Proposed Operational Restrictions and Conditions for the Restaurant On the Property at 400 Collins Avenue

DRAFT

The Applicant agrees to the following operational conditions for all permitted and accessory uses and shall bind itself, lessees, permittees, concessionaires, renters, guests, users, and successors and assigns and all successors in interest in whole or in part to comply with the following operational and noise attenuation requirements and/or limitations. The applicant shall ensure through appropriate contracts, assignments and management rules that these restrictions are enforced and the applicant agrees to include the rules and regulations set forth in these conditions in any contract or assignment:

a. Tinting, paper, blackout, or similar treatments shall be prohibited on the interior or the exterior of all glass located at the first level. Sheer drapes may be proposed at the first level, in a manner to be reviewed and approved by staff.

b. The restaurant shall close by 2:00 AM. Any future outdoor component of the restaurant shall close no later than 12 AM, seven days per week. After normal operating hours the establishment shall remain closed and no patrons or other persons, other than those employed by the establishment, shall remain therein between closing and 7 am.

c. No alcoholic beverage service may be provided in the exterior open-air restaurant unless accompanied by food service.

d. No sidewalk cafe permit shall be sought or utilized by the applicant or any lessees.

e. No exterior loudspeakers shall be permitted except those necessary for fire and life safety purposes.

f. Background music may be provided in the non-residential interior areas of the building, provided it is limited to background music that does not interfere with normal conversation. This restriction does not apply to the residential units.

g. Patrons shall not be allowed to queue on public rights-of-way, or the exterior of the premises along 4th Street or Collins Avenue.

h. Special events pursuant to the Miami Beach City Code, associated with the proposed establishment, may not be held on the premises and the applicant agrees that it will not seek or authorize applications for such permits.

i. Delivery trucks shall only be permitted to park within the loading area within the ground floor parking area or the designated loading zone for the property.

j. Delivery trucks shall not be allowed to idle in the loading zone area.

k. All trash containers shall utilize rubber wheels, or the path for the trash containers shall consist of a surface finish that reduces noise, in a manner to be reviewed and approved by staff.

l. Adequate trash room space, air conditioned and noise baffled, shall be provided, in a manner to be approved by the Planning and Public Works Departments. Sufficient

interior space must be provided so that doors can remain closed while trash and trash bags are being deposited in dumpsters. Doors shall remain closed and secured when not in active use.

m. Trash room(s)/garbage room(s) shall be large enough, or sufficient in number to accommodate enough dumpsters so that more than one pick up of garbage per day will not be necessary. A high-level trash/garbage compacting device shall be located in an air-conditioned trash/garbage holding room within the facility.

n. Garbage dumpster covers shall be closed at all times except when in active use.

o. Garbage pickups and service deliveries shall not take place between 9:00 PM and 8:00AM.

p. Applicant shall ensure that restaurant personnel do not place trash or recycling into any exterior dumpsters or receptacles between 9 PM and 8 AM, seven days a week.

q. Kitchen and other cooking odors shall be contained within the premises to the greatest extent reasonably feasible. Owner agrees to install an exhaust system, if required by code, for the kitchens of any commercial restaurants on the premise that will substantially reduce grease and smoke that would otherwise escape to the surrounding area. This may include the installation of a fan in connection with kitchen exhaust systems within the interior of the building in order to reduce noise levels at the exhaust outlet substantially in compliance with the plans as approved or in the alternative any such exhaust system shall be located along the west side of the property not directly adjacent to the southernmost or northernmost property lines.

r. Equipment and supplies shall not be stored in areas visible from streets, alleys or nearby buildings

s. The Operator shall be responsible for maintaining the areas adjacent to the facility, such as the sidewalks, curb and gutter on Collins Avenue, 4th Street and around the perimeter of the property in excellent condition, keeping these areas in a clean condition, free of all refuse, at all times.

t. The rooftop pool decks shall not have any commercial uses. Nor shall a commercial bar counter be placed on any portion of the property's exterior, including the rooftop, terraces, private decks, and balconies.

u. Street flyers and handouts shall not be permitted, including handbills from third-party promotions.

v. The applicant shall obtain a Certificate of Occupancy or a Certificate of Completion prior to the issuance of a Business Tax Receipt.

Torino Garage at 400 Collins Avenue

Mixed-Use Garage Condominium

Miami Beach, Florida

traffic study

prepared for:

Brandon Haw Architecture LLP

Traf Tech
ENGINEERING, INC.

May 2015

Updated May 2016

Torino Garage at 400 Collins Avenue

Miami Beach, Florida

Traffic Impact Analysis

May 2015
Updated May 2016

Prepared for:
Brandon Haw Architecture LLP

Prepared by:
Traf Tech Engineering, Inc.
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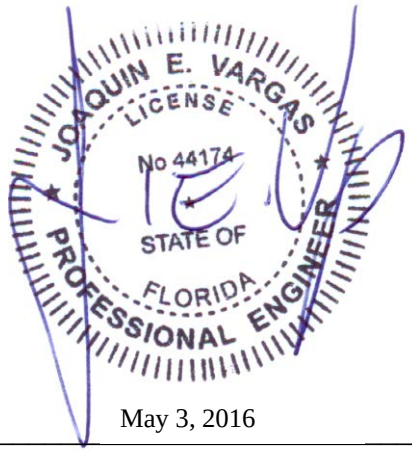

May 3, 2016

Joaquin E. Vargas, P.E.
Florida Registration Number 44174
Traf Tech Engineering, Inc.
8400 N. University Drive, Suite 309
Tamarac, Florida 33321
CA # 26605

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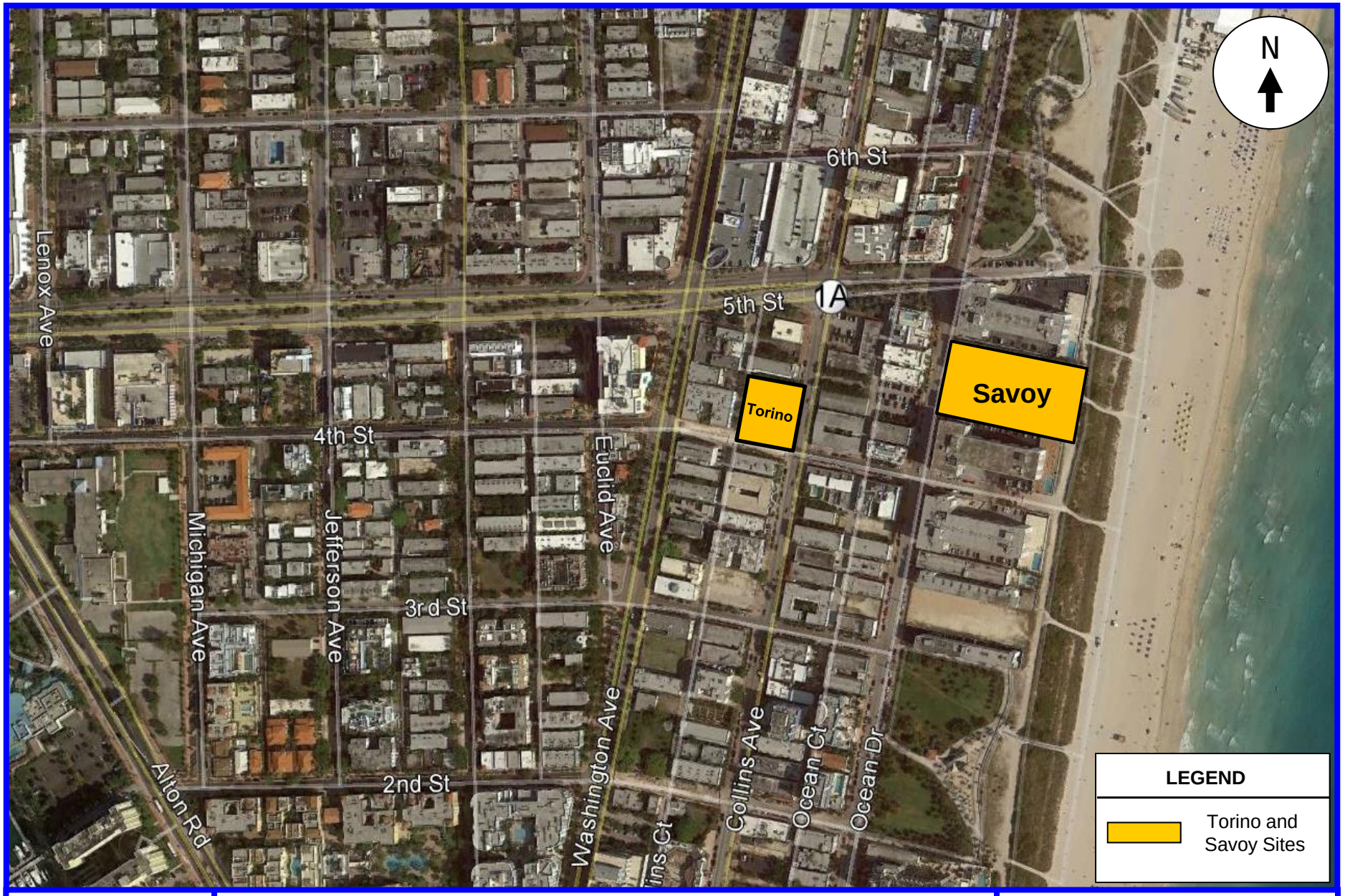
INTRODUCTION

The Torino Garage at 400 Collins Avenue is a proposed mixed-use garage condominium to be located in the northwest quadrant of the intersection at 4th Street and Collins Avenue in the City of Miami Beach, Miami-Dade County, Florida. More specifically, the subject site is located at 400-420 Collins Avenue. The subject site presently contains a surface parking lot that serves the existing Savoy Hotel located at 425 Ocean Drive. The proposed project involves the development of residential, retail/restaurant and parking facilities. The location of the project site (and the Savoy Hotel) is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. has been retained by Brandon Haw Architecture LLP to conduct a traffic impact study[1] in connection with the development of this mixed-use project. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network as well as parking procedures and the availability of multi-modal opportunities. This study is divided into nine (9) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Data
4. Trip Generation
5. Trip Distribution & Traffic Assignment
6. Traffic Analyses
7. Other Modes of Transportation
8. Parking & Queuing Analysis
9. Summary & Conclusions

[1] This traffic study methodology was discussed and agreed upon with City of Miami Beach staff and the peer reviewer on Monday, November 2, 2015. A summary of this methodology is presented in Appendix A of this report. It is noted that the current development program represents a slight deviation from that previously considered in November 2015.



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Project Location Map

FIGURE 1
Torino at 400 Collins Avenue
Miami Beach, Florida

INVENTORY

Existing Land Use and Access

As mentioned previously, the subject site contains a surface parking lot that serves the existing Savoy Hotel. This hotel (which is fully operational and open for business) consists of 66 guest rooms. The subject hotel will be renovated and expanded to include an additional 115 guest rooms and a new 114-seat restaurant. (A traffic impact study for this expansion was prepared in June 2013 and the main report is included as Appendix B to this report.)[1] Vehicular access to the site is presently provided via a driveway located on Collins Court just north of 4th Street.

Proposed Land Uses and Access

The subject Torino Mixed-Use Garage Condominium development will consist of four (4) luxury residential condominium dwelling units, a 199-seat restaurant, and a parking garage that will consist of 177 parking spaces (including 6 handicap spaces and 8 parking spaces designated for the residential dwelling units). Access to the parking garage will be provided via a driveway on 4th Street. Access to the residential parking area will be provided along Collins Court. The proposed project is anticipated to be built and occupied by 2018. Appendix D contains the proposed site plan for the Torino Garage at 400 Collins Avenue project.

[1] The traffic study presented in Appendix B considered a smaller development program than outlined above. As such, the trip generation data from the previous traffic report has been updated to reflect the current development plans at the Savoy site. This data is presented in Appendix C.

EXISTING CONDITIONS

This section of the report addresses the transportation system located in the vicinity of the project site.

Roadway System

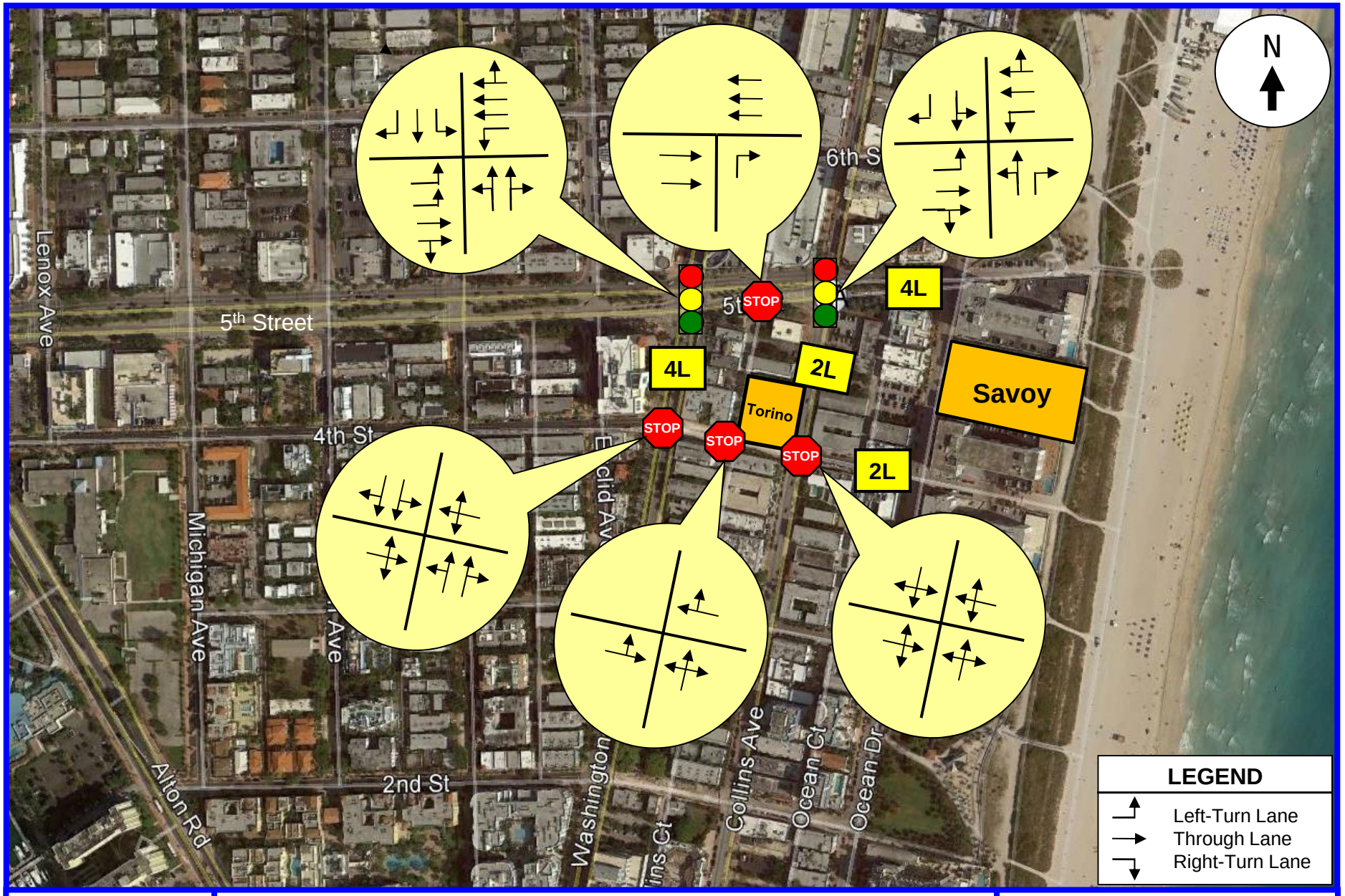
The roadway system located near the site includes 4th Street, 5th Street, Collins Avenue, Washington Avenue, and Collins Court. Within the study area, Collins Avenue is a north-south arterial roadway with one (1) travel lane in each direction and on-street parking on both sides of the roadway. In the vicinity of Collins Avenue, 5th Street is an east-west arterial roadway with two (2) travel lanes in each direction. 4th Street is an east-west local roadway with on-street parking on both sides and one (1) travel lane in each direction. Washington Avenue is a four-lane divided arterial oriented in the north-south direction. Collins Court is a north-south alley that allows vehicular travel in the northbound direction.

Nearby Intersections

With the assistance of City of Miami Beach staff and the peer reviewer, six (6) nearby intersections were identified as the locations that will be impacted most by the proposed development project. These intersections are:

- Collins Avenue and 5th Street (signalized)
- Collins Court and 5th Street (unsignalized)
- Collins Avenue and 4th Street (unsignalized)
- Collins Court and 4th Street (unsignalized)
- Washington Avenue and 4th Street (unsignalized)
- Washington Avenue and 5th Street (signalized)

Figure 2 shows the existing lane geometry of the six (6) intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in this figure.



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Existing Lane Geometry

FIGURE 2
Torino at 400 Collins Avenue
Miami Beach, Florida

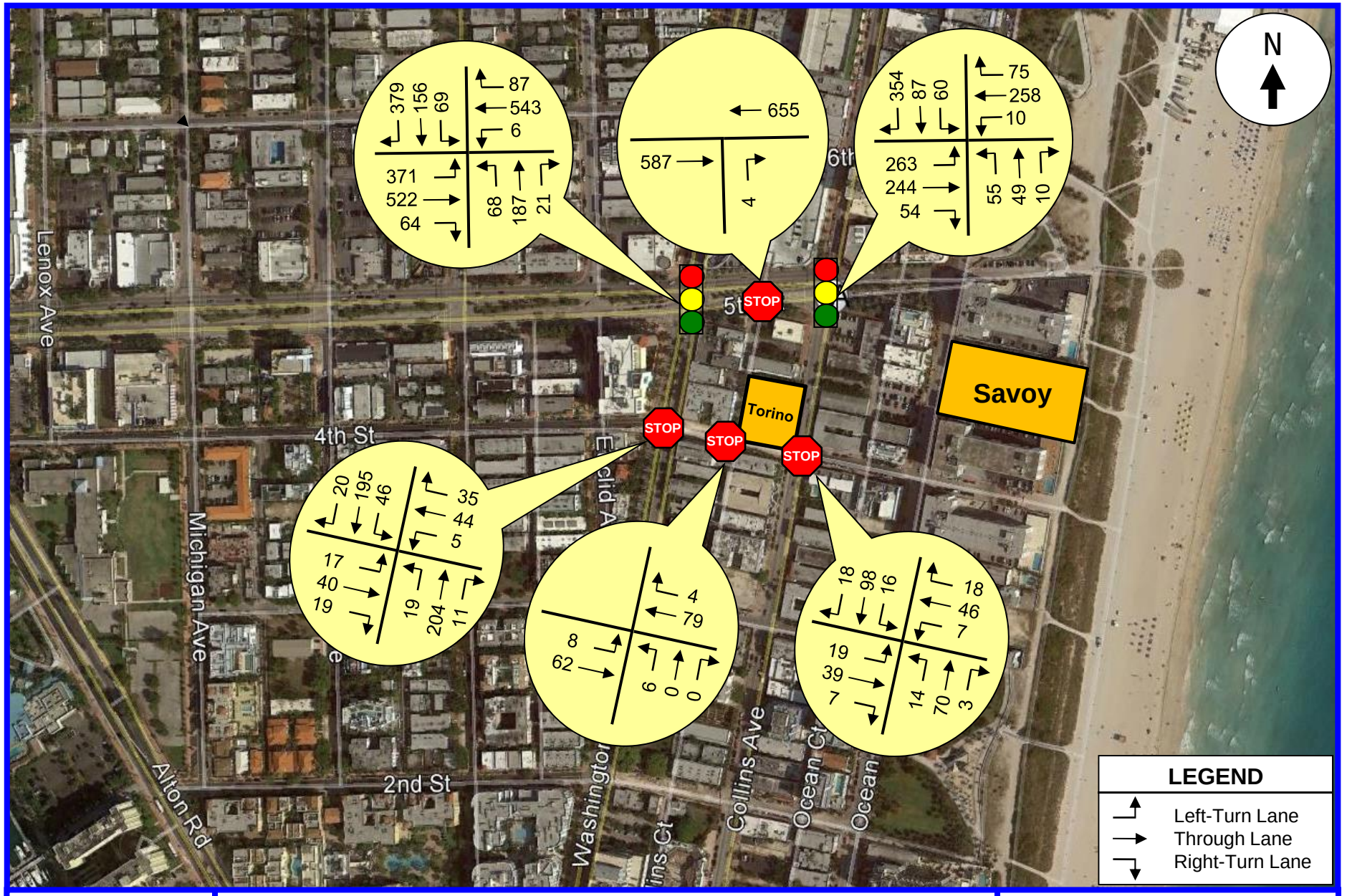
TRAFFIC COUNTS

Traf Tech Engineering, Inc., in association with Traffic Survey Specialists, Inc., collected intersection turning movement counts at the following six (6) study intersections:

- Collins Avenue and 5th Street
- Collins Court and 5th Street
- Collins Avenue and 4th Street
- Collins Court and 4th Street
- Washington Avenue and 4th Street
- Washington Avenue and 5th Street

These intersection turning movement counts along Collins Avenue and Collins Court were collected on Friday, July 11, 2014 between 5:00 PM and 7:00 PM. The intersection turning movement counts along Washington Avenue were collected on Friday, May 29, 2015 between 5:00 PM and 7:00 PM. Figure 3 summarizes the results of the intersection turning movement counts undertaken during the weekly (Friday) peak hour. Appendix E contains the intersection turning movement counts, as collected in the field.

The signalized intersections within the project study area (5th Street / Collins Avenue and 5th Street / Washington Avenue) are maintained and operated by Miami-Dade County's Traffic Signals and Signs Division. The current signal timing plans for these intersections were obtained from the County and are included in Appendix F.



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Existing PM Peak Hour Traffic Counts

Source: Traffic Survey Specialists, Inc. 7/11/14 & 5/29/15

FIGURE 3

Torino at 400 Collins Avenue
Miami Beach, Florida

TRIP GENERATION

The trip generation for The Torino Garage at 400 Collins Avenue mixed-use project was based upon information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (9th Edition).* According to the subject ITE manual, the most appropriate land use categories for the proposed development are: Land Use #230 – Residential Condominium / Townhouse and Land Use #931 – Quality Restaurant. The trip generation rates and equations used to determine the vehicle trips associated with The Torino Garage at 400 Collins Avenue project are presented below.

ITE Land Use #230 – Residential Condominium / Townhouse

Weekday (Daily) Trip Generation
T = 5.81 (X)
Where T = number of weekday daily trips and X = number of dwelling units

PM Peak Hour of Adjacent Street
T = 0.52 (X) (67% inbound and 33% outbound)
Where T = number of PM peak hour trips and X = number of dwelling units

ITE Land Use #931 – Quality Restaurant

Weekday (Daily) Trip Generation
T = 2.86 (X)
Where T = number of weekday trips and X = number of seats

PM Peak Hour of Generator
T = 0.30 (X) (59% inbound and 41% outbound)
Where T = number of weekday peak hour trips and X = number of seats

Given the location of the Torino Garage, proximity to various Miami Beach attractions, and the likelihood that many guests will arrive and depart via other modes, a 10% reduction in vehicle trips was applied to reflect reduced vehicle usage and greater reliance on walking, bicycling and public transportation. Table 1 on the following page summarizes the gross and net new vehicle trips associated with the proposed Torino development. *(For intersection analyses, the increase in traffic associated with the expansion of the Savoy Hotel is documented in the committed projects section.)*

TABLE 1 Trip Generation Summary The Torino Garage at 400 Collins Avenue Miami Beach, Florida					
		Daily	Weekday PM Peak Hour Trips		
Land Use	**Size**	**Trips**	**Inbound**	**Outbound**	**Total**
Condominium	4 Units	23	1	1	2
Restaurant	199 Seats	569	35	25	60
Gross New Trips	**-**	**592**	**36**	**26**	**62**
Other Modes (10%)	-	-59	-3	-3	-6
Net New Trips	**-**	**533**	**33**	**23**	**56**

Source: ITE Trip Generation Manual (9th Edition) and Traf Tech Engineering, Inc. (May 2016).

As indicated in Table 1 above, the net new external vehicle trips anticipated to be generated by the proposed Torino project consists of approximately 56 vehicle trips during the weekday PM peak hour (33 inbound and 23 outbound trips).

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone (TAZ) 656, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

TABLE 2
Project Trip Distribution
The Torino Garage at 400 Collins Avenue
Miami Beach, Florida

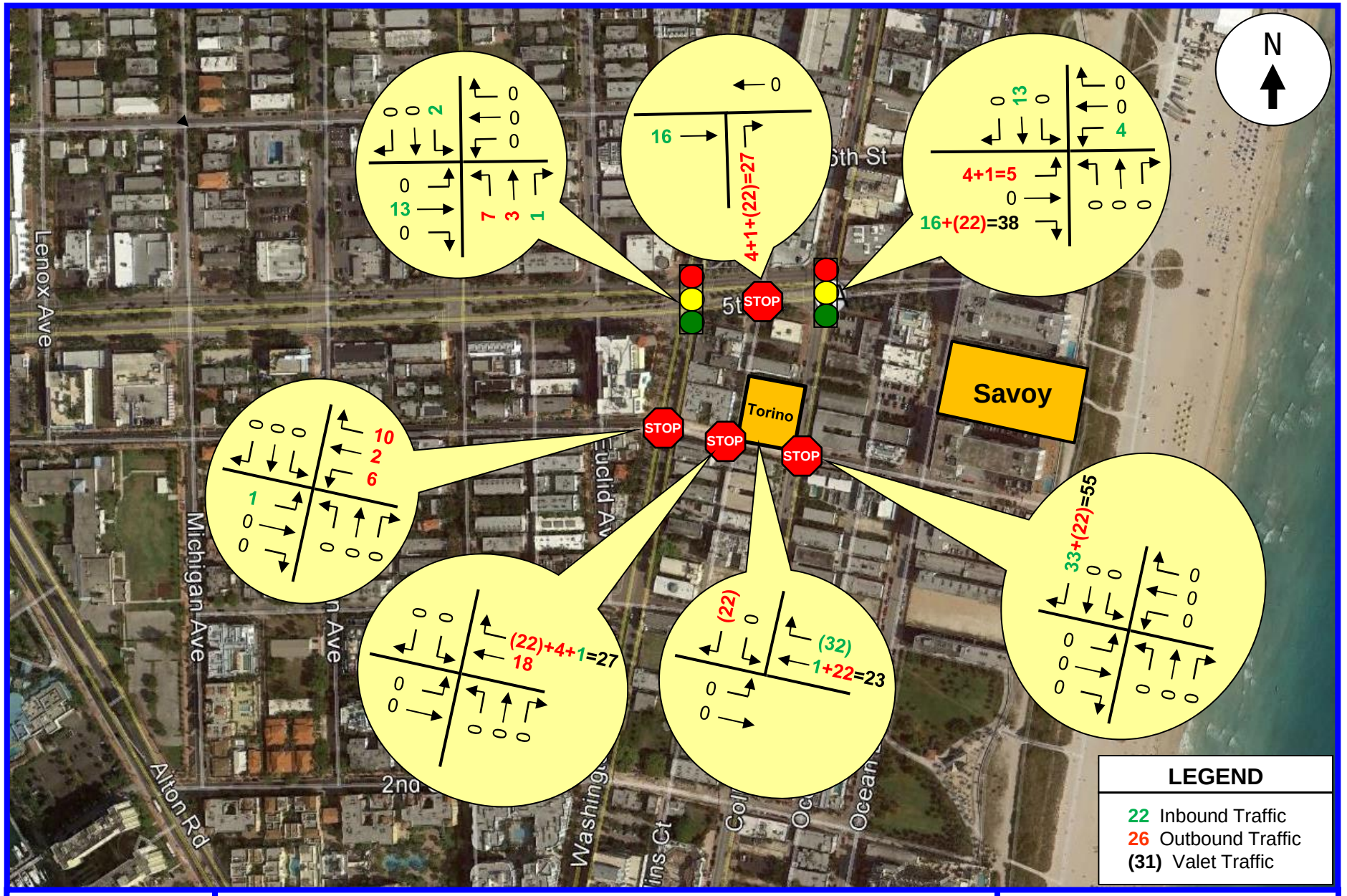
Direction		% of Total Trips
North:	Northwest	26.00%
	Northeast	19.1%
South:	Southwest	3.70%
	Southeast	0.00%
East:	Northeast	0.00%
	Southeast	0.00%
West:	Northwest	34.60%
	Southwest	16.60%
	Total:	100.00%

Source: Miami-Dade County (2040 LRTP Directional Distribution Report)

Using the trip distribution documented in Table 2 above, the nearby land uses, and the surrounding transportation network, the new peak hour traffic generated by the project was assigned to the study intersections. The project traffic assignment is summarized in Figure 4 on the following page.[1]

As mentioned previously, the existing surface parking lot on the subject site is utilized by the Savoy Hotel for off-site valet parking. As a result, the traffic associated with the existing 66 rooms at the Savoy are already on the local transportation network and are reflected in the existing traffic counts collected on July 11, 2014 and May 29, 2015.

[1] Valet parking will be provided for this project along 4th Street. In order to present a worst-case scenario, all of the restaurant traffic associated with the Torino at 400 Collins project has been assumed to utilize the valet service. As such, the traffic volumes associated with this process are represented in Figure 4.



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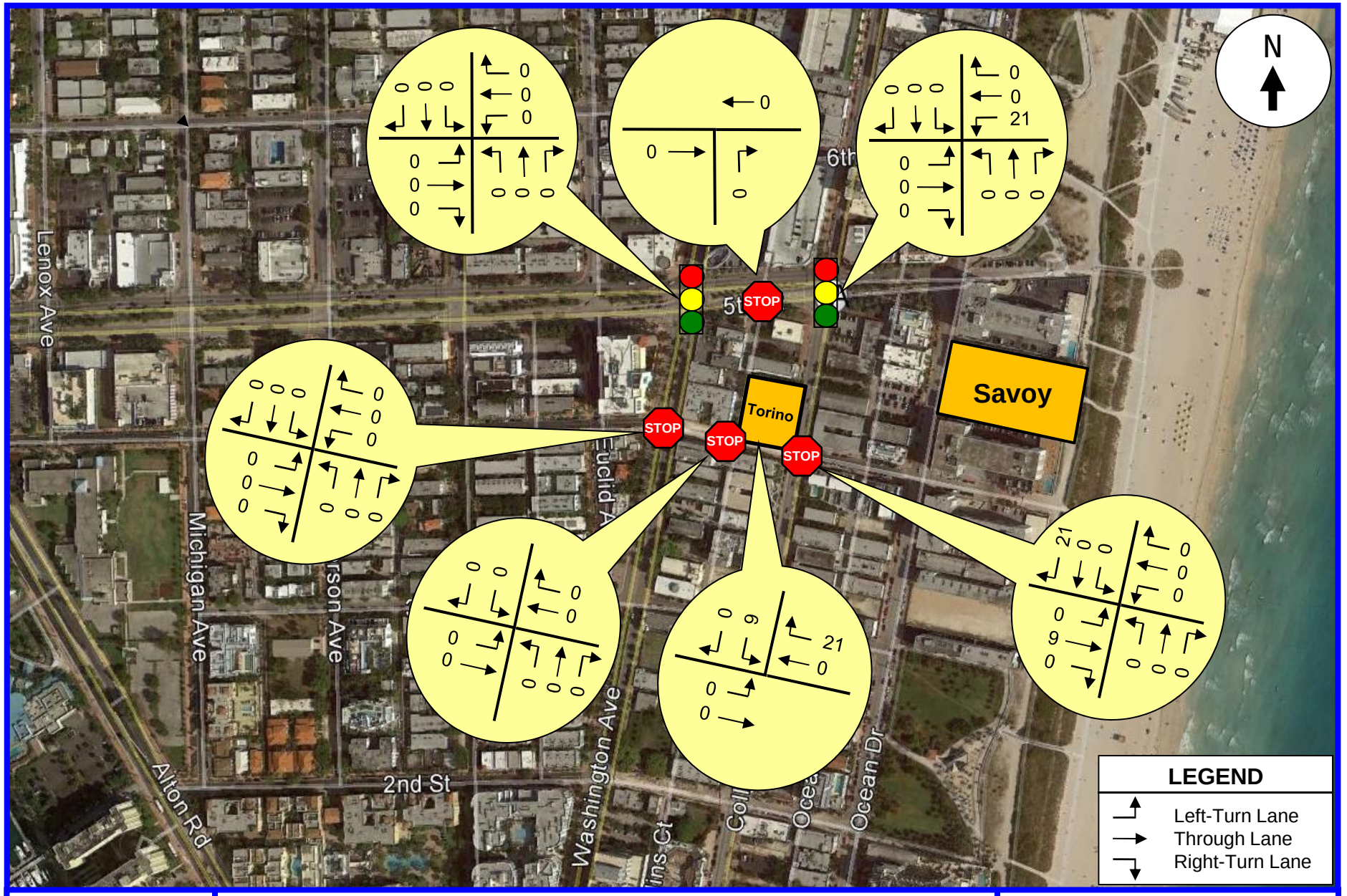
New PM Peak Hour Project (Torino)
Traffic Assignment

FIGURE 4
Torino at 400 Collins Avenue
Miami Beach, Florida

In order to more accurately reflect the actual valet parking characteristics of the Savoy Hotel, peak period traffic counts (i.e. for valet-related vehicles) were performed during the same time period as the intersection turning movement counts. During the peak hour, one (1) vehicle was valet parked during each of the 15 minute periods for a total of four (4) parked vehicles. No vehicles were returned from the parking lot during this time period. These values were confirmed by the low vehicular counts at the existing surface parking lot. On the evening of the data collection, the occupancy rate at the Savoy Hotel was 94%. The parking data is also presented in Appendix E.

The proposed expansion of the Savoy Hotel will consist of 115 new hotel rooms and a 114-seat restaurant. As referenced previously in Appendix C, the vehicle trips associated with this expansion consist of 88 additional PM peak hour vehicle trips (51 inbound and 37 outbound). The specific valet operations and procedures are described later in this report; however, the traffic assignment associated with the Savoy Hotel valet operations is documented in Figure 5.

Note that the intersection analyses assume that all of the new project trips associated with the Savoy Hotel will utilize the drop-off area or the valet service. For the parking analyses (i.e. access to the Torino garage), the actual observations noted above have been extrapolated to project future conditions with the expansion of the Savoy Hotel. With four (4) valet parking operations during the peak hour for 62 occupied rooms (i.e. 66 rooms at 94% occupancy), it is projected that twelve (12) valet parking operations will occur with 181 rooms at 100% occupancy. In addition, it was assumed that 75% of the restaurant traffic would utilize the valet service. This equates to 22 trips (13 inbound and 9 outbound).



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Net New PM Peak Hour Traffic Assignment
Savoy Hotel Valet Operations

FIGURE 5
Torino at 400 Collins Avenue
Miami Beach, Florida

TRAFFIC ANALYSES

This section of the study is divided into two (2) parts. The first part consists of developing the future conditions traffic volumes (with and without the Torino project traffic) for the study area. The second part includes level-of-service analyses for existing and future conditions.

Future Conditions Traffic Volumes

Two (2) sets of future traffic volumes were developed. The first set includes project build-out conditions without the proposed mixed-use project and the second set adds the net new vehicle trips anticipated to be generated by The Torino Garage at 400 Collins Avenue project.

Peak Season Conversion Factor – In order to develop year 2018 traffic volumes, without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the months of July 2014 and May 2015 to average peak season conditions. Based on FDOT's Peak Season Factor Category report, an adjustment factor for the July counts is 1.06 and the adjustment factor for May is 1.03. These factors are required to convert traffic counts collected in early July and late May to average peak season conditions (please see Appendix G).

Growth Rate Analysis – The second analysis includes a growth factor to project 2014 / 2015 peak season traffic volumes to the 2018 build-out year. Historical traffic data published by the FDOT for two (2) traffic count stations located near the project was reviewed for the purposes of developing a growth rate for the study area. Site #5159 (SR A1A / Collins Avenue, 200 feet north of 5th Street) has exhibited a decline in traffic over the past five (5) years (see Appendix G). Site #2528 (SR A1A / 5th Street, 150 feet east of Meridian Avenue) has also exhibited declining traffic volumes over the past five (5) years (see Appendix G).

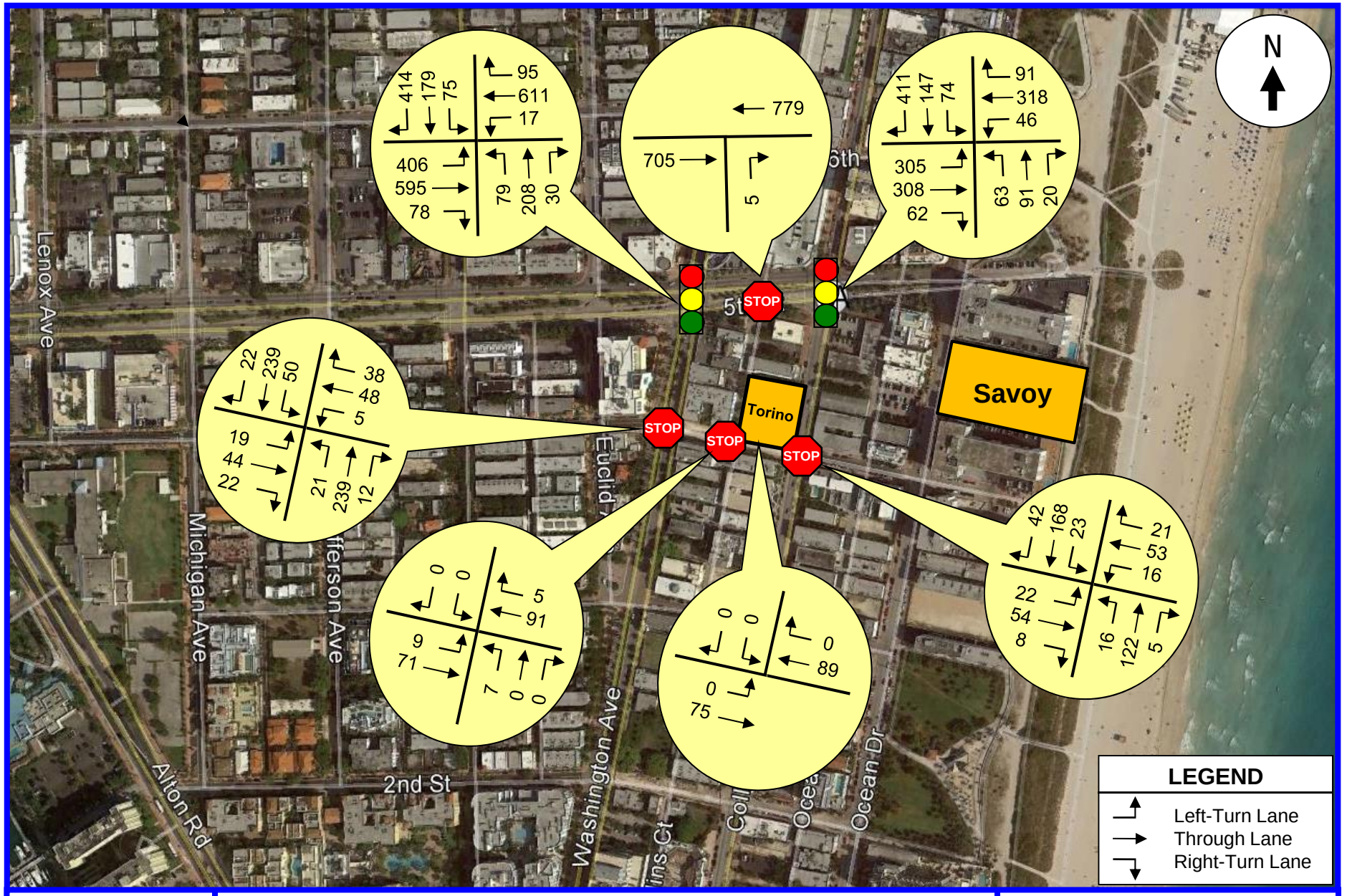
In addition, a review of the Miami-Dade County 2040 Long Range Transportation Plan (LRTP) – Directional Distribution Report was performed for the purposes of documenting the projected traffic growth for the subject area (TAZ 656). This data reveals a projected negligible annual growth rate of approximately 0.057% for this area from 2010 to 2040. The supporting data from the LRTP is included in Appendix G.

In order to assess traffic impacts with a conservative approach, and to account for approved (committed) trips that may impact the study intersections, a 2.0% growth rate per year was applied throughout the study area for purposes of this analysis.

Committed Project Traffic – Four (4) nearby projects have been identified with respect to this project. These projects are 49-53 Collins, 730-804 First Street, Block 1 (One Ocean) and Block 51 (Marea). The traffic volumes associated with these projects are included in the traffic analysis for the Torino. (Please see Appendix H for background information relative to these projects.) In addition, the project traffic associated with the Savoy Hotel expansion (beyond the valet operations traffic documented previously in Figure 5) is included in this analysis.

Project (Torino) Traffic – The new trips generated by the Torino project (refer to Table 1 and Figure 4 of this report) were added to the 2018 background traffic in order to develop total traffic conditions. The future traffic projections for the study intersections (peak season adjustments, growth rates, committed project traffic and Torino project traffic) are presented in tabular format in Appendix I.

Figures 6 and 7 present the year 2018 future traffic volumes for the study area. Figure 6 includes background traffic only (without the proposed project) and Figure 7 includes the additional traffic anticipated to be generated by the Torino project.



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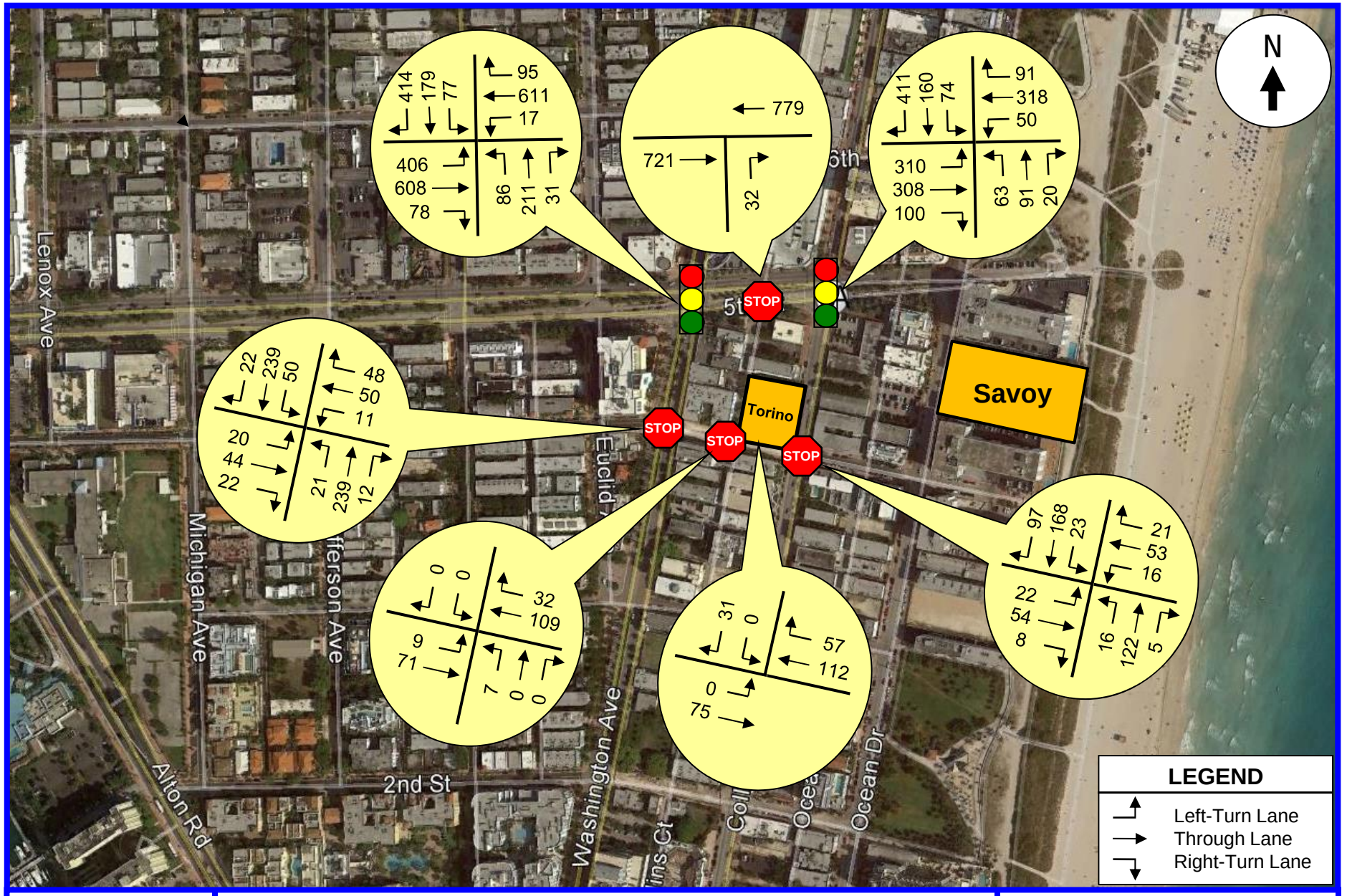
Background PM Peak Hour Traffic
Year 2018

FIGURE 6
Torino at 400 Collins Avenue
Miami Beach, Florida



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Future (Total) PM Peak Hour Traffic
Year 2018

FIGURE 7
Torino at 400 Collins Avenue
Miami Beach, Florida

Level of Service (LOS) Analyses

Intersection capacity/level of service (LOS) analyses were conducted for the six (6) study intersections and the project driveway on 4th Street. *(As previously referenced, the signal timing plans for the Collins Avenue / 5th Street and the Washington Avenue / 5th Street intersections were obtained from the Miami-Dade County Traffic Signals and Signs Division and are presented in Appendix F.)* These analyses were undertaken following the capacity / level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software. The results of the capacity analyses are summarized below in Table 3.

TABLE 3
Intersection Levels of Service
The Torino Garage at 400 Collins Avenue
Miami Beach, Florida

Intersection	2014/15 Existing	Future Traffic Conditions 2018 w/o Project	Future Traffic Conditions 2018 With Project
Collins Ave / 5th Street	C (34.4)	E (55.6)	E (55.9)
Optimized	--	--	*C (31.2)*
Collins Ct / 5th Street [1]	B (10.2)	B (11.0)	B (11.7)
Collins Ave / 4th Street [1]	B (12.0)	C (18.1)	C (19.2)
Collins Ct / 4th Street [1]	A (9.9)	B (10.3)	B (10.6)
Project Driveway (4th Street) [1]	--	--	A (9.5)
Washington Ave / 5th Street	C (28.6)	C (30.6)	C (30.7)
Washington Ave / 4th Street	A (9.2)	A (9.8)	B (10.1)

Source: Highway Capacity Manual and SYNCHRO
[1] Levels of Service for unsignalized intersections represent the critical side street approach.
Legend: LOS (Delay – sec/veh)

As indicated in Table 3, with the exception of the intersection at Collins Avenue and 5th Street each of the study intersections is currently operating adequately and will continue to do so in the buildout year of 2018 with the subject Torino project in place. When the cycle length is held constant and the splits are optimized, the intersection at Collins Avenue and 5th Street can achieve a Level of Service (LOS) of "C". The SYNCHRO printouts of the intersection capacity analyses are contained in Appendix J.

OTHER MODES OF TRANSPORTATION

Throughout much of Miami Beach, and specifically within the immediate area of the proposed Torino Garage Mixed-Use project, there are many convenient and cost-effective transportation alternatives for residents and visitors alike. As noted earlier in this report, a trip reduction factor of 10% has been incorporated into this traffic analysis to reflect those patrons that are likely to avail themselves of these alternative travel modes as opposed to the automobile. Several of the more prominent modes in this area include bus transit services, bicycling (including the Citi Bike), and the sidewalk network throughout the surrounding area. Each of these is explained in further detail below.

Miami-Dade Transit

Transit services on Miami Beach are provided by Miami-Dade Transit. There are numerous transit routes serving the immediate study area including 150 Miami Beach Airport Flyer, 103 Route C, 113 Route M, Route 120 Beach MAX and the 123 SB Local. These transit routes provide frequent service and access to all of Miami-Dade County as well as connections to other destinations outside of the County.

Airport Shuttle Service

Shuttle service to and from the Miami International Airport (MIA) is provided by Miami-Dade Transit via Route 150 which is also known as the Miami Beach Airport Flyer. This service is offered from 44th Street on the north to South Pointe Drive on the south. Within the Torino project study area, this service is provided along Washington Avenue with designated stops at 5th Street and 2nd Street. On weekdays, this service is provided every 30 minutes between 6:00 AM and 12:00 AM (midnight).

Bicycles

The study area is bicycle friendly and the Torino Garage project will incorporate multiple bicycle racks for storage. One area will be provided for patrons and another area will be provided for employees.

Citi Bike

Citi Bike (formerly known as DecoBike) is a bicycle sharing and rental program on Miami Beach. This program offers a network of 100 solar-powered bicycle rental stations and a fleet of 1,000 bicycles which can be rented 24 hours per day. Within the immediate area of the Torino, there are four (4) convenient Citi Bike rental stations. These stations are as follows:

- Station 114: Ocean Drive and 5th Street
- Station 126: Meridian Avenue and 6th Street
- Station 112: Washington Avenue and 3rd Street
- Station 106: Ocean Drive and 2nd Street

Pedestrian Network

Most of Miami Beach is considered a very walkable environment. Specifically within the project study area, each of the existing roadways has sidewalks on both sides and crosswalks are present at each of the major signalized intersections. There are many attractive destinations within easy access to the Torino and the project has been designed in such a manner as to provide direct access to this sidewalk network.

In summary, this project is located within an area that provides excellent access to alternative modes of transportation. It is expected that many of the residents and patrons of the Torino will utilize these services as opposed to driving passenger vehicles.

PARKING & QUEUING ANALYSIS

Parking for the Torino project will be provided via a 177-space parking garage. There will be no mechanical lifts, vehicle elevators, or tandem parking within this parking garage. Valet operations for the restaurant will be provided along 4th Street. Three (3) on-street parking spaces along 4th Street just west of Collins Avenue will be designated for valet service.

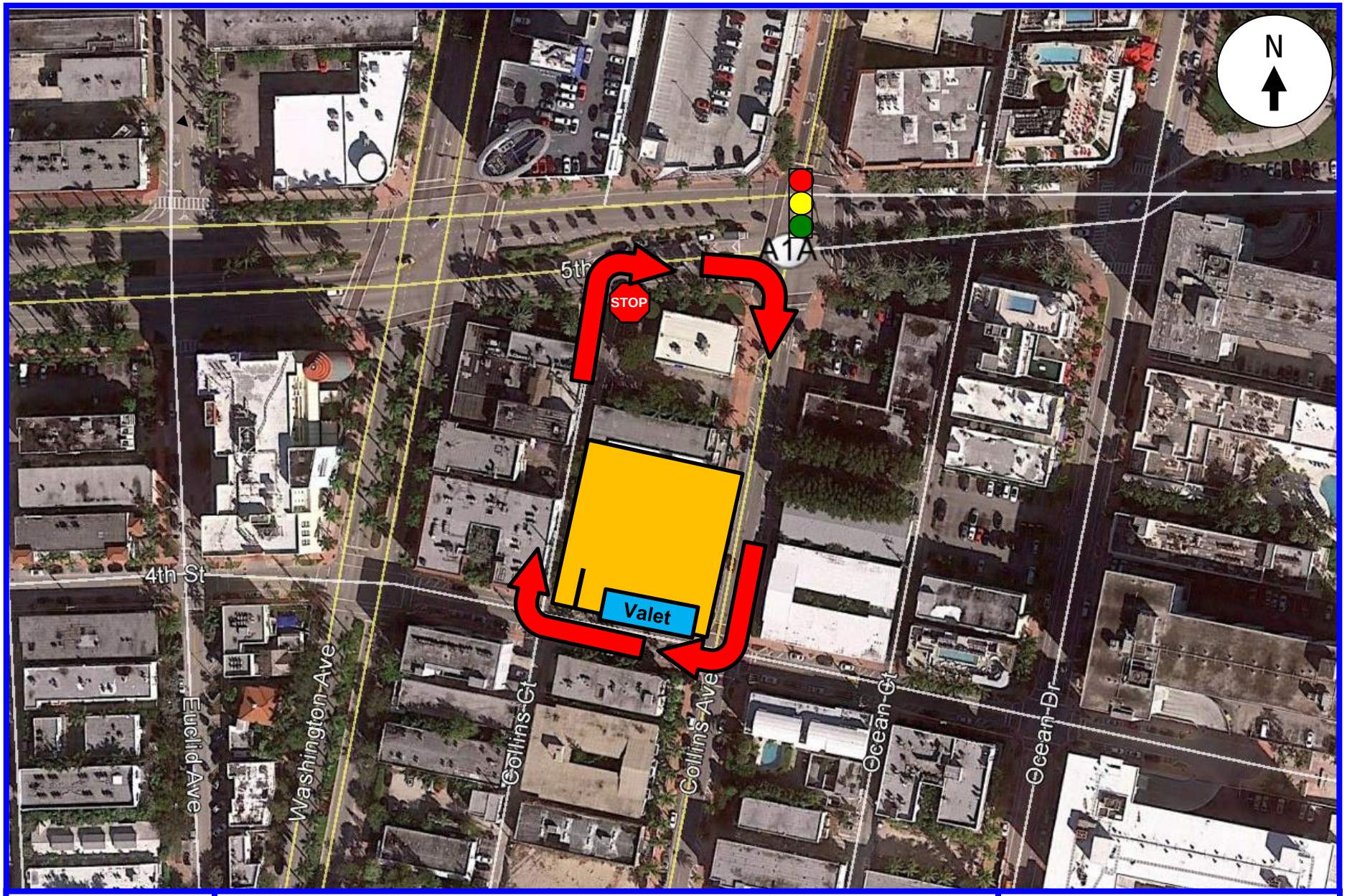
A queuing analysis has been conducted for the valet station for this project. For this analysis, it was conservatively estimated that 100% of the peak hour vehicles associated with the restaurant portion of this site will utilize the valet option. The vehicle storage (or queue) anticipated for this location was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- **Service Rate:** Based on the assumption that a vehicle can be parked/un-parked within a 3-minute period (valet parking spaces will be located immediately adjacent to the valet station), eight (8) valet attendants will be able to park/un-park approximately 160 vehicles in a one-hour peak period.

- **Demand Rate:** Based on the assumption that 100% of all inbound and outbound vehicles will use the valet during the PM peak hour (highest volume peak), 54 vehicles will have to be parked/un-parked by valet staff.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum valet demand anticipated at the Torino, at the 95% confidence level, is one (1) vehicle with the utilization of eight (8) valet runners. This queue (or storage) can be accommodated by the proposed number of valet spaces on 4th Street. Therefore, the projected maximum valet demand at the Torino Garage at 400 Collins Avenue is projected to function adequately. A valet circulation plan is presented in Figure 8 on the following page and the results of this queuing analysis are contained in Appendix K.

[1] By Vergil G. Stover and Frank J. Koepke.



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Valet Circulation Plan

FIGURE 8
Torino at 400 Collins Avenue
Miami Beach, Florida

SUMMARY & CONCLUSIONS

The Torino Garage is a proposed mixed-use garage condominium to be located in the northwest quadrant of the intersection at 4th Street and Collins Avenue in the City of Miami Beach, Miami-Dade County, Florida. More specifically, the subject site is located at 400-420 Collins Avenue. The subject site presently contains a surface parking lot that serves the existing Savoy Hotel located at 425 Ocean Drive. The proposed project involves the development of residential, restaurant, and parking facilities.

Traf Tech Engineering, Inc. has been retained by Brandon Haw Architecture LLP to conduct a traffic study in connection with the development of this mixed-use project. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network as well as parking procedures and the availability of multi-modal opportunities. The conclusions of the traffic study are presented below:

- The net new external vehicle trips anticipated to be generated by the proposed Torino project consists of approximately 56 vehicle trips during the weekly PM peak hour (33 inbound and 23 outbound trips).

- With the exception of the intersection at Collins Avenue and 5th Street, each of the study intersections is currently operating at an acceptable LOS and will continue to do so in 2018 with and without the project in place. When holding the cycle length constant and optimizing the splits, the intersection of Collins Avenue and 5th Street can achieve a Level of Service (LOS) of "C".

- A review of the subject valet drop-off / pick-up area indicates that three (3) parking spaces will be sufficient to accommodate the anticipated demand. It is recommended that up to eight (8) valet attendants be stationed at this site during the peak time periods to ensure adequate operations and to minimize the possibility of occasional back-ups on the adjacent street system.

APPENDIX A

The Torino at 400 Collins Avenue

Traffic Study Methodology

TO: Xavier Falconi, City of Miami Beach
Claudia Lamus, FTE Inc.
Alyssa Kriplen, Shulman + Associates

FROM: Karl Peterson, Traf Tech Engineering
Joaquin Vargas, Traf Tech Engineering

DATE: November 9, 2015

SUBJECT: Traffic Methodology for The Torino at 400 Collins Avenue

---

Based upon our meeting last week (11/2/15) with City staff, the City's traffic consultant, and members of the project team, the following is the proposed traffic analysis methodology in connection with The Torino at 400 Collins Avenue project in Miami Beach:

- A traffic impact study was previously prepared for this site in June 2015. The development program at that time consisted of five (5) residential condominiums, 5,755 square feet of specialty retail, and a parking garage with 156 parking spaces. The current development program consists of one (1) residential condominium, a 299-seat restaurant and a parking garage with 170 parking spaces.

- During our meeting earlier last week it was agreed that the additional trips generated by this development program are considered minimal (approximately 77 PM peak hour trips) and that an update of the previous traffic study would be sufficient.

- The traffic study will evaluate six (6) intersections in the immediate vicinity of the project. Traffic counts were collected in July 2104 and May 2015 at these intersections during the peak day / peak period for the area near the project site. These intersections are:

    - Collins Avenue and 5th Street
    - Collins Court and 5th Street
    - Collins Avenue and 4th Street
    - Collins Court and 4th Street
    - Washington Avenue and 5th Street
    - Washington Avenue and 4th Street

  In addition to these three intersections, the project driveway on 4th Street will be analyzed. (The traffic data was collected on a typical Friday afternoon / evening between 5:00 PM and 7:00 PM.)

- Traffic circulation will be evaluated in the traffic study, including its impact to the surrounding street system and adjacent driveways.

- The drop-off / pick-up procedures of the valet operation, if any, will be addressed. Queuing will be analyzed and if problems are identified, solutions will be suggested.

- The trip generation, internal capture, and passer-by trips will be based on the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (9th Edition)* and the *Trip Generation Handbook* (Second Edition).

- For purposes of the traffic study, the build-out year will be early 2017. For purposes of traffic growth, both FDOT historical traffic data and the most recent Miami-Dade MPO growth rates will be reviewed. The more conservative of the two will be utilized.

- The report will include an accurate site plan that is reader-friendly (possible to scale with dimensions).

- Existing traffic signal timing data, if applicable, and traffic counts will be included in the appendix of the traffic study.

- The traffic study will address any anticipated / proposed impacts onto the existing on-street vehicular parking, if applicable. The project team will coordinate with the City's Parking Department and documentation, when available, will be included in the traffic study.

- Committed developments in the immediate area include 49-53 Collins, 826 First Street, Block 1 (One Ocean), Block 51 (Marea), and The Savoy. Each of these projects will be included in the traffic impact analysis. The Savoy is directly related to the subject site and, as such, the operations (including traffic circulation associated with the valet operations) will be discussed in detail in this project. In addition, relevant excerpts from The Savoy traffic study will be included in the appendix to this report.

- Traffic figures will be prepared for the following trip generation scenarios for each of the intersections analyzed:

  1. Existing traffic
  2. Proposed site trips distribution
  3. Existing traffic + committed development traffic + site trips
  4. Future or build-out (with growth rate, if necessary) + site trips + committed development traffic

- The report will include the PM peak hour Level of Service (LOS) analysis.

- This report will also document other modes of travel available to patrons and employees. This will include TDM measures, transit, and bicycles. The presence of transit and nearby routes will be discussed as will the provision and location of potential bicycle racks. In addition, nearby CitiBike stations will be documented.

- Project driveways will be evaluated with respect to sight distance, signing, and striping as well as AutoTurn.

APPENDIX B

Savoy / Arlington Hotel

Traffic Impact Study

Savoy / Arlington Hotel

425 Ocean Drive

Miami Beach, Florida

traffic study

prepared for:

Shulman + Associates

Traf Tech
ENGINEERING, INC.

June 2013

Savoy / Arlington Hotel

425 Ocean Drive

Miami Beach, Florida

Traffic Impact Analysis

June 2013

Prepared for:
Shulman + Associates

Prepared by:
Traf Tech Engineering, Inc.
8400 N. University Drive, Suite 309
Tamarac, Florida 33321
Phone: (954) 560-7103
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Karl B. Peterson, P.E.
Florida Registration Number 49897
Engineering Business Number 26605

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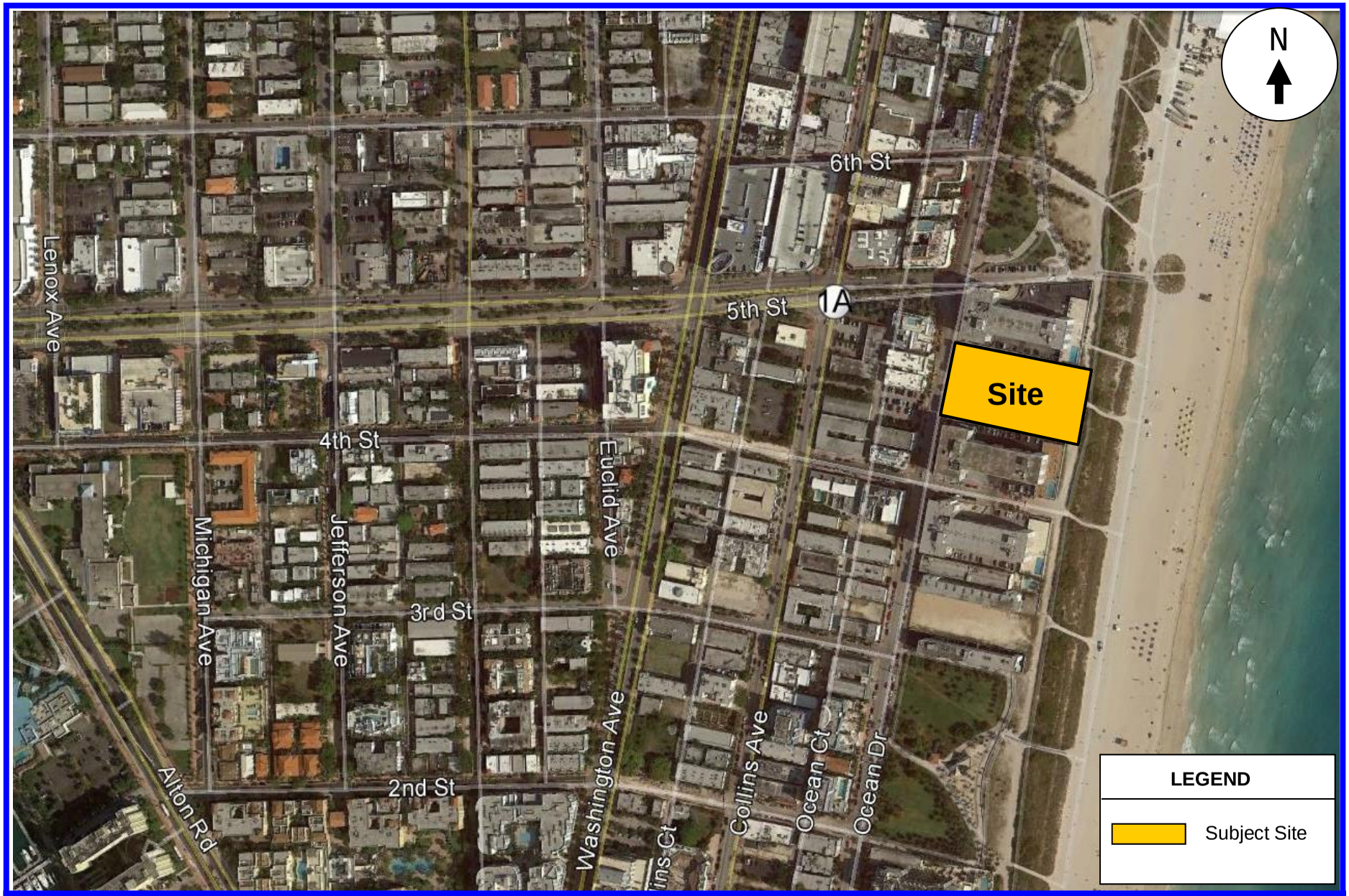
INTRODUCTION

The Savoy / Arlington Hotel is an existing hotel located on the east side of Ocean Drive between 4th Street and 5th Street in the City of Miami Beach, Miami-Dade County, Florida. More specifically, the subject site is located at 425 Ocean Drive. The existing building at this site is a fully functioning hotel with 66 guest rooms. This project involves the renovation, redevelopment and expansion of the existing facilities for a hotel with 134 rooms. The location of the project site is illustrated in Figure 1 on the following page.

Traf Tech Engineering, Inc. has been retained by Shulman + Associates to conduct a traffic study[1] in connection with the redevelopment and expansion of this hotel property. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into eight (8) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Data
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analyses
7. Parking and Queuing Analysis
8. Summary & Conclusions

[1] This traffic study methodology was discussed and agreed upon with City of Miami Beach staff on Thursday, May 30, 2013.



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Project Location Map

FIGURE 1
Savoy / Arlington Hotel
Miami Beach, Florida

Existing Land Use and Access

As mentioned previously, the subject hotel currently consists of 66 guest rooms. (The subject hotel is fully operational and open for business.) There is no vehicular access to the site and, as such, no onsite parking. There are two (2) valet parking spaces and one (1) loading space adjacent to the site on Ocean Drive.

Proposed Land Use and Access

The subject hotel will be renovated and expanded to include 134 guest rooms. No vehicular access or parking is proposed for the site. The proposed project is anticipated to be built and occupied in the year 2015. Appendix A contains the proposed site plan for the Savoy / Arlington Hotel project.

EXISTING CONDITIONS

This section of the report addresses the transportation system located in the vicinity of the project site.

Roadway System

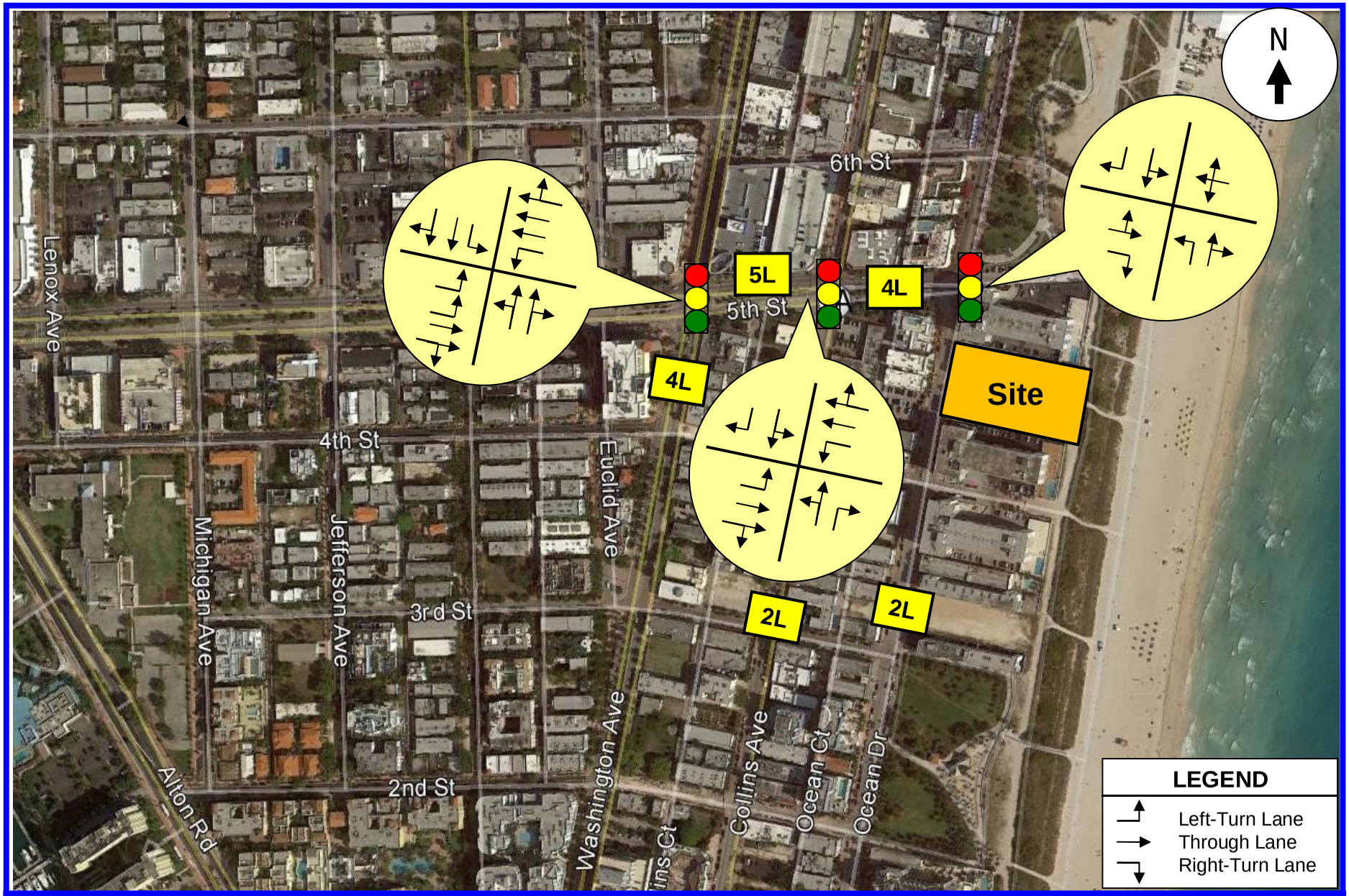
The roadway system located near the site includes Ocean Drive, 4th Street, 5th Street, Collins Avenue, and Washington Avenue. Within the study area, Ocean Drive and Collins Avenue are north-south arterial roadways with one (1) travel lane in each direction and on-street parking on both sides of the roadway. Washington Avenue is also a north-south arterial roadway near the project site. This facility has two (2) travel lanes in each direction and on-street parking on both sides of the roadway. Between Collins Avenue and Ocean Drive, 5th Street is an east-west arterial roadway with two (2) travel lanes in each direction. Between Washington Avenue and Collins Avenue, 5th Street has two (2) travel lanes in the eastbound direction and three (3) travel lanes in the westbound direction. 4th Street is an east-west local roadway with on-street parking on both sides and one (1) travel lane in each direction.

Nearby Intersections

With the assistance of City of Miami Beach staff, three (3) nearby intersections were identified as the locations that will be impacted most by the proposed redevelopment project. These intersections are:

- Ocean Drive and 5th Street (signalized)
- Collins Avenue and 5th Street (signalized)
- Washington Avenue and 5th Street (signalized)

Figure 2 shows the existing lane geometry of the three (3) intersections selected for analysis purposes. The number of lanes on the street system surrounding the project site is also depicted in this figure.



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Existing Lane Geometry

FIGURE 2
Savoy / Arlington Hotel
Miami Beach, Florida

TRAFFIC COUNTS

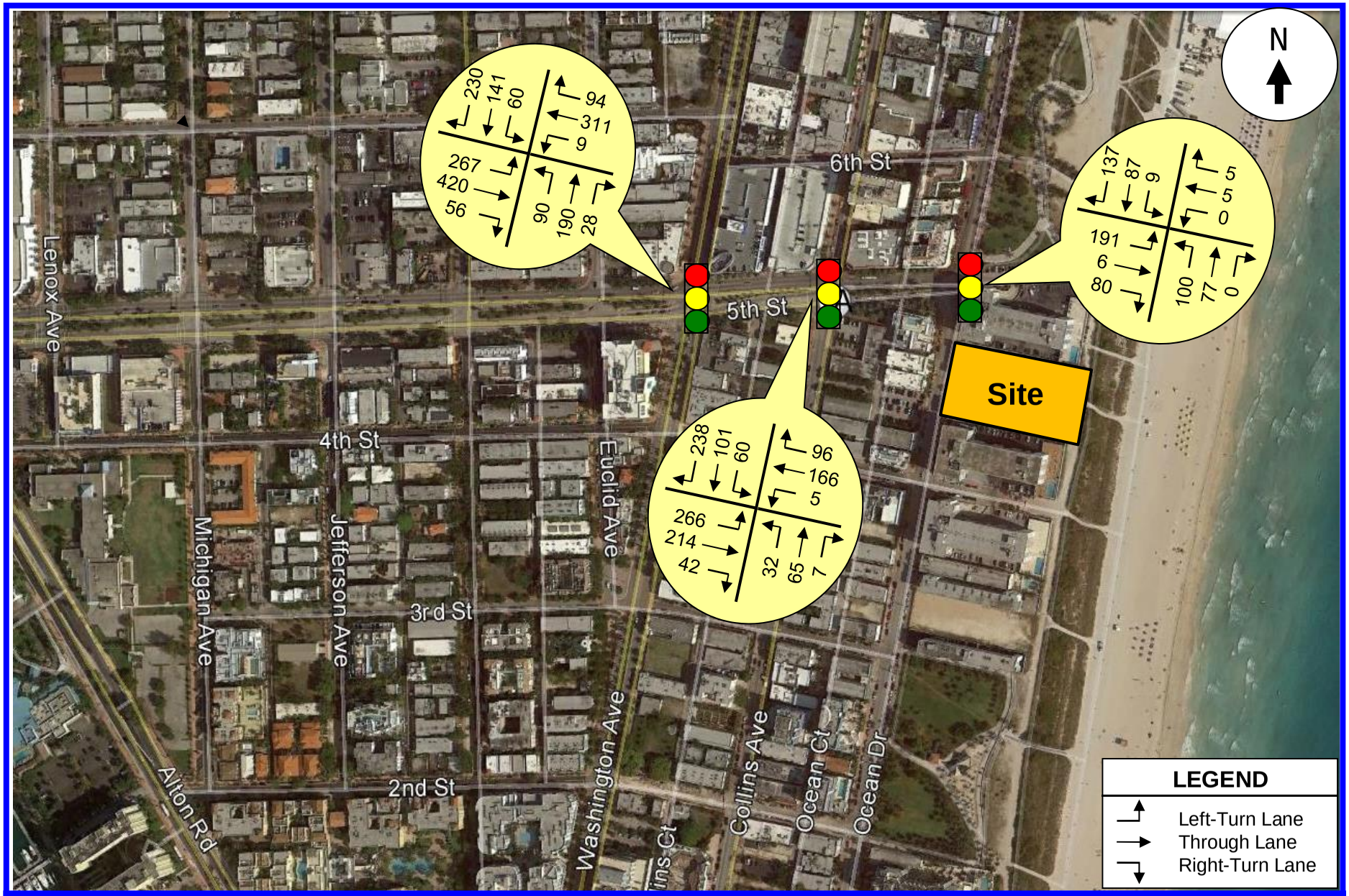
Traf Tech Engineering, Inc., in association with Traffic Survey Specialists, Inc. collected intersection turning movement counts at the following three (3) study intersections:

- Ocean Drive and 5th Street
- Collins Avenue and 5th Street
- Washington Avenue and 5th Street

These intersection turning movement counts were collected on Saturday, June 1, 2013 between 8:30 PM and 10:30 PM[1]. Figure 3 summarizes the results of the intersection turning movement counts undertaken during the weekly (Saturday) peak hour. Appendix B contains the intersection turning movement counts, as collected in the field.

The signalized intersections within the project study area are maintained and operated by Miami-Dade County's Traffic Signals and Signs Division. The current signal timing plans for these intersections were obtained from the County and are included in Appendix C.

[1] Previous traffic studies and analyses conducted in the vicinity of this project (and provided by the City of Miami Beach) have demonstrated that the peak period generally occurs on Saturdays between 8:30 PM and 10:30 PM.



Traf Tech
ENGINEERING, INC.

Existing Peak Hour Traffic Counts

Source: Traffic Survey Specialists, Inc. June, 1, 2013

FIGURE 3
Savoy / Arlington Hotel
Miami Beach, Florida

TRIP GENERATION

The trip generation for the Savoy / Arlington Hotel project was based upon information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation (9th Edition)* report. According to the subject ITE manual, the most appropriate land use category for the proposed development is: Land Use 310 – Hotel. The trip generation rates and equations used to determine the vehicle trips associated with the Savoy / Arlington Hotel project are presented below and the background ITE data is presented in Appendix D.

ITE Land Use 310 – Hotel

Weekday (Daily) Trip Generation
T = 8.17 (X)
Where T = number of weekday daily trips and X = number of rooms

PM Peak Hour of Generator
T = 0.61 (X) (58% inbound and 42% outbound)
Where T = number of weekday peak hour trips and X = number of rooms

Given the location of the Savoy / Arlington Hotel, lack of on-site vehicle parking, proximity to various Miami Beach attractions, and the likelihood that many guests will arrive and depart via other modes, a 15% reduction in vehicle trips was applied to reflect reduced vehicle usage and greater reliance on walking, bicycling and public transportation. Table 1 on the following page summarizes the gross and net new vehicle trips associated with the proposed redevelopment and expansion of the Savoy / Arlington Hotel.

TABLE 1 Trip Generation Summary Savoy / Arlington Hotel – Miami Beach, Florida					
Land Use	**Size**	**Daily Trips**	**Weekday PM Peak Hour Trips**		
			Inbound	**Outbound**	**Total**
EXISTING DEVELOPMENT					
Hotel	66 Rooms	539	23	17	40
Gross New Trips	**-**	**539**	**23**	**17**	**40**
Other Modes (15%)	-	-81	-3	-3	-6
Net New Trips	**-**	**458**	**20**	**14**	**34**
PROPOSED DEVELOPMENT					
Hotel	134 Rooms	1,095	48	34	82
Gross New Trips	**-**	**1,095**	**48**	**34**	**82**
Other Modes (15%)	-	-164	-7	-5	-12
Net New Trips	**-**	**931**	**41**	**29**	**70**
DIFFERENCE (PROPOSED – EXISTING)					
	68 Rooms	473	21	15	36

Source: ITE Trip Generation (9th Edition) and Traf Tech Engineering, Inc. (June 2013).

As indicated in Table 1 above, the net new external vehicle trips anticipated to be generated by the proposed Savoy / Arlington Hotel project consists of approximately 36 vehicle trips during the weekly PM peak hour of the generator (21 inbound and 15 outbound trips).

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the project were based on Miami-Dade County's Cardinal Distribution information for the study area. Table 2 summarizes the County's cardinal distribution data for Traffic Analysis Zone (TAZ) 639, which is applicable to the project site from the latest SERPM data published by Miami-Dade County.

TABLE 2
Project Trip Distribution
Savoy / Arlington Hotel – Miami Beach, Florida

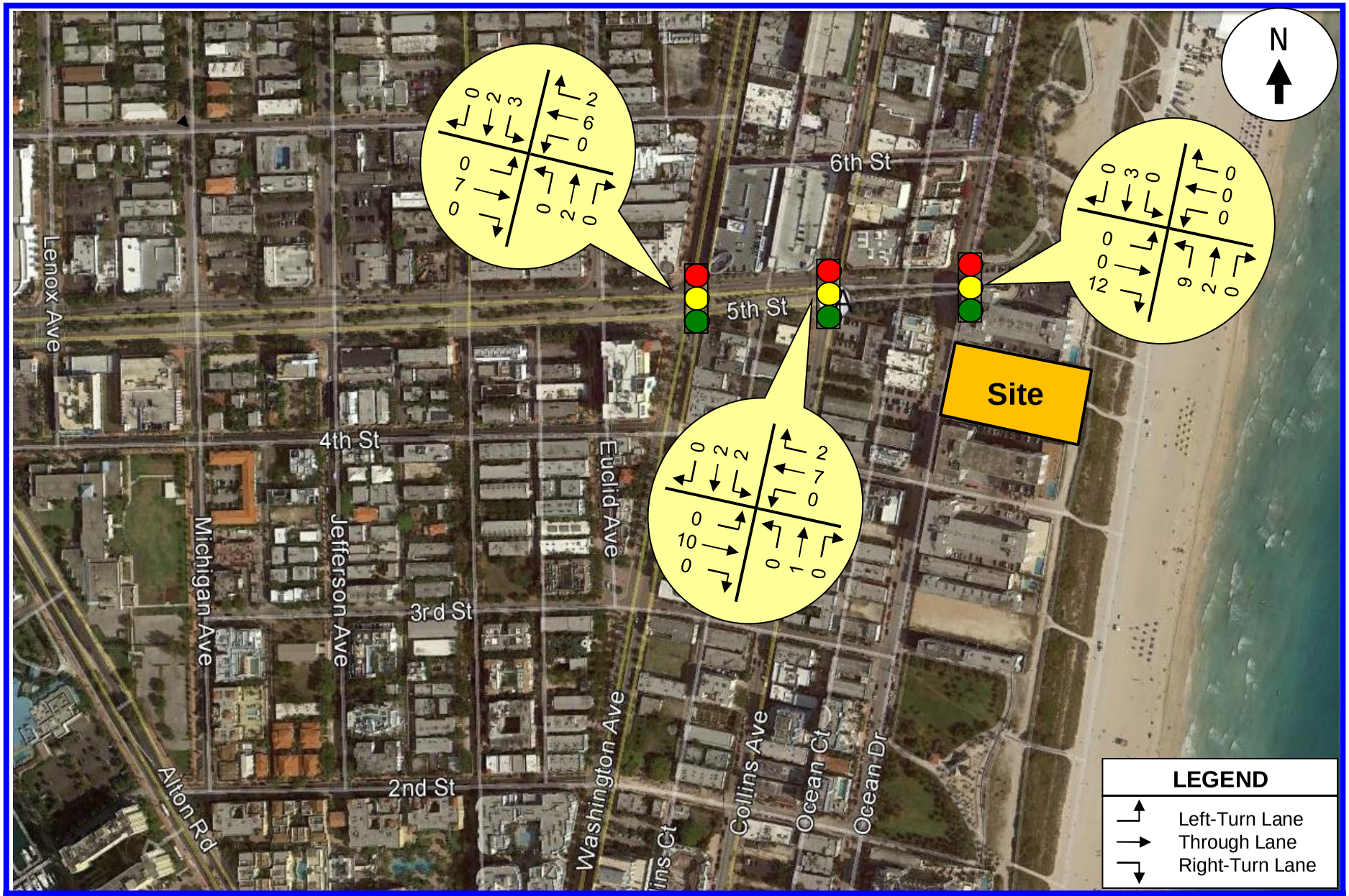
Direction		% of Total Trips
North:	Northwest	17.59%
	Northeast	24.08%
South:	Southwest	4.38%
	Southeast	3.95%
East:	Northeast	1.27%
	Southeast	3.50%
West:	Northwest	29.17%
	Southwest	16.06%
	Total:	100.00%

Source: Miami-Dade County (2035 SERPM)

Using the trip distribution documented in Table 2 above, the following traffic assignment was developed for the Savoy / Arlington Hotel project:

- 12% to and from the north / northeast via Ocean Drive
- 20% to and from the north via Collins Avenue
- 25% to and from the north / northwest via Washington Avenue
- 10% to and from the south via Ocean Drive
- 33% to and from the west via 5th Street

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



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New Peak Hour Project Traffic Assignment

FIGURE 4
Savoy / Arlington Hotel
Miami Beach, Florida

This section of the study is divided into two (2) parts. The first part consists of developing the future conditions traffic volumes (with and without the Savoy / Arlington Hotel project traffic) for the study area. The second part includes level-of-service analyses for existing and future conditions.

Future Conditions Traffic Volumes

Two (2) sets of future traffic volumes were developed. The first set includes project build-out conditions without the proposed hotel project and the second set adds the net new vehicle trips anticipated to be generated by the hotel redevelopment project.

In order to develop year 2015 traffic volumes, without the proposed project, two separate analyses were undertaken. The first analysis converts the existing peak hour traffic counts collected in the field during the month of June 2013 to average peak season conditions. Based on FDOT's Peak Season Factor Category report, an adjustment factor of 1.04 is required to convert traffic counts collected in early June to average peak season conditions (please see Appendix E).

The second analysis includes a growth factor to project 2013 peak season traffic volumes to the 2015 build-out year. Historical traffic data published by the FDOT for two (2) traffic count stations located near the project was reviewed for the purposes of developing a growth rate for the study area. Site #5159 (SR A1A / Collins Avenue, 200 feet north of 5th Street) has exhibited a 3.15% annual growth rate for the past five (5) years (please see Appendix E). On the other hand, Site #2528 (SR A1A / 5th Street, 150 feet east of Meridian Avenue) has exhibited declining traffic volumes of approximately 1.0% per year for the past five (5) years (please see Appendix E). In order to assess traffic impacts with a conservative approach, and to account for approved (committed) trips that may impact the study intersections, a 2.0% growth rate per year was applied throughout the study area for purposes of this analysis.

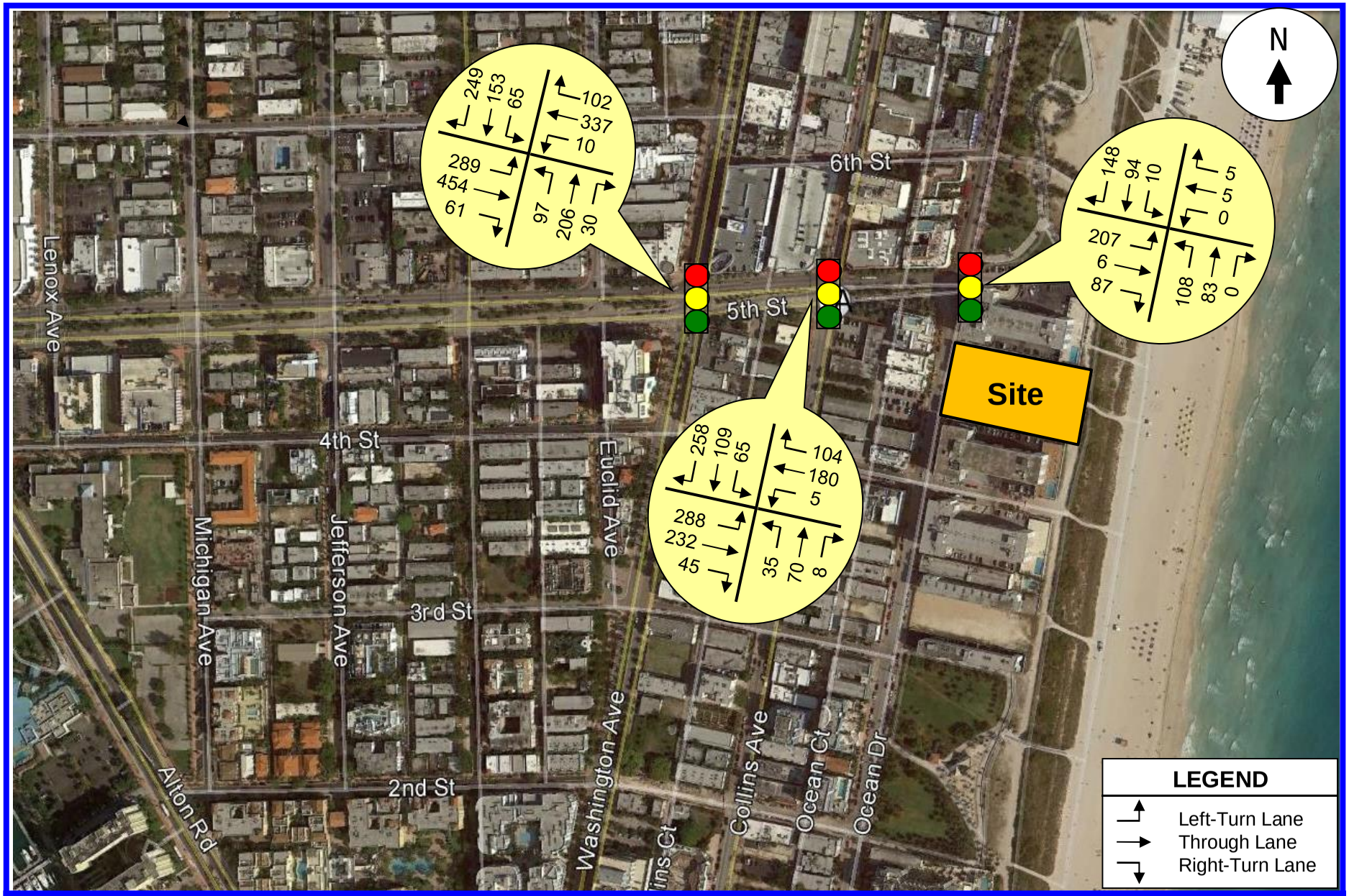
The new trips generated by the Savoy / Arlington Hotel project (refer to Table 1 and Figure 4) were added to the 2015 background traffic in order to develop total traffic conditions. The future traffic projections for the study intersections (peak season adjustments, growth rates, and project traffic) are presented in tabular format in Appendix F.

Figures 5 and 6 present the year 2015 future traffic volumes for the study area. Figure 5 includes background traffic only (without the proposed project) and Figure 6 includes the additional traffic anticipated to be generated by the Savoy / Arlington Hotel project.

Level of Service (LOS) Analyses

Intersection capacity/level of service (LOS) analyses were conducted for the three (3) study intersections. (The signal timing plans for each of the study intersections were obtained from the Miami-Dade County Traffic Signals and Signs Division and are presented in Appendix C as previously referenced.) These analyses were undertaken following the capacity / level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software. The results of the capacity analyses are summarized in Table 3.

As indicated in Table 3, the intersection of Ocean Drive / 5th Street and the intersection of Collins Avenue / 5th Street are currently operating at acceptable levels of service and will continue to do so in the future (2015) with and without the Savoy / Arlington Hotel project. The intersection of Washington Avenue / 5th Street is currently operating at LOS "D" with a delay of 49.6 seconds / vehicle. In 2015, without the subject project, this intersection is forecast to operate at LOS "E" with 55.9 seconds / vehicle of delay. In 2015, with the Savoy / Arlington Hotel project, this intersection is forecast to operate at LOS "E" with a similar vehicle delay. By optimizing the splits (and holding the cycle length constant), the intersection will operate at LOS "C" for each of the analyses timeframes.



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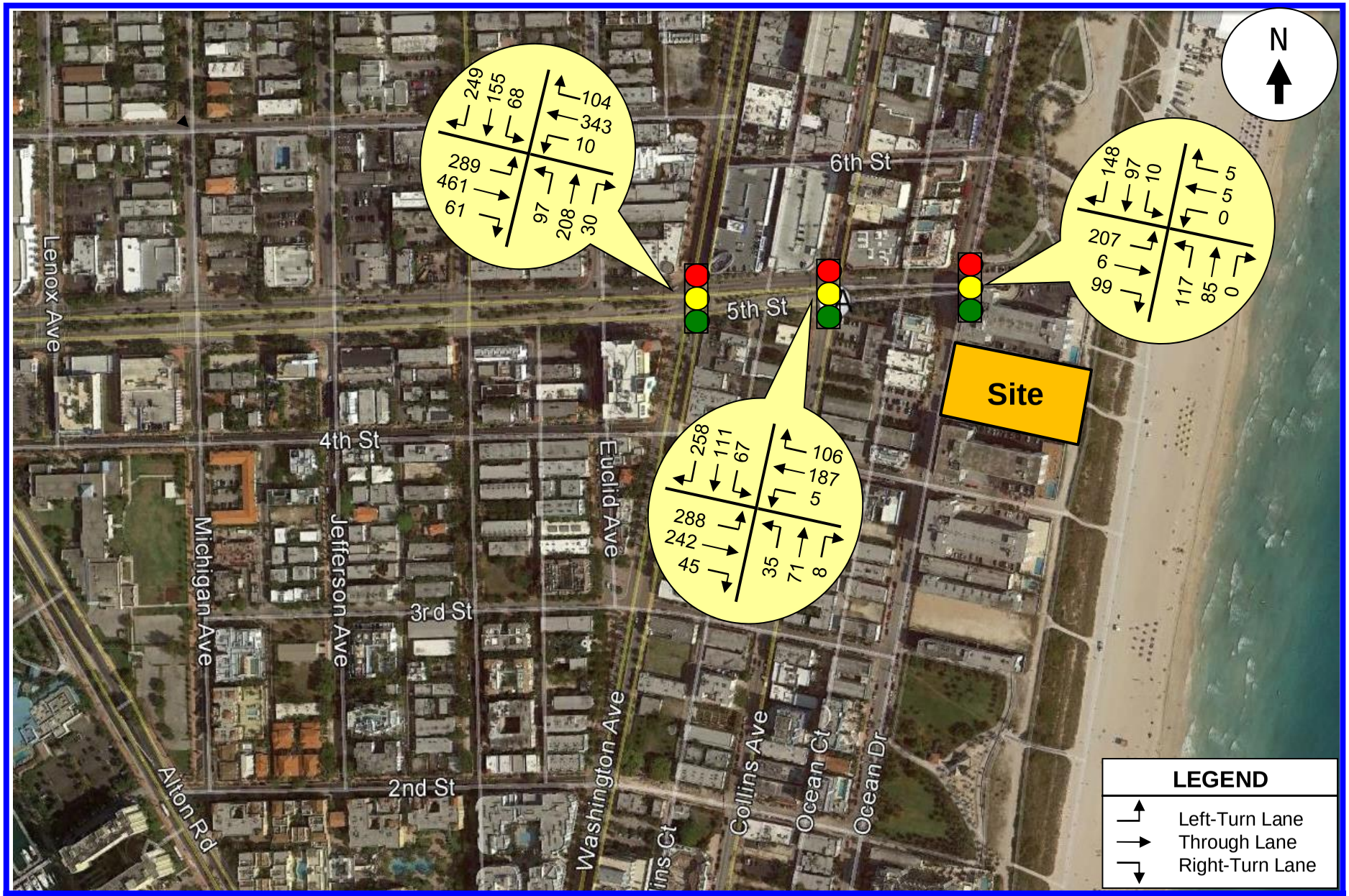
Background Peak Hour Traffic – Year 2015

FIGURE 5
Savoy / Arlington Hotel
Miami Beach, Florida



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Future (Total) Peak Hour Traffic – Year 2015

FIGURE 6
Savoy / Arlington Hotel
Miami Beach, Florida

TABLE 3 Intersection Levels of Service (Signalized Intersections) Savoy / Arlington Hotel – Miami Beach, FL			
		Future Traffic Conditions	
Intersection	**2013 Existing**	**2015 w/o Project**	**2015 With Project**
Ocean Drive / 5th Street	**C (22.7)**	**C (23.4)**	**C (23.2)**
Collins Ave / 5th Street	**B (19.8)**	**C (21.0)**	**C (21.1)**
Washington Ave / 5th Street			
- Current Signal Timing	**D (49.6)**	**E (55.9)**	**E (55.7)**
- Optimized Timing	**C (26.2)**	**C (26.9)**	**C (27.1)**

Source: Highway Capacity Manual and SYNCHRO
Legend: LOS (Delay – sec/veh)

As noted above, the intersection of Ocean Drive / 5th Street and the intersection of Collins Avenue / 5th Street are currently operating at an acceptable LOS and will continue to do so in 2015 with and without the subject project. No modifications to the signal timings are necessary.

The intersection of Washington Avenue / 5th Street is projected to operate at LOS "E" in 2015 with and without the project. It is noted that the movement that is the primary cause of this degradation in the LOS is the eastbound left-turn. The subject project will add no additional traffic to this movement. Nonetheless, it appears that the signal timing at this intersection can be refined and optimized for the subject time (peak) period in order to achieve an improved level of service (i.e. LOS "C") for each of the analysis timeframes (2013, 2015 without the project, and 2015 with the project). As such, it is suggested that this information be communicated to Miami-Dade County for further evaluation and possible implementation.

The SYNCHRO printouts of the intersection capacity analyses are contained in Appendix G.

PARKING AND QUEUING ANALYSIS

There is no parking provided on the Savoy / Arlington Hotel site. On-street parking, surface parking lots and several nearby parking garages are available to the public within the general study area. Presently, there are two (2) on-street valet parking spaces and one (1) loading space on Ocean Drive immediately adjacent to the hotel entrance.

A queuing analysis has been conducted for the valet station for this project. For this analysis, it was estimated that 50% of the peak hour vehicles associated with this site will utilize the valet option. The vehicle storage (or queue) anticipated for this location was determined using information contained in ITE's *Transportation and Land Development*, Chapter 8 – Drive-In Facilities[1]. For this analysis, the following input variables were used:

- **Service Rate:** Based on the assumption that a vehicle can be parked/un-parked within a three (3) minute period (likely valet parking spaces are to be located within three (3) blocks of the proposed valet station), four (4) valet attendants will be able to park/un-park approximately 80 vehicles in a one-hour peak period.

- **Demand Rate:** Based upon the assumption that 50% of all inbound and outbound vehicles will use the valet during the PM peak hour (i.e. highest volume peak), 35 vehicles will have to be parked/un-parked by valet staff.

Using equation 8-9b and Table 8-11 of ITE's *Transportation and Land Development*, the maximum valet demand anticipated at the Savoy / Arlington Hotel, at the 95% confidence level, is two (2) vehicles with the utilization of four (4) valet runners. This anticipated vehicle queue can be accommodated by the existing number of valet spaces on Ocean Drive. Therefore, the projected maximum valet demand at the Savoy / Arlington Hotel is projected to function adequately. The results of this analysis are contained in Appendix H.

[1] By Vergil G. Stover and Frank J. Koepke.

Concerning the parking facilities, supply, and availability for the Savoy / Arlington Hotel, the owner (Savoy Hotel Partners LLC) currently owns and utilizes a surface parking lot located at 4th Street and Collins Avenue. This property contains 50 parking spaces and is used exclusively by the existing Savoy Hotel. In order to meet the parking demands associated with the proposed hotel expansion, the owner has entered into a covenant agreement with the City of Miami Beach to construct a parking garage at this location that will provide approximately 300 parking spaces, of which a minimum of 82 parking spaces will be dedicated for exclusive use by the hotel. The remainder of the parking spaces will be available for public use.

The subject covenant ensures that, prior to issuance of a certificate of occupancy, ownership is required to construct this new parking garage in order to satisfy the additional parking demand associated with the expanded hotel facilities. A copy of the executed agreement is contained in Appendix I of this report.

SUMMARY & CONCLUSIONS

The Savoy / Arlington Hotel is an existing hotel located on the east side of Ocean Drive between 4th Street and 5th Street in the City of Miami Beach, Miami-Dade County, Florida. The existing building at this site is a fully functioning hotel with 66 guest rooms. This project involves the renovation, redevelopment and expansion of the existing facilities for a hotel with 134 rooms.

Traf Tech Engineering, Inc. has been retained by Shulman + Associates to conduct a traffic study in connection with the redevelopment and expansion of this hotel property. This study addresses trip generation and the traffic impacts created by the proposed project on the nearby transportation network. The conclusions of the traffic study are presented below:

- The net new external vehicle trips anticipated to be generated by the proposed Savoy / Arlington Hotel project consists of approximately 36 vehicle trips during the weekly PM peak hour of the generator (21 inbound and 15 outbound trips).

- The intersection of Ocean Drive / 5th Street and the intersection of Collins Avenue / 5th Street are currently operating at an acceptable LOS and will continue to do so in 2015 with and without the project in place.

- The intersection of Washington Avenue / 5th Street is projected to operate at LOS "E" in 2015 both with and without the subject project. A review of the signal timing plans indicates that adjustments can be made to the splits that will allow the operations of this intersection to improve to LOS "C". It is recommended that this information be communicated to Miami-Dade County for their review and consideration.

- A review of the vehicle storage capacity provided at the subject valet drop-off / pick-up area indicates that up to two (2) vehicles can be accommodated. Based upon the queuing analysis performed for this site, the presence of up to four (4) valet runners during the peak period will allow this configuration to operate adequately.

- A covenant agreement has been entered into between the owner and the City of Miami Beach that requires the construction of a parking garage at the intersection of 4th Street and Collins Avenue prior to the issuance of a certificate of occupancy for the hotel expansion.

APPENDIX C

Savoy / Arlington Hotel

Trip Generation Update

TABLE C-1
Trip Generation Summary
Savoy / Arlington Hotel
Miami Beach, Florida

Land Use	Size	Daily Trips	Weekday PM Peak Hour Trips		
			Inbound	Outbound	Total
EXISTING DEVELOPMENT					
Hotel	66 Rooms	539	23	17	40
Gross New Trips	**-**	**539**	**23**	**17**	**40**
Other Modes (15%)	-	-81	-3	-3	-6
Net New Trips	**-**	**458**	**20**	**14**	**34**
PROPOSED DEVELOPMENT					
Hotel	181 Rooms	1,479	64	46	110
Restaurant	114 Seats	326	20	14	34
Gross New Trips	**-**	**1,805**	**84**	**60**	**144**
Other Modes (15%)	-	-271	-13	-9	-22
Net New Trips	**-**	**1,534**	**71**	**51**	**122**
DIFFERENCE (PROPOSED – EXISTING)					
		1,076	51	37	88

Source: ITE Trip Generation (9th Edition) and Traf Tech Engineering, Inc. (May 2015).

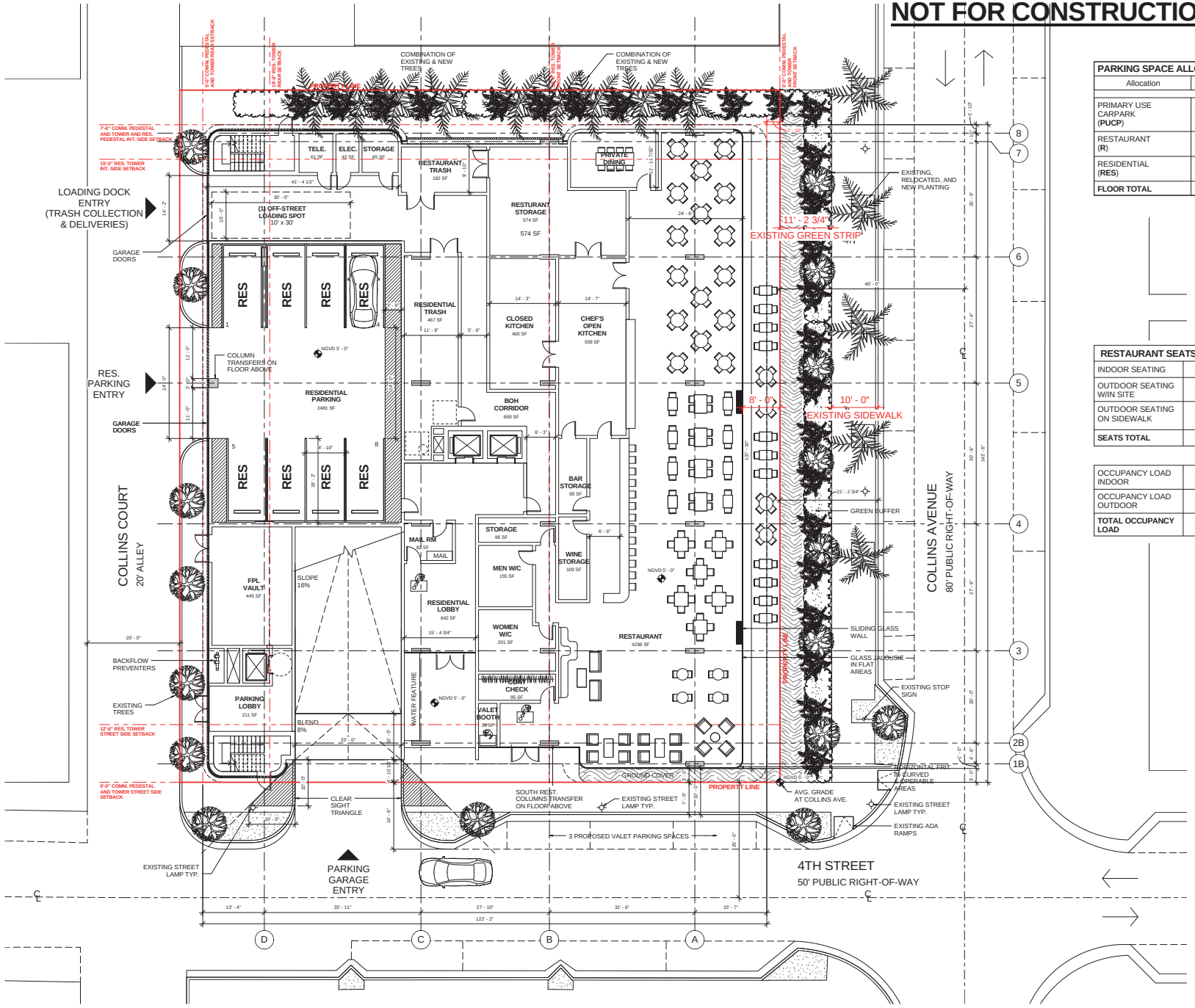
APPENDIX D

The Torino at 400 Collins Avenue

Preliminary Site Plan

ARCH E1 30"x42"

NOT FOR CONSTRUCTION



1 LEVEL 01A - GROUND FLOOR
1/8" = 1'-0"

PARKING SPACE ALLOCATION	
Allocation	Count
PRIMARY USE CARPARK (**PUCP**)	0
RESTAURANT (**R**)	0
RESIDENTIAL (**RES**)	8
FLOOR TOTAL	8

RESTAURANT SEATS COUNT	
INDOOR SEATING	161
OUTDOOR SEATING W/IN SITE	38
OUTDOOR SEATING ON SIDEWALK	0
SEATS TOTAL	**199**

OCCUPANCY LOAD INDOOR	161
OCCUPANCY LOAD OUTDOOR	38
TOTAL OCCUPANCY LOAD	**199**

PROJECT

TORINO GARAGE
400 COLLINS AVE.,
MIAMI BEACH, FL 33139

Owner:
Allied Partners
770 Lexington Ave
New York, NY 10065-8165

Design Architect:
Brandon Haw Architecture LLP
375 Park Avenue, Suite 3308
New York, NY 10152
License # AA26003249

CONSULTANTS

Landscape Architect:
Naturalficial, Inc.
6915 Red Road, Suite 224
Coral Gables, FL 33143

NO.	DESCRIPTION	DATE
01	PROGRESS SET	APRIL 27, 2016

DATE OF ISSUE 04/27/16
DRAWN BY Author
SCALE 1/8" = 1'-0"
CHECKED BY Checker
PROJECT NO. & TITLE Project Number TORINO GARAGE
PROJECT STATUS Project Status

KEY PLAN

SCALE & ORIENTATION

1/8" = 1'-0"

SEAL & SIGNATURE

This document has been prepared for creative, conceptual or planning purposes only. No warranties are made regarding the design or its adequacy for construction or other purposes.

STATE OF FLORIDA — BRANDON HAW — AR97975 — REGISTERED ARCHITECT

DRAWING TITLE

PB A-201
PROPOSED BUILDING - FLOOR PLAN - LVL 1 GROUND

APPENDIX E

Traffic Counts

Traffic Survey Specialists, Inc.
624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

4TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLCT

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS COURT From North				4TH STREET From East				COLLINS COURT From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	2	0	0	16	1	0	1	0	1	0	2	16	1	40
17:15	0	1	0	1	2	0	18	1	0	3	0	0	1	2	13	2	44
17:30	0	1	0	1	0	0	21	1	0	1	0	0	0	2	24	0	51
17:45	0	1	0	0	0	0	15	1	0	1	0	0	0	3	12	1	34
Hr Total	0	3	0	4	2	0	70	4	0	6	0	1	1	9	65	4	169
18:00	0	0	0	1	0	0	25	1	0	1	0	0	0	0	13	1	42
18:15	0	3	0	1	0	1	14	1	0	0	0	0	1	1	21	1	44
18:30	0	0	0	2	0	0	18	1	0	3	0	1	0	1	15	0	41
18:45	0	0	0	1	0	0	14	0	0	2	0	0	3	2	15	1	38
Hr Total	0	3	0	5	0	1	71	3	0	6	0	1	4	4	64	3	165
TOTAL	0	6	0	9	2	1	141	7	0	12	0	2	5	13	129	7	334

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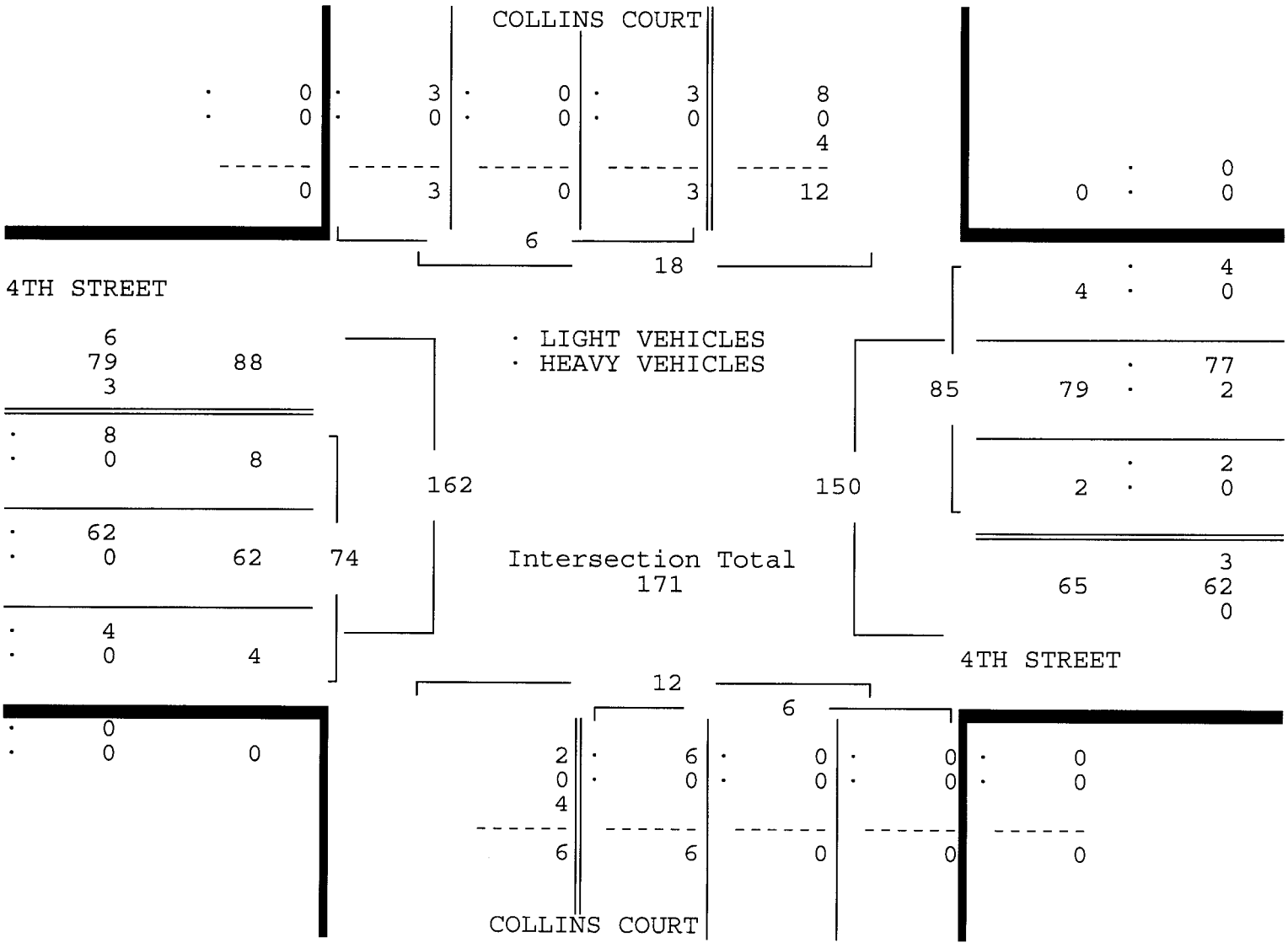
4TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLCT
Page : 2

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS COURT From North				4TH STREET From East				COLLINS COURT From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 07/11/14																	
Peak start	17:15				17:15				17:15				17:15				
Volume	0	3	0	3	2	0	79	4	0	6	0	0	1	7	62	4	
Percent	0%	50%	0%	50%	2%	0%	93%	5%	0%	100%	0%	0%	1%	9%	84%	5%	
Pk total	6				85				6				74				
Highest	17:15				18:00				17:15				17:30				
Volume	0	1	0	1	0	0	25	1	0	3	0	0	0	2	24	0	
Hi total	2				26				3				26				
PHF	.75				.82				.50				.71				



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4TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLCT
Page : 1

HEAVY VEHICLES

	COLLINS COURT From North				4TH STREET From East				COLLINS COURT From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
18:00	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1	2
Hr Total	0	0	0	0	0	0	2	0	0	0	0	0	0	0	1	1	4
TOTAL	0	0	0	0	0	0	3	0	0	0	0	0	0	0	1	1	5

Traffic Survey Specialists, Inc.

4TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

624 Gardenia Terrace
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Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLCT
Page : 1

PEDESTRIANS

	COLLINS COURT From North				4TH STREET From East				COLLINS COURT From South				4TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 07/11/14																	
17:00	0	4	0	5	0	0	0	1	0	1	0	3	0	0	0	1	15
17:15	0	2	0	12	0	0	0	2	0	1	0	11	0	0	0	0	28
17:30	0	2	0	7	0	0	0	0	0	1	0	3	0	0	0	0	13
17:45	0	1	0	7	0	0	0	1	0	0	0	4	0	0	0	0	13
Hr Total	0	9	0	31	0	0	0	4	0	3	0	21	0	0	0	1	69
18:00	0	1	0	9	0	0	0	0	0	2	0	13	0	0	0	0	25
18:15	0	2	0	16	0	0	0	2	0	2	0	9	0	0	0	0	31
18:30	0	5	0	14	0	0	0	2	0	1	0	4	0	0	0	2	28
18:45	0	2	0	11	0	0	0	0	0	2	0	3	0	0	0	2	20
Hr Total	0	10	0	50	0	0	0	4	0	7	0	29	0	0	0	4	104
TOTAL	0	19	0	81	0	0	0	8	0	10	0	50	0	0	0	5	173

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4TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLLA
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS AVENUE From North				4TH STREET From East				COLLINS AVENUE From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	6	27	1	0	3	13	8	0	3	20	0	1	6	5	3	96
17:15	0	3	15	7	0	1	8	4	0	6	17	1	0	5	9	0	76
17:30	0	1	24	6	0	2	13	4	0	3	16	2	0	4	17	4	96
17:45	0	6	32	4	0	1	12	2	0	2	17	0	0	3	8	0	87
Hr Total	0	16	98	18	0	7	46	18	0	14	70	3	1	18	39	7	355
18:00	0	0	15	4	0	1	18	2	0	4	7	1	0	1	8	3	64
18:15	0	2	10	5	0	0	6	5	0	2	13	1	1	3	18	3	69
18:30	0	2	16	7	0	2	9	3	0	4	14	1	0	1	8	6	73
18:45	0	6	20	2	0	3	9	4	2	5	20	3	0	4	9	4	91
Hr Total	0	10	61	18	0	6	42	14	2	15	54	6	1	9	43	16	297
TOTAL	0	26	159	36	0	13	88	32	2	29	124	9	2	27	82	23	652

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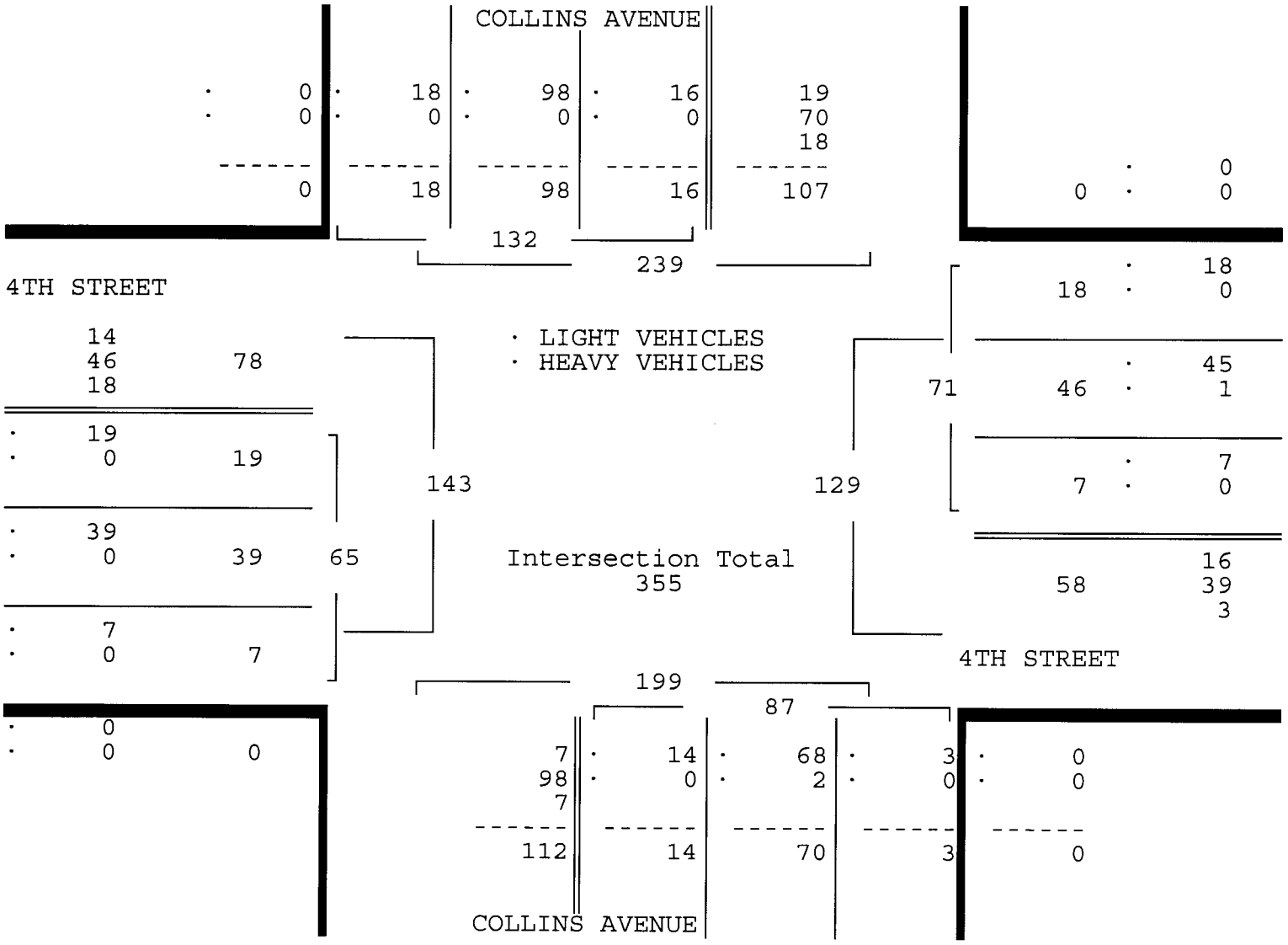
4TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLLA
Page : 2

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS AVENUE From North				4TH STREET From East				COLLINS AVENUE From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 07/11/14																	
Peak start	17:00				17:00				17:00				17:00				
Volume	0	16	98	18	0	7	46	18	0	14	70	3	1	18	39	7	
Percent	0%	12%	74%	14%	0%	10%	65%	25%	0%	16%	80%	3%	2%	28%	60%	11%	
Pk total	132				71				87				65				
Highest	17:45				17:00				17:15				17:30				
Volume	0	6	32	4	0	3	13	8	0	6	17	1	0	4	17	4	
Hi total	42				24				24				25				
PHF	.79				.74				.91				.65				



Traffic Survey Specialists, Inc.

4TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLLA
Page : 1

HEAVY VEHICLES

	COLLINS AVENUE From North				4TH STREET From East				COLLINS AVENUE From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
17:15	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
17:30	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	2
17:45	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Hr Total	0	0	0	0	0	0	1	0	0	0	2	0	0	0	0	0	3
18:00	0	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	4
18:15	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	3
18:30	0	0	1	0	0	1	0	1	0	0	2	0	0	0	0	0	5
18:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Hr Total	0	0	2	0	0	1	3	1	0	0	5	0	0	0	1	0	13
TOTAL	0	0	2	0	0	1	4	1	0	0	7	0	0	0	1	0	16

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4TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 4STCOLLA

PEDESTRIANS

	COLLINS AVENUE From North				4TH STREET From East				COLLINS AVENUE From South				4TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 07/11/14																	
17:00	0	1	0	5	0	1	0	2	0	1	0	1	0	0	0	3	14
17:15	0	4	0	2	0	0	0	13	0	1	0	8	0	0	0	8	36
17:30	0	3	0	3	0	2	0	10	0	0	0	4	0	0	0	9	31
17:45	0	1	0	4	0	0	0	7	0	0	0	0	0	1	0	9	22
Hr Total	0	9	0	14	0	3	0	32	0	2	0	13	0	1	0	29	103
18:00	0	1	0	1	0	1	0	4	0	2	0	0	0	0	0	24	33
18:15	0	3	0	5	0	0	0	13	0	1	0	12	0	3	0	22	59
18:30	0	1	0	9	0	1	0	24	0	1	0	2	0	1	0	10	49
18:45	0	3	0	0	0	0	0	6	0	1	0	3	0	1	0	7	21
Hr Total	0	8	0	15	0	2	0	47	0	5	0	17	0	5	0	63	162
TOTAL	0	17	0	29	0	5	0	79	0	7	0	30	0	6	0	92	265

Traffic Survey Specialists, Inc.

5TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: ISIDRO GONZALEZ
NOT SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5STCOLCT
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS COURT From North				5TH STREET From East				COLLINS COURT From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	8	0	0	182	13	0	0	0	0	0	0	140	0	343
17:15	0	0	0	12	0	0	157	11	0	0	0	1	0	0	120	2	303
17:30	0	0	0	9	0	0	142	29	0	0	0	0	0	0	137	0	317
17:45	0	0	0	11	0	0	171	23	0	0	0	2	0	0	153	0	360
Hr Total	0	0	0	40	0	0	652	76	0	0	0	3	0	0	550	2	1323
18:00	0	0	0	25	0	0	172	24	0	0	0	0	0	0	142	0	363
18:15	0	0	0	15	0	0	154	15	0	0	0	1	0	0	146	1	332
18:30	0	0	0	7	0	0	158	19	0	0	0	1	0	0	146	3	334
18:45	0	0	0	15	0	0	145	13	0	0	0	0	0	0	152	1	326
Hr Total	0	0	0	62	0	0	629	71	0	0	0	2	0	0	586	5	1355
TOTAL	0	0	0	102	0	0	1281	147	0	0	0	5	0	0	1136	7	2678

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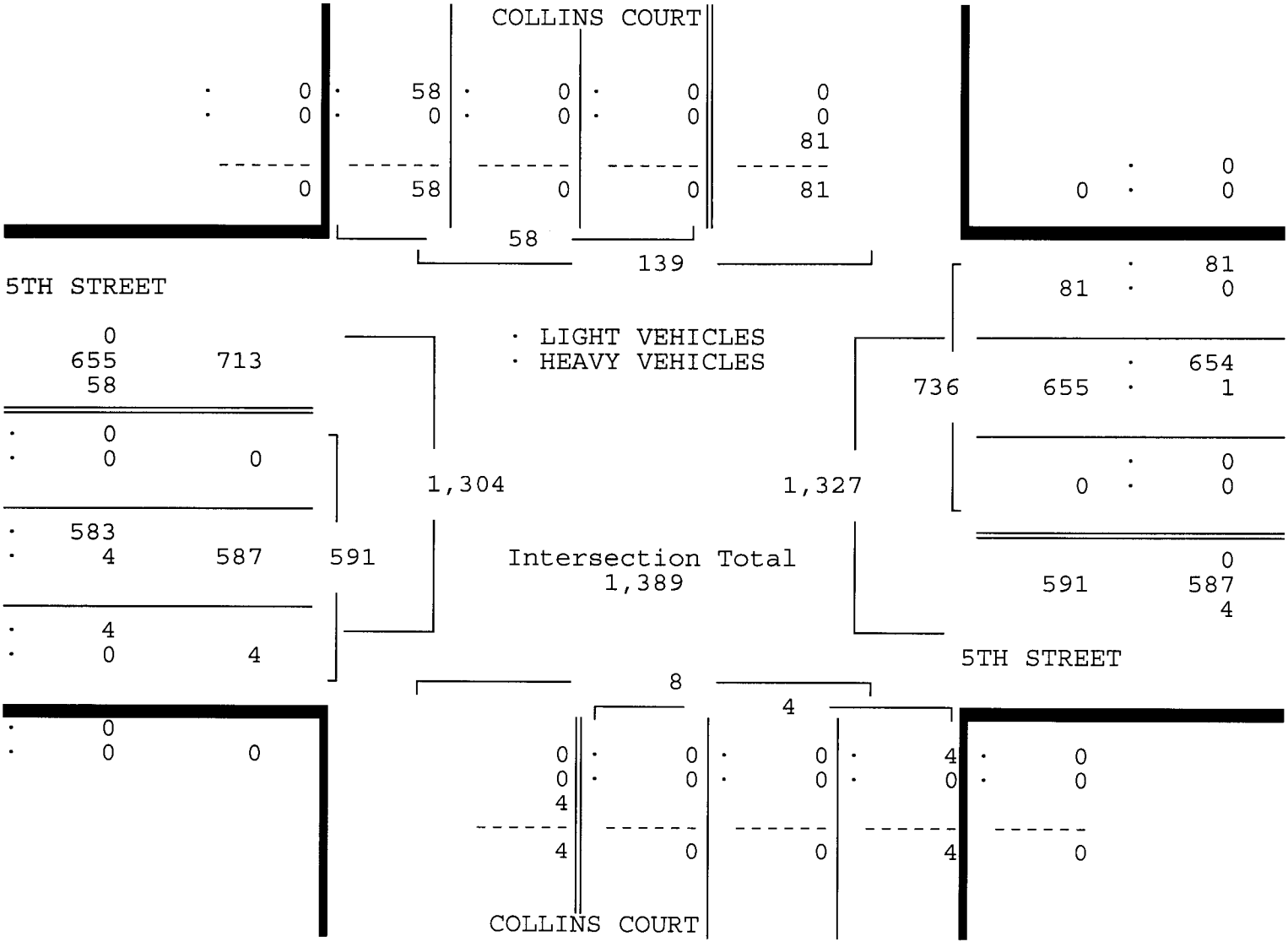
Delray Beach, Florida 33444
Phone (561) 272-3255

5TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: ISIDRO GONZALEZ
NOT SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5STCOLCT

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS COURT From North				5TH STREET From East				COLLINS COURT From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 07/11/14																	
Peak start	17:45				17:45				17:45				17:45				
Volume	0	0	0	58	0	0	655	81	0	0	0	4	0	0	587	4	
Percent	0%	0%	0%	100%	0%	0%	89%	11%	0%	0%	0%	100%	0%	0%	99%	1%	
Pk total	58				736				4				591				
Highest	18:00				18:00				17:45				17:45				
Volume	0	0	0	25	0	0	172	24	0	0	0	2	0	0	153	0	
Hi total	25				196				2				153				
PHF	.58				.94				.50				.97				



Traffic Survey Specialists, Inc.

5TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: ISIDRO GONZALEZ
NOT SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5STCOLCT
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HEAVY VEHICLES

	COLLINS COURT From North				5TH STREET From East				COLLINS COURT From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	2
17:15	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
17:30	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
17:45	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	2
Hr Total	0	0	0	0	0	0	5	0	0	0	0	0	0	0	2	0	7
18:00	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18:30	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	0	3
18:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
Hr Total	0	0	0	0	0	0	0	1	0	0	0	0	0	0	3	0	4
TOTAL	0	0	0	0	0	0	5	1	0	0	0	0	0	0	5	0	11

Traffic Survey Specialists, Inc.

5TH STREET & COLLINS COURT
MIAMI BEACH, FLORIDA
COUNTED BY: ISIDRO GONZALEZ
NOT SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5STCOLCT
Page : 1

PEDESTRIANS

	COLLINS COURT From North				5TH STREET From East				COLLINS COURT From South				5TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 07/11/14																	
17:00	0	7	0	67	0	0	0	1	0	5	0	12	0	0	0	1	93
17:15	0	8	0	51	0	0	0	3	0	0	0	15	0	1	0	2	80
17:30	0	8	0	61	0	0	0	5	0	0	0	12	0	0	0	2	88
17:45	0	6	0	58	0	0	0	1	0	3	0	22	0	0	0	0	90
Hr Total	0	29	0	237	0	0	0	10	0	8	0	61	0	1	0	5	351
18:00	0	6	0	56	0	0	0	0	0	5	0	13	0	0	0	0	80
18:15	0	5	0	65	0	0	0	7	0	1	0	21	0	0	0	0	99
18:30	0	6	0	46	0	0	0	0	0	1	0	11	0	0	0	1	65
18:45	0	7	0	55	0	0	0	1	0	4	0	13	0	0	0	0	80
Hr Total	0	24	0	222	0	0	0	8	0	11	0	58	0	0	0	1	324
TOTAL	0	53	0	459	0	0	0	18	0	19	0	119	0	1	0	6	675

Traffic Survey Specialists, Inc.

5TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: E. SAPORITTO & A. PALOMINO
SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5ST_COLL
Page : 1

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS AVENUE From North				5TH STREET From East				COLLINS AVENUE From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	10	23	102	0	0	61	15	0	18	15	0	12	49	66	16	387
17:15	12	9	14	79	1	5	71	15	0	11	14	1	7	54	46	11	350
17:30	0	16	21	83	0	3	55	28	0	13	13	7	18	47	62	12	378
17:45	0	13	29	90	0	1	71	17	0	13	7	2	21	55	70	15	404
Hr Total	12	48	87	354	1	9	258	75	0	55	49	10	58	205	244	54	1519
18:00	0	8	16	100	0	0	57	16	0	6	8	1	26	45	68	7	358
18:15	0	13	12	98	0	3	53	24	0	9	9	0	12	49	75	5	362
18:30	0	10	20	94	0	1	57	24	1	5	16	0	10	56	70	9	373
18:45	0	13	17	84	0	0	43	30	0	17	12	2	8	58	75	11	370
Hr Total	0	44	65	376	0	4	210	94	1	37	45	3	56	208	288	32	1463
TOTAL	12	92	152	730	1	13	468	169	1	92	94	13	114	413	532	86	2982

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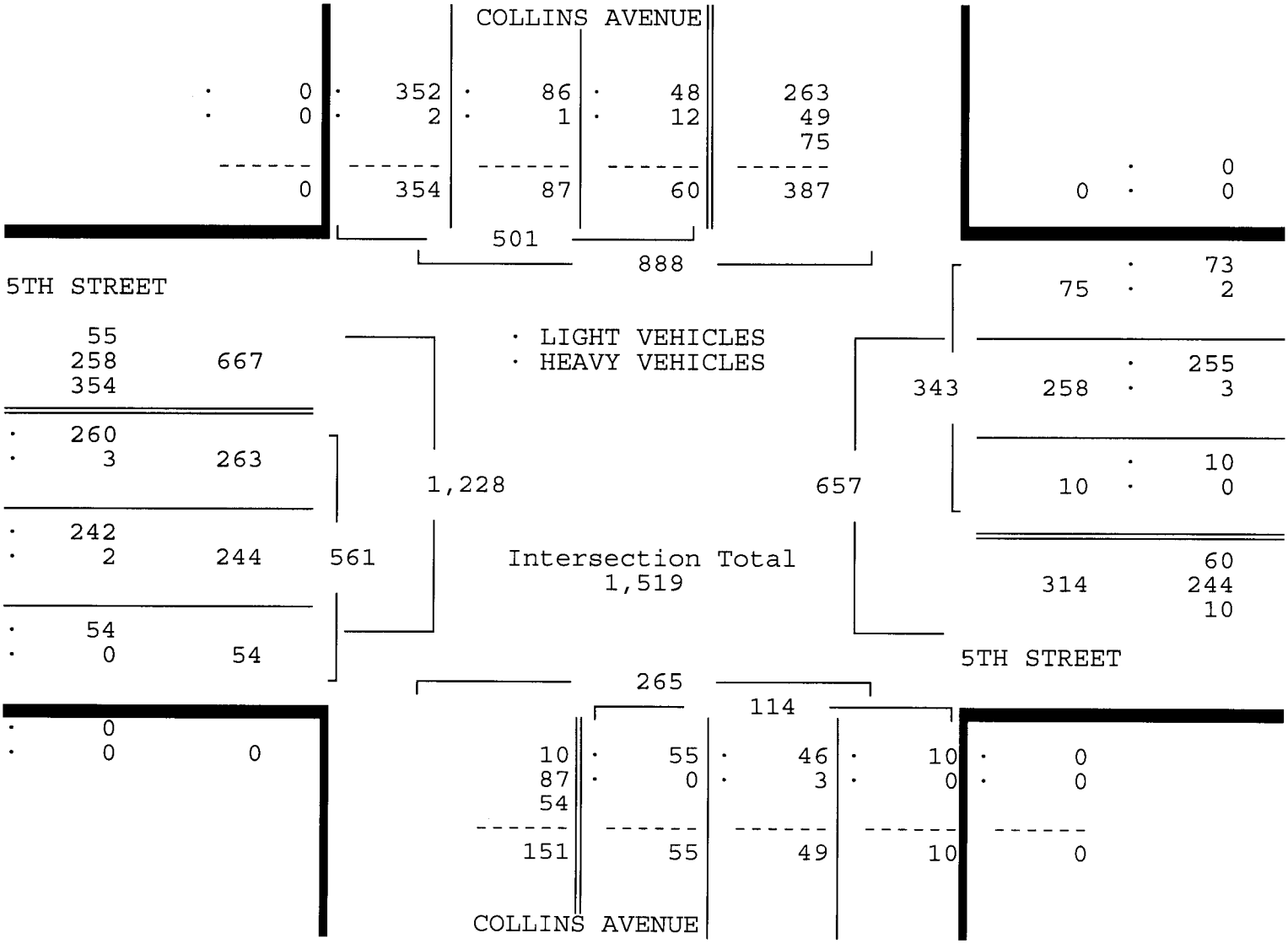
5TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: E. SAPORITTO & A. PALOMINO
SIGNALIZED

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5ST_COLL

LIGHT VEHICLES, HEAVY VEHICLES

	COLLINS AVENUE From North				5TH STREET From East				COLLINS AVENUE From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 07/11/14																	
Peak start	17:00				17:00				17:00				17:00				
Volume	12	48	87	354	1	9	258	75	0	55	49	10	58	205	244	54	
Percent	2%	10%	17%	71%	0%	3%	75%	22%	0%	48%	43%	9%	10%	37%	43%	10%	
Pk total	501				343				114				561				
Highest	17:00				17:15				17:00				17:45				
Volume	0	10	23	102	1	5	71	15	0	18	15	0	21	55	70	15	
Hi total	135				92				33				161				
PHF	.93				.93				.86				.87				



Traffic Survey Specialists, Inc.

5TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: E. SAPORITTO & A. PALOMINO
SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5ST_COLL
Page : 1

HEAVY VEHICLES

	COLLINS AVENUE From North				5TH STREET From East				COLLINS AVENUE From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 07/11/14																	
17:00	0	0	0	1	0	0	2	0	0	0	0	0	0	2	0	0	5
17:15	12	0	0	0	0	0	1	0	0	0	1	0	0	0	2	0	16
17:30	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	2
17:45	0	0	1	1	0	0	0	1	0	0	1	0	0	1	0	0	5
Hr Total	12	0	1	2	0	0	3	2	0	0	3	0	0	3	2	0	28
18:00	0	0	0	0	0	0	0	0	0	0	2	0	0	0	1	0	3
18:15	0	0	1	0	0	0	0	0	0	0	1	0	0	0	1	0	3
18:30	0	0	0	0	0	0	0	1	0	0	2	0	0	1	1	1	6
18:45	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
Hr Total	0	0	1	0	0	0	0	1	0	0	6	0	0	1	3	1	13
TOTAL	12	0	2	2	0	0	3	3	0	0	9	0	0	4	5	1	41

Traffic Survey Specialists, Inc.

5TH STREET & COLLINS AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: E. SAPORITTO & A. PALOMINO
SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00140149
Start Date: 07/11/14
File I.D. : 5ST_COLL
Page : 1

PEDESTRIANS

	COLLINS AVENUE From North				5TH STREET From East				COLLINS AVENUE From South				5TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 07/11/14																	
17:00	0	5	0	65	0	5	0	18	0	4	0	8	0	3	0	6	114
17:15	0	6	0	50	0	1	0	17	0	0	0	5	0	2	0	20	101
17:30	0	1	0	83	0	2	0	12	0	1	0	4	0	0	0	12	115
17:45	0	4	0	68	0	0	0	13	0	1	0	2	0	1	0	21	110
Hr Total	0	16	0	266	0	8	0	60	0	6	0	19	0	6	0	59	440
18:00	0	2	0	61	0	0	0	22	0	0	0	8	0	0	0	26	119
18:15	0	1	0	62	0	1	0	30	0	0	0	13	0	1	0	15	123
18:30	0	6	0	90	0	2	0	45	0	1	0	10	0	1	0	20	175
18:45	0	2	0	60	0	2	0	14	0	3	0	6	0	1	0	11	99
Hr Total	0	11	0	273	0	5	0	111	0	4	0	37	0	3	0	72	516
TOTAL	0	27	0	539	0	13	0	171	0	10	0	56	0	9	0	131	956

7/11/2014
SAVOR HOTEL

	VALET	RETURN TO VALET	GUEST CHECK IN	GUEST CHECK OUT
5:00-5:15	0	0	0	0
515-5:30	1	0	III	0
5:30-5:45	1	0	1	0
5:45-6:00	1	0	1	0
6:00-6:15	1	0	1	0
6:15-6:30	1	0	0	0
6:30-6:45	0	0	1	0
6:45-7:00	1 PARKED IN VALET	0	1 FEDEX TRUCK	0

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4TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
NOT SIGNALIZED

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 4ST_WASH
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				4TH STREET From East				WASHINGTON AVENUE From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/29/15																	
17:00	4	2	40	9	0	3	9	18	0	4	47	3	0	6	8	5	158
17:15	4	4	36	9	0	0	19	11	1	2	47	5	0	11	15	4	168
17:30	2	10	40	9	0	2	9	10	2	2	49	4	0	3	10	7	159
17:45	3	7	40	3	0	0	14	7	0	5	34	6	0	11	13	7	150
Hr Total	13	23	156	30	0	5	51	46	3	13	177	18	0	31	46	23	635
18:00	0	11	46	4	0	2	13	9	0	5	53	3	0	6	11	8	171
18:15	3	9	41	8	0	1	9	6	0	2	51	3	0	3	6	4	146
18:30	2	6	51	4	0	1	14	14	1	7	40	2	0	4	14	4	164
18:45	7	8	57	4	0	1	8	6	1	3	60	3	0	4	9	3	174
Hr Total	12	34	195	20	0	5	44	35	2	17	204	11	0	17	40	19	655
TOTAL	25	57	351	50	0	10	95	81	5	30	381	29	0	48	86	42	1290

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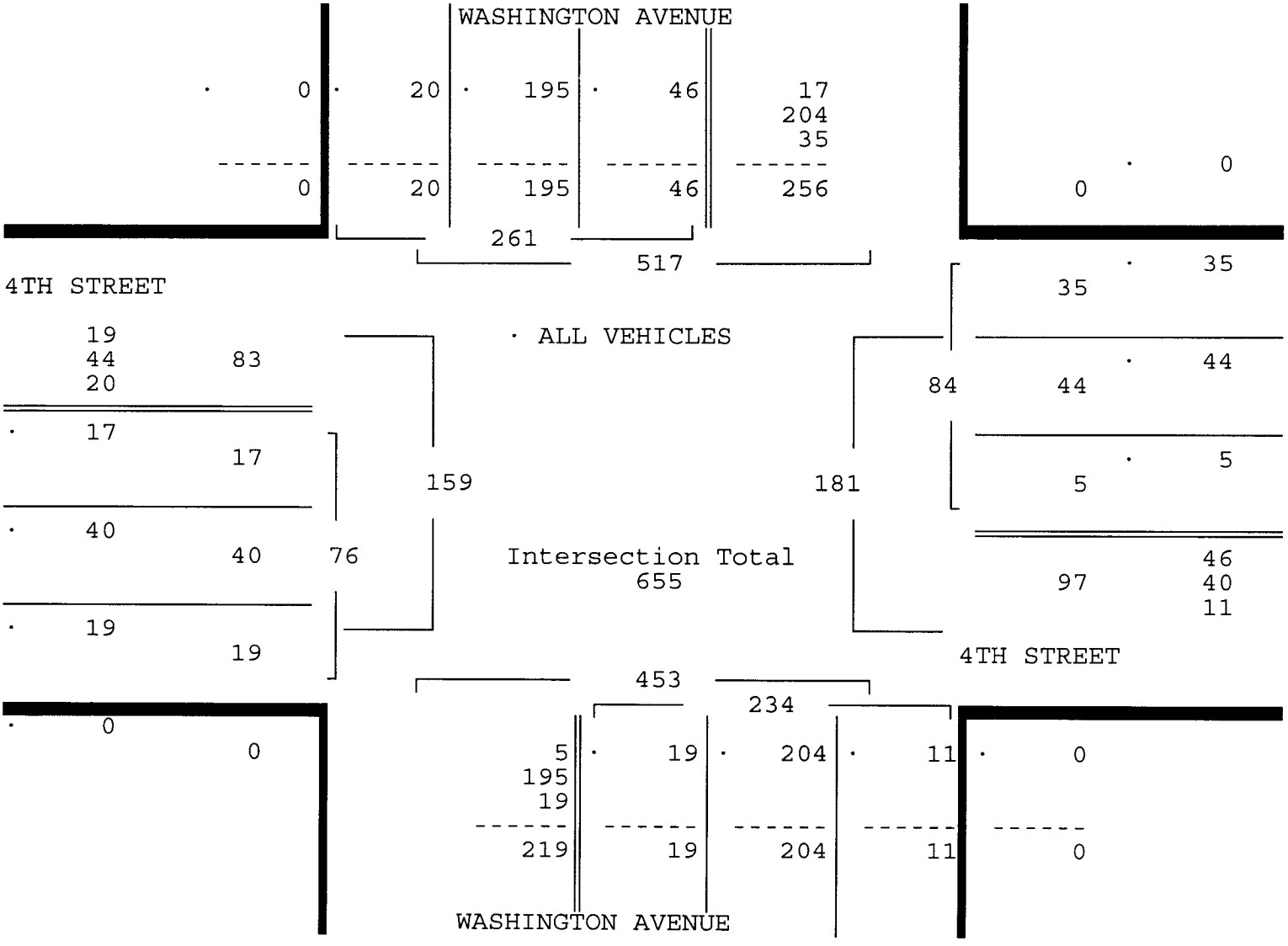
4TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
NOT SIGNALIZED

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 4ST_WASH

ALL VEHICLES

	WASHINGTON AVENUE From North				4TH STREET From East				WASHINGTON AVENUE From South				4TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/29/15																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 05/29/15																	
Peak start	18:00				18:00				18:00				18:00				
Volume	12	34	195	20	0	5	44	35	2	17	204	11	0	17	40	19	
Percent	5%	13%	75%	8%	0%	6%	52%	42%	1%	7%	87%	5%	0%	22%	53%	25%	
Pk total	261				84				234				76				
Highest	18:45				18:30				18:45				18:00				
Volume	7	8	57	4	0	1	14	14	1	3	60	3	0	6	11	8	
Hi total	76				29				67				25				
PHF	.86				.72				.87				.76				



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4TH STREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
NOT SIGNALIZED

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 4ST_WASH
Page : 1

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				4TH STREET From East				WASHINGTON AVENUE From South				4TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 05/29/15																	
17:00	0	1	0	5	0	2	0	10	0	0	0	11	0	1	0	7	37
17:15	0	0	0	6	0	2	0	18	0	0	0	5	0	2	0	9	42
17:30	0	0	0	9	0	2	0	13	0	0	0	15	0	5	0	5	49
17:45	0	0	0	8	0	0	0	15	0	0	0	1	0	3	0	11	38
Hr Total	0	1	0	28	0	6	0	56	0	0	0	32	0	11	0	32	166
18:00	0	0	0	10	0	0	0	13	0	0	0	11	0	1	0	7	42
18:15	0	0	0	9	0	4	0	22	0	1	0	4	0	1	0	7	48
18:30	0	2	0	5	0	7	0	21	0	0	0	18	0	6	0	19	78
18:45	0	0	0	11	0	0	0	24	0	1	0	26	0	3	0	17	82
Hr Total	0	2	0	35	0	11	0	80	0	2	0	59	0	11	0	50	250
TOTAL	0	3	0	63	0	17	0	136	0	2	0	91	0	22	0	82	416

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5TH SREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: A. GONZALEZ & I. GONZALEZ
SIGNALIZED

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 5STRWAS_
Page : 1

ALL VEHICLES

	WASHINGTON AVENUE From North				5TH STREET From East				WASHINGTON AVENUE From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/29/15																	
17:00	11	10	40	99	0	0	131	31	2	20	48	1	1	89	142	14	639
17:15	3	11	32	112	0	1	128	20	0	20	49	8	2	82	132	22	622
17:30	6	13	48	67	1	2	152	22	2	14	45	6	0	101	126	8	613
17:45	3	12	36	101	0	2	132	14	0	10	45	6	0	96	122	20	599
Hr Total	23	46	156	379	1	5	543	87	4	64	187	21	3	368	522	64	2473
18:00	6	11	40	86	0	3	137	20	0	16	45	6	0	87	125	19	601
18:15	7	13	40	104	0	1	140	24	0	18	42	7	0	99	135	13	643
18:30	6	15	51	91	1	0	109	20	0	18	41	1	1	79	117	14	564
18:45	4	13	57	97	0	2	130	22	0	33	49	4	1	93	107	15	627
Hr Total	23	52	188	378	1	6	516	86	0	85	177	18	2	358	484	61	2435
TOTAL	46	98	344	757	2	11	1059	173	4	149	364	39	5	726	1006	125	4908

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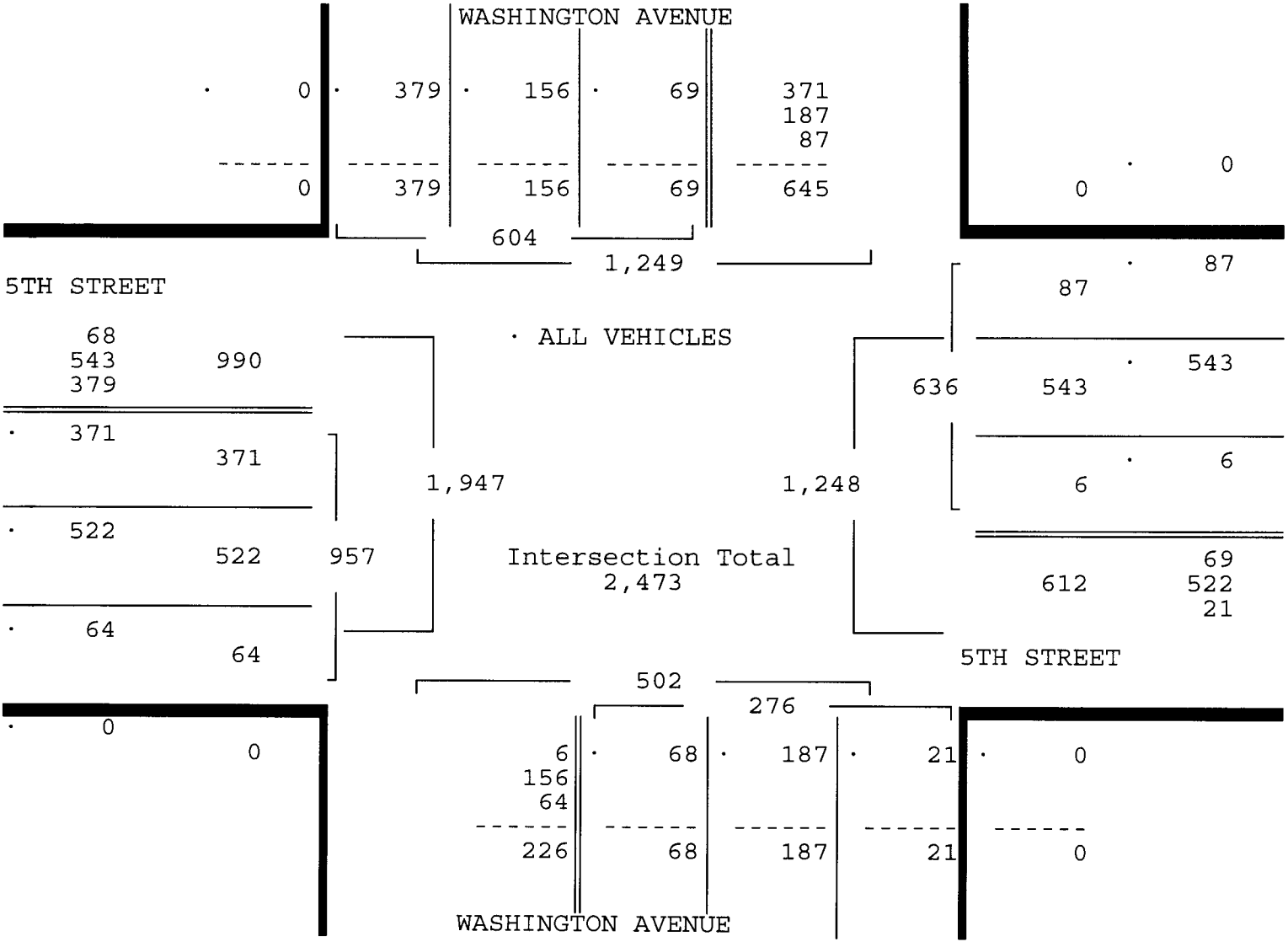
5TH SREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: A. GONZALEZ & I. GONZALEZ
SIGNALIZED

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 5STRWAS_

ALL VEHICLES

	WASHINGTON AVENUE From North				5TH STREET From East				WASHINGTON AVENUE From South				5TH STREET From West				
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Total
Date 05/29/15																	
Peak Hour Analysis By Entire Intersection for the Period: 17:00 to 19:00 on 05/29/15																	
Peak start	17:00				17:00				17:00				17:00				
Volume	23	46	156	379	1	5	543	87	4	64	187	21	3	368	522	64	
Percent	4%	8%	26%	63%	0%	1%	85%	14%	1%	23%	68%	8%	0%	38%	55%	7%	
Pk total	604				636				276				957				
Highest	17:00				17:30				17:15				17:00				
Volume	11	10	40	99	1	2	152	22	0	20	49	8	1	89	142	14	
Hi total	160				177				77				246				
PHF	.94				.90				.90				.97				



Traffic Survey Specialists, Inc.

5TH SREET & WASHINGTON AVENUE
MIAMI BEACH, FLORIDA
COUNTED BY: A. GONZALEZ & I. GONZALEZ
SIGNALIZED

624 Gardenia Terrace
Delray Beach, Florida 33444
Phone (561) 272-3255

Site Code : 00150120
Start Date: 05/29/15
File I.D. : 5STRWAS_
Page : 1

PEDESTRIANS & BIKES

	WASHINGTON AVENUE From North				5TH STREET From East				WASHINGTON AVENUE From South				5TH STREET From West				
	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Total
Date 05/29/15																	
17:00	0	7	0	23	0	0	0	9	0	1	0	5	0	3	0	15	63
17:15	0	4	0	43	0	1	0	23	0	1	0	9	0	0	0	8	89
17:30	0	1	0	41	0	0	0	22	0	2	0	14	0	4	0	11	95
17:45	0	5	0	29	0	3	0	18	0	1	0	19	0	4	0	9	88
Hr Total	0	17	0	136	0	4	0	72	0	5	0	47	0	11	0	43	335
18:00	0	8	0	41	0	0	0	26	0	2	0	12	0	5	0	7	101
18:15	0	1	0	33	0	1	0	13	0	2	0	7	0	0	0	9	66
18:30	0	0	0	24	0	0	0	13	0	0	0	25	0	3	0	38	103
18:45	0	0	0	32	0	1	0	9	0	0	0	12	0	1	0	15	70
Hr Total	0	9	0	130	0	2	0	61	0	4	0	56	0	9	0	69	340
TOTAL	0	26	0	266	0	6	0	133	0	9	0	103	0	20	0	112	675

APPENDIX F

Signal Timing Data

TOD Schedule Report
for 2658: Collins Av&5 St

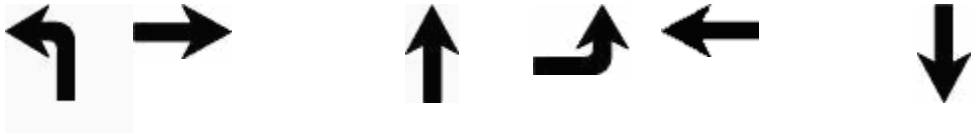
Print Date: 2/13/2015

Print Time: 10:13 AM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2658	Collins Av&5 St	HOLIDAY-6		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
-	EBT	-	NBT	EBL	WBT	-	SBT
0	0	0	0	0	0	0	0



Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1 2 3	Don't Walk 1 2 3	Min Initial 1 2 3	Veh Ext 1 2 3	Max Limit 1 2 3	Max 2 1 2 3	Yellow	Red
1 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
2 EBT	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	20 - 20 - 20	0 - 20 - 20	4	2.3
3 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
4 NBT	0 - 0 - 0	0 - 0 - 0	7 - 7 - 7	2.5 - 2.5 - 2.5	12 - 7 - 7	55 - 20 - 20	4	3.2
5 EBL	0 - 0 - 0	0 - 0 - 0	5 - 5 - 5	2 - 2 - 2	11 - 7 - 7	25 - 15 - 15	4	2
6 WBT	0 - 0 - 0	0 - 0 - 0	16 - 16 - 16	1 - 1 - 1	20 - 20 - 20	0 - 20 - 20	4	2.3
7 -	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0 - 0 - 0	0	0
8 SBT	0 - 0 - 0	0 - 0 - 0	7 - 7 - 7	5 - 2.5 - 2.5	12 - 7 - 7	55 - 20 - 20	4	3.2

Last In Service Date: unknown

Permitted Phases

	12345678
Default	-23456-8
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 2658: Collins Av&5 St

Print Date: 2/13/2015

Print Time: 10:13 AM

Current TOD Schedule	Plan	Cycle	Green Time 1 -	2 EBT	3 -	4 NBT	5 EBL	6 WBT	7 -	8 SBT	Ring Offset	Offset
	1	120	0	47	0	60	13	28	0	60	0	52
	2	110	0	46	0	51	6	34	0	51	0	95
	3	110	0	46	0	51	6	34	0	51	0	36
	4	130	0	66	0	51	6	54	0	51	0	61
	5	130	0	44	0	73	19	19	0	73	0	39
	6	110	0	46	0	51	6	34	0	51	0	42
	7	120	0	47	0	60	13	28	0	60	0	57
	8	110	0	46	0	51	6	34	0	51	0	72
	9	160	0	76	0	71	6	64	0	71	0	39
	10	160	0	66	0	81	6	54	0	81	0	130
	11	160	0	96	0	51	6	84	0	51	0	6
	12	160	0	96	0	51	6	84	0	51	0	42
	13	160	0	96	0	51	6	84	0	51	0	130
	14	120	0	56	0	51	6	44	0	51	0	57
	15	130	0	46	0	71	16	24	0	71	0	51
	16	120	0	47	0	60	13	28	0	60	0	90
	21	110	0	46	0	51	6	34	0	51	0	95
	22	110	0	46	0	51	6	34	0	51	0	95
	23	110	0	46	0	51	6	34	0	51	0	73
	25	140	0	65	0	62	6	53	0	62	0	0
	26	180	0	105	0	62	6	93	0	62	0	0
	27	140	0	65	0	62	6	53	0	62	0	37

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M S
0000	1	T W Th F
0030	1	Su M S
0300	22	Su M T W Th F S
0500	1	Su M T W Th F S
0700	22	Su S
0800	5	M T W Th F
0800	5	S
1000	5	Su
1800	16	Su S
1800	15	M T W Th F
2200	1	M T W Th F
2300	Free	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	--------	SuM T W ThF S

*** Settings**

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

TOD Schedule Report

for 2794: Washington Av&5 St

Print Date: 5/24/2015

Print Time: 3:39 PM

Asset	Intersection	TOD Schedule	Op Mode	Plan #	Cycle	Offset	TOD Setting	Active PhaseBank	Active Maximum
2794	Washington Av&5 St	HOLIDAY-1		N/A	0	0	N/A	0	Max 0

Splits

PH 1	PH 2	PH 3	PH 4	PH 5	PH 6	PH 7	PH 8
EBL	WBT	-	NBT	WBL	EBT	-	SBT
0	0	0	0	0	0	0	0

Active Phase Bank: Phase Bank 1

Phase	Walk Phase Bank 1	Walk Phase Bank 2	Walk Phase Bank 3	Don't Walk Phase Bank 1	Don't Walk Phase Bank 2	Don't Walk Phase Bank 3	Min Initial Phase Bank 1	Min Initial Phase Bank 2	Min Initial Phase Bank 3	Veh Ext Phase Bank 1	Veh Ext Phase Bank 2	Veh Ext Phase Bank 3	Max Limit Phase Bank 1	Max Limit Phase Bank 2	Max Limit Phase Bank 3	Max 2 Phase Bank 1	Max 2 Phase Bank 2	Max 2 Phase Bank 3	Yellow	Red
1 EBL	0	0	0	0	0	0	5	5	5	2	2	2	8	8	8	20	17	17	3.7	2.9
2 WBT	4	4	4	26	26	26	4	4	4	1	1	1	39	39	39	0	39	39	4	2
3 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 NBT	4	4	4	29	29	29	7	7	7	2.5	2.5	2.5	12	33	12	24	33	33	4	2.4
5 WBL	0	0	0	0	0	0	5	5	5	2	2	2	5	5	5	8	8	8	3.7	2.5
6 EBT	4	4	4	26	26	26	4	4	4	1	1	1	39	39	39	0	39	39	4	2
7 -	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 SBT	4	4	4	29	29	29	7	7	7	2.5	2.5	2.5	12	17	12	24	33	33	4	2.4

Last In Service Date: unknown

Permitted Phases

	12345678
Default	12-456-8
External Permit 0	--------
External Permit 1	--------
External Permit 2	--------

TOD Schedule Report

for 2794: Washington Av&5 St

Print Date: 5/24/2015

Print Time: 3:39 PM

Current TOD Schedule	Plan	Cycle	Green Time 1 EBL	2 WBT	3 -	4 NBT	5 WBL	6 EBT	7 -	8 SBT	Ring Offset	Offset
	1	120	14	41	0	46	7	49	0	46	0	51
	2	110	7	38	0	46	7	39	0	46	0	74
	3	110	7	38	0	46	7	39	0	46	0	15
	4	130	7	58	0	46	7	59	0	46	0	113
	5	110	7	38	0	46	7	39	0	46	0	35
	6	110	7	38	0	46	7	39	0	46	0	84
	7	110	7	38	0	46	7	39	0	46	0	23
	8	110	7	38	0	46	7	39	0	46	0	69
	9	160	7	88	0	46	7	89	0	46	0	29
	10	160	7	88	0	46	7	89	0	46	0	145
	11	160	7	88	0	46	7	89	0	46	0	15
	12	160	7	88	0	46	7	89	0	46	0	37
	13	160	7	88	0	46	7	89	0	46	0	145
	14	120	7	48	0	46	7	49	0	46	0	43
	15	130	18	47	0	46	7	59	0	46	0	46
	16	120	7	48	0	46	7	49	0	46	0	101
	17	130	18	47	0	46	7	59	0	46	0	46
	22	110	9	38	0	44	9	39	0	44	0	102
	23	110	7	38	0	46	7	39	0	46	0	80
	25	140	7	68	0	46	7	69	0	46	0	18
	26	180	7	108	0	46	7	109	0	46	0	17
	27	140	7	68	0	46	7	69	0	46	0	46

Local TOD Schedule

Time	Plan	DOW
0000	Free	Su M S
0000	1	T W Th F
0030	1	Su M S
0300	22	Su M T W Th F S
0500	1	Su M T W Th F S
0700	22	Su S
0800	4	M T W Th F
0800	14	S
1000	14	Su
1500	16	Su S
1500	15	M T W Th F
2200	1	M T W Th F
2300	Free	Su S

Current Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-------	SuM T W ThF S
0700	TOD OUTPUTS	-------1	Su S
0800	TOD OUTPUTS	--------	Su S
1900	TOD OUTPUTS	8-------	Su S

Local Time of Day Function

Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	8-------	SuM T W ThF S
0600	TOD OUTPUTS	--------	M T W ThF
0700	TOD OUTPUTS	-------1	Su S
0800	TOD OUTPUTS	--------	Su S
1800	TOD OUTPUTS	8-------	M T W ThF
1900	TOD OUTPUTS	8-------	Su S

* Settings

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

APPENDIX G

FDOT Peak Season Conversion Factors

FDOT Historical AADT Data

Miami-Dade County LRTP TAZ Data

2014 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8700 MIAMI-DADE NORTH

MOCF: 0.97

WEEK	DATES	SF	PSCF
1	01/01/2014 - 01/04/2014	1.03	1.06
2	01/05/2014 - 01/11/2014	1.03	1.06
3	01/12/2014 - 01/18/2014	1.03	1.06
4	01/19/2014 - 01/25/2014	1.02	1.05
5	01/26/2014 - 02/01/2014	1.01	1.04
6	02/02/2014 - 02/08/2014	0.99	1.02
* 7	02/09/2014 - 02/15/2014	0.98	1.01
* 8	02/16/2014 - 02/22/2014	0.97	1.00
* 9	02/23/2014 - 03/01/2014	0.97	1.00
*10	03/02/2014 - 03/08/2014	0.97	1.00
*11	03/09/2014 - 03/15/2014	0.97	1.00
*12	03/16/2014 - 03/22/2014	0.97	1.00
*13	03/23/2014 - 03/29/2014	0.97	1.00
*14	03/30/2014 - 04/05/2014	0.97	1.00
*15	04/06/2014 - 04/12/2014	0.97	1.00
*16	04/13/2014 - 04/19/2014	0.97	1.00
*17	04/20/2014 - 04/26/2014	0.98	1.01
*18	04/27/2014 - 05/03/2014	0.98	1.01
*19	05/04/2014 - 05/10/2014	0.99	1.02
20	05/11/2014 - 05/17/2014	0.99	1.02
21	05/18/2014 - 05/24/2014	1.00	1.03
22	05/25/2014 - 05/31/2014	1.00	1.03
23	06/01/2014 - 06/07/2014	1.00	1.03
24	06/08/2014 - 06/14/2014	1.01	1.04
25	06/15/2014 - 06/21/2014	1.01	1.04
26	06/22/2014 - 06/28/2014	1.02	1.05
27	06/29/2014 - 07/05/2014	1.02	1.05
28	07/06/2014 - 07/12/2014	1.03	1.06
29	07/13/2014 - 07/19/2014	1.04	1.07
30	07/20/2014 - 07/26/2014	1.03	1.06
31	07/27/2014 - 08/02/2014	1.03	1.06
32	08/03/2014 - 08/09/2014	1.02	1.05
33	08/10/2014 - 08/16/2014	1.02	1.05
34	08/17/2014 - 08/23/2014	1.01	1.04
35	08/24/2014 - 08/30/2014	1.01	1.04
36	08/31/2014 - 09/06/2014	1.01	1.04
37	09/07/2014 - 09/13/2014	1.02	1.05
38	09/14/2014 - 09/20/2014	1.02	1.05
39	09/21/2014 - 09/27/2014	1.01	1.04
40	09/28/2014 - 10/04/2014	1.01	1.04
41	10/05/2014 - 10/11/2014	1.00	1.03
42	10/12/2014 - 10/18/2014	0.99	1.02
43	10/19/2014 - 10/25/2014	1.01	1.04
44	10/26/2014 - 11/01/2014	1.03	1.06
45	11/02/2014 - 11/08/2014	1.05	1.08
46	11/09/2014 - 11/15/2014	1.07	1.10
47	11/16/2014 - 11/22/2014	1.09	1.12
48	11/23/2014 - 11/29/2014	1.08	1.11
49	11/30/2014 - 12/06/2014	1.06	1.09
50	12/07/2014 - 12/13/2014	1.05	1.08
51	12/14/2014 - 12/20/2014	1.03	1.06
52	12/21/2014 - 12/27/2014	1.03	1.06
53	12/28/2014 - 12/31/2014	1.03	1.06

* PEAK SEASON

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2014 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 2528 - SR A1A/MACARTHUR CSWY, 150' N OF MERIDIAN AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	33000 C	E 17000	W 16000	9.00	54.30	5.10
2013	34000 C	E 17500	W 16500	9.00	54.10	6.10
2012	32500 C	E 14500	W 18000	9.00	53.40	8.40
2011	35000 C	E 16500	W 18500	9.00	51.90	7.50
2010	35000 C	E 16500	W 18500	7.16	52.27	8.80
2009	35500 C	E 16500	W 19000	9.21	57.60	8.40
2008	34500 C	E 16000	W 18500	7.42	52.15	5.30
2007	34000 C	E 16500	W 17500	7.11	53.51	4.90
2006	40500 C	E 19500	W 21000	7.18	52.50	2.20
2005	35000 C	E 16000	W 19000	7.30	52.50	5.50
2004	41500 C	E 20500	W 21000	7.40	52.00	8.20
2003	40500 C	E 18500	W 22000	7.30	54.00	4.90
2002	43500 C	E 21000	W 22500	9.20	68.00	2.60
2001	45500 C	E 22000	W 23500	8.20	53.50	3.00
2000	37000 C	E 18500	W 18500	8.20	53.10	3.50
1999	46000 C	E 24500	W 21500	9.10	52.70	3.20

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2014 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5159 - SR AIA/COLLINS AV, 200' N 5 ST(MIAMI BEACH)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2014	13400 C	N 6500	S 6900	9.00	54.50	5.10
2013	16400 C	N 7400	S 9000	9.00	52.40	6.10
2012	16700 C	N 7100	S 9600	9.00	55.70	8.40
2011	13600 C	N 6900	S 6700	9.00	55.10	7.50
2010	12900 C	N 6200	S 6700	8.98	54.08	8.80
2009	15300 C	N 7600	S 7700	8.99	53.24	8.40
2008	13600 C	N 6300	S 7300	9.09	55.75	5.30
2007	14300 C	N 6500	S 7800	8.01	54.34	4.90
2006	13100 C	N 5800	S 7300	7.97	54.22	2.20
2005	16100 C	N 7300	S 8800	8.80	53.80	5.50
2004	17400 C	N 8400	S 9000	9.00	53.30	8.20
2003	16200 C	N 7000	S 9200	8.80	53.40	4.90
2002	17000 C	N 8200	S 8800	9.80	52.30	2.60
2001	17600 C	N 8800	S 8800	8.20	53.50	3.00
2000	20100 C	N 8100	S 12000	8.20	53.10	3.50
1999	18600 C	N 9100	S 9500	9.10	52.70	3.20

AADT FLAGS: C = COMPUTED; E = MANUAL ESTIMATE; F = FIRST YEAR ESTIMATE
S = SECOND YEAR ESTIMATE; T = THIRD YEAR ESTIMATE; F = 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

Miami-Dade 2010 Directional Distribution Summary

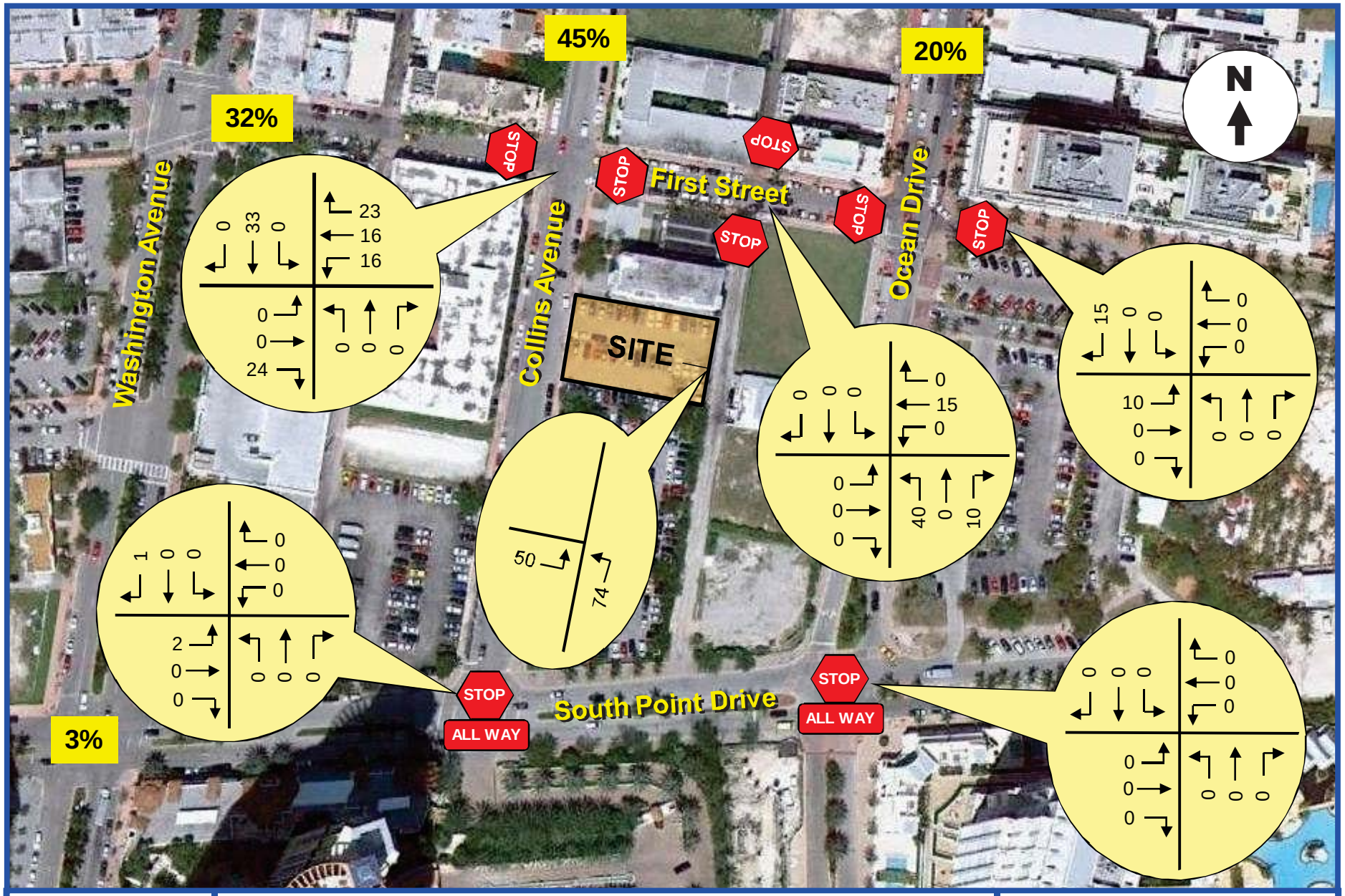
Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
636	3536	PERCENT	10.7	0.0	0.0	4.4	10.0	34.0	20.8	20.1	
637	3537	TRIPS	437	39	52	212	109	449	313	207	1,818
637	3537	PERCENT	24.0	2.2	2.9	11.7	6.0	24.7	17.2	11.4	
638	3538	TRIPS	148	25	57	108	66	231	258	107	1,000
638	3538	PERCENT	14.8	2.5	5.7	10.8	6.6	23.1	25.8	10.7	
639	3539	TRIPS	694	286	232	913	139	1,445	989	693	5,391
639	3539	PERCENT	12.9	5.3	4.3	16.9	2.6	26.8	18.4	12.9	
640	3540	TRIPS	436	242	845	100	107	663	503	303	3,199
640	3540	PERCENT	13.6	7.6	26.4	3.1	3.3	20.7	15.7	9.5	
641	3541	TRIPS	1,374	1,440	228	555	352	2,014	2,014	1,124	9,101
641	3541	PERCENT	15.1	15.8	2.5	6.1	3.9	22.1	22.1	12.4	
642	3542	TRIPS	2,054	891	109	1,000	541	3,435	3,075	2,196	13,301
642	3542	PERCENT	15.4	6.7	0.8	7.5	4.1	25.8	23.1	16.5	
643	3543	TRIPS	1,551	277	0	514	462	2,180	2,043	1,648	8,675
643	3543	PERCENT	17.9	3.2	0.0	5.9	5.3	25.1	23.6	19.0	
644	3544	TRIPS	1,376	0	0	0	1,181	3,638	3,350	2,709	12,254
644	3544	PERCENT	11.2	0.0	0.0	0.0	9.6	29.7	27.3	22.1	
645	3545	TRIPS	547	0	0	0	341	1,032	1,603	1,258	4,781
645	3545	PERCENT	11.4	0.0	0.0	0.0	7.1	21.6	33.5	26.3	
646	3546	TRIPS	862	0	61	243	184	1,226	1,566	1,133	5,275
646	3546	PERCENT	16.3	0.0	1.2	4.6	3.5	23.2	29.7	21.5	
647	3547	TRIPS	454	68	83	148	89	427	406	402	2,077
647	3547	PERCENT	21.9	3.3	4.0	7.1	4.3	20.6	19.6	19.4	
648	3548	TRIPS	1,234	415	131	265	56	788	950	546	4,385
648	3548	PERCENT	28.1	9.5	3.0	6.0	1.3	18.0	21.7	12.5	
649	3549	TRIPS	846	215	84	123	15	631	680	403	2,997
649	3549	PERCENT	28.2	7.2	2.8	4.1	0.5	21.1	22.7	13.5	
650	3550	TRIPS	124	133	83	0	20	325	229	66	980
650	3550	PERCENT	12.7	13.6	8.5	0.0	2.0	33.2	23.4	6.7	
651	3551	TRIPS	612	46	55	0	11	438	656	555	2,373
651	3551	PERCENT	25.8	1.9	2.3	0.0	0.5	18.5	27.6	23.4	
652	3552	TRIPS	743	68	63	25	87	625	873	981	3,465
652	3552	PERCENT	21.4	2.0	1.8	0.7	2.5	18.0	25.2	28.3	
653	3553	TRIPS	708	34	64	143	67	703	835	753	3,307
653	3553	PERCENT	21.4	1.0	1.9	4.3	2.0	21.3	25.3	22.8	
654	3554	TRIPS	490	0	203	74	114	628	1,068	1,058	3,635
654	3554	PERCENT	13.5	0.0	5.6	2.0	3.1	17.3	29.4	29.1	
655	3555	TRIPS	1,475	0	0	0	368	1,892	2,676	2,034	8,445
655	3555	PERCENT	17.5	0.0	0.0	0.0	4.4	22.4	31.7	24.1	
656	3556	TRIPS	372	0	0	0	96	740	997	698	2,903
656	3556	PERCENT	12.8	0.0	0.0	0.0	3.3	25.5	34.3	24.0	

Miami-Dade 2040 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
636	3536	PERCENT	19.5	0.0	0.0	8.2	14.8	29.5	14.8	13.3	
637	3537	TRIPS	374	82	83	225	55	396	261	151	1,627
637	3537	PERCENT	23.0	5.0	5.1	13.8	3.4	24.3	16.0	9.3	
638	3538	TRIPS	232	28	34	125	70	269	193	126	1,077
638	3538	PERCENT	21.5	2.6	3.2	11.6	6.5	25.0	17.9	11.7	
639	3539	TRIPS	735	283	169	948	113	1,300	821	476	4,845
639	3539	PERCENT	15.2	5.8	3.5	19.6	2.3	26.8	17.0	9.8	
640	3540	TRIPS	430	255	683	151	73	932	515	373	3,412
640	3540	PERCENT	12.6	7.5	20.0	4.4	2.1	27.3	15.1	10.9	
641	3541	TRIPS	1,419	1,154	177	632	303	1,982	1,752	1,049	8,468
641	3541	PERCENT	16.8	13.6	2.1	7.5	3.6	23.4	20.7	12.4	
642	3542	TRIPS	2,179	1,098	137	956	454	3,066	2,615	1,535	12,040
642	3542	PERCENT	18.1	9.1	1.1	7.9	3.8	25.5	21.7	12.8	
643	3543	TRIPS	2,025	464	0	785	437	2,968	1,920	1,574	10,173
643	3543	PERCENT	19.9	4.6	0.0	7.7	4.3	29.2	18.9	15.5	
644	3544	TRIPS	2,373	0	0	0	1,831	4,426	3,267	2,854	14,751
644	3544	PERCENT	16.1	0.0	0.0	0.0	12.4	30.0	22.2	19.4	
645	3545	TRIPS	1,336	0	0	0	789	1,367	1,649	1,160	6,301
645	3545	PERCENT	21.2	0.0	0.0	0.0	12.5	21.7	26.2	18.4	
646	3546	TRIPS	950	0	142	324	255	1,435	1,393	1,140	5,639
646	3546	PERCENT	16.9	0.0	2.5	5.8	4.5	25.5	24.7	20.2	
647	3547	TRIPS	400	97	99	84	58	528	545	323	2,134
647	3547	PERCENT	18.7	4.6	4.6	3.9	2.7	24.7	25.5	15.1	
648	3548	TRIPS	1,129	496	172	440	46	1,080	1,249	650	5,262
648	3548	PERCENT	21.5	9.4	3.3	8.4	0.9	20.5	23.7	12.4	
649	3549	TRIPS	917	197	118	194	38	829	1,043	478	3,814
649	3549	PERCENT	24.0	5.2	3.1	5.1	1.0	21.7	27.4	12.5	
650	3550	TRIPS	88	112	79	9	31	340	412	150	1,221
650	3550	PERCENT	7.2	9.2	6.5	0.7	2.5	27.9	33.7	12.3	
651	3551	TRIPS	833	9	103	0	52	472	1,049	629	3,147
651	3551	PERCENT	26.5	0.3	3.3	0.0	1.7	15.0	33.3	20.0	
652	3552	TRIPS	856	91	112	82	128	551	1,157	859	3,836
652	3552	PERCENT	22.3	2.4	2.9	2.1	3.3	14.4	30.2	22.4	
653	3553	TRIPS	659	74	119	117	68	718	812	627	3,194
653	3553	PERCENT	20.6	2.3	3.7	3.7	2.1	22.5	25.4	19.6	
654	3554	TRIPS	814	0	220	127	186	1,003	1,184	881	4,415
654	3554	PERCENT	18.4	0.0	5.0	2.9	4.2	22.7	26.8	20.0	
655	3555	TRIPS	2,196	0	0	0	807	1,970	3,347	2,212	10,532
655	3555	PERCENT	20.9	0.0	0.0	0.0	7.7	18.7	31.8	21.0	
656	3556	TRIPS	565	0	0	0	108	489	1,022	769	2,953
656	3556	PERCENT	19.1	0.0	0.0	0.0	3.7	16.6	34.6	26.0	

APPENDIX H

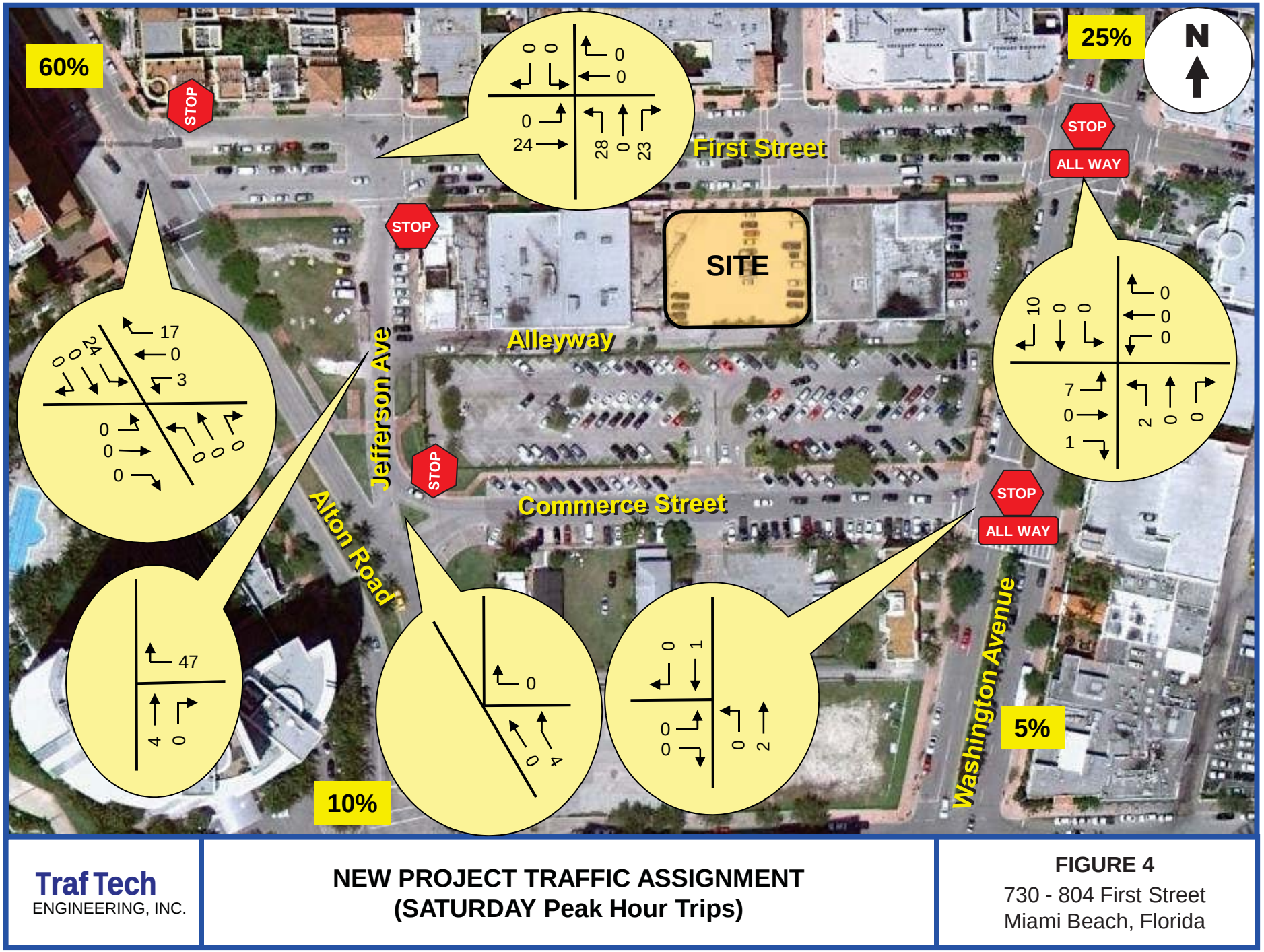
Committed Development



TrafTech ENGINEERING, INC.

NEW PROJECT TRAFFIC ASSIGNMENT
(SATURDAY Peak Hour Trips)

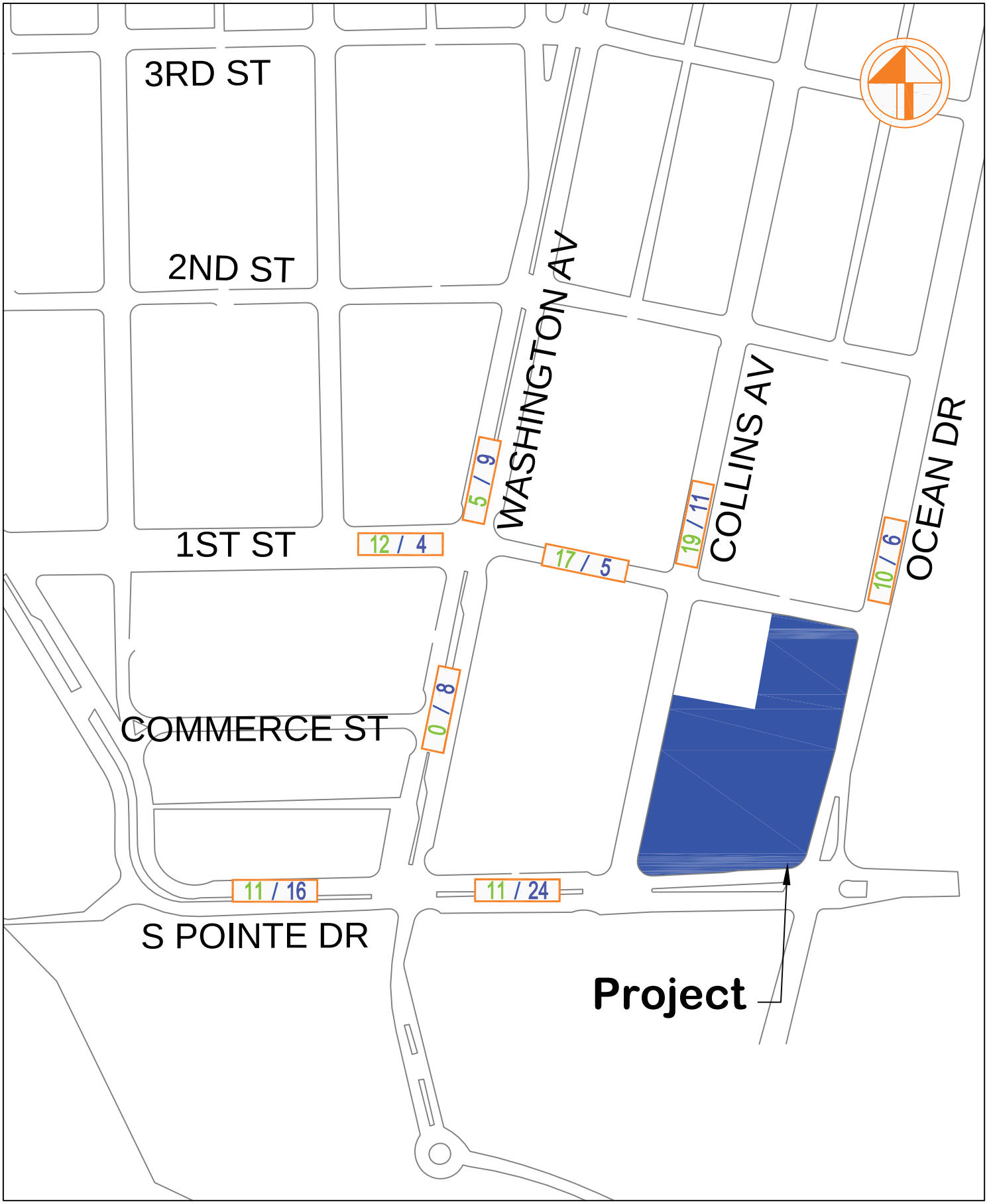
FIGURE 4
49-53 Collins Avenue
Miami Beach, Florida



Traf Tech
ENGINEERING, INC.

NEW PROJECT TRAFFIC ASSIGNMENT
(SATURDAY Peak Hour Trips)

FIGURE 4
730 - 804 First Street
Miami Beach, Florida



Block 1

FANDREI CONSULTING INC
Traffic Engineering Services

April 2012

Note:
Distribution
IN / OUT

Figure 6

Project Trips

TRIP GENERATION

The net number of p.m. peak hour trips generated by the Block 51 development is shown in Table 1. Specialty retail has been used as a generic land use for the 6,836 sq. ft. of retail not assigned to the Quality Restaurant.

Table 1
4-6 PM PEAK HOUR TRIPS

Use	LUC	Size	units	Enter	Exit	Total
Luxury Condo. [1]	233	32	R.U.	11	7	18
Quality Restaurant [2]	931	13.064	1000 sf	66	32	98
*Pass-By @ 40% **				*-26*	*-13*	*-39*
Net				40	19	59
Specialty Retail [3]	814	6.836	1000 sf	8	11	19
*Pass-By @ 20%**				*-2*	*-2*	*-4*
				6	9	15
Net External Trips: 4-6 p.m. Peak Hour				**57**	**35**	**92**

(1) T = 0.55 (X); 63% enter, 37% exit [ITE Report *Trip Generation*, 8th ed.]
(2) T = 7.49 (X); 67% enter, 33% exit "
(3) T = 2.71 (X); 44% enter, 56% exit "
* ITE *Trip Generation Handbook*, 2nd Ed.shows ave. pass-by of 44%, 40% used for this study. The *Handbook* (p 36 ff.) has pass-by data for a number of retail and service uses with virtually all pass-by percentages higher than 25%; 20% was used for this study.

Net available trip capacity for the Portofino DRI is currently 1,032 P.M. peak hour trips. After subtracting 92 trips for Block 51, the available trip total will be 940.

APPENDIX I

Turning Movement Volumes

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Avenue and 5th Street
Peak Hour Analysis

Description	Collins Ave Northbound			Collins Ave Southbound			5th Street Eastbound			5th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2014 Existing Traffic (7/11/14)	55	49	10	60	87	354	263	244	54	10	258	75
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 Peak Season Traffic	58	52	11	64	92	375	279	259	57	11	273	80
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	63	56	11	69	100	406	302	280	62	11	296	86
Committed Projects:												
49-53 Collins		17	4		20					10		
730-804 First Street						5	3	4			5	
51 Block (Marea)		10			12							
Block 1 (One Ocean)		6	5		10					4		
Savoy Hotel - Primary Traffic		2		5	5			24			17	5
Savoy Hotel - Valet Traffic										21		
2018 Background Traffic	63	91	20	74	147	411	305	308	62	46	318	91
New Project (Torino) Trips					13		5		38	4		
2018 Total Traffic	**63**	**91**	**20**	**74**	**160**	**411**	**310**	**308**	**100**	**50**	**318**	**91**

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Court & 5th Street
Peak Hour Analysis

Description	Collins Court Northbound			Collins Court Southbound			5th Street Eastbound			5th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2014 Existing Traffic (7/11/14)	0	0	4	0	0	0	0	587	0	0	655	0
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 Peak Season Traffic	0	0	4	0	0	0	0	622	0	0	694	0
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	0	0	5	0	0	0	0	674	0	0	752	0
Committed Projects:												
49-53 Collins												
730-804 First Street								7			10	
51 Block (Marea)												
Block 1 (One Ocean)												
Savoy Hotel - Primary Traffic								24			17	
Savoy Hotel - Valet Traffic												
2018 Background Traffic	0	0	5	0	0	0	0	705	0	0	779	0
New Project (Torino) Trips			27					16				
2018 Total Traffic	**0**	**0**	**32**	**0**	**0**	**0**	**0**	**721**	**0**	**0**	**779**	**0**

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 5th Street
Peak Hour Analysis

Description	Washington Ave Northbound			Washington Ave Southbound			5th Street Eastbound			5th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2015 Existing Traffic (5/29/15)	68	187	21	69	156	379	371	522	64	6	543	87
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2015 Peak Season Traffic	70	193	22	71	161	390	382	538	66	6	559	90
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	74	204	23	75	171	414	406	571	70	7	594	95
Committed Projects:												
49-53 Collins					6				6			
730-804 First Street			7							10		
51 Block (Marea)												
Block 1 (One Ocean)	5	4			2				2			
Savoy Hotel - Primary Traffic								24			17	
Savoy Hotel - Valet Traffic												
2018 Background Traffic	79	208	30	75	179	414	406	595	78	17	611	95
New Project (Torino) Trips	7	3	1	2				13				
2018 Total Traffic	**86**	**211**	**31**	**77**	**179**	**414**	**406**	**608**	**78**	**17**	**611**	**95**

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Avenue and 4th Street
Peak Hour Analysis

Description	Collins Avenue Northbound			Collins Avenue Southbound			4th Street Eastbound			4th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2014 Existing Traffic (7/11/14)	14	70	3	16	98	18	19	39	7	7	46	18
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 Peak Season Traffic	15	74	3	17	104	19	20	41	7	7	49	19
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	16	80	3	18	112	21	22	45	8	8	53	21
Committed Projects:												
49-53 Collins		21	2		30					3		
730-804 First Street												
51 Block (Marea)		10			12							
Block 1 (One Ocean)		11			14					5		
Savoy Hotel - Primary Traffic				5								
Savoy Hotel - Valet Traffic						21		9				
2018 Background Traffic	16	122	5	23	168	42	22	54	8	16	53	21
New Project (Torino) Trips						55						
2018 Total Traffic	**16**	**122**	**5**	**23**	**168**	**97**	**22**	**54**	**8**	**16**	**53**	**21**

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

4th Street and Project Driveway
Peak Hour Analysis

Description	Northbound			Project Driveway Southbound			4th Street Eastbound			4th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2014 Existing Traffic (7/11/14)	0	0	0	0	0	0	0	65	0	0	78	0
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 Peak Season Traffic	0	0	0	0	0	0	0	69	0	0	83	0
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	0	0	0	0	0	0	0	75	0	0	89	0
Committed Projects:												
49-53 Collins												
730-804 First Street												
51 Block (Marea)												
Block 1 (One Ocean)												
Savoy Hotel - Primary Traffic												
Savoy Hotel - Valet Traffic						9						25
2018 Background Traffic	0	0	0	0	0	9	0	75	0	0	89	25
New Project (Torino) Trips						22					23	32
2018 Total Traffic	**0**	**0**	**0**	**0**	**0**	**31**	**0**	**75**	**0**	**0**	**112**	**57**

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FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Collins Court and 4th Street
Peak Hour Analysis

Description	Collins Court Northbound			Collins Court Southbound			4th Street Eastbound			4th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2014 Existing Traffic (7/11/14)	6	0	0	0	0	0	8	62	0	0	79	4
Season Adjustment Factor	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06	1.06
2014 Peak Season Traffic	6	0	0	0	0	0	8	66	0	0	84	4
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	7	0	0	0	0	0	9	71	0	0	91	5
Committed Projects:												
49-53 Collins												
730-804 First Street												
51 Block (Marea)												
Block 1 (One Ocean)												
Savoy Hotel - Primary Traffic												
Savoy Hotel - Valet Traffic												
2018 Background Traffic	7	0	0	0	0	0	9	71	0	0	91	5
New Project (Torino) Trips											18	27
2018 Total Traffic	**7**	**0**	**0**	**0**	**0**	**0**	**9**	**71**	**0**	**0**	**109**	**32**

Traf Tech
ENGINEERING, INC.

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Washington Avenue and 4th Street
Peak Hour Analysis

Description	Washington Ave Northbound			Washington Ave Southbound			4th Street Eastbound			4th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
2015 Existing Traffic (5/29/15)	19	204	11	46	195	20	17	40	19	5	44	35
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2015 Peak Season Traffic	20	210	11	47	201	21	18	41	20	5	45	36
Annual Growth Rate	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%
2018 Growth Traffic	21	223	12	50	213	22	19	44	21	5	48	38
Committed Projects:												
49-53 Collins					12							
730-804 First Street		7			10							
51 Block (Marea)												
Block 1 (One Ocean)		9			4				1			
Savoy Hotel - Primary Traffic												
Savoy Hotel - Valet Traffic												
2018 Background Traffic	21	239	12	50	239	22	19	44	22	5	48	38
New Project (Torino) Trips							1			6	2	10
2018 Total Traffic	**21**	**239**	**12**	**50**	**239**	**22**	**20**	**44**	**22**	**11**	**50**	**48**

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APPENDIX J

SYNCHRO Analyses Output

SYNCHRO Analyses Output

2014/15 Existing Conditions

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	263	244	54	10	258	75	55	49	10	60	87	354
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Frt		0.973			0.966				0.850			0.850
Flt Protected	0.950			0.950				0.974			0.980	
Satd. Flow (prot)	1805	3513	0	1805	3487	0	0	1851	1615	0	1862	1615
Flt Permitted	0.226			0.546				0.786			0.839	
Satd. Flow (perm)	429	3513	0	1037	3487	0	0	1493	1615	0	1594	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		22			25				59			88
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			336			459			453	
Travel Time (s)		9.9			7.6			10.4			10.3	
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	302	280	62	11	277	81	64	57	12	65	94	381
Shared Lane Traffic (%)												
Lane Group Flow (vph)	302	342	0	11	358	0	0	121	12	0	159	381
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pt+ov
Protected Phases	7	4			8			2			6	6 7
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	6	6	6 7
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	8.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Total Split (s)	25.0	50.0		25.0	25.0		80.0	80.0	80.0	80.0	80.0	
Total Split (%)	19.2%	38.5%		19.2%	19.2%		61.5%	61.5%	61.5%	61.5%	61.5%	
Maximum Green (s)	21.0	44.0		19.0	19.0		73.0	73.0	73.0	73.0	73.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		1.0	1.0		2.5	2.5	2.5	1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	42.2	40.2		15.6	15.6			76.8	76.8		76.8	101.4
Actuated g/C Ratio	0.32	0.31		0.12	0.12			0.59	0.59		0.59	0.78
v/c Ratio	0.84	0.31		0.09	0.82			0.14	0.01		0.17	0.30
Control Delay	57.0	32.3		50.9	66.9			13.1	0.0		13.3	3.9
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	57.0	32.3		50.9	66.9			13.1	0.0		13.3	3.9
LOS	E	C		D	E			B	A		B	A
Approach Delay		43.8			66.4			11.9			6.7	
Approach LOS		D			E			B			A	

Intersection Summary			
Area Type:	Other		
Cycle Length: 130			
Actuated Cycle Length: 130			
Offset: 0 (0%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green			
Natural Cycle: 55			
Control Type: Actuated-Coordinated			
Maximum v/c Ratio: 0.84			
Intersection Signal Delay: 34.4		Intersection LOS: C	
Intersection Capacity Utilization 53.7%		ICU Level of Service A	
Analysis Period (min) 15			

Splits and Phases: 8: Collins Ave & 5th Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations	↑↑			↑↑↑		↱
Volume (veh/h)	587	0	0	655	0	4
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.94	0.94	0.50	0.50
Hourly flow rate (vph)	605	0	0	697	0	8
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			605		837	303
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			605		837	303
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	99
cM capacity (veh/h)			983		309	699

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	303	303	232	232	232	8
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	8
cSH	1700	1700	1700	1700	1700	699
Volume to Capacity	0.18	0.18	0.14	0.14	0.14	0.01
Queue Length 95th (ft)	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	10.2
Lane LOS						B
Approach Delay (s)	0.0		0.0			10.2
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	26.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔			↔			↔	
Volume (veh/h)	19	39	7	7	46	18	14	70	3	16	98	18
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.74	0.74	0.74	0.91	0.91	0.91	0.79	0.79	0.79
Hourly flow rate (vph)	29	60	11	9	62	24	15	77	3	20	124	23
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	341	287	135	326	297	79	147			80		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	341	287	135	326	297	79	147			80		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	95	90	99	98	90	98	99			99		
cM capacity (veh/h)	545	611	919	566	604	988	1447			1530		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	100	96	96	167
Volume Left	29	9	15	20
Volume Right	11	24	3	23
cSH	611	665	1447	1530
Volume to Capacity	0.16	0.14	0.01	0.01
Queue Length 95th (ft)	15	13	1	1
Control Delay (s)	12.0	11.3	1.3	1.0
Lane LOS	B	B	A	A
Approach Delay (s)	12.0	11.3	1.3	1.0
Approach LOS	B	B		

Intersection Summary				
Average Delay	5.6			
Intersection Capacity Utilization	23.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	8	62	0	0	79	4	6	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.82	0.82	0.82	0.50	0.50	0.50	0.75	0.75	0.75
Hourly flow rate (vph)	11	87	0	0	96	5	12	0	0	0	0	0
Pedestrians												
Lane Width (ft)												
Walking Speed (ft/s)												
Percent Blockage												
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	101			87			209	211	87	209	209	99
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	101			87			209	211	87	209	209	99
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	100	100	100	100	100
cM capacity (veh/h)	1504			1521			749	685	977	749	687	963

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	99	101	12	0
Volume Left	11	0	12	0
Volume Right	0	5	0	0
cSH	1504	1700	749	1700
Volume to Capacity	0.01	0.06	0.02	0.00
Queue Length 95th (ft)	1	0	1	0
Control Delay (s)	0.9	0.0	9.9	0.0
Lane LOS	A		A	A
Approach Delay (s)	0.9	0.0	9.9	0.0
Approach LOS			A	A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	20.0%	ICU Level of Service	A	
Analysis Period (min)	15			

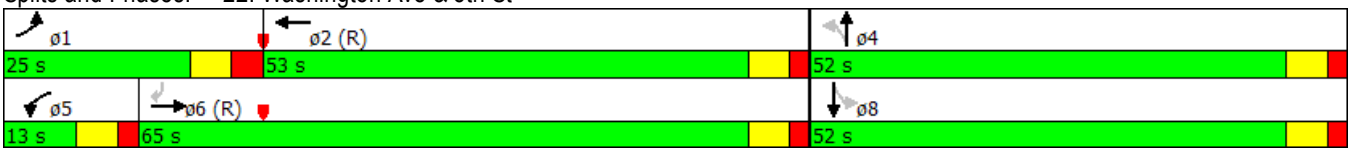
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	371	522	64	6	543	87	68	187	21	69	156	379
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Lane Util. Factor	0.97	0.95	0.95	1.00	0.91	0.91	0.95	0.95	0.95	1.00	1.00	1.00
Frt		0.984			0.979			0.989				0.850
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	3502	3552	0	1805	5078	0	0	3527	0	1805	1900	1615
Flt Permitted	0.950			0.950				0.714		0.418		
Satd. Flow (perm)	3502	3552	0	1805	5078	0	0	2549	0	794	1900	1615
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		13			26			7				403
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		580			532			460			380	
Travel Time (s)		13.2			12.1			10.5			8.6	
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	382	538	66	7	603	97	76	208	23	73	166	403
Shared Lane Traffic (%)												
Lane Group Flow (vph)	382	604	0	7	700	0	0	307	0	73	166	403
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	custom
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		6
Detector Phase	1	6		5	2		4	4		8	8	6
Switch Phase												
Minimum Initial (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Minimum Split (s)	11.0	22.0		10.0	22.0		22.0	22.0		22.0	22.0	22.0
Total Split (s)	25.0	65.0		13.0	53.0		52.0	52.0		52.0	52.0	65.0
Total Split (%)	19.2%	50.0%		10.0%	40.8%		40.0%	40.0%		40.0%	40.0%	50.0%
Maximum Green (s)	18.0	59.0		7.0	47.0		46.0	46.0		46.0	46.0	59.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	3.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	6.0		6.0	6.0			6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	C-Max
Walk Time (s)		5.0			5.0		5.0	5.0		5.0	5.0	5.0
Flash Dont Walk (s)		11.0			11.0		11.0	11.0		11.0	11.0	11.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effct Green (s)	19.5	96.4		6.1	72.5			19.0		19.0	19.0	96.4
Actuated g/C Ratio	0.15	0.74		0.05	0.56			0.15		0.15	0.15	0.74
v/c Ratio	0.73	0.23		0.08	0.25			0.81		0.63	0.60	0.31
Control Delay	61.0	6.3		61.0	15.3			69.2		75.1	60.6	1.5
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	61.0	6.3		61.0	15.3			69.2		75.1	60.6	1.5
LOS	E	A		E	B			E		E	E	A
Approach Delay		27.5			15.7			69.2			25.1	
Approach LOS		C			B			E			C	

Intersection Summary

Area Type: Other
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 46 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.81
Intersection Signal Delay: 28.6 Intersection LOS: C
Intersection Capacity Utilization 59.9% ICU Level of Service B
Analysis Period (min) 15

Splits and Phases: 22: Washington Ave & 5th St



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Volume (vph)	17	40	19	5	44	35	19	204	11	46	195	20
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.87	0.87	0.87	0.86	0.86	0.86
Hourly flow rate (vph)	22	53	25	7	61	49	22	234	13	53	227	23

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	100	117	139	130	167	137
Volume Left (vph)	22	7	22	0	53	0
Volume Right (vph)	25	49	0	13	0	23
Hadj (s)	-0.11	-0.24	0.08	-0.07	0.16	-0.12
Departure Headway (s)	5.3	5.2	5.5	5.4	5.6	5.3
Degree Utilization, x	0.15	0.17	0.21	0.19	0.26	0.20
Capacity (veh/h)	613	632	623	639	618	651
Control Delay (s)	9.2	9.2	8.8	8.5	9.3	8.4
Approach Delay (s)	9.2	9.2	8.6		8.9	
Approach LOS	A	A	A		A	

Intersection Summary				
Delay	8.9			
Level of Service	A			
Intersection Capacity Utilization	33.4%	ICU Level of Service	A	
Analysis Period (min)	15			

SYNCHRO Analyses Output

2018 Background Conditions (without the Torino)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	305	308	62	46	318	91	63	91	20	74	147	411
Future Volume (vph)	305	308	62	46	318	91	63	91	20	74	147	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		175
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.82	0.98		0.96	0.86			0.96	0.84		0.96	
Frt		0.975			0.967				0.850			0.850
Flt Protected	0.950			0.950				0.980			0.983	
Satd. Flow (prot)	1624	3114	0	1624	2694	0	0	1676	1454	0	1681	1454
Flt Permitted	0.186			0.504				0.788			0.835	
Satd. Flow (perm)	260	3114	0	825	2694	0	0	1294	1224	0	1373	1454
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		19			24				59			25
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			336			459			453	
Travel Time (s)		9.9			7.6			10.4			10.3	
Confl. Peds. (#/hr)	266		19	19		266	59		60	60		59
Confl. Bikes (#/hr)			6			16			8			6
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	351	354	71	49	342	98	73	106	23	80	158	442
Shared Lane Traffic (%)												
Lane Group Flow (vph)	351	425	0	49	440	0	0	179	23	0	238	442
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pt+ov
Protected Phases	7	4			8			2			6	6 7
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	6	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	16.0		16.0	16.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Total Split (s)	25.0	50.0		25.0	25.0		80.0	80.0	80.0	80.0	80.0	
Total Split (%)	19.2%	38.5%		19.2%	19.2%		61.5%	61.5%	61.5%	61.5%	61.5%	
Maximum Green (s)	21.0	44.0		19.0	19.0		73.0	73.0	73.0	73.0	73.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		1.0	1.0		2.5	2.5	2.5	1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	46.0	44.0		19.0	19.0			73.0	73.0		73.0	98.0
Actuated g/C Ratio	0.35	0.34		0.15	0.15			0.56	0.56		0.56	0.75
v/c Ratio	1.12	0.40		0.41	1.06			0.25	0.03		0.31	0.40
Control Delay	124.8	32.7		61.8	111.3			15.6	0.1		16.5	6.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	124.8	32.7		61.8	111.3			15.6	0.1		16.5	6.5
LOS	F	C		E	F			B	A		B	A
Approach Delay		74.3			106.3			13.9			10.0	
Approach LOS		E			F			B			A	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 90 (69%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.13
Intersection Signal Delay: 55.6 Intersection LOS: E
Intersection Capacity Utilization 80.3% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Collins Ave & 5th Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	705	0	0	779	0	5
Future Volume (Veh/h)	705	0	0	779	0	5
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.94	0.94	0.50	0.50
Hourly flow rate (vph)	727	0	0	829	0	10
Pedestrians				19		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			727		1003	382
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			727		1003	382
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	98
cM capacity (veh/h)			886		242	611

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	364	364	276	276	276	10
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	10
cSH	1700	1700	1700	1700	1700	611
Volume to Capacity	0.21	0.21	0.16	0.16	0.16	0.02
Queue Length 95th (ft)	0	0	0	0	0	1
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.0
Lane LOS						B
Approach Delay (s)	0.0		0.0			11.0
Approach LOS						B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	36.3%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	22	54	8	16	53	21	16	122	5	23	168	42
Future Volume (Veh/h)	22	54	8	16	53	21	16	122	5	23	168	42
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.74	0.74	0.74	0.91	0.91	0.91	0.79	0.79	0.79
Hourly flow rate (vph)	34	83	12	22	72	28	18	134	5	29	213	53
Pedestrians		29			32			13			14	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			3			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	577	534	282	568	558	182	295			171		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	577	534	282	568	558	182	295			171		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	90	80	98	93	82	97	99			98		
cM capacity (veh/h)	325	417	736	328	404	832	1247			1381		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	122	157	295
Volume Left	34	22	18	29
Volume Right	12	28	5	53
cSH	403	438	1247	1381
Volume to Capacity	0.32	0.28	0.01	0.02
Queue Length 95th (ft)	34	28	1	2
Control Delay (s)	18.1	16.4	1.0	0.9
Lane LOS	C	C	A	A
Approach Delay (s)	18.1	16.4	1.0	0.9
Approach LOS	C	C		

Intersection Summary			
Average Delay	6.8		
Intersection Capacity Utilization	35.1%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	71	0	0	91	5	7	0	0	0	0	0
Future Volume (Veh/h)	9	71	0	0	91	5	7	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.82	0.82	0.82	0.50	0.50	0.50	0.75	0.75	0.75
Hourly flow rate (vph)	13	100	0	0	111	6	14	0	0	0	0	0
Pedestrians					3						35	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	152			100			240	278	103	278	275	149
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	152			100			240	278	103	278	275	149
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	100	100	100	100	100
cM capacity (veh/h)	1399			1505			697	609	955	638	611	877

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	117	14	0
Volume Left	13	0	14	0
Volume Right	0	6	0	0
cSH	1399	1700	697	1700
Volume to Capacity	0.01	0.07	0.02	0.00
Queue Length 95th (ft)	1	0	2	0
Control Delay (s)	0.9	0.0	10.3	0.0
Lane LOS	A		B	A
Approach Delay (s)	0.9	0.0	10.3	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay	1.0			
Intersection Capacity Utilization	22.3%	ICU Level of Service	A	
Analysis Period (min)	15			

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	595	78	17	611	95	79	208	30	75	179	414
Future Volume (vph)	406	595	78	17	611	95	79	208	30	75	179	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.91	0.91	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.90	0.98		0.94	0.97			0.98		0.95		0.90
Frt		0.983			0.980			0.986				0.850
Flt Protected	0.950			0.950				0.988		0.950		
Satd. Flow (prot)	3152	3131	0	1624	4456	0	0	3136	0	1624	1710	1454
Flt Permitted	0.950			0.950				0.708		0.405		
Satd. Flow (perm)	2839	3131	0	1532	4456	0	0	2214	0	658	1710	1303
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			25			9				440
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		504			552			480			368	
Travel Time (s)		11.5			12.5			10.9			8.4	
Confl. Peds. (#/hr)	136		69	69		136	69		72	72		69
Confl. Bikes (#/hr)			4			17			4			9
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	419	613	80	19	679	106	88	231	33	80	190	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	419	693	0	19	785	0	0	352	0	80	190	440
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	custom
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		6
Detector Phase	1	6		5	2		4	4		8	8	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	4.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	36.0		11.0	36.0		39.0	39.0		39.0	39.0	36.0
Total Split (s)	25.0	65.0		13.0	53.0		52.0	52.0		52.0	52.0	65.0
Total Split (%)	19.2%	50.0%		10.0%	40.8%		40.0%	40.0%		40.0%	40.0%	50.0%
Maximum Green (s)	18.0	59.0		7.0	47.0		46.0	46.0		46.0	46.0	59.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	3.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	6.0		6.0	6.0			6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	C-Max
Walk Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		26.0			26.0		29.0	29.0		29.0	29.0	26.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effct Green (s)	24.0	87.9		7.1	62.7			24.3		24.3	24.3	87.9
Actuated g/C Ratio	0.18	0.68		0.05	0.48			0.19		0.19	0.19	0.68
v/c Ratio	0.72	0.33		0.22	0.36			0.84		0.66	0.60	0.43
Control Delay	57.2	10.8		63.8	22.2			66.7		72.5	55.4	2.7
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	57.2	10.8		63.8	22.2			66.7		72.5	55.4	2.7
LOS	E	B		E	C			E		E	E	A
Approach Delay		28.3			23.2			66.7			24.7	
Approach LOS		C			C			E			C	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 46 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 30.6 Intersection LOS: C
Intersection Capacity Utilization 110.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 22: Washington Ave & 5th St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	19	44	22	5	48	38	21	239	12	50	239	22
Future Volume (vph)	19	44	22	5	48	38	21	239	12	50	239	22
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.87	0.87	0.87	0.86	0.86	0.86
Hourly flow rate (vph)	25	58	29	7	67	53	24	275	14	58	278	26

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	112	127	162	152	197	165
Volume Left (vph)	25	7	24	0	58	0
Volume Right (vph)	29	53	0	14	0	26
Hadj (s)	-0.11	-0.24	0.07	-0.06	0.15	-0.11
Departure Headway (s)	5.6	5.5	5.7	5.6	5.7	5.5
Degree Utilization, x	0.17	0.19	0.26	0.23	0.31	0.25
Capacity (veh/h)	581	598	603	616	602	630
Control Delay (s)	9.8	9.7	9.5	9.1	10.1	9.1
Approach Delay (s)	9.8	9.7	9.3		9.7	
Approach LOS	A	A	A		A	

Intersection Summary			
Delay	9.6		
Level of Service	A		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

SYNCHRO Analyses Output

2018 Future Conditions (with the Torino)

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	308	100	50	318	91	63	91	20	74	160	411
Future Volume (vph)	310	308	100	50	318	91	63	91	20	74	160	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		175
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.82	0.98		0.96	0.86			0.96	0.84		0.96	
Frt		0.963			0.967				0.850			0.850
Flt Protected	0.950			0.950				0.980			0.984	
Satd. Flow (prot)	1624	3051	0	1624	2694	0	0	1676	1454	0	1683	1454
Flt Permitted	0.186			0.483				0.783			0.842	
Satd. Flow (perm)	260	3051	0	793	2694	0	0	1288	1224	0	1388	1454
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		36			24				59			25
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			336			459			453	
Travel Time (s)		9.9			7.6			10.4			10.3	
Confl. Peds. (#/hr)	266		19	19		266	59		60	60		59
Confl. Bikes (#/hr)			6			16			8			6
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	356	354	115	54	342	98	73	106	23	80	172	442
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	469	0	54	440	0	0	179	23	0	252	442
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pt+ov
Protected Phases	7	4			8			2			6	6 7
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	6	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	16.0		16.0	16.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Total Split (s)	25.0	50.0		25.0	25.0		80.0	80.0	80.0	80.0	80.0	
Total Split (%)	19.2%	38.5%		19.2%	19.2%		61.5%	61.5%	61.5%	61.5%	61.5%	
Maximum Green (s)	21.0	44.0		19.0	19.0		73.0	73.0	73.0	73.0	73.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		1.0	1.0		2.5	2.5	2.5	1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	46.0	44.0		19.0	19.0			73.0	73.0		73.0	98.0
Actuated g/C Ratio	0.35	0.34		0.15	0.15			0.56	0.56		0.56	0.75
v/c Ratio	1.14	0.44		0.47	1.06			0.25	0.03		0.32	0.40
Control Delay	130.2	32.3		65.6	111.3			15.6	0.1		16.7	6.5
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	130.2	32.3		65.6	111.3			15.6	0.1		16.7	6.5
LOS	F	C		E	F			B	A		B	A
Approach Delay		74.5			106.3			13.9			10.2	
Approach LOS		E			F			B			B	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 39 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 1.14
Intersection Signal Delay: 55.9 Intersection LOS: E
Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Collins Ave & 5th Street

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	310	308	100	50	318	91	63	91	20	74	160	411
Future Volume (vph)	310	308	100	50	318	91	63	91	20	74	160	411
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	150		0	150		0	0		0	0		175
Storage Lanes	1		0	1		0	0		1	0		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	1.00	0.95	0.95	1.00	0.95	0.95	1.00	1.00	1.00	1.00	1.00	1.00
Ped Bike Factor	0.80	0.98		0.96	0.86			0.97	0.84		0.97	
Frt		0.963			0.967				0.850			0.850
Flt Protected	0.950			0.950				0.980			0.984	
Satd. Flow (prot)	1624	3053	0	1624	2699	0	0	1676	1454	0	1683	1454
Flt Permitted	0.250			0.483				0.770			0.837	
Satd. Flow (perm)	340	3053	0	793	2699	0	0	1274	1222	0	1383	1454
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		55			27				59			25
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		434			336			459			453	
Travel Time (s)		9.9			7.6			10.4			10.3	
Confl. Peds. (#/hr)	266		19	19		266	59		60	60		59
Confl. Bikes (#/hr)			6			16			8			6
Peak Hour Factor	0.87	0.87	0.87	0.93	0.93	0.93	0.86	0.86	0.86	0.93	0.93	0.93
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	356	354	115	54	342	98	73	106	23	80	172	442
Shared Lane Traffic (%)												
Lane Group Flow (vph)	356	469	0	54	440	0	0	179	23	0	252	442
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		12			12			0			0	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2	1	1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru	Right	Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100	20	20	100	20
Trailing Detector (ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0	0	0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6	20	20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	pm+pt	NA		Perm	NA		Perm	NA	Perm	Perm	NA	pt+ov
Protected Phases	7	4			8			2			6	6 7
Permitted Phases	4			8			2		2	6		
Detector Phase	7	4		8	8		2	2	2	6	6	6 7
Switch Phase												
Minimum Initial (s)	5.0	16.0		16.0	16.0		7.0	7.0	7.0	7.0	7.0	
Minimum Split (s)	9.0	22.0		22.0	22.0		23.0	23.0	23.0	23.0	23.0	
Total Split (s)	41.0	79.0		38.0	38.0		51.0	51.0	51.0	51.0	51.0	
Total Split (%)	31.5%	60.8%		29.2%	29.2%		39.2%	39.2%	39.2%	39.2%	39.2%	
Maximum Green (s)	37.0	73.0		32.0	32.0		44.0	44.0	44.0	44.0	44.0	
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0	4.0	4.0	4.0	
All-Red Time (s)	0.0	2.0		2.0	2.0		3.0	3.0	3.0	3.0	3.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0	0.0		0.0	
Total Lost Time (s)	4.0	6.0		6.0	6.0			7.0	7.0		7.0	
Lead/Lag	Lead			Lag	Lag							
Lead-Lag Optimize?	Yes			Yes	Yes							
Vehicle Extension (s)	3.0	3.0		1.0	1.0		2.5	2.5	2.5	1.0	1.0	
Recall Mode	None	None		None	None		C-Max	C-Max	C-Max	C-Max	C-Max	
Walk Time (s)		5.0		5.0	5.0		5.0	5.0	5.0	5.0	5.0	
Flash Dont Walk (s)		11.0		11.0	11.0		11.0	11.0	11.0	11.0	11.0	
Pedestrian Calls (#/hr)		0		0	0		0	0	0	0	0	
Act Effct Green (s)	62.7	60.7		23.6	23.6			56.3	56.3		56.3	93.4
Actuated g/C Ratio	0.48	0.47		0.18	0.18			0.43	0.43		0.43	0.72
v/c Ratio	0.73	0.32		0.38	0.86			0.32	0.04		0.42	0.42
Control Delay	33.7	18.6		52.8	64.7			29.2	0.1		31.0	9.0
Queue Delay	0.0	0.0		0.0	0.0			0.0	0.0		0.0	0.0
Total Delay	33.7	18.6		52.8	64.7			29.2	0.1		31.0	9.0
LOS	C	B		D	E			C	A		C	A
Approach Delay		25.1			63.4			25.9			17.0	
Approach LOS		C			E			C			B	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 39 (30%), Referenced to phase 2:NBTL and 6:SBTL, Start of Green
Natural Cycle: 60
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.86
Intersection Signal Delay: 31.2 Intersection LOS: C
Intersection Capacity Utilization 81.2% ICU Level of Service D
Analysis Period (min) 15

Splits and Phases: 8: Collins Ave & 5th Street

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Volume (veh/h)	721	0	0	779	0	32
Future Volume (Veh/h)	721	0	0	779	0	32
Sign Control	Free			Free	Stop	
Grade	0%			0%	0%	
Peak Hour Factor	0.97	0.97	0.94	0.94	0.50	0.50
Hourly flow rate (vph)	743	0	0	829	0	64
Pedestrians				19		
Lane Width (ft)				12.0		
Walking Speed (ft/s)				4.0		
Percent Blockage				2		
Right turn flare (veh)						
Median type	None			None		
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume			743		1019	390
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol			743		1019	390
tC, single (s)			4.1		6.8	6.9
tC, 2 stage (s)						
tF (s)			2.2		3.5	3.3
p0 queue free %			100		100	89
cM capacity (veh/h)			873		236	604

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	WB 3	NB 1
Volume Total	372	372	276	276	276	64
Volume Left	0	0	0	0	0	0
Volume Right	0	0	0	0	0	64
cSH	1700	1700	1700	1700	1700	604
Volume to Capacity	0.22	0.22	0.16	0.16	0.16	0.11
Queue Length 95th (ft)	0	0	0	0	0	9
Control Delay (s)	0.0	0.0	0.0	0.0	0.0	11.7
Lane LOS						B
Approach Delay (s)	0.0		0.0			11.7
Approach LOS						B

Intersection Summary			
Average Delay	0.5		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕			↕			↕	
Traffic Volume (veh/h)	22	54	8	16	53	21	16	122	5	23	168	97
Future Volume (Veh/h)	22	54	8	16	53	21	16	122	5	23	168	97
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.74	0.74	0.74	0.91	0.91	0.91	0.79	0.79	0.79
Hourly flow rate (vph)	34	83	12	22	72	28	18	134	5	29	213	123
Pedestrians		29			32			13			14	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		4.0			4.0			4.0			4.0	
Percent Blockage		2			3			1			1	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	612	568	316	604	628	182	365			171		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	612	568	316	604	628	182	365			171		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	89	79	98	93	80	97	98			98		
cM capacity (veh/h)	303	398	703	308	369	832	1176			1381		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	129	122	157	365
Volume Left	34	22	18	29
Volume Right	12	28	5	123
cSH	382	406	1176	1381
Volume to Capacity	0.34	0.30	0.02	0.02
Queue Length 95th (ft)	37	31	1	2
Control Delay (s)	19.2	17.6	1.0	0.8
Lane LOS	C	C	A	A
Approach Delay (s)	19.2	17.6	1.0	0.8
Approach LOS	C	C		

Intersection Summary				
Average Delay	6.6			
Intersection Capacity Utilization	39.2%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	9	71	0	0	109	32	7	0	0	0	0	0
Future Volume (Veh/h)	9	71	0	0	109	32	7	0	0	0	0	0
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.71	0.71	0.71	0.82	0.82	0.82	0.50	0.50	0.50	0.75	0.75	0.75
Hourly flow rate (vph)	13	100	0	0	133	39	14	0	0	0	0	0
Pedestrians					3						35	
Lane Width (ft)					12.0						12.0	
Walking Speed (ft/s)					4.0						4.0	
Percent Blockage					0						3	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	207			100			278	333	103	316	314	188
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	207			100			278	333	103	316	314	188
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			100			98	100	100	100	100	100
cM capacity (veh/h)	1336			1505			658	567	955	602	582	835

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	113	172	14	0
Volume Left	13	0	14	0
Volume Right	0	39	0	0
cSH	1336	1700	658	1700
Volume to Capacity	0.01	0.10	0.02	0.00
Queue Length 95th (ft)	1	0	2	0
Control Delay (s)	1.0	0.0	10.6	0.0
Lane LOS	A		B	A
Approach Delay (s)	1.0	0.0	10.6	0.0
Approach LOS			B	A

Intersection Summary				
Average Delay	0.9			
Intersection Capacity Utilization	23.5%	ICU Level of Service	A	
Analysis Period (min)	15			

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	0	75	112	57	0	31
Future Volume (Veh/h)	0	75	112	57	0	31
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	82	122	62	0	34
Pedestrians			3		35	
Lane Width (ft)			12.0		12.0	
Walking Speed (ft/s)			4.0		4.0	
Percent Blockage			0		3	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	219				273	188
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	219				273	188
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	100				100	96
cM capacity (veh/h)	1323				698	834

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	82	184	34
Volume Left	0	0	0
Volume Right	0	62	34
cSH	1323	1700	834
Volume to Capacity	0.00	0.11	0.04
Queue Length 95th (ft)	0	0	3
Control Delay (s)	0.0	0.0	9.5
Lane LOS			A
Approach Delay (s)	0.0	0.0	9.5
Approach LOS			A

Intersection Summary			
Average Delay	1.1		
Intersection Capacity Utilization	22.7%	ICU Level of Service	A
Analysis Period (min)	15		

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	406	608	78	17	611	95	86	211	31	77	179	414
Future Volume (vph)	406	608	78	17	611	95	86	211	31	77	179	414
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Storage Length (ft)	350		0	75		0	0		0	100		0
Storage Lanes	1		0	1		0	0		0	1		1
Taper Length (ft)	25			25			25			25		
Lane Util. Factor	0.97	0.95	0.95	1.00	0.91	0.91	0.95	0.95	0.95	1.00	1.00	1.00
Ped Bike Factor	0.90	0.98		0.94	0.97			0.98		0.95		0.90
Frt		0.983			0.980			0.986				0.850
Flt Protected	0.950			0.950				0.987		0.950		
Satd. Flow (prot)	3152	3133	0	1624	4456	0	0	3133	0	1624	1710	1454
Flt Permitted	0.950			0.950				0.708		0.396		
Satd. Flow (perm)	2839	3133	0	1534	4456	0	0	2213	0	645	1710	1303
Right Turn on Red			Yes			Yes			Yes			Yes
Satd. Flow (RTOR)		14			25			9				440
Link Speed (mph)		30			30			30			30	
Link Distance (ft)		470			482			396			344	
Travel Time (s)		10.7			11.0			9.0			7.8	
Confl. Peds. (#/hr)	136		69	69		136	69		72	72		69
Confl. Bikes (#/hr)			4			17			4			9
Peak Hour Factor	0.97	0.97	0.97	0.90	0.90	0.90	0.90	0.90	0.90	0.94	0.94	0.94
Heavy Vehicles (%)	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%	0%
Adj. Flow (vph)	419	627	80	19	679	106	96	234	34	82	190	440
Shared Lane Traffic (%)												
Lane Group Flow (vph)	419	707	0	19	785	0	0	364	0	82	190	440
Enter Blocked Intersection	No	No	No	No	No	No	No	No	No	No	No	No
Lane Alignment	Left	Left	Right	Left	Left	Right	Left	Left	Right	Left	Left	Right
Median Width(ft)		24			24			12			12	
Link Offset(ft)		0			0			0			0	
Crosswalk Width(ft)		16			16			16			16	
Two way Left Turn Lane												
Headway Factor	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14	1.14
Turning Speed (mph)	15		9	15		9	15		9	15		9
Number of Detectors	1	2		1	2		1	2		1	2	1
Detector Template	Left	Thru		Left	Thru		Left	Thru		Left	Thru	Right
Leading Detector (ft)	20	100		20	100		20	100		20	100	20
Trailing Detector (ft)	0	0		0	0		0	0		0	0	0
Detector 1 Position(ft)	0	0		0	0		0	0		0	0	0
Detector 1 Size(ft)	20	6		20	6		20	6		20	6	20
Detector 1 Type	Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex		Cl+Ex	Cl+Ex	Cl+Ex
Detector 1 Channel												
Detector 1 Extend (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Queue (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 1 Delay (s)	0.0	0.0		0.0	0.0		0.0	0.0		0.0	0.0	0.0
Detector 2 Position(ft)		94			94			94			94	
Detector 2 Size(ft)		6			6			6			6	
Detector 2 Type		Cl+Ex			Cl+Ex			Cl+Ex			Cl+Ex	
Detector 2 Channel												

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Detector 2 Extend (s)		0.0			0.0			0.0			0.0	
Turn Type	Prot	NA		Prot	NA		Perm	NA		Perm	NA	custom
Protected Phases	1	6		5	2			4			8	
Permitted Phases							4			8		6
Detector Phase	1	6		5	2		4	4		8	8	6
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	4.0		7.0	7.0		7.0	7.0	7.0
Minimum Split (s)	12.0	36.0		11.0	36.0		39.0	39.0		39.0	39.0	36.0
Total Split (s)	25.0	65.0		13.0	53.0		52.0	52.0		52.0	52.0	65.0
Total Split (%)	19.2%	50.0%		10.0%	40.8%		40.0%	40.0%		40.0%	40.0%	50.0%
Maximum Green (s)	18.0	59.0		7.0	47.0		46.0	46.0		46.0	46.0	59.0
Yellow Time (s)	4.0	4.0		4.0	4.0		4.0	4.0		4.0	4.0	4.0
All-Red Time (s)	3.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Lost Time (s)	7.0	6.0		6.0	6.0			6.0		6.0	6.0	6.0
Lead/Lag	Lead	Lag		Lead	Lag							Lag
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							Yes
Vehicle Extension (s)	3.0	3.0		3.0	3.0		3.0	3.0		3.0	3.0	3.0
Recall Mode	None	C-Max		None	C-Max		None	None		None	None	C-Max
Walk Time (s)		4.0			4.0		4.0	4.0		4.0	4.0	4.0
Flash Dont Walk (s)		26.0			26.0		29.0	29.0		29.0	29.0	26.0
Pedestrian Calls (#/hr)		0			0		0	0		0	0	0
Act Effct Green (s)	24.0	87.1		7.1	61.9			25.1		25.1	25.1	87.1
Actuated g/C Ratio	0.18	0.67		0.05	0.48			0.19		0.19	0.19	0.67
v/c Ratio	0.72	0.34		0.22	0.37			0.84		0.66	0.58	0.43
Control Delay	57.2	11.3		63.8	22.7			65.9		72.1	53.8	2.7
Queue Delay	0.0	0.0		0.0	0.0			0.0		0.0	0.0	0.0
Total Delay	57.2	11.3		63.8	22.7			65.9		72.1	53.8	2.7
LOS	E	B		E	C			E		E	D	A
Approach Delay		28.3			23.7			65.9			24.4	
Approach LOS		C			C			E			C	

Intersection Summary

Area Type: CBD
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 46 (35%), Referenced to phase 2:WBT and 6:EBT, Start of Green
Natural Cycle: 90
Control Type: Actuated-Coordinated
Maximum v/c Ratio: 0.84
Intersection Signal Delay: 30.7 Intersection LOS: C
Intersection Capacity Utilization 110.5% ICU Level of Service H
Analysis Period (min) 15

Splits and Phases: 26: Washington Ave & 5th St

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Sign Control		Stop			Stop			Stop			Stop	
Traffic Volume (vph)	20	44	22	11	50	48	21	239	12	50	239	22
Future Volume (vph)	20	44	22	11	50	48	21	239	12	50	239	22
Peak Hour Factor	0.76	0.76	0.76	0.72	0.72	0.72	0.87	0.87	0.87	0.86	0.86	0.86
Hourly flow rate (vph)	26	58	29	15	69	67	24	275	14	58	278	26

Direction, Lane #	EB 1	WB 1	NB 1	NB 2	SB 1	SB 2
Volume Total (vph)	113	151	162	152	197	165
Volume Left (vph)	26	15	24	0	58	0
Volume Right (vph)	29	67	0	14	0	26
Hadj (s)	-0.11	-0.25	0.07	-0.06	0.15	-0.11
Departure Headway (s)	5.7	5.5	5.8	5.7	5.8	5.6
Degree Utilization, x	0.18	0.23	0.26	0.24	0.32	0.26
Capacity (veh/h)	572	598	592	605	591	619
Control Delay (s)	9.9	10.1	9.7	9.2	10.3	9.3
Approach Delay (s)	9.9	10.1	9.5		9.8	
Approach LOS	A	B	A		A	

Intersection Summary				
Delay	9.8			
Level of Service	A			
Intersection Capacity Utilization	48.7%	ICU Level of Service		A
Analysis Period (min)	15			

APPENDIX K

Queuing Analysis

Transportation and Land Development

2nd Edition

by Vergil G. Stover
and Frank J. Koepke

Institute of Transportation Engineers

location, a 5% probability of back-up onto the adjacent street is judged to be acceptable. Demand on the system for design is expected to be 110 vehicles in a 45-minute period. Average service time was expected to be 2.2 minutes. Is the queue storage adequate?

Such problems can be quickly solved using Equation (8–9b) given in Table 8-10 and repeated below for convenience.

$$M = \left[\frac{\ln P(x > M) - \ln Q_M}{\ln \rho}\right] - 1$$

where:

M = queue length which is exceeded p percent of the time
N = number of service channels (drive-in positions)
Q = service rate per channel (vehicles per hour)
$\rho = \dfrac{\text{demand rate}}{\text{service rate}} = \dfrac{q}{NQ}$ = utilization factor
q = demand rate on the system (vehicles per hour)
Q_M = tabled values of the relationship between queue length, number of channels, and utilization factor (see Table 8.11)

TABLE 8-11
Table of Q_M Values

ρ	$N = 1$	2	3	4	6	8	10
0.0	0.0000	0.0000	0.0000	0.0000			
0.1	.1000	.0182	.0037	.0008	.0000	0.0000	0.0000
.2	.2000	.0666	.0247	.0096	.0015	.0002	.0000
.3	.3000	.1385	.0700	.0370	.0111	.0036	.0011
.4	.4000	.2286	.1411	.0907	.0400	.0185	.0088
.5	.5000	.3333	.2368	.1739	.0991	.0591	.0360
.6	.6000	.4501	.3548	.2870	.1965	.1395	.1013
.7	.7000	.5766	.4923	.4286	.3359	.2706	.2218
.8	.8000	.7111	.6472	.5964	.5178	.4576	.4093
.9	.9000	.8526	.8172	.7878	.7401	.7014	.6687
1.0	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

$\rho = \dfrac{q}{NQ} = \dfrac{\text{arrival rate, total}}{(\text{number of channels})(\text{service rate per channel})}$
N = number of channels (service positions)

Solution

Step 1: $Q = \dfrac{60 \text{ min/hr}}{2.2 \text{ min/service}} = 27.3$ services per hour

Step 2: $q = (110 \text{ veh}/45 \text{ min}) \times (60 \text{ min/hr}) = 146.7$ vehicles per hour

Step 3: $\rho = \dfrac{q}{NQ} = \dfrac{146.7}{(6)(27.3)} = 0.8956$

Step 4: $Q_M = 0.7303$ by interpolation between 0.8 and 0.9 for $N = 6$ from the table of Q_M values (see Table 8-11).

Step 5: The acceptable probability of the queue, M, being longer than the storage, 18 spaces in this example, was stated to be 5%. $P(x > M) = 0.05$, and:

$$M = \left[\frac{\ln 0.05 - \ln 0.7303}{\ln 0.8956}\right] - 1 = \left[\frac{-2.996 - (-0.314)}{-0.110}\right] - 1$$

$= 24.38 - 1 = 23.38$, say 23 vehicles.

Queuing Analysis based on ITE Procedures

q = 54 veh/hr (demand rate)

Q = 160 veh/hr (service rate w/8 Valet Runners)

$$p = \frac{q}{NQ} = 0.3375 \text{ (N = one)}$$

$Q_M = 0.3375$ (for N = 1)

Using Acceptable Probability of 5% (95% Confidence Level)

$$M = \left(\frac{Ln\ (x > M) - Ln\ (Q_M)}{Ln\ (p)} \right) - 1$$

$$M = \left(\frac{Ln(0.05) - Ln(0.3375)}{Ln(0.3375)} \right) - 1$$

$$M = \left(\frac{-2.9957 - (-1.0862)}{-1.0862} \right) - 1$$

M = 1.76 – 1 = 0.76, say 1 vehicle

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