s	0.0	0.0	0.0	5.2	0.0	0.0	0.0	0.0	4.6	0.0	0.0	3.0
Cycle Q Clear(g_c), s	4.8	0.0	0.0	11.6	0.0	0.0	4.3	0.0	4.6	2.4	0.0	3.0
Prop In Lane	0.33		0.36	0.19		0.45	0.04		0.07	0.08		0.07
Lane Grp Cap(c), veh/h	252	0	0	253	0	0	1179	0	1053	1063	0	1053
V/C Ratio(X)	0.27	0.00	0.00	0.59	0.00	0.00	0.51	0.00	0.53	0.41	0.00	0.42
Avail Cap(c_a), veh/h	325	0	0	328	0	0	1179	0	1053	1063	0	1053
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.33	1.33	1.33	1.33	1.33	1.33
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.83	0.00	0.83
Uniform Delay (d), s/veh	36.0	0.0	0.0	38.7	0.0	0.0	1.1	0.0	1.1	1.0	0.0	1.0
Incr Delay (d2), s/veh	0.4	0.0	0.0	1.7	0.0	0.0	1.6	0.0	1.9	1.0	0.0	1.0
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	1.7	0.0	0.0	4.0	0.0	0.0	2.1	0.0	2.2	1.3	0.0	1.5
LnGrp Delay(d),s/veh	36.4	0.0	0.0	40.4	0.0	0.0	2.6	0.0	3.0	2.0	0.0	2.0
LnGrp LOS	D			D			A		A	A		A
Approach Vol, veh/h		69			150			1158			873	
Approach Delay, s/veh		36.4			40.4			2.8			2.0	
Approach LOS		D			D			A			A	
Timer	1	2	3	4	5	6	7	8				
Assigned Phs		2		4		6		8				
Phs Duration (G+Y+Rc), s		76.5		23.5		76.5		23.5				
Change Period (Y+Rc), s		6.0		6.0		6.0		6.0				
Max Green Setting (Gmax), s		64.0		24.0		64.0		24.0				
Max Q Clear Time (g_c+I1), s		5.0		13.6		6.6		6.8				
Green Ext Time (p_c), s		2.3		0.5		3.1		0.2				
Intersection Summary												
HCM 2010 Ctrl Delay			6.0									
HCM 2010 LOS			A									

Timings 6: Collins Ave & 24th St

Future Total
P.M. Peak Hour

				
Lane Group	WBL	NBT	SBL	SBT
Lane Configurations				
Traffic Volume (vph)	53	1228	30	847
Future Volume (vph)	53	1228	30	847
Turn Type	Perm	NA	Perm	NA
Protected Phases		6		2
Permitted Phases	4		2	
Detector Phase	4	6	2	2
Switch Phase				
Minimum Initial (s)	7.0	7.0	7.0	7.0
Minimum Split (s)	23.3	25.0	25.0	25.0
Total Split (s)	31.0	99.0	99.0	99.0
Total Split (%)	23.8%	76.2%	76.2%	76.2%
Yellow Time (s)	4.0	4.0	4.0	4.0
All-Red Time (s)	3.3	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0
Total Lost Time (s)	7.3	6.0		6.0
Lead/Lag				
Lead-Lag Optimize?				
Recall Mode	None	C-Max	C-Max	C-Max

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 24 (18%), Referenced to phase 2:SBTL and 6:NBT, Start of Yellow
 Natural Cycle: 60
 Control Type: Actuated-Coordinated

Splits and Phases: 6: Collins Ave & 24th St

 Ø2 (R)	 Ø4
99 s	31 s
 Ø6 (R)	
99 s	

HCM Signalized Intersection Capacity Analysis

6: Collins Ave & 24th St

Future Total
P.M. Peak Hour

						
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (vph)	53	31	1228	72	30	847
Future Volume (vph)	53	31	1228	72	30	847
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900
Total Lost time (s)	7.3		6.0			6.0
Lane Util. Factor	1.00		0.95			0.95
Frpb, ped/bikes	0.89		0.99			1.00
Flpb, ped/bikes	0.90		1.00			1.00
Frt	0.95		0.99			1.00
Flt Protected	0.97		1.00			1.00
Satd. Flow (prot)	1115		3115			3019
Flt Permitted	0.97		1.00			0.85
Satd. Flow (perm)	1115		3115			2559
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	55	32	1279	75	31	882
RTOR Reduction (vph)	18	0	2	0	0	0
Lane Group Flow (vph)	69	0	1352	0	0	913
Confl. Peds. (#/hr)	67	114		67	67	
Confl. Bikes (#/hr)		2		13		
Parking (#/hr)	0	0				0
Turn Type	Perm		NA		Perm	NA
Protected Phases			6			2
Permitted Phases	4				2	
Actuated Green, G (s)	15.2		101.5			101.5
Effective Green, g (s)	15.2		101.5			101.5
Actuated g/C Ratio	0.12		0.78			0.78
Clearance Time (s)	7.3		6.0			6.0
Vehicle Extension (s)	3.0		1.0			1.0
Lane Grp Cap (vph)	130		2432			1997
v/s Ratio Prot			c0.43			
v/s Ratio Perm	c0.06					0.36
v/c Ratio	0.53		0.56			0.46
Uniform Delay, d1	54.1		5.5			4.9
Progression Factor	1.00		1.07			1.00
Incremental Delay, d2	4.2		0.1			0.8
Delay (s)	58.2		6.0			5.6
Level of Service	E		A			A
Approach Delay (s)	58.2		6.0			5.6
Approach LOS	E		A			A
Intersection Summary						
HCM 2000 Control Delay			7.8		HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.55			
Actuated Cycle Length (s)			130.0		Sum of lost time (s)	13.3
Intersection Capacity Utilization			74.5%		ICU Level of Service	D
Analysis Period (min)			15			
c Critical Lane Group						

HCM 2010 TWSC
7: Liberty Ave & Project Driveway

Future Total
P.M. Peak Hour

Intersection

Int Delay, s/veh 4.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	141	0	30	56	0	42
Future Vol, veh/h	141	0	30	56	0	42
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, %	2	2	2	2	2	2
Mvmt Flow	153	0	33	61	0	46

Major/Minor	Minor1	Major1	Major2
Conflicting Flow All	110	64	0
Stage 1	64	-	-
Stage 2	46	-	-
Critical Hdwy	5	5	-
Critical Hdwy Stg 1	5.42	-	-
Critical Hdwy Stg 2	5.42	-	-
Follow-up Hdwy	3	3	-
Pot Cap-1 Maneuver	1078	1127	-
Stage 1	1119	-	-
Stage 2	1141	-	-
Platoon blocked, %		-	-
Mov Cap-1 Maneuver	1078	1127	-
Mov Cap-2 Maneuver	1078	-	-
Stage 1	1119	-	-
Stage 2	1141	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT
Capacity (veh/h)	-	-	1078	1095
HCM Lane V/C Ratio	-	-	0.142	-
HCM Control Delay (s)	-	-	8.9	0
HCM Lane LOS	-	-	A	A
HCM 95th %tile Q(veh)	-	-	0.5	0