

January 22, 2016

Mr. Tim Stillings, AICP
Planning & Zoning Director
City of Delray Beach
100 N.W. 1st Avenue
Delray Beach, FL 33444

**Re: Atlantic Crossing, Class II Plan Modification
Traffic Review and Analysis**

Dear Mr. Stillings:

Greenman-Pedersen, Inc. (GPI) is pleased to present the City of Delray Beach with this independent review of the traffic information provided by Covelli Design Associates, Inc. with regard to the Atlantic Crossing Class II Site Plan, and an assessment of site circulation and access alternatives for the project.

Summary of Findings

Based on our review of the Class II Site Plan Modification; traffic information presented in the 12/23/15 Response to Comment letter prepared Covelli Design Associates; the July 2012 Traffic Impact Study for the Site prepared by Kimley-Horn and Associates; traffic data collected in January 2016; and our analysis, site traffic can be accommodated by the road network, with the only possible improvement being a traffic signal at the NE 1st Street and NE 6th Avenue intersection, and some traffic signal retiming. This is true regardless of the access alternative selected (of the options presented by the applicant). It is our professional opinion that the originally approved site plan access alternative provides off-site operations similar to the Class II modification with less on-site conflicts and confusion, but the Class II modification would provide acceptable operations with the on-site circulation modifications discussed in the subsequent section. We offer the following summary of findings with respect to the analysis performed:

1. A “worst case” scenario traffic evaluation was performed for the Class II access alternative and it was found that even without a pass-by trip reduction being applied, most of the intersections have capacity enough to sufficiently accommodate new site traffic. The only exception being that signal timing changes at the NE 1st Street and NE 5th Avenue intersection will be required to accommodate PM peak hour traffic at that location and a traffic signal installation will be required at the NE 1st Street and NE 6th Avenue intersection to accommodate PM peak hour traffic. However, since this was a “worst case” assessment, we would recommend further analysis at this intersection with updated site traffic data (including the effect of pass-by traffic), and a traffic signal warrant, before the installation of a traffic signal can be justified. Furthermore, it is recommended that all traffic signals within the study area be retimed for the new traffic flow condition once the development is in-place and operational to optimize traffic flows and minimize delay.

2. A review of traffic volumes for the various access alternatives suggests that little variation in off-site traffic volumes will occur regardless of the access alternative selected. In all cases, a less than 50 vehicle variance per intersection is expected. The traffic increase would need to be near 100 vehicles to noticeably effect traffic operations at a particular location.
3. The different site access options to/from NE 6th Avenue are anticipated to have negligible impacts to off-site operations. Therefore, other major factors must be considered such as on-site circulation, multi-modal safety and convenience for those who will be frequenting the site (i.e. residents, work staff, patrons, visitors, etc.) It is understood that there are three parking structures to be included in the proposed development as follows:
 - a. 419 total space garage accessed via NE 6th Avenue and on-site in the vicinity of Building VI South - 145 general/self-park spaces and 274 spaces reserved for residents/tenants
 - b. 142 total space garage accessed via East side of 7th by Building IV South – all spaces valet and reserved parking
 - c. 475 total space garage accessed via Building IV North and Building V via NE 1st St – 95 reserved for valet and 380 spaces for general/self-park

The site access point to/from NE 6th Avenue directly impacts parking mobility for parking structure (a) listed above. Considering that this garage will contain the highest number of residential/tenant spaces, it can be assumed that the peak outbound trips will occur during the morning period while the peak inbound trips will occur during the evening period. Providing access from this garage directly to an adjacent roadway, namely, NE 6th Avenue, will ultimately reduce the number of on-site conflicts thereby increasing safety and improving on-site circulation compared to providing only an on-site exit from this parking structure. Furthermore, it is assumed that providing an exit directly from the parking structure (a) onto NE 6th Avenue will provide the most convenience for residents to more easily access an adjacent corridor.

4. If the Class II Plan Modification access alternative is approved, modification to the site circulation pattern is recommended. To minimize on-site conflicts and improve circulation, removal of the central loop and reevaluation of the garage access locations should be considered. Additionally it is recommended that the raised crosswalk north of the central loop be removed or relocated to avoid safety concerns that result from turn vehicles traversing the hump while skewed.
5. The original 2012 traffic study estimated the net number of external trips (trips located away from the site driveways) new to the road network based on an assumption of existing site land uses and trip generation rates. It is standard practice, when a site exists, to count the actual volumes in and out of the site to determine site trips and not to estimate them. After conducting these counts, it was determined that the actual number of new external trips would be significantly higher than reported, and is estimated at 242 in the AM peak hour (82 inbound/160 outbound) and 482 in the PM peak hour (284 inbound/198 outbound), this is nearly 3 times the amount reported in the traffic impact study.
6. Traffic Volume diagrams showing the number and distribution of projected site trips in both the 2012 traffic study and in the traffic data presented in the Class II comment response should be

updated to reflect the presence of pass-by trips. Pass-by trips were not identified or removed from the traffic flow in these diagrams, and as presented, cannot be used to accurately assess impacts, they can only be used to review “worst case” scenarios regarding the impacts. Additionally, it was noticed that the number of inbound and outbound trips did not match the trip generation projections on some diagrams. This should be corrected in any resubmission of diagrams.

Access Alternative Assessment

Several access alternatives have previously been reviewed by others as part of the approval process for this project. The variation in each of these alternatives has focused on the site access connection to NE 6th Avenue, and the alternatives have included the following configurations for that driveway.

- a) Garage Access Outbound Only, No Surface Connection (shown in the 2012 traffic impact study)
- b) Garage Access Inbound & Outbound, No Surface Connection (shown on approved site plan)
- c) Inbound & Outbound Surface Connection, No Garage Connection (Option 1 discussed in 7/1/15 assessment letter by Simmons & White, Inc.)
- d) Garage Access Inbound, Surface Connection Outbound (Option 2 discussed in 7/1/15 assessment letter by Simmons & White, Inc., and is proposed Class II Access Alternative)

Of these configurations, GPI has only been presented with site generated traffic volume diagrams for case (a) in the 2012 TIS, and case (d) which was presented in the 12/23/15 comment response letter, and it should be noted that these diagrams include all site trips as if they were new to the roadway and did not account for pass-by trips away from the site driveways, so they show an overly conservative number of trips on the roadway. With that said, some comparative inferences can be made about the various access alternatives based on these diagrams. The most apparent of these is that all the access alternatives will have the same general impacts away from the site. The diagrams we have show less than a 50 vehicle difference at any given intersection between the options reviewed, and it is assumed that the other alternatives will be consistent with this level of redistribution. As previously mentioned, a volume difference of approximately 100 vehicles at an intersection is typically required to provide a noticeable effect on capacity, so with the traffic variations between the reviewed options being considerably less than that threshold, we believe all options mentioned above will have similar impacts to the Class II Access Alternative currently under consideration and discussed above. Since the off-site impacts will be relatively the same for all cases above, internal site circulation becomes more of a deciding factor in determining a preferred alternative.

In a July 1, 2015 letter prepared by Simmons & White, Inc. cases (c) and (d) were reviewed and they found that, of those two options, case (d), which is also known as the Class II Access Alternative, would provide the better site circulation as it allowed enough turn radius for vehicles exiting the Building VI-South parking garage to make a turn onto the NE 6th Avenue Access Drive. While we agree that the movement from the garage is better made under this access scenario, we have several concerns regarding this access alternative, unless other site circulation changes are made. The center of the site has too many conflicting movements that are too closely spaced with the addition of any new access road connection. This lack of adequate spacing and the resulting offset intersection approaches cause an increased number of conflict points and increased driver confusion, and on-site wayfinding may be much more difficult, as there is insufficient spacing to sign destinations properly.

If the NE 7th Avenue spine is to remain as designed, the most appropriate access alternative is as presented in the originally approved plans, with no direct surface connection to NE 6th Avenue. In reviewing the traffic analysis and the traffic variations between the different access options, it is clear that the direct surface connection to NE 6th Avenue is not needed for capacity reasons, and this alternative would cause the fewest number of on-site conflicts and would reduce driver confusion at the site's central loop. A justification should be provided if a change from the originally approved access condition is desired.

If the direct surface connection to NE 6th Avenue is essential to site operations, the access alternative presented in the Class II plans (Inbound garage access only/outbound surface access only) would be the most appropriate, but only if site circulation changes are made along NE 7th Avenue and at the site's central loop. Additionally, related to traffic flow, the raised crosswalk immediately north of the central loop and the Building VI-South driveway exit is too close to the intersection and should be removed or relocated. As it sits, drivers turning north from the loop or garage will not be perpendicular to the crosswalk prior to hitting the hump, this uneven alignment to the raised crosswalk would be uncomfortable for drivers and could result in some drivers losing control as they traverse it.

Traffic Impact Evaluation of Class II Access Alternative

As discussed above, a more accurate diagram of site trips that accounts for pass-by traffic is necessary to reasonably assess impacts away from the site and identify improvements that may have to be made by the City to mitigate those impacts. However, the diagrams provided can be used to perform a "worst case" scenario analysis for the roadway to determine the improvements necessary if all site traffic was new to the roadway. GPI performed such analysis for the Class II access alternative by performing the following tasks:

- Diagram existing traffic volumes (see attached Figures 1 & 2) and perform an existing condition capacity analysis to identify any existing operational deficiencies. It should be noted that the analysis was performed with field observed timings, as existing timing information was not available at the time of the study.
- Develop "Background Condition" traffic volumes which removes the existing site trips from the roadway network and redistributes NE 7th Avenue traffic due to the roadway closing and cul-de-sac proposed by the Atlantic Crossing project. These volumes represent a base condition to which the projected site trips can be added (see attached Figures 3 & 4).
- Modify Site Trip Volume diagrams to be consistent with the trip generation. The number of inbound and outbound vehicles shown in the diagrams provided by the applicant were not consistent with the trip generation they reported (see attached Figures 5 & 6).
- Develop "Build Condition" traffic volumes, which combine the background volumes and the site generated trips (see attached Figures 7 & 8). It should be noted that these volumes are based on the trip assignments provided by the applicant and do not account for pass-by trips away from the site. The use of these volumes will result in a very conservative capacity analyses that will identify "worst case scenario" operations and needs.
- Analyze Build Condition operations for the Class II Access Alternative. Identify operational deficiencies and determine improvements necessary to mitigate.

The traffic analysis was performed using the Synchro traffic analysis software which estimates capacity based on methodologies found in the *Highway Capacity Manual* (HCM 2010), published by the Transportation Research Board. The procedures in that manual describe operating conditions in terms of Level of Service (LOS). In general, "A" represents the best operating condition with unrestricted flow and little or no delay per vehicle, and "F" represents the worst, with congested conditions, long delays and poor traffic operations. LOS C or better is generally desirable, but LOS D is generally acceptable during peak periods.

Table 1 below presents the LOS criteria for both signalized and unsignalized intersections.

TABLE 1: LEVEL OF SERVICE CRITERIA

LOS	Signalized Intersection Delay Per Vehicle (sec.)	Unsignalized Intersection Delay Per Vehicle (sec.)
A	≤ 10.0	≤ 10.0
B	> 10.0 and ≤ 20.0	> 10.0 and ≤ 15.0
C	> 20.0 and ≤ 35.0	> 15.0 and ≤ 25.0
D	> 35.0 and ≤ 55.0	> 25.0 and ≤ 35.0
E	> 55.0 and ≤ 80.0	> 35.0 and ≤ 50.0
F	> 80.0	> 50.0

The traffic operations within the study area for the Existing Condition and Class II Access Alternative Build Condition are summarized in Table 2 below. Computation worksheets for these analyses are attached. It should be noted that the Build Condition results below are without any intersection improvements being made.

TABLE 2: LEVEL OF SERVICE SUMMARY

Intersection	Movement	AM Peak Hour		PM Peak Hour	
		Existing Condition	Build Condition	Existing Condition	Build Condition
E. Atlantic Ave and NE 5 th Ave	Eastbound	C (33.4)	D (36.7)	D (36.1)	D (47.3)
	Westbound	B (19.5)	B (19.6)	B (19.5)	C (21.7)
	Southbound	B (16.8)	B (19.4)	B (16.1)	C (24.6)
	Overall	C (20.1)	C (22.6)	C (20.7)	C (28.8)
E. Atlantic Ave and NE 6 th Avenue	Eastbound	B (18.6)	C (29.6)	B (18.8)	C (21.9)
	Westbound	C (31.5)	C (32.4)	C (33.4)	D (36.9)
	Northbound	B (15.8)	B (16.3)	C (20.1)	C (25.9)
	Overall	B (19.8)	C (21.1)	C (22.8)	C (27.7)
E. Atlantic Ave and NE 7 th Ave (future site access)	Eastbound	C (30.1)	C (31.0)	C (30.6)	D (36.5)
	Westbound	C (30.0)	C (30.0)	C (32.3)	C (29.9)
	Northbound	A (5.2)	A (5.3)	A (5.6)	A (6.8)
	Southbound	A (5.4)	A (5.4)	A (5.6)	A (6.6)
	Overall	C (24.1)	C (25.9)	C (26.2)	C (27.2)
NE 1 st St and NE 5 th Ave	Eastbound	D (40.4)	D (37.0)	D (38.7)	D (36.5)
	Westbound	D (42.0)	D (41.3)	D (39.6)	F (83.5)
	Southbound	A (5.2)	A (7.5)	A (6.3)	A (8.5)
	Overall	A (9.0)	B (11.8)	B (12.9)	C (23.0)
NE 1 st St and NE 6 th Avenue*	Eastbound	C (15.6)	D 27.8	C (23.4)	F (Incalc.)
	Westbound	B (13.8)	C (24.4)	C (21.2)	F (222.3)
NE 1 st St and NE 7 th Ave* (future site access)	Eastbound	B (10.2)	---	B (10.1)	---
	Westbound	B (10.6)	---	B (10.7)	---
	Northbound	---	A (9.4)	---	B (10.6)
	Southbound	---	---	---	---
Site Access and NE 6 th Avenue*	Westbound	B (11.4)	B (11.4)	B (11.4)	C (19.4)

* Indicates unsignalized intersection. The methodology assumes all uncontrolled movements have negligible delay, as such they have been excluded from the table and will operate at LOS A.
 X (XX.X) indicates LOS (vehicular delay in seconds per vehicle)
 (Incalc.) indicates that delay is incalculable due to oversaturated conditions.

As the level of service summary shows, the existing condition operations are within acceptable levels at all locations, and the build condition levels of service (before any capacity improvements are made) are within acceptable levels at all but two intersections, and those locations only show capacity issues during the PM peak hour. Reviewing the traffic controls at these two locations, the following improvements would positively affect operations:

- NE 1st street and NE 5th Avenue – This signalized intersection has timings heavily skewed towards the southbound movement. A minor adjustment to the signal timings, shifting time from the northbound movement to the side streets, may correct the LOS F seen on the westbound approach and may provide acceptable levels of service on all approaches.
- NE 1st St and NE 6th Avenue – The increased side street traffic at this two-way stop controlled intersection causes the eastbound and westbound approaches to fall to LOS F in the Build Condition PM peak hour. Although geometric constraints do not permit widening, capacity could effectively be increased via the installation of a traffic signal, as suggested on the

applicant’s site plan. With signalized operations, acceptable levels of service could be achieved for all approaches.

Table 3 below summarized the PM peak hour operations at the two deficient intersections with and without the improvements discussed.

TABLE 3: PM PEAK HOUR BUILD CONDITION WITH IMPROVEMENTS LEVEL OF SERVICE SUMMARY

Intersection	Movement	Without Improvement (from table 2)	With Improvements
NE 1 st St and NE 5 th Ave	Eastbound	D (36.5)	C (26.6)
	Westbound	F (83.5)	D (39.5)
	Southbound	A (8.5)	A (9.5)
	Overall	C (23.0)	B (15.9)
NE 1 st St and NE 6 th Ave	Eastbound	F (Incalc.)	C (29.9)
	Westbound	F (222.3)	C (27.7)
	Southbound	---	A (9.5)
	Overall	---	B (12.7)

However, as mentioned previously, the projected site trip diagrams provided by the applicant did not discount traffic, away from the site, to account for pass-by trips already on the roadway. It is possible that with the traffic reduction resulting from pass-by traffic that the traffic signal installation may not be necessary. It is recommended that additional capacity analysis (with volumes adjusted for pass-by trips) and a traffic signal warrant analysis be performed for the NE 1st Street and NE 6th Ave intersection after more detailed site trip diagrams (showing pass-by trips) are obtained from the applicant in order to justify a signal installation at this location.

The signal timing adjustments at NE 1st Street and NE 5th Avenue are recommended either way, as it is always prudent to optimize a signal network when a significant traffic generator is introduced. We recommend that all traffic signals within the study area be optimized after the site is constructed and turning movement counts with the new traffic pattern in place can be obtained.

Supplemental Traffic Data Comments

1. These comments relate to the traffic information for the Class II Site Plan provided with the 12/23/15 comment response provided by Covelli Design Associates, and on the July 2012 Traffic Impact Study (TIS) prepared by Kimley-Horn and Associates, Inc. It is understood that the 2012 TIS was part of the original site plan approval, but several of the elements in that study relate back to the Class II modifications, so a reexamination of that data was prudent.
2. It should be noted that the access alternative discussed in the July 2012 traffic study was not the option progressed for approval. The study shows the NE 6th Avenue site access as being an “out only” from the garage. The approved site plan shows “in and out” from the garage at that location. We are unsure if the applicant provided Projected Site Access Volumes for the approved site plan’s access alternative, but if not, one should be provided to perform the alternative comparison for the Class II modifications.

3. The projected traffic increases for this Site reported in the 2012 TIS base existing site trips on Institute of Transportation Engineers (ITE) & Palm Beach County trip generation rates for a full buildout condition of the existing development; however it appears that much of what they include is no longer on site or operational. This artificially inflates the existing condition site trip numbers, and makes the increase in site traffic and their impacts appear less than they actually will be. The existing site access points should have been counted as part of the study to determine the actual number of existing trips. This effort was undertaken by GPI on January 6, 2016 and the actual number of existing trips were found to be 60%-75% lower than what the Atlantic Crossing traffic study suggests; with 116 AM peak hour trips (103 in/13 out) and 170 PM peak hour trips (60 in/110 out).
4. In addition to collecting turning movement count (TMC) data at the site driveways, GPI collected TMC data at the adjacent intersection at NE 7th Avenue, NE 6th Avenue and NE 5th Avenue for both E. Atlantic Avenue and NE First Street. Diagrams showing the AM and PM peak hour existing traffic volumes for the road network are attached as Figures 1 & 2. Printouts for all traffic counts (including those at the site driveway) are also attached to this letter. This data is provided for informational purposes and for City use. GPI will use this data as part of the impact assessment performed for the City, outside of the Site Plan approval process.
5. Pass-by Rates used in the trip generation estimates are considerably higher than ITE published average rates. The rate for Retail should be 34% based on ITE, and 49% was used in the study. The Office land use doesn't typically have a significant number of pass-by's (0%), but 10% was used. We understand that the rates used in the study may have come from Palm Beach County, but those rates do not meet current industry standards and will not provide the most accurate representation for impact assessment. Overall, the traffic study reports 48 AM peak hour pass-by's and 275 PM peak hour pass-by's. Our estimation, based on ITE rates, is that those numbers should be 26 (46% lower) in the AM and 227 (18% lower) in the PM.
6. The traffic study for the site estimated the proposed project will generate 83 AM peak hour and 169 PM peak hour trips external to the site (away from the driveways). ITE guidelines suggest that less than 100 vehicles added to an intersection is typically insufficient to cause a change in level of service, so based on how traffic disbursts away from the site, all intersections away from the site would be below that threshold and little to no impact would be expected. However, based on actual existing condition TMC data, the correction of pass-by rates discussed above and rounding errors found in the study, GPI estimates the actual number of new trips external to the site at 242 in the AM peak hour and 482 in the PM peak hour (after accounting for the 110% development credit referred to in the study). These are nearly three (3) times the number of trips reported in the study and are of a magnitude that may impact traffic operations away from the site. The attached Table A summarizes our estimation of these trips and how it compares with the Study data.
7. It should be noted that the Trip Generation numbers (in and out) shown on the 12/23/15 comment letter's site traffic diagram don't match the trip generation tables and diagrams in the 2012 Traffic Study (trip gen. 896 / vol. diag. 837). The new diagram shows 60 fewer vehicles entering and exiting the site. It also significantly changes some of the driveway turn volumes that shouldn't change as a result of the access change. For example, the east most driveway on NE 1st Street shows 115 exiting PM peak hour vehicles in the study, but only 76 vehicles in the Class II update, since this driveway has access to only limited part of the site, it is unclear why the volume change was that dramatic between the approved access plan and the Class II access modification. Any change in land use or

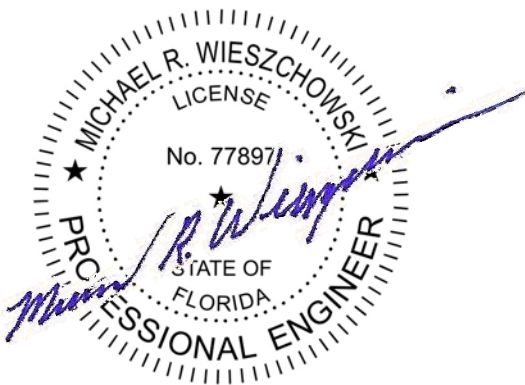
site circulation that would cause such a significant redistribution should be explained in the traffic assessment for the Class II modification. If land uses have changed, a new trip generation table should also be submitted. Additionally, an updated traffic volume diagram showing the correct number of inbound and outbound site trips should be submitted. Several Type-o's concerning the volumes in the diagram were noted as well and should be corrected in the updated diagram.

8. All the Site Trip Volume diagrams provided by the applicant show every trip as "New", where the trip generation table reports that there should be "Pass-by" trips as well. The Site Volume diagram should reflect the actual number of site trips at each intersection, which mean accounting for both New and Pass-by trips, in order for the City to accurately assess potential impacts. The current diagram over reports the number of trips at each of the intersections because the pass-by trips are not removed where appropriate. An updated projected site access volume diagram showing both new and pass-by trips should be submitted. It is understood that this project site is in the City of Delray Beach's Transportation Concurrency Exemption Area (TCEA), so the applicant is not required to perform traffic analysis, but they should provide accurate enough information for the City to perform this analysis and assess impacts. These updated diagrams are needed to do so.

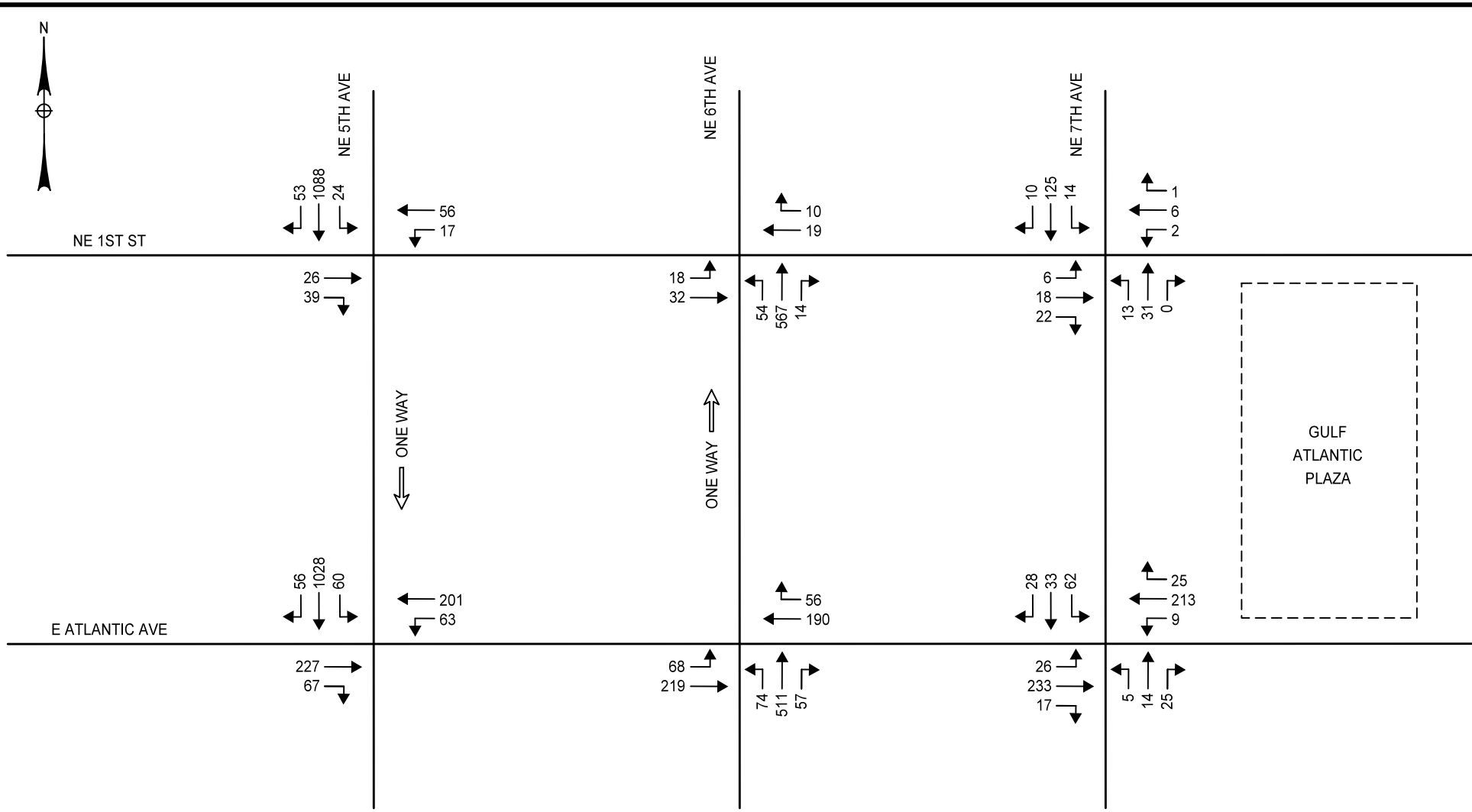
If you have any questions, please let us know and we can discuss over the phone or at a personal meeting to review the findings.

Sincerely

Greenman-Pedersen, Inc.



Michael R. Wieszchowski, P.E., PTOE
Senior Traffic Engineer



Greenman-Pedersen
CONSULTING ENGINEERS

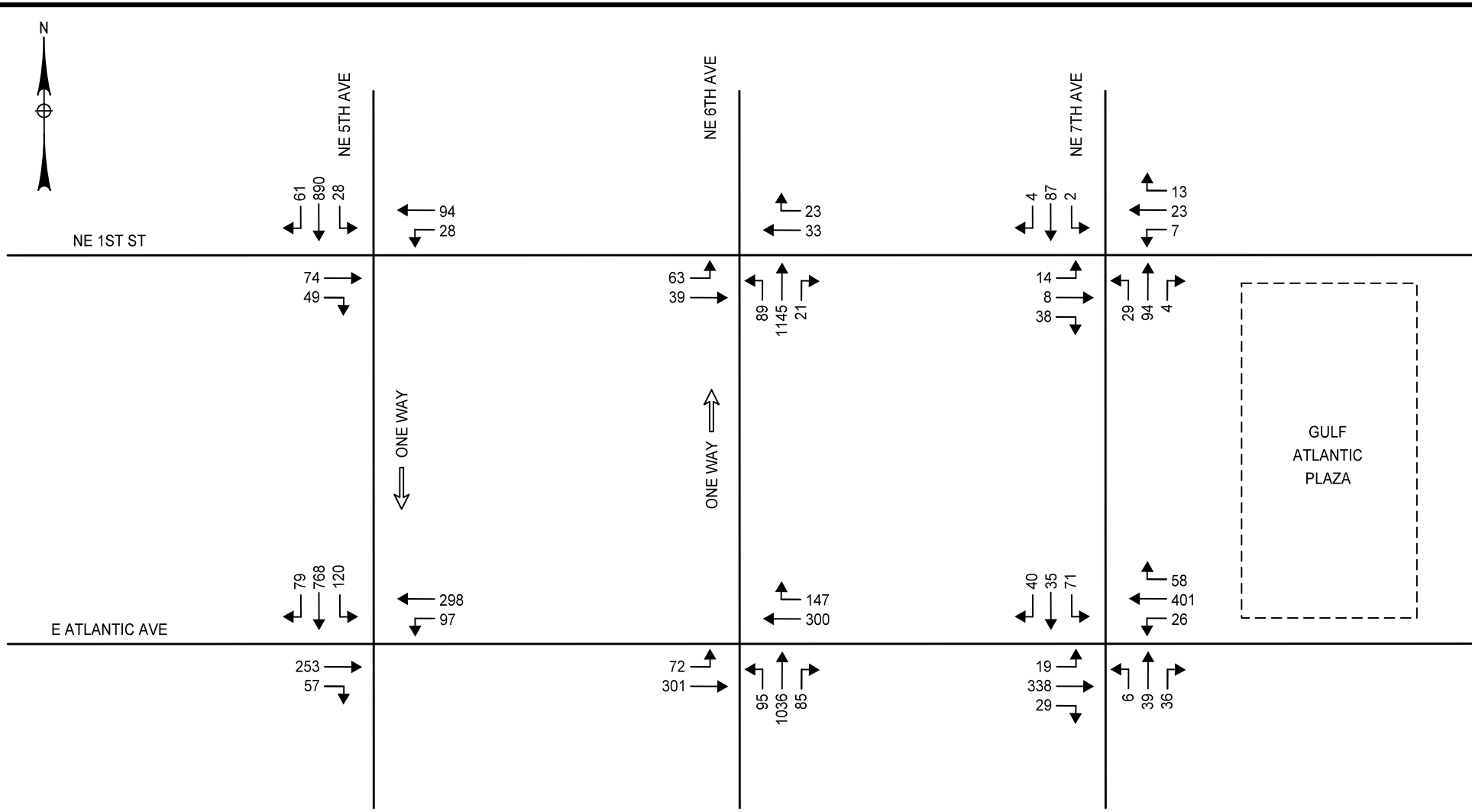
GPI

1000 Ashley Drive
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ATLANTIC CROSSING
CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA

EXISTING AM PEAK HOUR
TRAFFIC VOLUMES

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 1
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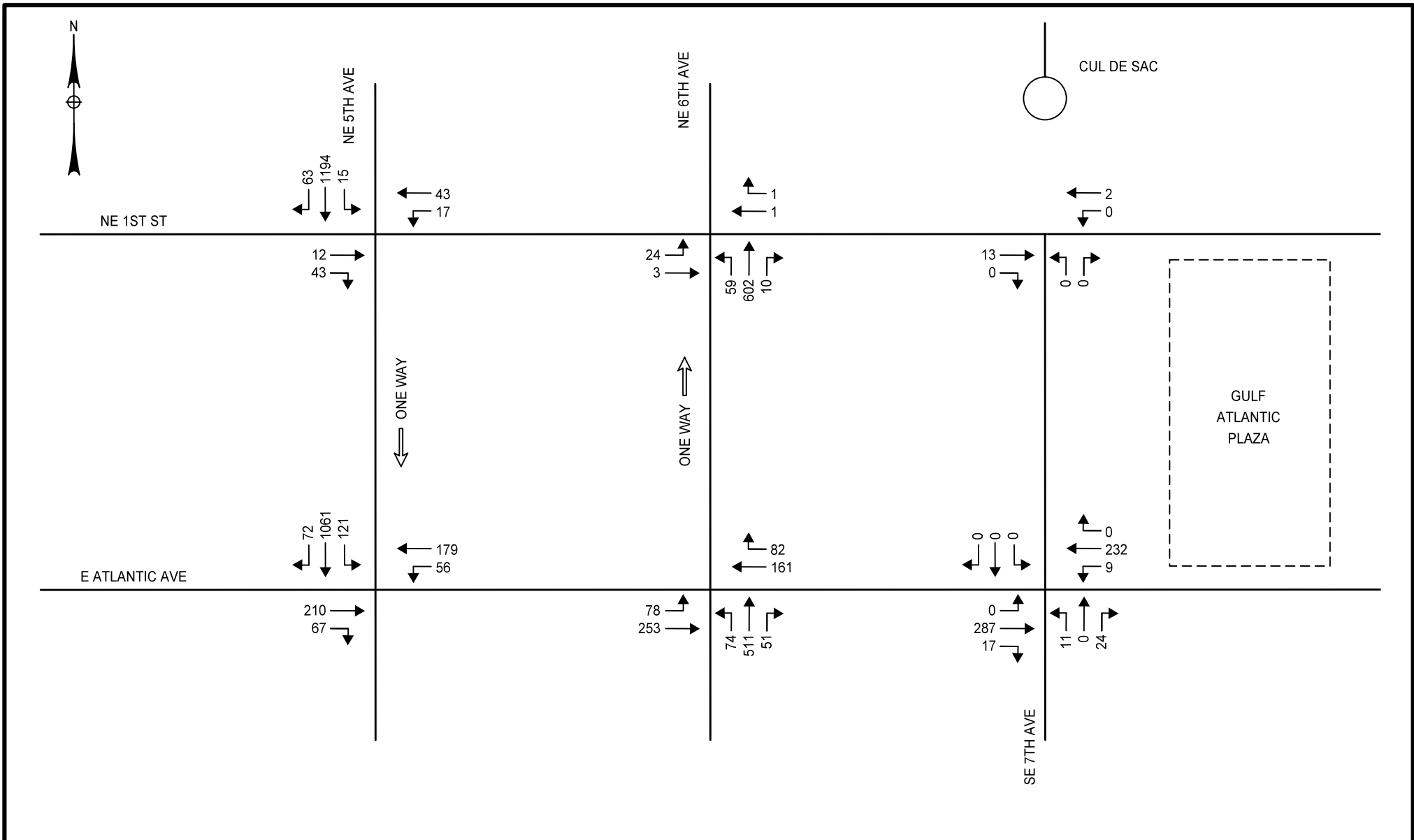
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ATLANTIC CROSSING
CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA

EXISTING PM PEAK HOUR
TRAFFIC VOLUMES

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 2
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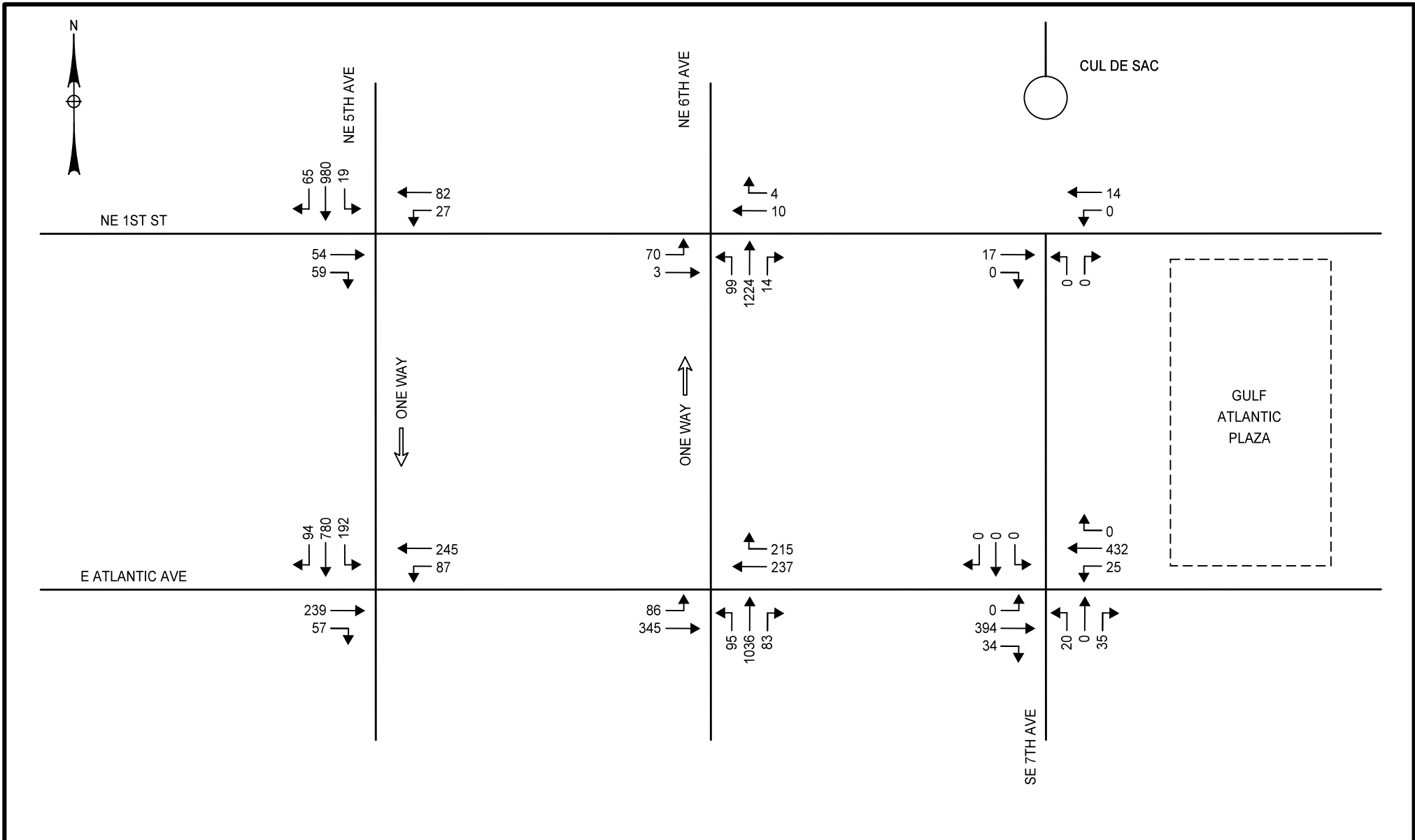
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ATLANTIC CROSSING
CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA

BACKGROUND CONDITION
AM PEAK HOUR TRAFFIC VOLUMES
(WITH EXISTING SITE TRAFFIC REMOVED
AND CUL DE SAC REDISTRIBUTION)

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 3
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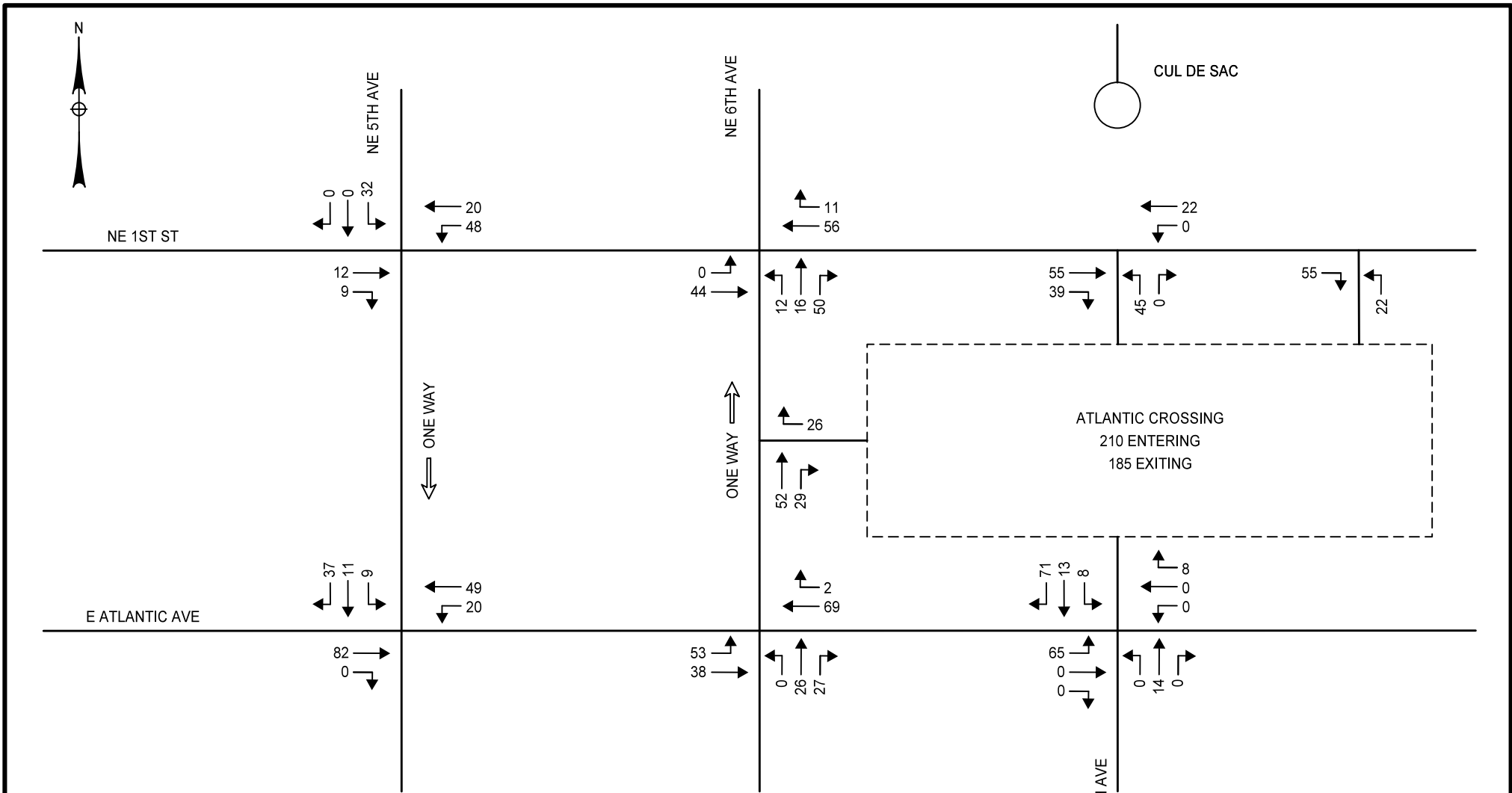
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**ATLANTIC CROSSING
CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA**

**BACKGROUND CONDITION
PM PEAK HOUR TRAFFIC VOLUMES
(WITH EXISTING SITE TRAFFIC REMOVED
AND CUL DE SAC REDISTRIBUTION)**

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 4
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NOTE:
TRAFFIC VOLUMES SHOWN REPRESENT THE TOTAL SITE TRAFFIC GENERATION WITH NO REDUCTION FOR PASS-BY TRIPS THAT MAY ALREADY BE ON THE ROADWAY. THIS IS A "WORST CASE" (CONSERVATIVE) PROJECTION, AND IS CONSISTENT WITH THE METHODOLOGY USED IN THE JULY 2012 TRAFFIC STUDY AND OTHER MATERIALS PREVIOUSLY APPROVED FOR THIS PROJECT.

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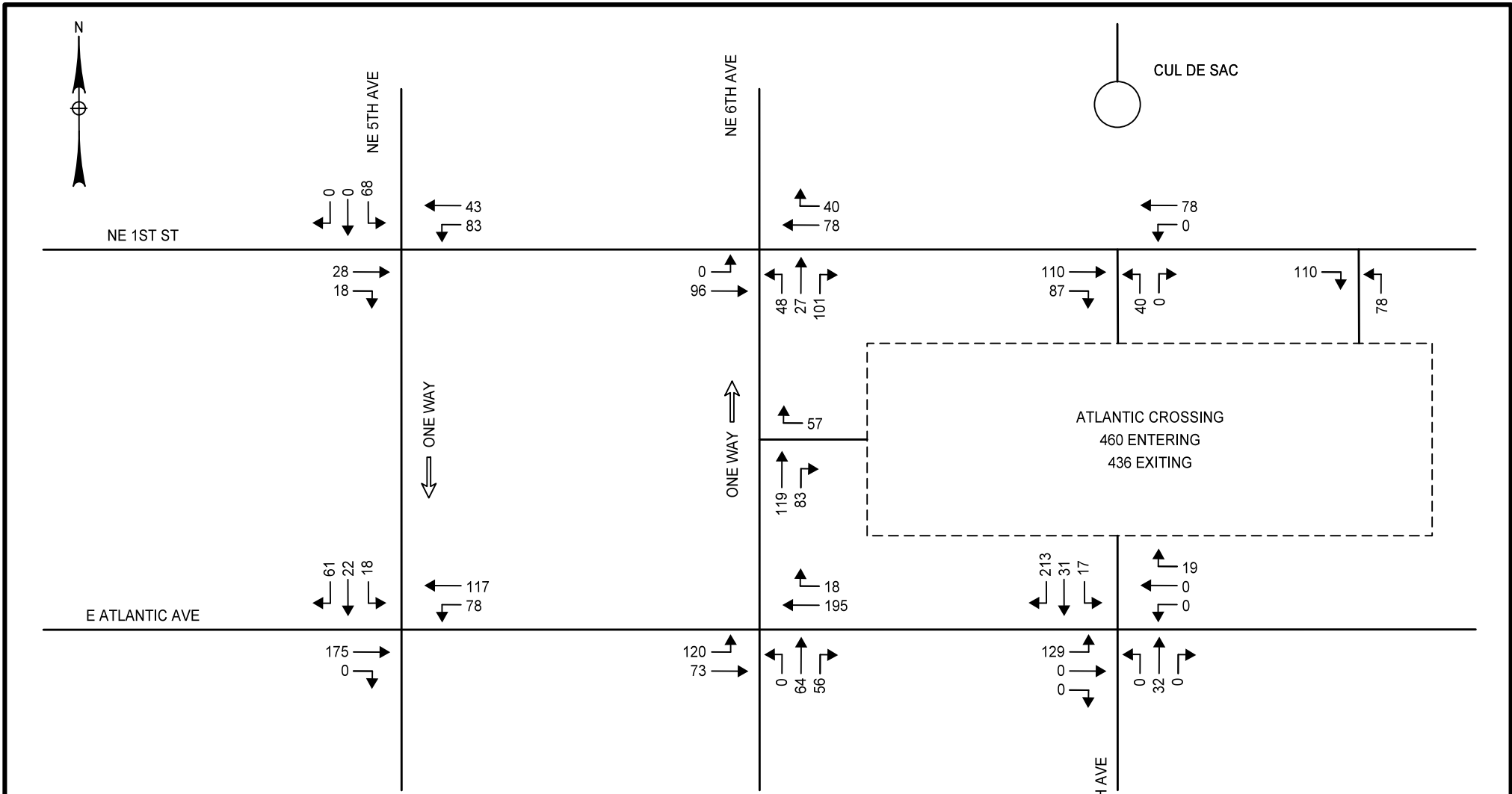
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ATLANTIC CROSSING
CITY OF DELRAY BEACH
PALM BEACH COUNTY, FLORIDA

SITE GENERATED TRAFFIC
AM PEAK HOUR
CLASS 2 ACCESS ALTERNATIVE

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 5
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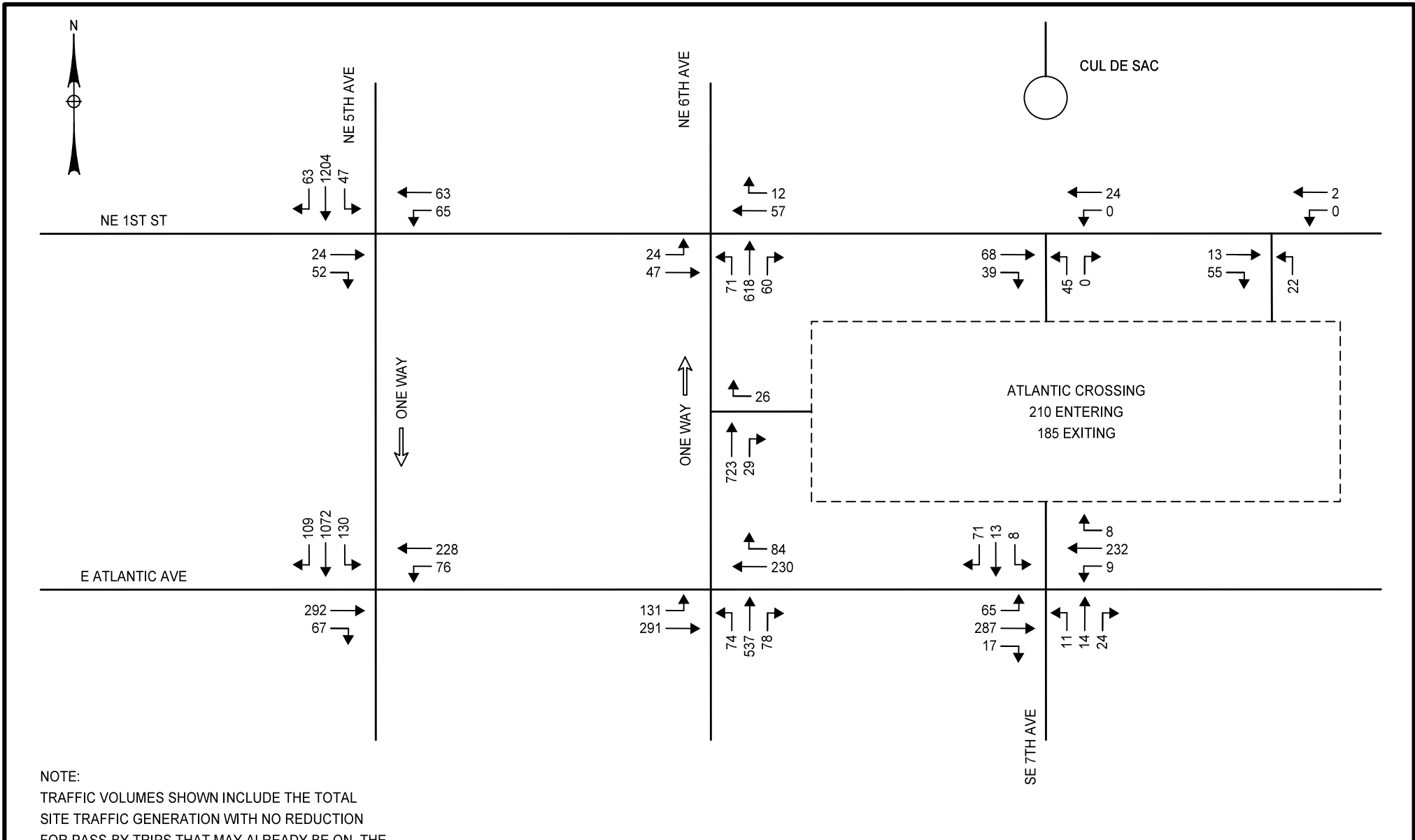
NOTE:
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ATLANTIC CROSSING
 CITY OF DELRAY BEACH
 PALM BEACH COUNTY, FLORIDA

SITE GENERATED TRAFFIC
 PM PEAK HOUR
 CLASS 2 ACCESS ALTERNATIVE

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 6
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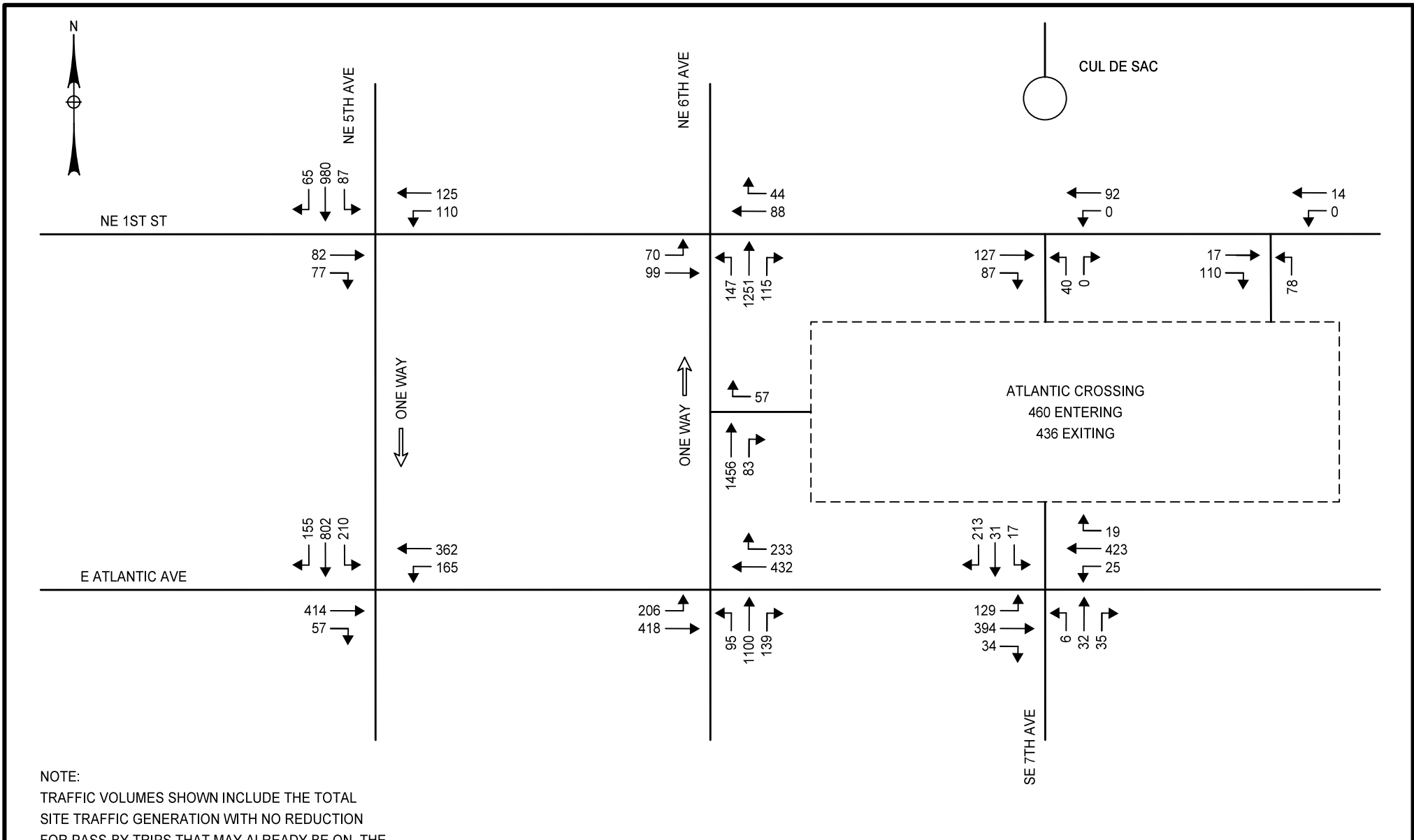
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ATLANTIC CROSSING
 CITY OF DELRAY BEACH
 PALM BEACH COUNTY, FLORIDA

BUILD CONDITION
 AM PEAK HOUR
 CLASS 2 ACCESS ALTERNATIVE

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 7
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NOTE:
 TRAFFIC VOLUMES SHOWN INCLUDE THE TOTAL SITE TRAFFIC GENERATION WITH NO REDUCTION FOR PASS-BY TRIPS THAT MAY ALREADY BE ON THE ROADWAY. THIS IS A "WORST CASE" (CONSERVATIVE) PROJECTION, AND IS CONSISTENT WITH THE METHODOLOGY USED IN THE JULY 2012 TRAFFIC STUDY AND OTHER MATERIALS PREVIOUSLY APPROVED FOR THIS PROJECT.

Greenman-Pedersen
 CONSULTING ENGINEERS

GPI

1000 Ashley Drive
 Suite 100
 Tampa, FL 33602

ATLANTIC CROSSING
 CITY OF DELRAY BEACH
 PALM BEACH COUNTY, FLORIDA

BUILD CONDITION
 PM PEAK HOUR
 CLASS 2 ACCESS ALTERNATIVE

JOB NO. 20160XX.00	SCALE: NO SCALE	DATE: JANUARY 2016	FIGURE NO. 8
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**TABLE A
ATLANTIC PLAZA TRIP GENERATION**

	AM Peak Hour			PM Peak Hour		
	Total	Entering	Exiting	Total	Entering	Exiting
Existing Traffic Volumes: (combined total of counts at 4 access points on 1/6/16)	116	103	13	170	60	110
Total with 110% Development Credit	127	113	14	187	66	121
Future Development:						
Retail 37,642 sf	39	24	15	329	158	171
Office 83,462 sf	162	143	19	165	28	137
Restaurant 37,991 sf	31	16	15	285	191	94
Condominiums 82 units	44	7	37	51	34	17
Apartments 264 units	133	27	106	164	103	61
Total Site Trips (as reported in July 2012 TIS)	409	217	192	994	514	480
Internal Capture (rates as reported in July 2012 TIS) 3.42% AM capture rate / 9.86% PM capture rate)	14	7	7	98	54	44
Total Trips at Driveways (total trips minus internal trips)	395	210	185	896	460	436
Pass-by Trips (calculated with ITE Rates) (34% for Retail/44% for Restaurant/0% otherwise)	26	15	11	227	110	117
Total External Trips (trips outside of the driveway areas)	369	195	174	669	350	319
Net New External Site Traffic (Total external trips minus 110% credit existing trips)	242	82	160	482	284	198
Net External Site Traffic Reported in July 2012 TIS	83	(27)	109	169	151	19
Difference between TIS Trip Data and Data Above	+160	+109	+51	+312	+133	+179



National Data & Surveying Services

Site Code: **16-3083-001**

Date: **1/6/2016**

Weather: **Rain**

City: **Delray Beach**

County: **Palm Beach**

Count Times: **07:00 – 09:00**

16:00 – 18:00

Control: **Signalized**

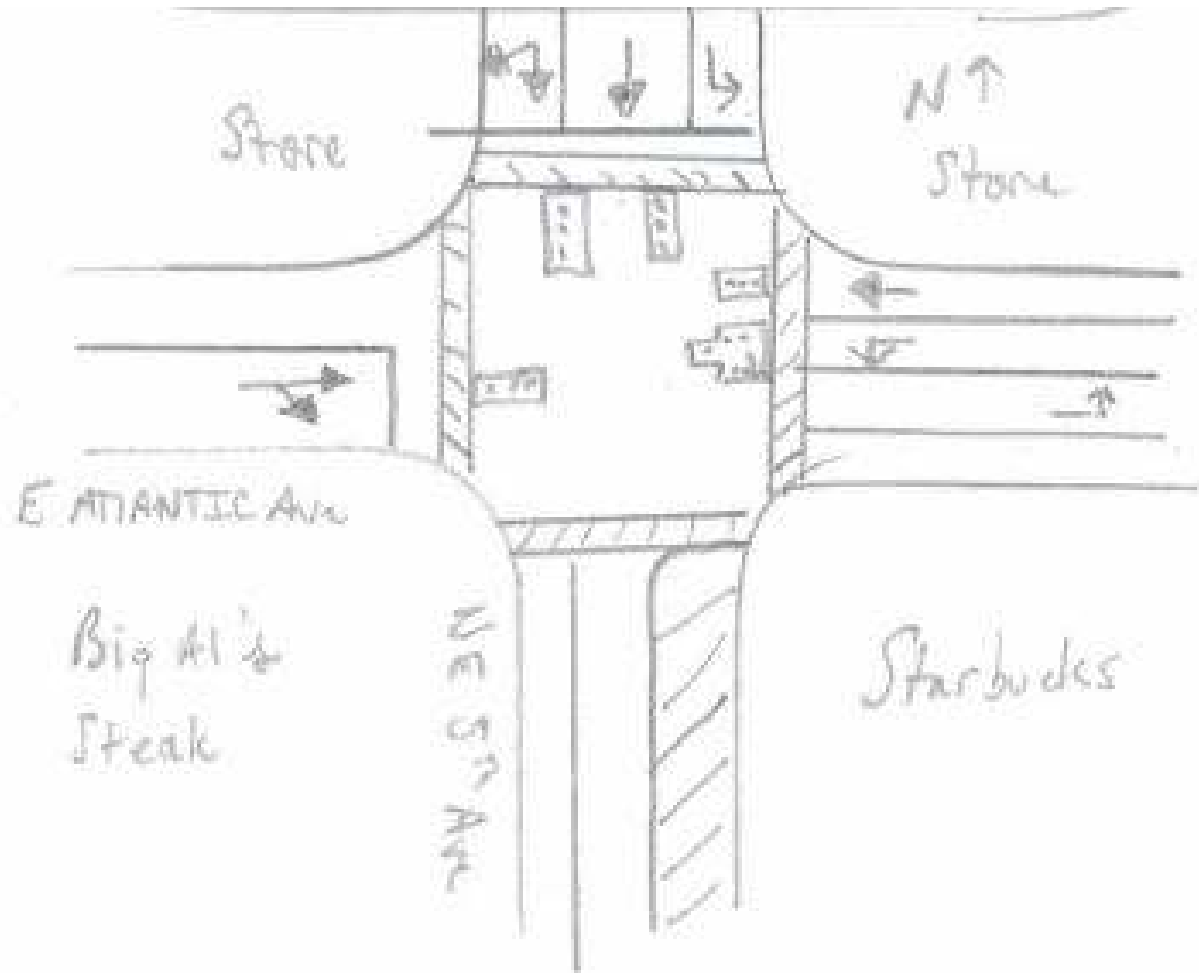
SIGNAL TIMING

PHASES	1	2	3
ST	58	56	57
ET/WT	43	42	39



N/S Street: **SE 5th Ave**

Speed: **35**



E/W Street: **E Atlantic Ave**

Speed: **25**

Project ID: 16-3083-001
 Location: SE 5th St & E Atlantic Ave
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	SE 5th St Northbound					SE 5th St Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	0	0	0	1	0	7	115	6	2	128	0	42	10	1	52	10	30	0	0	40	220
7:15 AM	0	0	0	5	0	10	139	14	0	163	0	43	5	1	48	12	27	0	1	39	250
7:30 AM	0	0	0	3	0	15	211	13	3	239	0	62	14	1	76	11	42	0	3	53	368
7:45 AM	0	0	0	4	0	14	235	14	1	263	0	77	12	3	89	18	44	0	1	62	414
Total	0	0	0	13	0	46	700	47	6	793	0	224	41	6	265	51	143	0	5	194	1252
8:00 AM	0	0	0	5	0	19	252	15	0	286	0	51	16	0	67	13	54	0	4	67	420
8:15 AM	0	0	0	3	0	7	288	12	4	307	0	54	18	0	72	17	38	0	6	55	434
8:30 AM	0	0	0	2	0	11	257	7	3	275	0	61	18	0	79	16	50	0	3	66	420
8:45 AM	0	0	0	5	0	23	231	13	5	267	0	62	15	2	77	17	59	0	4	76	420
Total	0	0	0	15	0	60	1028	47	12	1135	0	228	67	2	295	63	201	0	17	264	1694
BREAK																					
4:00 PM	0	0	0	49	0	27	208	22	38	257	0	60	15	11	75	20	79	0	18	99	431
4:15 PM	0	0	0	67	0	21	175	20	45	216	0	62	14	14	76	30	73	0	13	103	395
4:30 PM	0	0	0	62	0	34	175	26	34	235	0	63	14	13	77	21	81	0	9	102	414
4:45 PM	0	0	0	50	0	27	197	19	43	243	0	65	17	17	82	23	78	0	16	101	426
Total	0	0	0	228	0	109	755	87	160	951	0	250	60	55	310	94	311	0	56	405	1666
5:00 PM	0	0	0	45	0	38	221	14	32	273	0	57	12	42	69	28	74	0	12	102	444
5:15 PM	0	0	0	51	0	33	159	23	61	215	0	60	10	18	70	23	72	0	9	95	380
5:30 PM	0	0	0	63	0	30	177	17	33	224	0	60	12	18	72	22	72	0	11	94	390
5:45 PM	0	0	0	55	0	25	155	23	25	203	0	52	9	23	61	23	75	0	2	98	362
Total	0	0	0	214	0	126	712	77	151	915	0	229	43	101	272	96	293	0	34	389	1576
Grand Total	0	0	0	470	0	341	3195	258	329	3794	0	931	211	164	1142	304	948	0	112	1252	6188
Apprch %	0.0	0.0	0.0	0.0	0.0	9.0	84.2	6.8	8.7		0.0	81.5	18.5	14.4		24.3	75.7	0.0	8.9		
Total %	0.0	0.0	0.0	7.6	0.0	5.5	51.6	4.2	5.3	61.3	0.0	15.0	3.4	2.7	18.5	4.9	15.3	0.0	1.8	20.2	
Cars, PU, Vans	0	0	0	470	0	340	3186	258	329	3784	0	930	211	164	1141	300	947	0	112	1247	6172
% Cars, PU, Vans	0.0	0.0	0.0	100.0	0.0	99.7	99.7	100.0	100.0	99.7	0.0	99.9	100.0	100.0	99.9	98.7	99.9	0.0	100.0	99.6	99.7
Heavy Trucks	0	0	0	0	0	1	9	0	0	10	0	1	0	0	1	4	1	0	0	5	16
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.3	0.3	0.0	0.0	0.3	0.0	0.1	0.0	0.0	0.1	1.3	0.1	0.0	0.0	0.4	0.3

Project ID: 16-3083-001
 Location: SE 5th St & E Atlantic Ave
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	SE 5th St Northbound				SE 5th St Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	0	0	0	0	19	252	15	286	0	51	16	67	13	54	0	67	420
8:15 AM	0	0	0	0	7	288	12	307	0	54	18	72	17	38	0	55	434
8:30 AM	0	0	0	0	11	257	7	275	0	61	18	79	16	50	0	66	420
8:45 AM	0	0	0	0	23	231	13	267	0	62	15	77	17	59	0	76	420
Total Volume	0	0	0	0	60	1028	47	1135	0	228	67	295	63	201	0	264	1694
% App. Total	0.0	0.0	0.0	0	5.3	90.6	4.1	100	0.0	77.3	22.7	100	23.9	76.1	0.0	100	
PHF	0.000				0.924				0.934				0.868				0.976
Cars, PU, Vans	0	0	0	0	59	1022	47	1128	0	227	67	294	62	200	0	262	1684
% Cars, PU, Vans	0.0	0.0	0.0	0.0	98.3	99.4	100.0	99.4	0.0	99.6	100.0	99.7	98.4	99.5	0.0	99.2	99.4
Heavy Trucks	0	0	0	0	1	6	0	7	0	1	0	1	1	1	0	2	10
%Heavy Trucks	0.0	0.0	0.0	0.0	1.7	0.6	0.0	0.6	0.0	0.4	0.0	0.3	1.6	0.5	0.0	0.8	0.6

PM

Start Time	SE 5th St Northbound				SE 5th St Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
4:15 PM	0	0	0	0	21	175	20	216	0	62	14	76	30	73	0	103	395
4:30 PM	0	0	0	0	34	175	26	235	0	63	14	77	21	81	0	102	414
4:45 PM	0	0	0	0	27	197	19	243	0	65	17	82	23	78	0	101	426
5:00 PM	0	0	0	0	38	221	14	273	0	57	12	69	28	74	0	102	444
Total Volume	0	0	0	0	120	768	79	967	0	247	57	304	102	306	0	408	1679
% App. Total	0.0	0.0	0.0	0	12.4	79.4	8.2	100	0.0	81.3	18.8	100	25.0	75.0	0.0	100	
PHF	0.000				0.886				0.927				0.990				0.945
Cars, PU, Vans	0	0	0	0	120	768	79	967	0	247	57	304	102	306	0	408	1679
% Cars, PU, Vans	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-001
 N/S Street: SE 5th St
 E/W Street: E Atlantic Ave
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	0	1	0	0	1	0
7:15 AM	0	0	4	1	1	0	1	0
7:30 AM	2	1	1	2	2	1	1	0
7:45 AM	1	0	3	1	0	1	2	1
8:00 AM	0	0	3	2	2	2	0	0
8:15 AM	1	3	2	1	4	2	0	0
8:30 AM	2	1	2	0	1	2	0	0
8:45 AM	3	2	2	3	2	2	2	0
TOTALS	10	8	17	11	12	10	7	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	1	1	0	1	0
7:15 AM	0	0	0	0	0	1	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	0	0	0	0	1	0	1	0
TOTALS	0	0	0	1	1	1	0	1	2	0	2	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	21	17	20	29	10	8	8	3
4:15 PM	23	22	35	32	6	7	7	7
4:30 PM	9	25	32	30	7	2	8	5
4:45 PM	13	30	22	28	10	6	6	11
5:00 PM	22	10	23	22	7	5	20	22
5:15 PM	32	29	22	29	5	4	8	10
5:30 PM	21	12	30	33	7	4	4	14
5:45 PM	7	18	24	31	0	2	8	15
TOTALS	148	163	208	234	52	38	69	87

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	4	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	1	6	1	0	0	0	0	0	1	0
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:15 PM	0	0	0	0	0	0	1	1	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	1	6	3	0	1	7	0	0	3	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	6	6	9	6	9	8	2	0
4:15 PM	67	87	112	112	30	20	41	45

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	1	0	0	0	0	1	0	1	0
4:15 PM	0	0	1	6	2	0	0	1	0	0	1	0

AM
PM



National Data & Surveying Services



N/S Street: **N Federal Hwy**

Speed: **25**

Site Code: **16-3083-002**

Date: **1/6/2016**

Weather: **Rain**

City: **Delray Beach**

County: **Palm Beach**

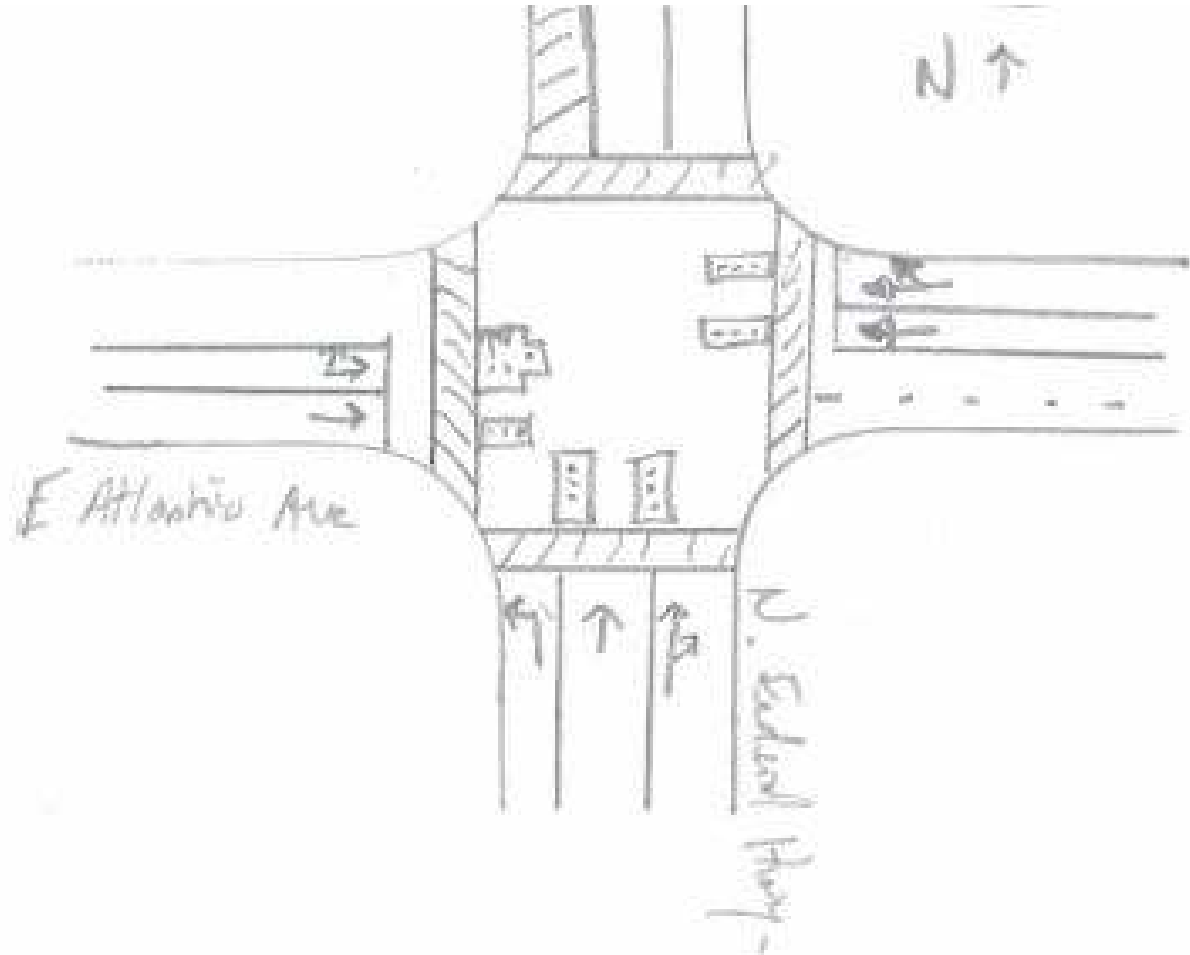
Count Times: **07:00 – 09:00**

16:00 – 18:00

Control: **Signalized**

SIGNAL TIMING

PHASES	1	2	3
NT	43	46	45
ET/WT	38	36	34
EL/ET	11	13	14



E/W Street: **E Atlantic Ave**

Speed: **25**

Project ID: 16-3083-002
 Location: S Federal Hwy & E Atlantic Ave
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	S Federal Hwy Northbound					S Federal Hwy Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	7	47	3	1	57	0	0	0	1	0	19	32	0	0	51	0	34	10	0	44	152
7:15 AM	9	75	4	1	88	0	0	0	0	0	12	39	0	0	51	0	29	5	0	34	173
7:30 AM	8	96	7	1	111	0	0	0	0	0	20	56	0	0	76	0	45	14	0	59	246
7:45 AM	14	104	8	0	126	0	0	0	0	0	21	71	0	0	92	0	48	8	0	56	274
Total	38	322	22	3	382	0	0	0	1	0	72	198	0	0	270	0	156	37	0	193	845
8:00 AM	12	102	11	1	125	0	0	0	0	0	18	47	0	2	65	0	55	12	0	67	257
8:15 AM	15	119	15	3	149	0	0	0	4	0	19	44	0	0	63	0	39	11	2	50	262
8:30 AM	24	133	8	4	165	0	0	0	2	0	15	57	0	0	72	0	44	12	0	56	293
8:45 AM	26	157	23	4	206	0	0	0	3	0	16	71	0	0	87	0	46	21	1	67	360
Total	77	511	57	12	645	0	0	0	9	0	68	219	0	2	287	0	184	56	3	240	1172

BREAK

4:00 PM	23	200	19	44	242	0	0	0	27	0	17	71	0	21	88	0	75	43	5	118	448
4:15 PM	36	207	22	46	265	0	0	0	16	0	17	63	0	18	80	0	65	35	6	100	445
4:30 PM	24	234	19	38	277	0	0	0	13	0	25	73	0	11	98	0	84	15	6	99	474
4:45 PM	19	231	22	14	272	0	0	0	33	0	15	74	0	9	89	0	79	33	3	112	473
Total	102	872	82	142	1056	0	0	0	89	0	74	281	0	59	355	0	303	126	20	429	1840
5:00 PM	31	232	18	25	281	0	0	0	23	0	20	77	0	14	97	0	71	53	0	124	502
5:15 PM	15	268	25	38	308	0	0	0	25	0	14	77	0	9	91	0	80	31	5	111	510
5:30 PM	26	279	14	28	319	0	0	0	14	0	24	71	0	19	95	0	73	26	10	99	513
5:45 PM	20	257	24	53	301	0	0	0	22	0	14	62	0	14	76	0	74	35	6	109	486
Total	92	1036	81	144	1209	0	0	0	84	0	72	287	0	56	359	0	298	145	21	443	2011
Grand Total	309	2741	242	301	3292	0	0	0	183	0	286	985	0	117	1271	0	941	364	44	1305	5868
Apprch %	9.4	83.3	7.4	9.1		0.0	0.0	0.0	0.0		22.5	77.5	0.0	9.2		0.0	72.1	27.9	3.4		
Total %	5.3	46.7	4.1	5.1	56.1	0.0	0.0	0.0	3.1	0.0	4.9	16.8	0.0	2.0	21.7	0.0	16.0	6.2	0.7	22.2	
Cars, PU, Vans	309	2731	236	301	3276	0	0	0	183	0	285	984	0	117	1269	0	936	361	44	1297	5842
% Cars, PU, Vans	100.0	99.6	97.5	100.0	99.5	0.0	0.0	0.0	100.0	0.0	99.7	99.9	0.0	100.0	99.8	0.0	99.5	99.2	100.0	99.4	99.6
Heavy Trucks	0	10	6		16	0	0	0			1	1	0		2	0	5	3		8	26
%Heavy Trucks	0.0	0.4	2.5	0.0	0.5	0.0	0.0	0.0	0.0	0.0	0.3	0.1	0.0	0.0	0.2	0.0	0.5	0.8	0.0	0.6	0.4

Project ID: 16-3083-002
 Location: S Federal Hwy & E Atlantic
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	S Federal Hwy Northbound				S Federal Hwy Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	12	102	11	125	0	0	0	0	18	47	0	65	0	55	12	67	257
8:15 AM	15	119	15	149	0	0	0	0	19	44	0	63	0	39	11	50	262
8:30 AM	24	133	8	165	0	0	0	0	15	57	0	72	0	44	12	56	293
8:45 AM	26	157	23	206	0	0	0	0	16	71	0	87	0	46	21	67	360
Total Volume	77	511	57	645	0	0	0	0	68	219	0	287	0	184	56	240	1172
% App. Total	11.9	79.2	8.8	100	0.0	0.0	0.0	0	23.7	76.3	0.0	100	0.0	76.7	23.3	100	
PHF	0.783				0.000				0.825				0.896				0.814
Cars, PU, Vans	77	506	54	637	0	0	0	0	67	218	0	285	0	182	55	237	1159
% Cars, PU, Vans	100.0	99.0	94.7	98.8	0.0	0.0	0.0	0.0	98.5	99.5	0.0	99.3	0.0	98.9	98.2	98.8	98.9
Heavy Trucks	0	5	3	8	0	0	0	0	1	1	0	2	0	2	1	3	13
%Heavy Trucks	0.0	1.0	5.3	1.2	0.0	0.0	0.0	0.0	1.5	0.5	0.0	0.7	0.0	1.1	1.8	1.3	1.1

PM

Start Time	S Federal Hwy Northbound				S Federal Hwy Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 05:00 PM																	
5:00 PM	31	232	18	281	0	0	0	0	20	77	0	97	0	71	53	124	502
5:15 PM	15	268	25	308	0	0	0	0	14	77	0	91	0	80	31	111	510
5:30 PM	26	279	14	319	0	0	0	0	24	71	0	95	0	73	26	99	513
5:45 PM	20	257	24	301	0	0	0	0	14	62	0	76	0	74	35	109	486
Total Volume	92	1036	81	1209	0	0	0	0	72	287	0	359	0	298	145	443	2011
% App. Total	7.6	85.7	6.7	100	0.0	0.0	0.0	0	20.1	79.9	0.0	100	0.0	67.3	32.7	100	
PHF	0.947				0.000				0.925				0.893				0.980
Cars, PU, Vans	92	1036	80	1208	0	0	0	0	72	287	0	359	0	296	145	441	2008
% Cars, PU, Vans	100.0	100.0	98.8	99.9	0.0	0.0	0.0	0.0	100.0	100.0	0.0	100.0	0.0	99.3	100.0	99.5	99.9
Heavy Trucks	0	0	1	1	0	0	0	0	0	0	0	0	0	2	0	2	3
%Heavy Trucks	0.0	0.0	1.2	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.7	0.0	0.5	0.1

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-002
 N/S Street: S Federal Hwy
 E/W Street: E Atlantic Ave
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	1	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	1	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	1	1
8:15 AM	0	4	1	2	2	0	0	0
8:30 AM	1	1	2	2	0	0	0	0
8:45 AM	3	0	3	1	1	0	0	0
TOTALS	4	6	9	6	3	0	1	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0
TOTALS	0	1	1	0	0	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	14	13	18	26	4	1	11	10
4:15 PM	4	12	20	26	0	6	9	9
4:30 PM	7	6	15	23	1	5	6	5
4:45 PM	4	29	7	7	2	1	6	3
5:00 PM	17	6	12	13	0	0	11	3
5:15 PM	11	14	22	16	2	3	2	7
5:30 PM	10	4	14	14	4	6	6	13
5:45 PM	4	18	25	28	3	3	12	2
TOTALS	71	102	133	153	16	25	63	52

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	1	0	0	0	4	0	0	1	0
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	1	0	1	0	0	0	0	0	0	0
4:45 PM	0	1	1	1	0	0	0	0	0	0	1	0
5:00 PM	0	2	0	1	0	0	0	1	0	0	0	1
5:15 PM	0	0	0	2	0	0	0	1	0	0	1	0
5:30 PM	0	0	0	0	1	0	0	2	0	0	0	0
5:45 PM	0	0	0	0	0	2	0	0	0	0	1	0
TOTALS	0	6	2	5	2	2	0	8	0	0	4	1

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	4	5	7	5	3	0	1	1
5:00 PM	42	42	73	71	9	12	31	25

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	1	0	0	0	0	0	0	0	0	0
5:00 PM	0	2	0	3	1	2	0	4	0	0	2	1

AM
PM



National Data & Surveying Services

Site Code: **16-3083-003**

Date: **1/6/2016**

Weather: **Rain**

City: **Delray Beach**

County: **Palm Beach**

Count Times: **07:00 – 09:00**

16:00 – 18:00

Control: **Signalized**

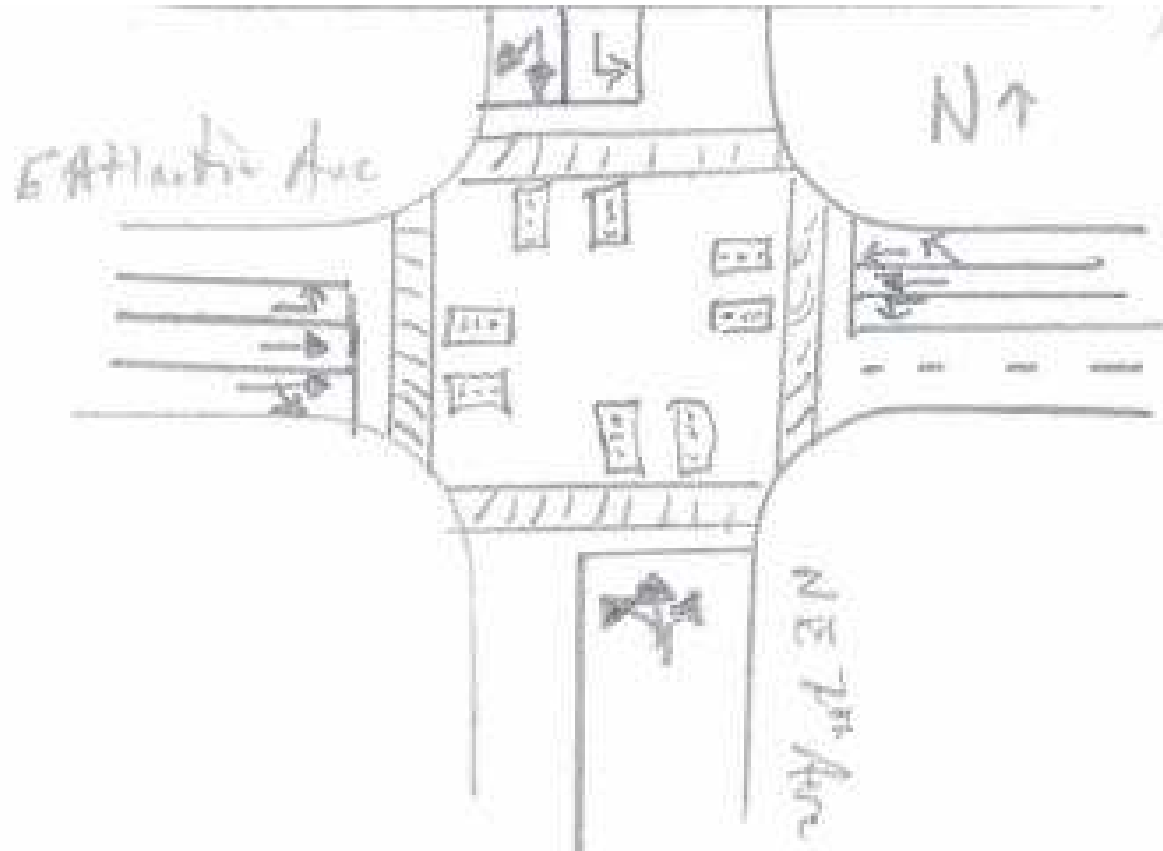
SIGNAL TIMING

PHASES	1	2	3
NT/ST	58	1:00	58
ET/WT	27	28	32



N/S Street: **NE 7th Ave**

Speed: **25**



E/W Street: **E Atlantic Ave**

Speed: **25**

Project ID: 16-3083-003
 Location: NE 7th Ave & E Atlantic Ave
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NE 7th Ave Northbound					NE 7th Ave Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	1	1	0	0	2	5	2	7	1	14	1	35	0	0	36	4	36	5	0	45	97
7:15 AM	0	1	0	3	1	7	2	6	0	15	1	40	0	0	41	1	29	3	0	33	90
7:30 AM	1	1	3	2	5	6	2	7	0	15	8	57	1	0	66	0	55	8	0	63	149
7:45 AM	1	3	3	0	7	11	8	11	0	30	4	72	2	0	78	2	40	5	1	47	162
Total	3	6	6	5	15	29	14	31	1	74	14	204	3	0	221	7	160	21	1	188	498
8:00 AM	1	1	9	0	11	8	10	9	0	27	5	49	3	0	57	3	57	3	0	63	158
8:15 AM	1	6	2	2	9	13	4	9	2	26	9	47	3	0	59	1	46	10	0	57	151
8:30 AM	2	1	4	2	7	21	10	6	3	37	5	52	7	0	64	2	49	4	0	55	163
8:45 AM	2	6	10	4	18	20	9	5	5	34	7	84	4	1	95	3	64	8	0	75	222
Total	6	14	25	8	45	62	33	29	10	124	26	232	17	1	275	9	216	25	0	250	694
BREAK																					
4:00 PM	3	3	9	37	15	15	7	9	28	31	1	86	4	11	91	9	108	18	2	135	272
4:15 PM	5	5	9	34	19	13	6	3	22	22	4	74	7	2	85	3	88	13	1	104	230
4:30 PM	1	5	10	37	16	25	8	9	17	42	5	83	7	0	95	4	100	14	0	118	271
4:45 PM	2	12	10	18	24	15	9	12	27	36	7	85	5	4	97	7	88	13	6	108	265
Total	11	25	38	126	74	68	30	33	94	131	17	328	23	17	368	23	384	58	9	465	1038
5:00 PM	0	8	8	23	16	17	6	9	24	32	4	85	7	2	96	10	115	18	5	143	287
5:15 PM	1	14	8	34	23	18	13	10	15	41	3	85	10	0	98	5	98	13	4	116	278
5:30 PM	3	9	8	27	20	12	9	5	23	26	5	78	4	2	87	4	96	6	2	106	239
5:45 PM	2	15	10	31	27	6	8	8	23	22	1	75	9	2	85	6	96	12	6	114	248
Total	6	46	34	115	86	53	36	32	85	121	13	323	30	6	366	25	405	49	17	479	1052
Grand Total	26	91	103	254	220	212	113	125	190	450	70	1087	73	24	1230	64	1165	153	27	1382	3282
Apprch %	11.8	41.4	46.8	115.5		47.1	25.1	27.8	42.2		5.7	88.4	5.9	2.0		4.6	84.3	11.1	2.0		
Total %	0.8	2.8	3.1	7.7	6.7	6.5	3.4	3.8	5.8	13.7	2.1	33.1	2.2	0.7	37.5	2.0	35.5	4.7	0.8	42.1	
Cars, PU, Vans	24	91	102	254	217	210	113	125	190	448	70	1080	73	24	1223	64	1158	152	27	1374	3262
% Cars, PU, Vans	92.3	100.0	99.0	100.0	98.6	99.1	100.0	100.0	100.0	99.6	100.0	99.4	100.0	100.0	99.4	100.0	99.4	99.3	100.0	99.4	99.4
Heavy Trucks	2	0	1		3	2	0	0		2	0	7	0		7	0	7	1		8	20
% Heavy Trucks	7.7	0.0	1.0	0.0	1.4	0.9	0.0	0.0	0.0	0.4	0.0	0.6	0.0	0.0	0.6	0.0	0.6	0.7	0.0	0.6	0.6

Project ID: 16-3083-003
 Location: NE 7th Ave & E Atlantic Ave
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	NE 7th Ave Northbound				NE 7th Ave Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	1	1	9	11	8	10	9	27	5	49	3	57	3	57	3	63	158
8:15 AM	1	6	2	9	13	4	9	26	9	47	3	59	1	46	10	57	151
8:30 AM	2	1	4	7	21	10	6	37	5	52	7	64	2	49	4	55	163
8:45 AM	2	6	10	18	20	9	5	34	7	84	4	95	3	64	8	75	222
Total Volume	6	14	25	45	62	33	29	124	26	232	17	275	9	216	25	250	694
% App. Total	13.3	31.1	55.6	100	50.0	26.6	23.4	100	9.5	84.4	6.2	100	3.6	86.4	10.0	100	
PHF	0.623				0.838				0.724				0.833				0.782
Cars, PU, Vans	5	14	24	43	60	33	29	122	26	228	17	271	9	213	25	247	683
% Cars, PU, Vans	83.3	100.0	96.0	95.6	96.8	100.0	100.0	98.4	100.0	98.3	100.0	98.5	100.0	98.6	100.0	98.8	98.4
Heavy Trucks	1	0	1	2	2	0	0	2	0	4	0	4	0	3	0	3	11
% Heavy Trucks	16.7	0.0	4.0	4.4	3.2	0.0	0.0	1.6	0.0	1.7	0.0	1.5	0.0	1.4	0.0	1.2	1.6

PM

Start Time	NE 7th Ave Northbound				NE 7th Ave Southbound				E Atlantic Ave Eastbound				E Atlantic Ave Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
4:30 PM	1	5	10	16	25	8	9	42	5	83	7	95	4	100	14	118	271
4:45 PM	2	12	10	24	15	9	12	36	7	85	5	97	7	88	13	108	265
5:00 PM	0	8	8	16	17	6	9	32	4	85	7	96	10	115	18	143	287
5:15 PM	1	14	8	23	18	13	10	41	3	85	10	98	5	98	13	116	278
Total Volume	4	39	36	79	75	36	40	151	19	338	29	386	26	401	58	485	1101
% App. Total	5.1	49.4	45.6	100	49.7	23.8	26.5	100	4.9	87.6	7.5	100	5.4	82.7	12.0	100	
PHF	0.823				0.899				0.985				0.848				0.959
Cars, PU, Vans	4	39	36	79	75	36	40	151	19	337	29	385	26	400	57	483	1098
% Cars, PU, Vans	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	99.7	100.0	99.7	100.0	99.8	98.3	99.6	99.7
Heavy Trucks	0	0	0	0	0	0	0	0	0	1	0	1	0	1	1	2	3
% Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3	0.0	0.3	0.0	0.2	1.7	0.4	0.3

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-003
 N/S Street: NE 7th Ave
 E/W Street: E Atlantic Ave
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	0	0	3	0	0	0	0	0
7:30 AM	0	0	1	1	0	0	0	0
7:45 AM	0	0	0	0	0	1	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	2	1	1	0	0	0	0
8:30 AM	2	1	1	1	0	0	0	0
8:45 AM	4	1	3	1	0	0	0	1
TOTALS	6	5	9	4	0	1	0	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	0	0	0	0	1	0	0	2	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	10	18	17	20	2	0	4	7
4:15 PM	6	16	13	21	1	0	2	0
4:30 PM	7	10	18	19	0	0	0	0
4:45 PM	4	23	10	8	5	1	2	2
5:00 PM	13	11	9	14	0	5	0	2
5:15 PM	7	8	16	18	4	0	0	0
5:30 PM	11	12	11	16	1	1	0	2
5:45 PM	4	19	18	13	4	2	0	2
TOTALS	62	117	112	129	17	9	8	15

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	5	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	1	2	0	0	1	0	0	0	0
4:45 PM	0	0	1	0	1	0	0	1	0	0	0	0
5:00 PM	0	0	1	0	0	0	0	1	0	0	0	0
5:15 PM	0	1	0	0	1	0	0	3	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	2	2	1	4	0	0	11	0	0	3	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	6	4	5	3	0	0	0	1
4:30 PM	31	52	53	59	9	6	2	4

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	1	0	0	1	0	0	0	0
4:30 PM	0	1	2	1	4	0	0	6	0	0	1	0

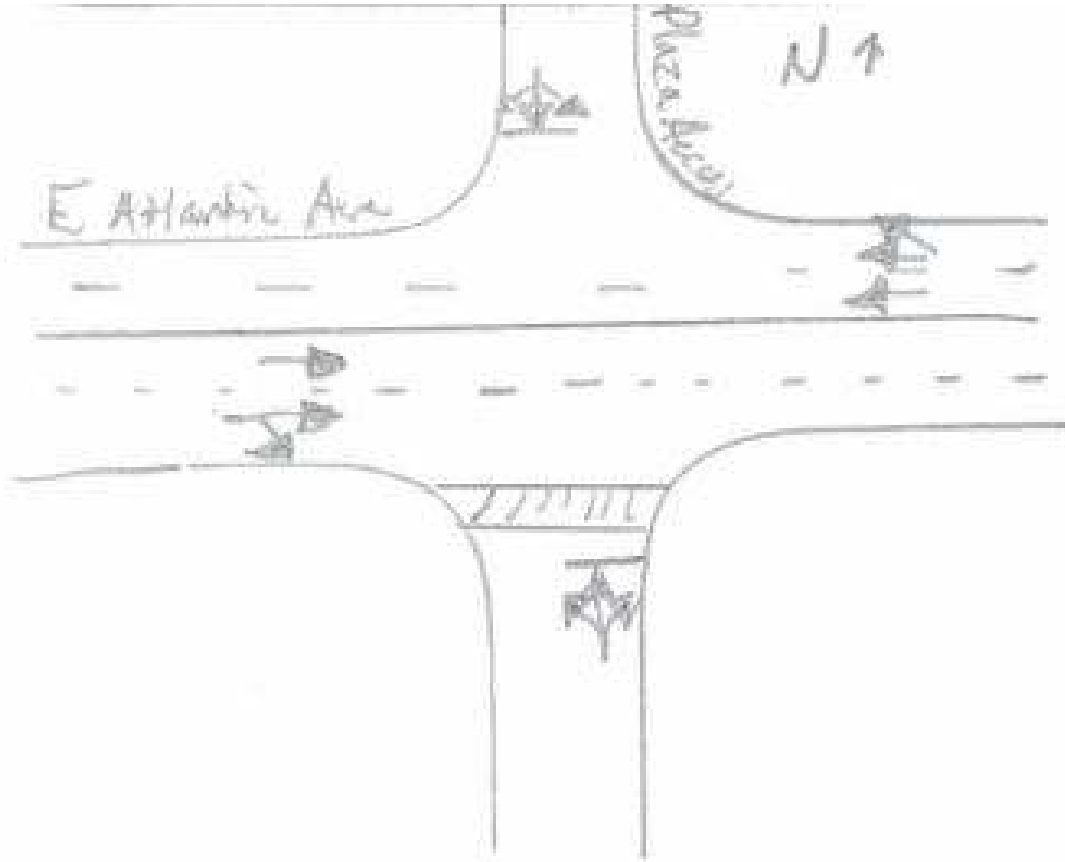
AM
PM



N/S Street: **Atlantic Plaza Access #1**

Speed: **25**

Site Code: **16-3083-004**
Date: **1/6/2016**
Weather: **Rain**
City: **Delray Beach**
County: **Palm Beach**
Count Times: **07:00 – 09:00**
16:00 – 18:00
Control: **1-Way Stop (NB)**



E/W Street: **E Atlantic Ave**

Speed: **25**

Project ID: 16-3083-004
 Location: Atlantic Plaza Access Point #1 & E Atlantic Ave
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	Atlantic Plaza Access Point #1 Northbound					Atlantic Plaza Access Point #1 Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	0	0	1	1	1	0	0	0	1	0	1	39	0	0	40	1	43	0	0	44	85
7:15 AM	2	0	4	2	6	0	0	1	0	1	1	41	2	0	44	2	31	2	0	35	86
7:30 AM	0	0	5	2	5	0	0	0	0	0	2	59	5	0	66	3	63	1	0	67	138
7:45 AM	0	0	2	0	2	0	0	0	1	0	1	84	4	0	89	12	47	0	0	59	150
Total	2	0	12	5	14	0	0	1	2	1	5	223	11	0	239	18	184	3	0	205	459
8:00 AM	0	0	2	0	2	0	0	0	0	0	2	58	8	0	68	1	63	3	0	67	137
8:15 AM	5	0	4	0	9	0	0	0	1	0	0	57	5	0	62	3	52	2	0	57	128
8:30 AM	2	0	4	2	6	1	0	1	1	2	1	66	8	0	75	4	52	2	0	58	141
8:45 AM	4	0	7	8	11	1	0	0	3	1	5	105	4	0	114	3	68	3	0	74	200
Total	11	0	17	10	28	2	0	1	5	3	8	286	25	0	319	11	235	10	0	256	606

BREAK

4:00 PM	6	1	12	44	19	1	0	4	26	5	9	93	7	2	109	5	124	3	0	132	265
4:15 PM	2	0	9	34	11	3	0	6	17	9	2	85	9	1	96	4	94	4	2	102	218
4:30 PM	5	0	7	37	12	3	0	9	13	12	1	110	6	1	117	5	106	2	2	113	254
4:45 PM	3	0	12	13	15	2	0	3	26	5	4	100	4	0	108	2	101	3	2	106	234
Total	16	1	40	128	57	9	0	22	82	31	16	388	26	4	430	16	425	12	6	453	971
5:00 PM	4	1	13	16	18	1	0	6	25	7	4	105	2	1	111	13	133	3	3	149	285
5:15 PM	5	1	7	30	13	1	0	6	9	7	3	104	2	2	109	4	104	4	2	112	241
5:30 PM	0	1	7	32	8	0	0	2	22	2	1	96	4	0	101	4	102	3	0	109	220
5:45 PM	7	0	6	35	13	4	0	7	16	11	2	82	2	0	86	4	99	3	0	106	216
Total	16	3	33	113	52	6	0	21	72	27	10	387	10	3	407	25	438	13	5	476	962
Grand Total	45	4	102	256	151	17	0	45	161	62	39	1284	72	7	1395	70	1282	38	11	1390	2998
Apprch %	29.8	2.6	67.5	169.5		27.4	0.0	72.6	259.7		2.8	92.0	5.2	0.5		5.0	92.2	2.7	0.8		
Total %	1.5	0.1	3.4	8.5	5.0	0.6	0.0	1.5	5.4	2.1	1.3	42.8	2.4	0.2	46.5	2.3	42.8	1.3	0.4	46.4	
Cars, PU, Vans	44	4	101	256	149	17	0	45	161	62	39	1277	69	7	1385	69	1275	38	11	1382	2978
% Cars, PU, Vans	97.8	100.0	99.0	100.0	98.7	100.0	0.0	100.0	100.0	100.0	100.0	99.5	95.8	100.0	99.3	98.6	99.5	100.0	100.0	99.4	99.3
Heavy Trucks	1	0	1		2	0	0	0		0	0	7	3		10	1	7	0		8	20
%Heavy Trucks	2.2	0.0	1.0	0.0	1.3	0.0	0.0	0.0	0.0	0.0	0.0	0.5	4.2	0.0	0.7	1.4	0.5	0.0	0.0	0.6	0.7

Project ID: 16-3083-004
 Location: Atlantic Plaza Access Point
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	Atlantic Plaza Access Point #1 Northbound					Atlantic Plaza Access Point #1 Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
8:00 AM	0	0	2	2		0	0	0	0		2	58	8	68		1	63	3	67	137	
8:15 AM	5	0	4	9		0	0	0	0		0	57	5	62		3	52	2	57	128	
8:30 AM	2	0	4	6		1	0	1	2		1	66	8	75		4	52	2	58	141	
8:45 AM	4	0	7	11		1	0	0	1		5	105	4	114		3	68	3	74	200	
Total Volume	11	0	17	28		2	0	1	3		8	286	25	319		11	235	10	256	606	
% App. Total	39.3	0.0	60.7	100		66.7	0.0	33.3	100		2.5	89.7	7.8	100		4.3	91.8	3.9	100		
PHF	0.636					0.375					0.700					0.865					0.758
Cars, PU, Vans	11	0	16	27		2	0	1	3		8	280	24	312		10	232	10	252	594	
% Cars, PU, Vans	100.0	0.0	94.1	96.4		100.0	0.0	100.0	100.0		100.0	97.9	96.0	97.8		90.9	98.7	100.0	98.4	98.0	
Heavy Trucks	0	0	1	1		0	0	0	0		0	6	1	7		1	3	0	4	12	
%Heavy Trucks	0.0	0.0	5.9	3.6		0.0	0.0	0.0	0.0		0.0	2.1	4.0	2.2		9.1	1.3	0.0	1.6	2.0	

PM

Start Time	Atlantic Plaza Access Point #1 Northbound					Atlantic Plaza Access Point #1 Southbound					E Atlantic Ave Eastbound					E Atlantic Ave Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																					
Peak Hour for Entire Intersection Begins at 04:30 PM																					
4:30 PM	5	0	7	12		3	0	9	12		1	110	6	117		5	106	2	113	254	
4:45 PM	3	0	12	15		2	0	3	5		4	100	4	108		2	101	3	106	234	
5:00 PM	4	1	13	18		1	0	6	7		4	105	2	111		13	133	3	149	285	
5:15 PM	5	1	7	13		1	0	6	7		3	104	2	109		4	104	4	112	241	
Total Volume	17	2	39	58		7	0	24	31		12	419	14	445		24	444	12	480	1014	
% App. Total	29.3	3.4	67.2	100		22.6	0.0	77.4	100		2.7	94.2	3.1	100		5.0	92.5	2.5	100		
PHF	0.806					0.646					0.951					0.805					0.889
Cars, PU, Vans	16	2	39	57		7	0	24	31		12	419	13	444		24	443	12	479	1011	
% Cars, PU, Vans	94.1	100.0	100.0	98.3		100.0	0.0	100.0	100.0		100.0	100.0	92.9	99.8		100.0	99.8	100.0	99.8	99.7	
Heavy Trucks	1	0	0	1		0	0	0	0		0	0	1	1		0	1	0	1	3	
%Heavy Trucks	5.9	0.0	0.0	1.7		0.0	0.0	0.0	0.0		0.0	0.0	7.1	0.2		0.0	0.2	0.0	0.2	0.3	

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-004
 N/S Street: Atlantic Plaza Access Point #1
 E/W Street: E Atlantic Ave
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	1	0	0	0	0	0
7:15 AM	0	0	2	0	0	0	0	0
7:30 AM	0	0	1	1	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0
8:30 AM	0	1	1	1	0	0	0	0
8:45 AM	2	1	6	2	0	0	0	0
TOTALS	3	4	11	4	0	0	0	0

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	1	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	2	0	0	0	0
TOTALS	0	0	0	0	0	0	0	3	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	13	13	27	17	0	0	0	2
4:15 PM	5	12	16	18	2	0	1	0
4:30 PM	6	7	18	19	0	2	1	0
4:45 PM	9	17	5	8	0	2	0	0
5:00 PM	10	15	9	7	3	0	1	0
5:15 PM	5	4	11	19	1	1	0	2
5:30 PM	12	10	13	19	0	0	0	0
5:45 PM	4	12	15	20	0	0	0	0
TOTALS	64	90	114	127	6	5	3	4

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	4	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0	0	1	0	0
4:30 PM	0	0	0	0	0	0	0	2	0	1	0	0
4:45 PM	0	0	0	0	0	0	0	2	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	1	0	1	0	0
5:15 PM	0	0	0	0	0	0	0	3	0	0	1	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	12	0	3	3	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	2	3	7	3	0	0	0	0
4:30 PM	30	43	43	53	4	5	2	2

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	0	0	0	2	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	8	0	2	1	0

AM
PM



National Data & Surveying Services

Site Code: **16-3083-005**

Date: **1/6/2016**

Weather: **Rain**

City: **Delray Beach**

County: **Palm Beach**

Count Times: **07:00 – 09:00**

16:00 – 18:00

Control: **Signalized**

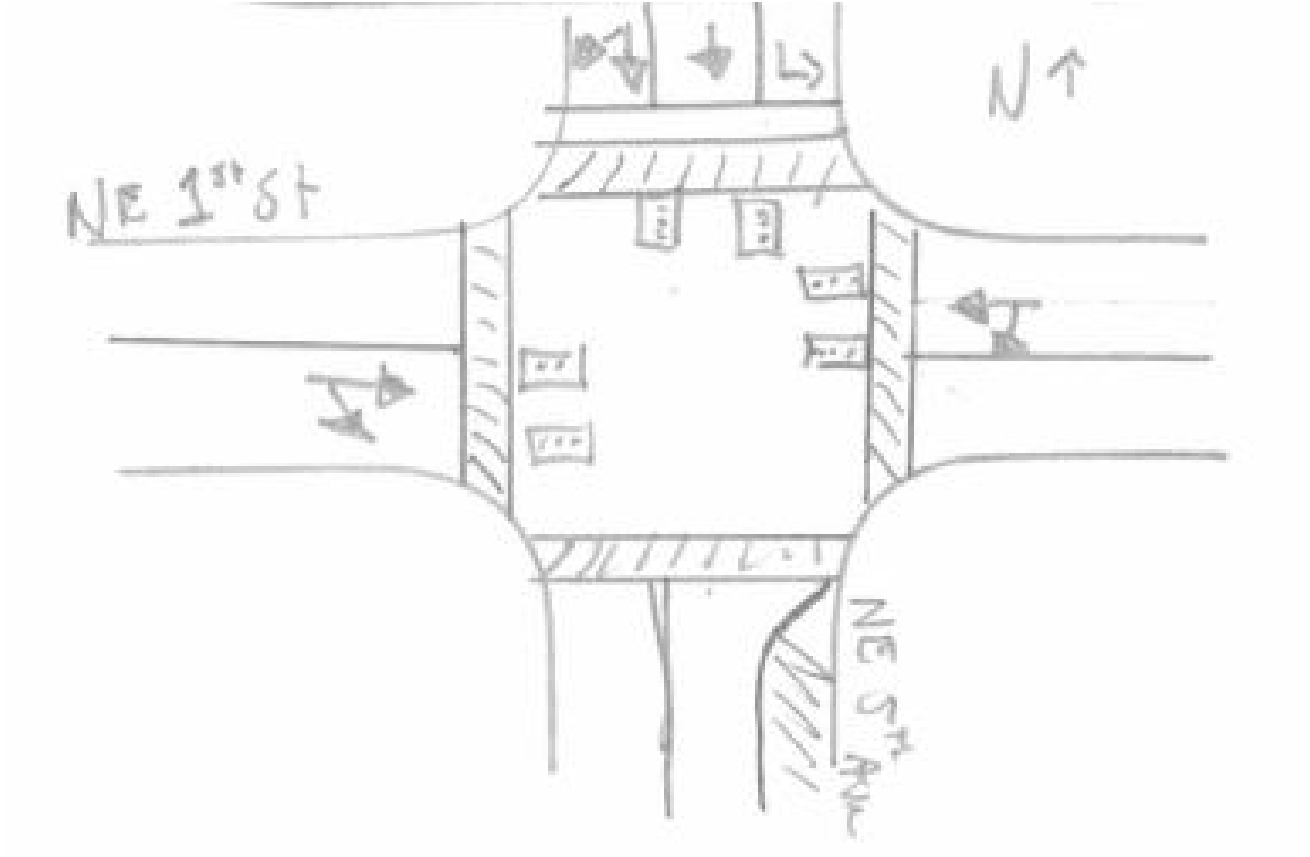
SIGNAL TIMING

PHASES	1	2	3
ST	1:13	1:13	1:14
ET/WT	26	24	25



N/S Street: **NE 5th Ave**

Speed: **25**



E/W Street: **NE 1st St**

Speed: **25**

Project ID: 16-3083-005
 Location: NE 5th Ave & NE 1st St
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NE 5th Ave Northbound					NE 5th Ave Southbound					NE 1st St Eastbound					NE 1st St Westbound					Int. Total					
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total						
7:00 AM	0	0	0	0	0	1	126	7	1	134	0	3	0	0	3	0	7	0	0	7	0	0	0	0	0	144
7:15 AM	0	0	0	0	0	3	159	12	0	174	0	4	5	0	9	0	6	0	0	6	0	0	0	0	0	189
7:30 AM	0	0	0	0	0	2	229	11	0	242	0	5	4	0	9	2	4	0	1	6	0	0	0	0	0	257
7:45 AM	0	0	0	0	0	2	257	9	0	268	0	6	10	2	16	1	8	0	0	9	0	0	0	0	0	293
Total	0	0	0	0	0	8	771	39	1	818	0	18	19	2	37	3	25	0	1	28	0	0	0	0	0	883
8:00 AM	0	0	0	0	0	4	276	12	0	292	0	3	9	0	12	4	7	0	1	11	0	0	0	0	0	315
8:15 AM	0	0	0	0	0	2	306	10	0	318	0	8	8	0	16	4	13	0	3	17	0	0	0	0	0	351
8:30 AM	0	0	0	0	0	12	271	20	1	303	0	8	11	0	19	4	13	0	0	17	0	0	0	0	0	339
8:45 AM	0	0	0	0	0	6	245	11	0	262	0	7	11	0	18	5	23	0	2	28	0	0	0	0	0	308
Total	0	0	0	0	0	24	1098	53	1	1175	0	26	39	0	65	17	56	0	6	73	0	0	0	0	0	1313

BREAK

4:00 PM	0	0	0	0	0	7	229	25	2	261	0	10	9	0	19	8	27	0	1	35	0	0	0	0	0	315
4:15 PM	0	0	0	1	0	4	208	17	1	229	0	21	6	3	27	5	26	0	6	31	0	0	0	0	0	287
4:30 PM	0	0	0	2	0	7	216	18	0	241	0	16	11	2	27	4	24	0	0	28	0	0	0	0	0	296
4:45 PM	0	0	0	1	0	9	230	8	1	247	0	23	13	2	36	8	14	0	3	22	0	0	0	0	0	305
Total	0	0	0	4	0	27	883	68	4	978	0	70	39	7	109	25	91	0	10	116	0	0	0	0	0	1203
5:00 PM	0	0	0	2	0	9	236	18	2	263	0	16	19	6	35	9	26	0	5	35	0	0	0	0	0	333
5:15 PM	0	0	0	2	0	7	206	14	0	227	0	20	11	3	31	3	23	0	2	26	0	0	0	0	0	284
5:30 PM	0	0	0	2	0	7	208	12	1	227	0	14	9	1	23	4	22	0	2	26	0	0	0	0	0	276
5:45 PM	0	0	0	4	0	2	190	15	1	207	0	17	13	3	30	3	37	0	5	40	0	0	0	0	0	277
Total	0	0	0	10	0	25	840	59	4	924	0	67	52	13	119	19	108	0	14	127	0	0	0	0	0	1170
Grand Total	0	0	0	14	0	84	3592	219	10	3895	0	181	149	22	330	64	280	0	31	344	0	0	0	0	0	4569
Apprch %	0.0	0.0	0.0	0.0	0.0	2.2	92.2	5.6	0.3		0.0	54.8	45.2	6.7		18.6	81.4	0.0	9.0		0.0	0.0	0.0	0.0	0.0	
Total %	0.0	0.0	0.0	0.3	0.0	1.8	78.6	4.8	0.2	85.2	0.0	4.0	3.3	0.5	7.2	1.4	6.1	0.0	0.7	7.5	0.0	0.0	0.0	0.0	0.0	
Cars, PU, Vans	0	0	0	14	0	83	3585	219	10	3887	0	181	147	22	328	63	277	0	31	340	0	0	0	0	0	4555
% Cars, PU, Vans	0.0	0.0	0.0	100.0	0.0	98.8	99.8	100.0	100.0	99.8	0.0	100.0	98.7	100.0	99.4	98.4	98.9	0.0	100.0	98.8	0.0	0.0	0.0	0.0	0.0	99.7
Heavy Trucks	0	0	0	0	0	1	7	0	0	8	0	0	2	0	2	1	3	0	0	4	0	0	0	0	0	14
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	1.2	0.2	0.0	0.0	0.2	0.0	0.0	1.3	0.0	0.6	1.6	1.1	0.0	0.0	1.2	0.0	0.0	0.0	0.0	0.0	0.3

Project ID: 16-3083-005
 Location: NE 5th Ave & NE 1st St
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	NE 5th Ave Northbound				NE 5th Ave Southbound				NE 1st St Eastbound				NE 1st St Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	0	0	0	0	4	276	12	292	0	3	9	12	4	7	0	11	315
8:15 AM	0	0	0	0	2	306	10	318	0	8	8	16	4	13	0	17	351
8:30 AM	0	0	0	0	12	271	20	303	0	8	11	19	4	13	0	17	339
8:45 AM	0	0	0	0	6	245	11	262	0	7	11	18	5	23	0	28	308
Total Volume	0	0	0	0	24	1098	53	1175	0	26	39	65	17	56	0	73	1313
% App. Total	0.0	0.0	0.0	0	2.0	93.4	4.5	100	0.0	40.0	60.0	100	23.3	76.7	0.0	100	
PHF	0.000				0.924				0.855				0.652				0.935
Cars, PU, Vans	0	0	0	0	23	1093	53	1169	0	26	38	64	16	55	0	71	1304
% Cars, PU, Vans	0.0	0.0	0.0	0.0	95.8	99.5	100.0	99.5	0.0	100.0	97.4	98.5	94.1	98.2	0.0	97.3	99.3
Heavy Trucks	0	0	0	0	1	5	0	6	0	0	1	1	1	1	0	2	9
%Heavy Trucks	0.0	0.0	0.0	0.0	4.2	0.5	0.0	0.5	0.0	0.0	2.6	1.5	5.9	1.8	0.0	2.7	0.7

PM

Start Time	NE 5th Ave Northbound				NE 5th Ave Southbound				NE 1st St Eastbound				NE 1st St Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:15 PM																	
4:15 PM	0	0	0	0	4	208	17	229	0	21	6	27	5	26	0	31	287
4:30 PM	0	0	0	0	7	216	18	241	0	16	11	27	4	24	0	28	296
4:45 PM	0	0	0	0	9	230	8	247	0	23	13	36	8	14	0	22	305
5:00 PM	0	0	0	0	9	236	18	263	0	16	19	35	9	26	0	35	333
Total Volume	0	0	0	0	29	890	61	980	0	76	49	125	26	90	0	116	1221
% App. Total	0.0	0.0	0.0	0	3.0	90.8	6.2	100	0.0	60.8	39.2	100	22.4	77.6	0.0	100	
PHF	0.000				0.932				0.868				0.829				0.917
Cars, PU, Vans	0	0	0	0	29	890	61	980	0	76	49	125	26	89	0	115	1220
% Cars, PU, Vans	0.0	0.0	0.0	0.0	100.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	100.0	98.9	0.0	99.1	99.9
Heavy Trucks	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	1
%Heavy Trucks	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.0	0.9	0.1

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-005
 N/S Street: NE 5th Ave
 E/W Street: NE 1st St
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	1	0	0
7:45 AM	0	0	0	0	0	0	2	0
8:00 AM	0	0	0	0	0	1	0	0
8:15 AM	0	0	0	0	2	1	0	0
8:30 AM	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	1	0	0
TOTALS	0	2	0	0	3	4	2	0

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	0	0	0	0	3	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	1	1	0	0	1	0	0	0
4:15 PM	1	0	0	1	4	2	3	0
4:30 PM	0	0	1	1	0	0	1	1
4:45 PM	1	0	1	0	0	3	1	1
5:00 PM	0	2	0	2	3	2	4	2
5:15 PM	0	0	1	1	1	1	0	3
5:30 PM	1	0	1	1	1	1	1	0
5:45 PM	0	1	2	2	1	4	0	3
TOTALS	4	4	6	8	11	13	10	10

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	1	1	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0
TOTALS	0	1	0	0	3	0	0	2	1	0	1	1

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	0	1	0	0	3	3	0	0
4:15 PM	2	2	2	4	7	7	9	4

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	2	0	0	1	1	0	0	1

AM
PM



National Data & Surveying Services



N/S Street: **N Federal Hwy**

Speed: **25**

Site Code: **16-3083-006**

Date: **1/6/2016**

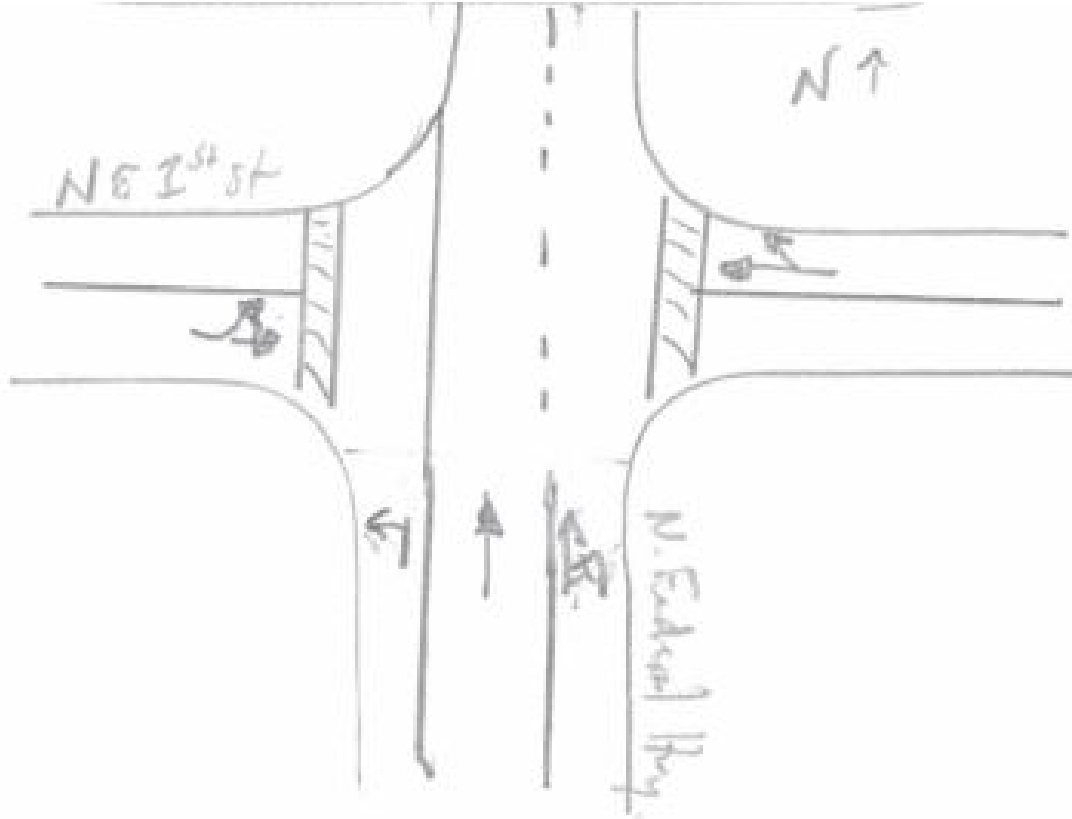
Weather: **Rain**

City: **Delray Beach**

County: **Palm Beach**

Count Times: **07:00 – 09:00**
16:00 – 18:00

Control: **2-Way Stop (EB/WB)**



E/W Street: **NE 1st St**

Speed: **25**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-006
 N/S Street: N Federal Hwy
 E/W Street: NE 1st St
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	1	0	0	0	0	0
7:45 AM	0	0	0	1	0	0	1	0
8:00 AM	0	0	0	0	0	0	1	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	1
TOTALS	0	2	1	1	0	0	2	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	1	0	0	1	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	3	0	0	2
4:15 PM	0	1	1	2	1	2	4	0
4:30 PM	0	0	0	0	0	2	0	0
4:45 PM	1	0	2	0	0	1	2	0
5:00 PM	0	0	0	0	2	2	5	1
5:15 PM	0	1	0	0	0	1	4	2
5:30 PM	4	1	1	0	1	5	1	0
5:45 PM	0	0	1	0	0	2	4	0
TOTALS	5	3	5	2	7	15	20	5

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	3	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	1	0	0	1	0	0	0	0
4:45 PM	1	0	0	0	0	0	1	0	1	0	0	0
5:00 PM	0	3	0	0	1	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	1	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	1	0	0	2	0
TOTALS	1	6	0	0	3	0	1	2	1	0	3	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	0	1	0	0	0	0	1	1
5:00 PM	4	2	2	0	3	10	14	3

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	3	0	0	2	0	0	1	0	0	3	0

AM
PM



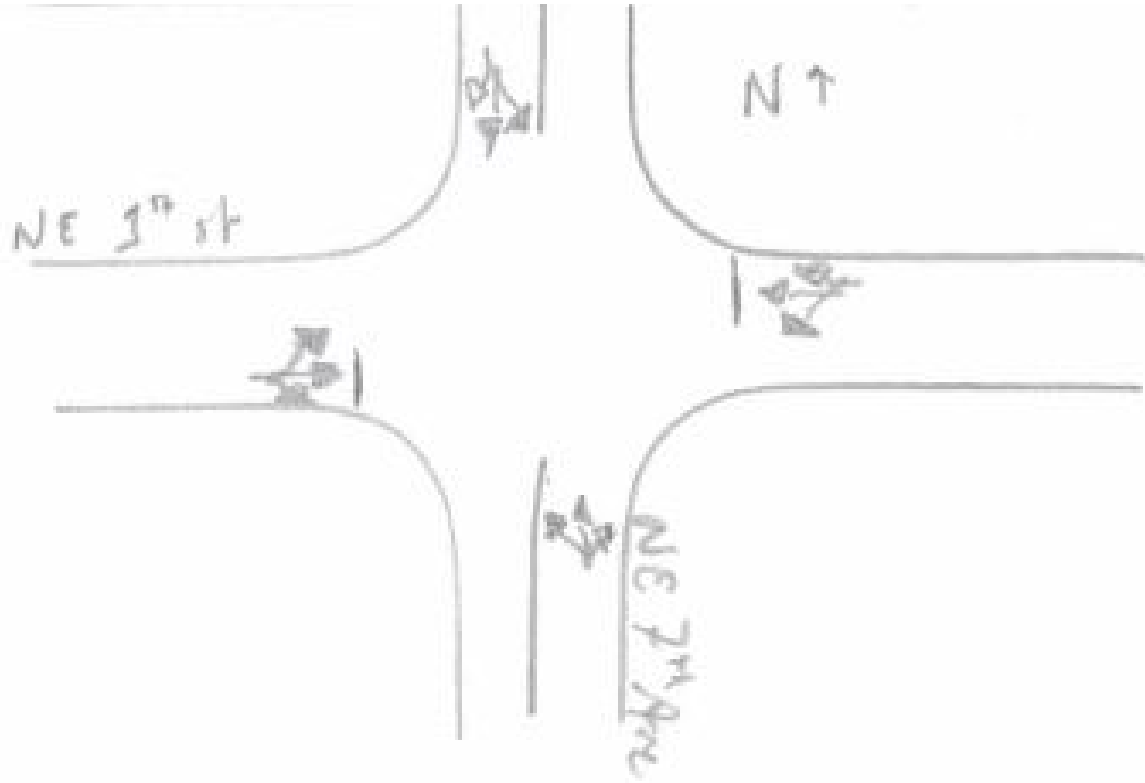
National Data & Surveying Services

Site Code: **16-3083-007**
 Date: **1/6/2016**
 Weather: **Rain**
 City: **Delray Beach**
 County: **Palm Beach**
 Count Times: **07:00 – 09:00**
16:00 – 18:00
 Control: **2-Way Stop (EB/WB)**



N/S Street: **NE 7th Ave**

Speed: **25**



E/W Street: **NE 1st St**

Speed: **25**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-007
 N/S Street: NE 7th Ave
 E/W Street: NE 1st St
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	1	0	1	0
8:00 AM	0	1	0	0	1	0	0	1
8:15 AM	1	1	0	0	1	0	0	1
8:30 AM	0	1	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0
TOTALS	1	3	0	0	4	1	1	2

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0	0	0	0	0
TOTALS	0	0	0	0	2	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	2	7	0	0
4:15 PM	0	0	1	2	3	1	0	0
4:30 PM	0	0	2	0	2	2	0	3
4:45 PM	0	0	2	0	0	0	0	0
5:00 PM	0	0	0	0	2	2	0	0
5:15 PM	0	0	0	0	8	3	0	0
5:30 PM	0	0	0	0	0	0	1	2
5:45 PM	0	0	0	0	1	2	0	0
TOTALS	0	0	5	2	18	17	1	5

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	1	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	2	0	0	0	1	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	2	0	0	0	0	0	0
TOTALS	2	1	0	0	3	2	0	0	1	0	1	1

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	1	3	0	0	3	0	0	2
4:30 PM	0	0	4	0	12	7	0	3

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	2	0	0	0	0	0	0	0
4:30 PM	1	1	0	0	3	0	0	0	1	0	0	0

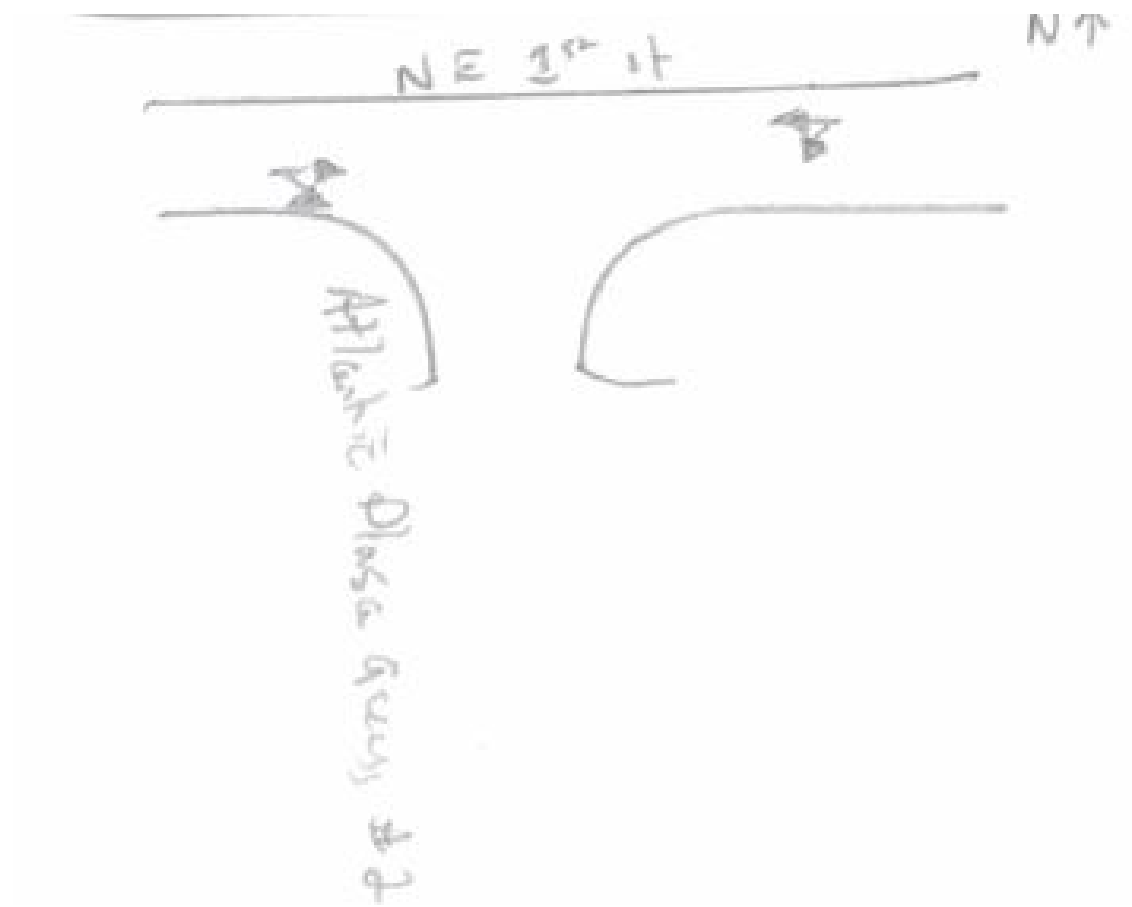
AM
PM



N/S Street: **Atlantic Plaza Access #2**

Speed: **N/A**

Site Code: **16-3083-008**
Date: **1/6/2016**
Weather: **Rain**
City: **Delray Beach**
County: **Palm Beach**
Count Times: **07:00 – 09:00**
16:00 – 18:00
Control: **1-Way Stop (NB)**



E/W Street: **NE 1st St**

Speed: **25**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-008
 N/S Street: Atlantic Plaza access point #2
 E/W Street: NE 1st St
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	1	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	0	0	0	2	0	0	0	0

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	1	0	0	0	0
4:15 PM	0	0	2	0	1	0	0	1
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0
5:00 PM	0	0	0	2	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	2	0	0	2	0
5:45 PM	0	0	2	0	1	0	0	2
TOTALS	0	0	5	5	2	0	2	3

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0
TOTALS	0	0	0	0	0	0	0	1	0	0	5	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	0	0	0	2	0	0	0	0
4:00 PM	0	0	3	1	1	0	0	1

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0	0	0	3	0

AM
PM

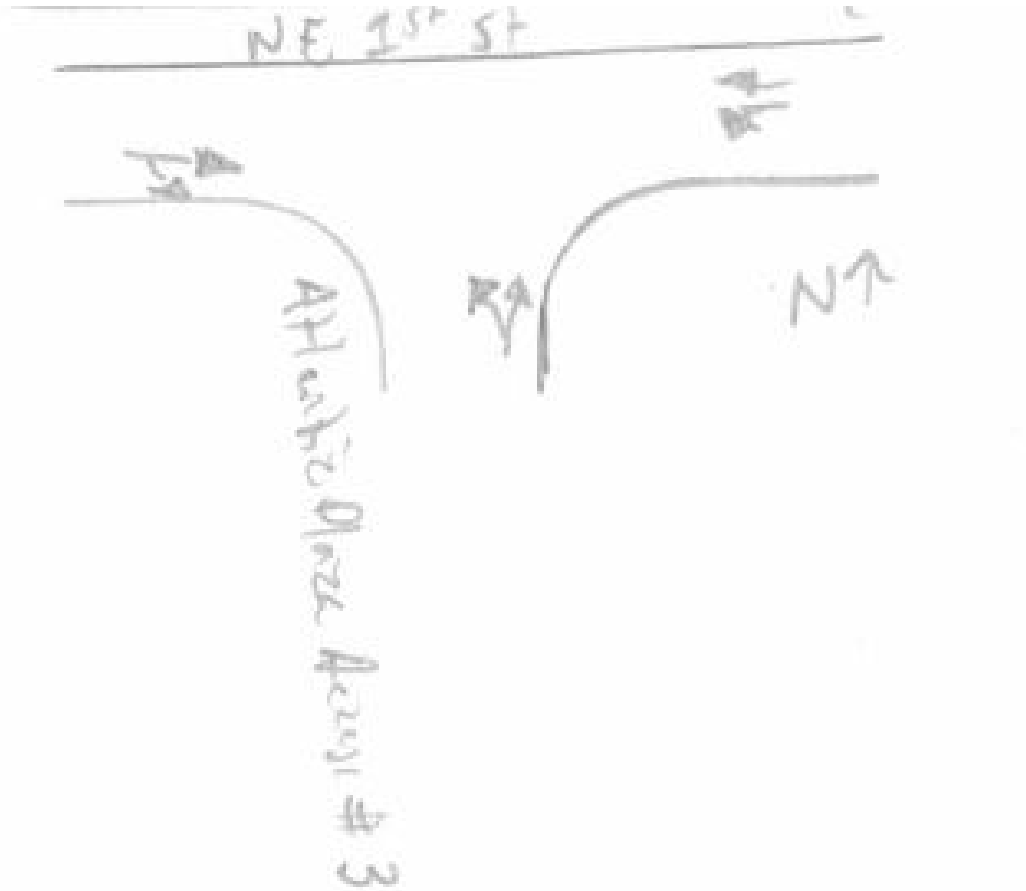


N↑

N/S Street: **Atlantic Plaza Access #3**

Speed: **N/A**

Site Code: **16-3083-009**
Date: **1/6/2016**
Weather: **Rain**
City: **Delray Beach**
County: **Palm Beach**
Count Times: **07:00 – 09:00**
16:00 – 18:00
Control: **1-Way Stop (NB)**



E/W Street: **NE 1st St**

Speed: **25**

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-009
 N/S Street: Atlantic Plaza access point #3
 E/W Street: NE 1st St
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
TOTALS	0	0	0	1	0	0	0	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	0	0	0	0	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	2	0	0	3	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	1	0
5:45 PM	0	0	0	0	0	0	0	1
TOTALS	0	0	0	2	0	0	4	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	0	0	0	0	0	0	0	0	0	2	0
4:15 PM	1	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	2	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	1	0	0	0
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0
TOTALS	2	0	2	0	0	0	0	0	1	0	2	0

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	2	0	0	4	1

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	1	0	0	0	0	0	0	0	1	0	0	0

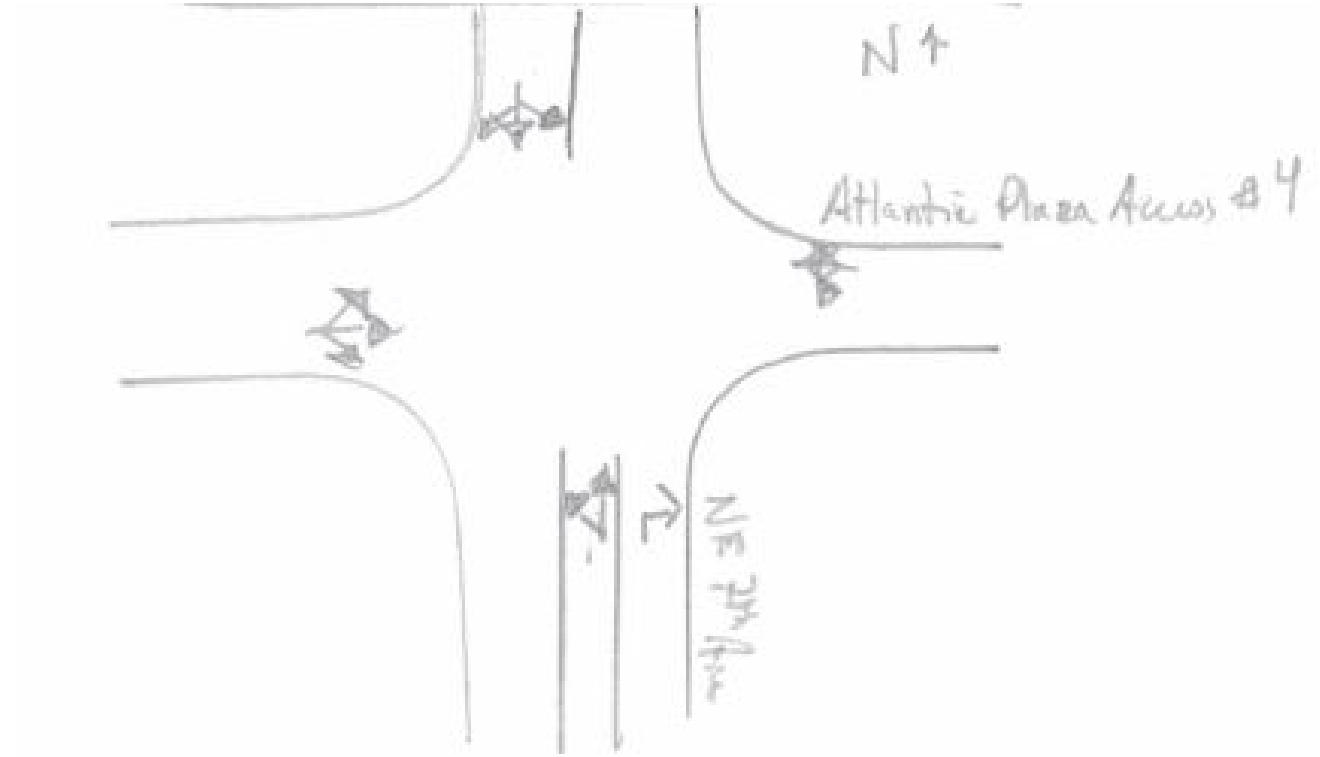
AM
PM



N/S Street: **NE 7th Ave**

Speed: **25**

Site Code: **16-3083-010**
Date: **1/6/2016**
Weather: **Rain**
City: **Delray Beach**
County: **Palm Beach**
Count Times: **07:00 – 09:00**
16:00 – 18:00
Control: **1-Way Stop (WB)**



E/W Street: **Atlantic Plaza Access #4**

Speed: **N/A**

Project ID: 16-3083-010
 Location: NE 7th Ave & Atlantic Plaza Access #4
 City: Delray Beach

Day: Wednesday
 Date: 1/6/2016

Groups Printed - Cars, PU, Vans - Heavy Trucks

Start Time	NE 7th Ave Northbound					NE 7th Ave Southbound					Atlantic Plaza Access #4 Eastbound					Atlantic Plaza Access #4 Westbound					Int. Total
	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	Left	Thru	Rgt	Peds	App. Total	
7:00 AM	0	7	1	0	8	0	12	0	0	12	0	0	0	0	0	1	0	0	1	1	21
7:15 AM	0	5	0	0	5	2	17	0	0	19	0	0	0	0	0	0	0	0	0	0	24
7:30 AM	0	9	8	0	17	0	13	0	0	13	0	0	0	0	0	0	0	0	0	0	30
7:45 AM	0	9	3	0	12	1	31	0	1	32	0	0	0	0	0	0	0	0	2	0	44
Total	0	30	12	0	42	3	73	0	1	76	0	0	0	0	0	1	0	0	3	1	119
8:00 AM	0	6	3	0	9	6	26	0	0	32	0	0	0	0	0	0	0	0	0	0	41
8:15 AM	1	15	8	0	24	6	24	0	0	30	0	0	0	1	0	0	0	3	0	3	57
8:30 AM	0	3	8	0	11	6	36	1	0	43	1	0	0	0	1	0	0	1	0	1	56
8:45 AM	0	12	10	0	22	9	33	1	0	43	0	0	0	0	0	1	0	0	1	1	66
Total	1	36	29	0	66	27	119	2	0	148	1	0	0	1	1	1	0	4	1	5	220
BREAK																					
4:00 PM	0	23	1	0	24	2	24	0	0	26	0	0	0	0	0	6	0	7	8	13	63
4:15 PM	0	19	3	0	22	2	21	0	0	23	0	0	0	0	0	2	0	8	5	10	55
4:30 PM	1	19	3	0	23	3	34	0	0	37	0	0	0	2	0	8	0	6	5	14	74
4:45 PM	1	27	5	0	33	3	30	0	0	33	0	0	0	0	0	5	0	6	1	11	77
Total	2	88	12	0	102	10	109	0	0	119	0	0	0	2	0	21	0	27	19	48	269
5:00 PM	1	26	2	0	29	3	30	0	1	33	1	0	0	0	1	4	0	5	3	9	72
5:15 PM	0	30	0	0	30	2	30	0	0	32	0	0	0	0	0	8	0	4	11	12	74
5:30 PM	1	15	2	0	18	2	22	0	0	24	1	0	0	2	1	2	0	6	0	8	51
5:45 PM	0	25	3	0	28	2	20	0	1	22	0	0	0	0	0	2	0	8	3	10	60
Total	2	96	7	0	105	9	102	0	2	111	2	0	0	2	2	16	0	23	17	39	257
Grand Total	5	250	60	0	315	49	403	2	3	454	3	0	0	5	3	39	0	54	40	93	865
Apprch %	1.6	79.4	19.0	0.0		10.8	88.8	0.4	0.7		100.0	0.0	0.0	166.7		41.9	0.0	58.1	43.0		
Total %	0.6	28.9	6.9	0.0	36.4	5.7	46.6	0.2	0.3	52.5	0.3	0.0	0.0	0.6	0.3	4.5	0.0	6.2	4.6	10.8	
Cars, PU, Vans	5	249	60	0	314	48	401	2	3	451	3	0	0	5	3	39	0	54	40	93	861
% Cars, PU, Vans	100.0	99.6	100.0	0.0	99.7	98.0	99.5	100.0	100.0	99.3	100.0	0.0	0.0	100.0	100.0	100.0	0.0	100.0	100.0	100.0	99.5
Heavy Trucks	0	1	0	0	1	1	2	0	0	3	0	0	0	0	0	0	0	0	0	0	4
%Heavy Trucks	0.0	0.4	0.0	0.0	0.3	2.0	0.5	0.0	0.0	0.7	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5

Project ID: 16-3083-010
 Location: NE 7th Ave & Atlantic Plaza
 City: Delray Beach

PEAK HOURS

Day: Wednesday
 Date: 1/6/2016

AM

Start Time	NE 7th Ave Northbound				NE 7th Ave Southbound				Atlantic Plaza Access #4 Eastbound				Atlantic Plaza Access #4 Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 07:00 AM to 09:00 AM																	
Peak Hour for Entire Intersection Begins at 08:00 AM																	
8:00 AM	0	6	3	9	6	26	0	32	0	0	0	0	0	0	0	0	41
8:15 AM	1	15	8	24	6	24	0	30	0	0	0	0	0	0	3	3	57
8:30 AM	0	3	8	11	6	36	1	43	1	0	0	1	0	0	1	1	56
8:45 AM	0	12	10	22	9	33	1	43	0	0	0	0	1	0	0	1	66
Total Volume	1	36	29	66	27	119	2	148	1	0	0	1	1	0	4	5	220
% App. Total	1.5	54.5	43.9	100	18.2	80.4	1.4	100	100.0	0.0	0.0	100	20.0	0.0	80.0	100	
PHF	0.688				0.860				0.250				0.417				0.833
Cars, PU, Vans	1	36	29	66	26	117	2	145	1	0	0	1	1	0	4	5	217
% Cars, PU, Vans	100.0	100.0	100.0	100.0	96.3	98.3	100.0	98.0	100.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	98.6
Heavy Trucks	0	0	0	0	1	2	0	3	0	0	0	0	0	0	0	0	3
%Heavy Trucks	0.0	0.0	0.0	0.0	3.7	1.7	0.0	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.4

PM

Start Time	NE 7th Ave Northbound				NE 7th Ave Southbound				Atlantic Plaza Access #4 Eastbound				Atlantic Plaza Access #4 Westbound				Int. Total
	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	Left	Thru	Rgt	App. Total	
Peak Hour Analysis from 04:00 PM to 06:00 PM																	
Peak Hour for Entire Intersection Begins at 04:30 PM																	
4:30 PM	1	19	3	23	3	34	0	37	0	0	0	0	8	0	6	14	74
4:45 PM	1	27	5	33	3	30	0	33	0	0	0	0	5	0	6	11	77
5:00 PM	1	26	2	29	3	30	0	33	1	0	0	1	4	0	5	9	72
5:15 PM	0	30	0	30	2	30	0	32	0	0	0	0	8	0	4	12	74
Total Volume	3	102	10	115	11	124	0	135	1	0	0	1	25	0	21	46	297
% App. Total	2.6	88.7	8.7	100	8.1	91.9	0.0	100	100.0	0.0	0.0	100	54.3	0.0	45.7	100	
PHF	0.871				0.912				0.250				0.821				0.964
Cars, PU, Vans	3	101	10	114	11	124	0	135	1	0	0	1	25	0	21	46	296
% Cars, PU, Vans	100.0	99.0	100.0	99.1	100.0	100.0	0.0	100.0	100.0	0.0	0.0	100.0	100.0	0.0	100.0	100.0	99.7
Heavy Trucks	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1
%Heavy Trucks	0.0	1.0	0.0	0.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.3

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 16-3083-010
 N/S Street: NE 7th Ave
 E/W Street: Atlantic Plaza Access #4
 DATE: 1/6/2016
 CITY: Delray Beach

DAY: Wednesday

A M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	1	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	1	0	0	0	1	1	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	1	0	0	0
TOTALS	1	0	0	0	2	2	0	1

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	1	0	0	0	0	0	0	0	0
TOTALS	0	0	0	1	1	0	0	0	0	0	0	0

P M

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
4:00 PM	0	0	0	0	1	7	0	0
4:15 PM	0	0	0	0	5	0	0	0
4:30 PM	0	0	0	0	1	4	0	2
4:45 PM	0	0	0	0	0	1	0	0
5:00 PM	0	1	0	0	1	2	0	0
5:15 PM	0	0	0	0	8	3	0	0
5:30 PM	0	0	0	0	0	0	1	1
5:45 PM	1	0	0	0	1	2	0	0
TOTALS	1	1	0	0	17	19	1	3

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	3	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	1	0	0	1	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0
TOTALS	0	2	0	0	5	0	0	1	0	0	0	1

PEAK HOURS

PEDESTRIANS

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
8:00 AM	0	0	0	0	1	0	0	1
4:30 PM	0	1	0	0	10	10	0	2

AM
PM

PEAK HOURS

BIKES

T I M E	NB			SB			EB			WB		
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR
8:00 AM	0	0	0	1	1	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	5	0	0	1	0	0	0	1

HCM Signalized Intersection Capacity Analysis

1: SE 5th Ave & NE 1st St

2016 Existing - AM Peak Hour




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔					↔	↔	↔	
Volume (vph)	0	26	39	17	56	0	0	0	0	24	1088	53	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0			5.0					5.0	5.0		
Lane Util. Factor		1.00			1.00					1.00	0.95		
Frb, ped/bikes		1.00			1.00					1.00	1.00		
Flpb, ped/bikes		1.00			1.00					0.98	1.00		
Frt		0.92			1.00					1.00	0.99		
Flt Protected		1.00			0.99					0.95	1.00		
Satd. Flow (prot)		1712			1824					1751	3546		
Flt Permitted		1.00			0.92					0.95	1.00		
Satd. Flow (perm)		1712			1704					1751	3546		
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	
Adj. Flow (vph)	0	28	42	18	60	0	0	0	0	26	1170	57	
RTOR Reduction (vph)	0	36	0	0	0	0	0	0	0	0	2	0	
Lane Group Flow (vph)	0	34	0	0	78	0	0	0	0	26	1225	0	
Confl. Peds. (#/hr)										6			
Confl. Bikes (#/hr)												1	
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	1%	1%	1%	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			8						6		
Permitted Phases				8						6			
Actuated Green, G (s)		15.6			15.6					82.1	82.1		
Effective Green, g (s)		15.6			15.6					82.1	82.1		
Actuated g/C Ratio		0.14			0.14					0.76	0.76		
Clearance Time (s)		5.0			5.0					5.0	5.0		
Vehicle Extension (s)		3.0			3.0					3.0	3.0		
Lane Grp Cap (vph)		247			246					1334	2703		
v/s Ratio Prot		0.02									c0.35		
v/s Ratio Perm					c0.05					0.01			
v/c Ratio		0.14			0.32					0.02	0.45		
Uniform Delay, d1		40.2			41.3					3.1	4.6		
Progression Factor		1.00			1.00					1.00	1.00		
Incremental Delay, d2		0.3			0.7					0.0	0.6		
Delay (s)		40.4			42.0					3.1	5.2		
Level of Service		D			D					A	A		
Approach Delay (s)		40.4			42.0			0.0			5.2		
Approach LOS		D			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			9.0									HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio			0.43										
Actuated Cycle Length (s)			107.7									Sum of lost time (s)	10.0
Intersection Capacity Utilization			56.8%									ICU Level of Service	B
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

2: N FEDERAL HWY & NE 1st St

2016 Existing - AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	18	32	0	0	19	10	54	567	14	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	22	39	0	0	23	12	66	691	17	0	0	0
Pedestrians		2										1
Lane Width (ft)		12.0										0.0
Walking Speed (ft/s)		4.0										4.0
Percent Blockage		0										0
Right turn flare (veh)												
Median type								None				None
Median storage veh												
Upstream signal (ft)								656				
pX, platoon unblocked	0.91	0.91		0.91	0.91	0.91				0.91		
vC, conflicting volume	504	842	2	851	834	355	2			709		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	256	628	2	638	618	92	2			481		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	96	89	100	100	93	99	96			100		
cM capacity (veh/h)	557	347	1079	293	353	864	1624			987		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	61	35	66	461	248							
Volume Left	22	0	66	0	0							
Volume Right	0	12	0	0	17							
cSH	401	444	1624	1700	1700							
Volume to Capacity	0.15	0.08	0.04	0.27	0.15							
Queue Length 95th (ft)	13	6	3	0	0							
Control Delay (s)	15.6	13.8	7.3	0.0	0.0							
Lane LOS	C	B	A									
Approach Delay (s)	15.6	13.8	0.6									
Approach LOS	C	B										
Intersection Summary												
Average Delay			2.2									
Intersection Capacity Utilization			32.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	3.1											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	6	18	22	2	6	1	13	31	0	14	125	10
Conflicting Peds, #/hr	4	0	0	0	0	4	2	0	3	3	0	2
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	7	20	25	2	7	1	15	35	0	16	142	11

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	257	253	155	275	258	42	157	0	0	39	0	0
Stage 1	184	184	-	69	69	-	-	-	-	-	-	-
Stage 2	73	69	-	206	189	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	696	650	891	679	648	1032	1429	-	-	1577	-	-
Stage 1	818	747	-	944	839	-	-	-	-	-	-	-
Stage 2	937	837	-	798	746	-	-	-	-	-	-	-
Platoon blocked, %							-	-	-	-	-	-
Mov Cap-1 Maneuver	674	632	886	629	630	1026	1425	-	-	1573	-	-
Mov Cap-2 Maneuver	674	632	-	629	630	-	-	-	-	-	-	-
Stage 1	806	736	-	931	827	-	-	-	-	-	-	-
Stage 2	916	825	-	744	735	-	-	-	-	-	-	-



















Approach	EB	WB	NB	SB
HCM Control Delay, s	10.2	10.6	2.2	0.7
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1425	-	-	739	658	1573	-	-
HCM Lane V/C Ratio	0.01	-	-	0.071	0.016	0.01	-	-
HCM Control Delay (s)	7.6	0	-	10.2	10.6	7.3	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.2	0	0	-	-

HCM Signalized Intersection Capacity Analysis

4: SE 5th Ave & E Atlantic Ave

2016 Existing - AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	227	67	63	201	0	0	0	0	60	1028	56
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	0.95	
Frbp, ped/bikes		0.99		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					0.97	1.00	
Frt		0.97		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1808		1783	1881					1737	3542	
Flt Permitted		1.00		0.29	1.00					0.95	1.00	
Satd. Flow (perm)		1808		537	1881					1737	3542	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	234	69	65	207	0	0	0	0	62	1060	58
RTOR Reduction (vph)	0	11	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	292	0	65	207	0	0	0	0	62	1115	0
Confl. Peds. (#/hr)			15	15						17		2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		21.9		33.4	33.4					45.3	45.3	
Effective Green, g (s)		21.9		33.4	33.4					45.3	45.3	
Actuated g/C Ratio		0.25		0.38	0.38					0.51	0.51	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		446		293	708					887	1808	
v/s Ratio Prot		c0.16		0.02	c0.11						c0.31	
v/s Ratio Perm				0.07						0.04		
v/c Ratio		0.65		0.22	0.29					0.07	0.62	
Uniform Delay, d1		30.0		19.0	19.4					11.0	15.5	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		3.4		0.4	0.2					0.2	1.6	
Delay (s)		33.4		19.4	19.6					11.2	17.1	
Level of Service		C		B	B					B	B	
Approach Delay (s)		33.4			19.5			0.0			16.8	
Approach LOS		C			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.1		HCM 2000 Level of Service					C		
HCM 2000 Volume to Capacity ratio			0.61									
Actuated Cycle Length (s)			88.7		Sum of lost time (s)				15.0			
Intersection Capacity Utilization			66.0%		ICU Level of Service					C		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: N FEDERAL HWY & E Atlantic Ave

2016 Existing - AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕				
Volume (vph)	68	219	0	0	190	56	74	511	57	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0				
Lane Util. Factor		0.95			0.95		1.00	0.95				
Frbp, ped/bikes		1.00			0.99		1.00	1.00				
Flpb, ped/bikes		1.00			1.00		1.00	1.00				
Frt		1.00			0.97		1.00	0.99				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		3527			3431		1781	3515				
Flt Permitted		0.75			1.00		0.95	1.00				
Satd. Flow (perm)		2676			3431		1781	3515				
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	84	270	0	0	235	69	91	631	70	0	0	0
RTOR Reduction (vph)	0	0	0	0	29	0	0	7	0	0	0	0
Lane Group Flow (vph)	0	354	0	0	275	0	91	694	0	0	0	0
Confl. Peds. (#/hr)	9					9	2		3			
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA		Perm	NA				
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		38.0			20.0		45.0	45.0				
Effective Green, g (s)		38.0			20.0		45.0	45.0				
Actuated g/C Ratio		0.41			0.22		0.48	0.48				
Clearance Time (s)		5.0			5.0		5.0	5.0				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)		1212			737		861	1700				
v/s Ratio Prot		c0.04			c0.08			c0.20				
v/s Ratio Perm		0.08					0.05					
v/c Ratio		0.29			0.37		0.11	0.41				
Uniform Delay, d1		18.5			31.1		13.1	15.4				
Progression Factor		1.00			1.00		1.00	1.00				
Incremental Delay, d2		0.1			0.3		0.2	0.7				
Delay (s)		18.6			31.5		13.3	16.2				
Level of Service		B			C		B	B				
Approach Delay (s)		18.6			31.5			15.8			0.0	
Approach LOS		B			C			B			A	























Intersection Summary			
HCM 2000 Control Delay	19.8	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.39		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: SE 7th Ave & E Atlantic Ave

2016 Existing - AM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 					
Volume (vph)	26	232	17	9	213	25	5	14	25	62	33	28	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00		
Frbp, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99		
Flpb, ped/bikes	0.98	1.00		0.99	1.00			1.00		1.00	1.00		
Frt	1.00	0.99		1.00	0.98			0.92		1.00	0.93		
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00		
Satd. Flow (prot)	1739	3492		1746	3466			1665		1770	1723		
Flt Permitted	0.51	1.00		0.50	1.00			0.98		0.72	1.00		
Satd. Flow (perm)	940	3492		913	3466			1647		1342	1723		
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	
Adj. Flow (vph)	33	297	22	12	273	32	6	18	32	79	42	36	
RTOR Reduction (vph)	0	6	0	0	10	0	0	11	0	0	12	0	
Lane Group Flow (vph)	33	313	0	12	295	0	0	45	0	79	66	0	
Confl. Peds. (#/hr)	10		8	8		10	1					1	
Confl. Bikes (#/hr)									1				
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2			6			
Actuated Green, G (s)	20.0	20.0		20.0	20.0			60.0		60.0	60.0		
Effective Green, g (s)	20.0	20.0		20.0	20.0			60.0		60.0	60.0		
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.67		0.67	0.67		
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0		
Lane Grp Cap (vph)	208	776		202	770			1098		894	1148		
v/s Ratio Prot		c0.09			0.09						0.04		
v/s Ratio Perm	0.04			0.01				0.03		c0.06			
v/c Ratio	0.16	0.40		0.06	0.38			0.04		0.09	0.06		
Uniform Delay, d1	28.2	29.9		27.6	29.8			5.1		5.3	5.2		
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00		
Incremental Delay, d2	0.4	0.3		0.1	0.3			0.1		0.2	0.1		
Delay (s)	28.6	30.2		27.7	30.1			5.2		5.5	5.3		
Level of Service	C	C		C	C			A		A	A		
Approach Delay (s)		30.1			30.0			5.2			5.4		
Approach LOS		C			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			24.1									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.17										
Actuated Cycle Length (s)			90.0									Sum of lost time (s)	10.0
Intersection Capacity Utilization			46.6%									ICU Level of Service	A
Analysis Period (min)			15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

1: SE 5th Ave & NE 1st St

2016 Existing - PM Peak Hour




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↔			↔					↔	↔↔	
Volume (vph)	0	74	49	28	94	0	0	0	0	28	890	61
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0					5.0	5.0	
Lane Util. Factor		1.00			1.00					1.00	0.95	
Frbp, ped/bikes		0.99			1.00					1.00	1.00	
Flpb, ped/bikes		1.00			1.00					0.95	1.00	
Frt		0.95			1.00					1.00	0.99	
Flt Protected		1.00			0.99					0.95	1.00	
Satd. Flow (prot)		1762			1856					1703	3528	
Flt Permitted		1.00			0.91					0.95	1.00	
Satd. Flow (perm)		1762			1701					1703	3528	
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92
Adj. Flow (vph)	0	80	53	30	102	0	0	0	0	30	967	66
RTOR Reduction (vph)	0	23	0	0	0	0	0	0	0	0	4	0
Lane Group Flow (vph)	0	110	0	0	132	0	0	0	0	30	1029	0
Confl. Peds. (#/hr)			6	6						14		10
Confl. Bikes (#/hr)			1									2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		20.0			20.0					77.7	77.7	
Effective Green, g (s)		20.0			20.0					77.7	77.7	
Actuated g/C Ratio		0.19			0.19					0.72	0.72	
Clearance Time (s)		5.0			5.0					5.0	5.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		327			315					1228	2545	
v/s Ratio Prot		0.06									c0.29	
v/s Ratio Perm					c0.08					0.02		
v/c Ratio		0.34			0.42					0.02	0.40	
Uniform Delay, d1		38.1			38.7					4.3	5.9	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		0.6			0.9					0.0	0.5	
Delay (s)		38.7			39.6					4.3	6.4	
Level of Service		D			D					A	A	
Approach Delay (s)		38.7			39.6			0.0			6.3	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			12.9			HCM 2000 Level of Service				B		
HCM 2000 Volume to Capacity ratio			0.41									
Actuated Cycle Length (s)			107.7			Sum of lost time (s)			10.0			
Intersection Capacity Utilization			64.2%			ICU Level of Service				C		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: N FEDERAL HWY & NE 1st St

2016 Existing - PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	63	39	0	0	33	23	89	1145	21	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.82	0.82	0.82
Hourly flow rate (vph)	65	39	0	0	34	24	92	1180	22	0	0	0
Pedestrians		14			13							6
Lane Width (ft)		12.0			12.0							0.0
Walking Speed (ft/s)		4.0			4.0							4.0
Percent Blockage		1			1							0
Right turn flare (veh)												
Median type								None				None
Median storage veh												
Upstream signal (ft)								656				
pX, platoon unblocked	0.77	0.77		0.77	0.77	0.77				0.77		
vC, conflicting volume	834	1413	14	1407	1402	620	14			1215		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	184	936	14	929	922	0	14			679		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	86	79	100	100	82	97	94			100		
cM capacity (veh/h)	458	188	1053	135	192	827	1591			697		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	104	58	92	787	415							
Volume Left	65	0	92	0	0							
Volume Right	0	24	0	0	22							
cSH	298	280	1591	1700	1700							
Volume to Capacity	0.35	0.21	0.06	0.46	0.24							
Queue Length 95th (ft)	38	19	5	0	0							
Control Delay (s)	23.4	21.2	7.4	0.0	0.0							
Lane LOS	C	C	A									
Approach Delay (s)	23.4	21.2	0.5									
Approach LOS	C	C										
Intersection Summary												
Average Delay			3.0									
Intersection Capacity Utilization			51.2%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection												
Int Delay, s/veh	4											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Vol, veh/h	14	8	38	7	23	13	29	94	4	2	87	4
Conflicting Peds, #/hr	0	0	4	4	0	0	3	0	19	19	0	3
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	95	95	95	95	95	95	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	1	1	1	1	1	1	1	1	1
Mvmt Flow	15	8	40	7	24	14	31	99	4	2	92	4

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	287	270	117	292	270	124	100	0	0	107	0	0
Stage 1	102	102	-	166	166	-	-	-	-	-	-	-
Stage 2	185	168	-	126	104	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.11	6.51	6.21	4.11	-	-	4.11	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.11	5.51	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.11	5.51	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.509	4.009	3.309	2.209	-	-	2.209	-	-
Pot Cap-1 Maneuver	665	636	935	662	638	929	1499	-	-	1490	-	-
Stage 1	904	811	-	838	763	-	-	-	-	-	-	-
Stage 2	817	759	-	880	811	-	-	-	-	-	-	-
Platoon blocked, %	-	-	-	-	-	-	-	-	-	-	-	-
Mov Cap-1 Maneuver	612	617	917	604	619	911	1475	-	-	1466	-	-
Mov Cap-2 Maneuver	612	617	-	604	619	-	-	-	-	-	-	-
Stage 1	881	807	-	817	744	-	-	-	-	-	-	-
Stage 2	749	740	-	819	807	-	-	-	-	-	-	-



















Approach	EB	WB	NB	SB
HCM Control Delay, s	10.1	10.7	1.7	0.2
HCM LOS	B	B		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1475	-	-	776	682	1466	-	-
HCM Lane V/C Ratio	0.021	-	-	0.081	0.066	0.001	-	-
HCM Control Delay (s)	7.5	0	-	10.1	10.7	7.5	0	-
HCM Lane LOS	A	A	-	B	B	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.3	0.2	0	-	-

HCM Signalized Intersection Capacity Analysis

4: SE 5th Ave & E Atlantic Ave

2016 Existing - PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	0	253	57	97	198	0	0	0	0	120	768	79
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	0.95	
Frbp, ped/bikes		0.94		1.00	1.00					1.00	0.98	
Flpb, ped/bikes		1.00		0.98	1.00					0.91	1.00	
Frt		0.98		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1725		1745	1881					1634	3438	
Flt Permitted		1.00		0.26	1.00					0.95	1.00	
Satd. Flow (perm)		1725		487	1881					1634	3438	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.94	0.94	0.94
Adj. Flow (vph)	0	269	61	103	211	0	0	0	0	128	817	84
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	321	0	103	211	0	0	0	0	128	895	0
Confl. Peds. (#/hr)			224	224						50		86
Confl. Bikes (#/hr)			1									2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		23.7		35.7	35.7					45.5	45.5	
Effective Green, g (s)		23.7		35.7	35.7					45.5	45.5	
Actuated g/C Ratio		0.26		0.39	0.39					0.50	0.50	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		448		287	736					815	1715	
v/s Ratio Prot		c0.19		c0.03	0.11						c0.26	
v/s Ratio Perm				0.11						0.08		
v/c Ratio		0.72		0.36	0.29					0.16	0.52	
Uniform Delay, d1		30.7		19.3	19.0					12.4	15.5	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		5.4		0.8	0.2					0.4	1.1	
Delay (s)		36.1		20.1	19.2					12.8	16.6	
Level of Service		D		C	B					B	B	
Approach Delay (s)		36.1			19.5			0.0			16.1	
Approach LOS		D			B			A			B	
Intersection Summary												
HCM 2000 Control Delay			20.7			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.57									
Actuated Cycle Length (s)			91.2			Sum of lost time (s)				15.0		
Intersection Capacity Utilization			61.7%			ICU Level of Service				B		
Analysis Period (min)			15									
c	Critical Lane Group											

HCM Signalized Intersection Capacity Analysis

5: N FEDERAL HWY & E Atlantic Ave

2016 Existing - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕				
Volume (vph)	72	301	0	0	300	147	95	1036	85	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0				
Lane Util. Factor		0.95			0.95		1.00	0.95				
Frbp, ped/bikes		1.00			0.95		1.00	1.00				
Flpb, ped/bikes		0.99			1.00		0.90	1.00				
Frt		1.00			0.95		1.00	0.99				
Flt Protected		0.99			1.00		0.95	1.00				
Satd. Flow (prot)		3516			3223		1612	3520				
Flt Permitted		0.71			1.00		0.95	1.00				
Satd. Flow (perm)		2532			3223		1612	3520				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.81	0.81	0.81
Adj. Flow (vph)	73	307	0	0	306	150	97	1057	87	0	0	0
RTOR Reduction (vph)	0	0	0	0	64	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	380	0	0	392	0	97	1139	0	0	0	0
Confl. Peds. (#/hr)	84					84	56		21			
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA		Perm	NA				
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		38.4			20.4		45.0	45.0				
Effective Green, g (s)		38.4			20.4		45.0	45.0				
Actuated g/C Ratio		0.41			0.22		0.48	0.48				
Clearance Time (s)		5.0			5.0		5.0	5.0				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)		1177			703		776	1695				
v/s Ratio Prot		c0.04			c0.12			c0.32				
v/s Ratio Perm		0.09					0.06					
v/c Ratio		0.32			0.56		0.12	0.67				
Uniform Delay, d1		18.7			32.5		13.3	18.5				
Progression Factor		1.00			1.00		1.00	1.00				
Incremental Delay, d2		0.2			1.0		0.3	2.1				
Delay (s)		18.8			33.4		13.7	20.7				
Level of Service		B			C		B	C				
Approach Delay (s)		18.8			33.4			20.1			0.0	
Approach LOS		B			C			C			A	

Intersection Summary























HCM 2000 Control Delay	22.8	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.59		
Actuated Cycle Length (s)	93.4	Sum of lost time (s)	15.0
Intersection Capacity Utilization	77.3%	ICU Level of Service	D
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: SE 7th Ave & E Atlantic Ave

2016 Existing - PM Peak Hour

													
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		 			 			 					
Volume (vph)	19	338	29	26	401	58	6	39	36	71	35	40	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0		
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00		
Frbp, ped/bikes	1.00	0.97		1.00	0.97			0.99		1.00	0.99		
Flpb, ped/bikes	0.90	1.00		0.84	1.00			1.00		0.98	1.00		
Frt	1.00	0.99		1.00	0.98			0.94		1.00	0.92		
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00		
Satd. Flow (prot)	1614	3438		1493	3396			1741		1747	1708		
Flt Permitted	0.33	1.00		0.43	1.00			0.99		0.70	1.00		
Satd. Flow (perm)	564	3438		675	3396			1729		1290	1708		
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	
Adj. Flow (vph)	20	352	30	27	418	60	6	41	38	74	36	42	
RTOR Reduction (vph)	0	7	0	0	12	0	0	13	0	0	14	0	
Lane Group Flow (vph)	20	375	0	27	466	0	0	72	0	74	64	0	
Confl. Peds. (#/hr)	83		112	112		83	15		6	15		6	
Confl. Bikes (#/hr)			6			1			1			4	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA		
Protected Phases		4			8			2			6		
Permitted Phases	4			8			2			6			
Actuated Green, G (s)	20.8	20.8		20.8	20.8			60.0		60.0	60.0		
Effective Green, g (s)	20.8	20.8		20.8	20.8			60.0		60.0	60.0		
Actuated g/C Ratio	0.23	0.23		0.23	0.23			0.66		0.66	0.66		
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0		
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0		
Lane Grp Cap (vph)	129	787		154	777			1142		852	1128		
v/s Ratio Prot		0.11			c0.14						0.04		
v/s Ratio Perm	0.04			0.04				0.04		c0.06			
v/c Ratio	0.16	0.48		0.18	0.60			0.06		0.09	0.06		
Uniform Delay, d1	28.0	30.3		28.1	31.3			5.5		5.5	5.4		
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00		
Incremental Delay, d2	0.6	0.5		0.5	1.3			0.1		0.2	0.1		
Delay (s)	28.5	30.7		28.7	32.5			5.6		5.7	5.5		
Level of Service	C	C		C	C			A		A	A		
Approach Delay (s)		30.6			32.3			5.6			5.6		
Approach LOS		C			C			A			A		
Intersection Summary													
HCM 2000 Control Delay			26.2									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.22										
Actuated Cycle Length (s)			90.8									Sum of lost time (s)	10.0
Intersection Capacity Utilization			46.6%									ICU Level of Service	A
Analysis Period (min)			15										

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

1: NE 5th Ave & NE 1st St

2016 Build - AM Peak Hour




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗			↖					↘	↗↖	↘↖
Volume (vph)	0	24	52	65	63	0	0	0	0	47	1204	63
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0					5.0	5.0	
Lane Util. Factor		1.00			1.00					1.00	0.95	
Frbp, ped/bikes		1.00			1.00					1.00	1.00	
Flpb, ped/bikes		1.00			1.00					0.98	1.00	
Frt		0.91			1.00					1.00	0.99	
Flt Protected		1.00			0.98					0.95	1.00	
Satd. Flow (prot)		1691			1799					1751	3544	
Flt Permitted		1.00			0.80					0.95	1.00	
Satd. Flow (perm)		1691			1473					1751	3544	
Peak-hour factor, PHF	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Adj. Flow (vph)	0	26	56	70	68	0	0	0	0	51	1295	68
RTOR Reduction (vph)	0	46	0	0	0	0	0	0	0	0	3	0
Lane Group Flow (vph)	0	36	0	0	138	0	0	0	0	51	1360	0
Confl. Peds. (#/hr)										6		
Confl. Bikes (#/hr)												1
Heavy Vehicles (%)	2%	2%	2%	3%	3%	3%	1%	1%	1%	1%	1%	1%
Turn Type		NA		Perm	NA					Perm	NA	
Protected Phases		4			8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		20.2			20.2					78.6	78.6	
Effective Green, g (s)		20.2			20.2					78.6	78.6	
Actuated g/C Ratio		0.19			0.19					0.72	0.72	
Clearance Time (s)		5.0			5.0					5.0	5.0	
Vehicle Extension (s)		3.0			3.0					3.0	3.0	
Lane Grp Cap (vph)		313			273					1264	2560	
v/s Ratio Prot		0.02									c0.38	
v/s Ratio Perm					c0.09					0.03		
v/c Ratio		0.12			0.51					0.04	0.53	
Uniform Delay, d1		36.9			39.8					4.3	6.8	
Progression Factor		1.00			1.00					1.00	1.00	
Incremental Delay, d2		0.2			1.5					0.1	0.8	
Delay (s)		37.0			41.3					4.4	7.6	
Level of Service		D			D					A	A	
Approach Delay (s)		37.0			41.3			0.0			7.5	
Approach LOS		D			D			A			A	
Intersection Summary												
HCM 2000 Control Delay			11.8								HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.53									
Actuated Cycle Length (s)			108.8							10.0	Sum of lost time (s)	
Intersection Capacity Utilization			60.3%								ICU Level of Service	B
Analysis Period (min)			15									
c Critical Lane Group												

HCM Unsignalized Intersection Capacity Analysis

2: N Federal Hwy & NE 1st St

2016 Build - AM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	24	47	0	0	57	12	71	618	60	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82	0.82
Hourly flow rate (vph)	29	57	0	0	70	15	87	754	73	0	0	0
Pedestrians		2										1
Lane Width (ft)		12.0										0.0
Walking Speed (ft/s)		4.0										4.0
Percent Blockage		0										0
Right turn flare (veh)												
Median type								None				None
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	602	1002	2	992	965	414	2			827		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	602	1002	2	992	965	414	2			827		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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	75	100	100	71	98	95			100		
cM capacity (veh/h)	278	228	1079	156	241	590	1624			806		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	87	84	87	502	324							
Volume Left	29	0	87	0	0							
Volume Right	0	15	0	0	73							
cSH	243	269	1624	1700	1700							
Volume to Capacity	0.36	0.31	0.05	0.30	0.19							
Queue Length 95th (ft)	39	32	4	0	0							
Control Delay (s)	27.8	24.4	7.3	0.0	0.0							
Lane LOS	D	C	A									
Approach Delay (s)	27.8	24.4	0.7									
Approach LOS	D	C										
Intersection Summary												
Average Delay			4.7									
Intersection Capacity Utilization			36.1%		ICU Level of Service				A			
Analysis Period (min)			15									

Intersection	
Int Delay, s/veh	2.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	68	39	0	24	45	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	77	44	0	27	51	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	122
Stage 1	-	-	99
Stage 2	-	-	27
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	5.41
Critical Hdwy Stg 2	-	-	5.41
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	1472
Stage 1	-	-	927
Stage 2	-	-	998
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1472
Mov Cap-2 Maneuver	-	-	871
Stage 1	-	-	927
Stage 2	-	-	998

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	871	-	-	1472	-
HCM Lane V/C Ratio	0.059	-	-	-	-
HCM Control Delay (s)	9.4	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM Signalized Intersection Capacity Analysis

4: NE 5th Ave & E Atlantic Ave

2016 Build - AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗		↖	↖			↖		↖	↗	↗
Volume (vph)	0	292	67	76	228	0	0	0	0	130	1072	109
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	0.95	
Frbp, ped/bikes		0.99		1.00	1.00					1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00					0.97	1.00	
Frt		0.97		1.00	1.00					1.00	0.99	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1821		1787	1881					1735	3517	
Flt Permitted		1.00		0.22	1.00					0.95	1.00	
Satd. Flow (perm)		1821		420	1881					1735	3517	
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	0	301	69	78	235	0	0	0	0	134	1105	112
RTOR Reduction (vph)	0	9	0	0	0	0	0	0	0	0	6	0
Lane Group Flow (vph)	0	361	0	78	235	0	0	0	0	134	1211	0
Confl. Peds. (#/hr)			15	15						17		2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		24.6		36.3	36.3					45.5	45.5	
Effective Green, g (s)		24.6		36.3	36.3					45.5	45.5	
Actuated g/C Ratio		0.27		0.40	0.40					0.50	0.50	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		487		265	743					859	1743	
v/s Ratio Prot		c0.20		0.02	c0.12						c0.34	
v/s Ratio Perm				0.09						0.08		
v/c Ratio		0.74		0.29	0.32					0.16	0.69	
Uniform Delay, d1		30.7		19.3	19.2					12.7	17.8	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		6.0		0.6	0.2					0.4	2.3	
Delay (s)		36.7		19.9	19.4					13.0	20.1	
Level of Service		D		B	B					B	C	
Approach Delay (s)		36.7			19.6			0.0			19.4	
Approach LOS		D			B			A			B	

Intersection Summary

HCM 2000 Control Delay	22.6	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.69		
Actuated Cycle Length (s)	91.8	Sum of lost time (s)	15.0
Intersection Capacity Utilization	72.0%	ICU Level of Service	C
Analysis Period (min)	15		
c Critical Lane Group			

HCM Signalized Intersection Capacity Analysis

5: N Federal Hwy & E Atlantic Ave

2016 Build - AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕				
Volume (vph)	131	291	0	0	230	84	74	537	78	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0				
Lane Util. Factor		0.95			0.95		1.00	0.95				
Frbp, ped/bikes		1.00			0.99		1.00	1.00				
Flpb, ped/bikes		1.00			1.00		1.00	1.00				
Frt		1.00			0.96		1.00	0.98				
Flt Protected		0.98			1.00		0.95	1.00				
Satd. Flow (prot)		3515			3405		1781	3499				
Flt Permitted		0.61			1.00		0.95	1.00				
Satd. Flow (perm)		2164			3405		1781	3499				
Peak-hour factor, PHF	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Adj. Flow (vph)	162	359	0	0	284	104	91	663	96	0	0	0
RTOR Reduction (vph)	0	0	0	0	40	0	0	9	0	0	0	0
Lane Group Flow (vph)	0	521	0	0	348	0	91	750	0	0	0	0
Confl. Peds. (#/hr)	9					9	2		3			
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA		Perm	NA				
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		38.0			20.0		45.0	45.0				
Effective Green, g (s)		38.0			20.0		45.0	45.0				
Actuated g/C Ratio		0.41			0.22		0.48	0.48				
Clearance Time (s)		5.0			5.0		5.0	5.0				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)		1073			732		861	1693				
v/s Ratio Prot		c0.07			0.10			c0.21				
v/s Ratio Perm		c0.13					0.05					
v/c Ratio		0.49			0.48		0.11	0.44				
Uniform Delay, d1		20.3			31.9		13.1	15.8				
Progression Factor		1.00			1.00		1.00	1.00				
Incremental Delay, d2		0.3			0.5		0.2	0.8				
Delay (s)		20.6			32.4		13.3	16.6				
Level of Service		C			C		B	B				
Approach Delay (s)		20.6			32.4			16.3			0.0	
Approach LOS		C			C			B			A	

Intersection Summary

HCM 2000 Control Delay	21.1	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	93.0	Sum of lost time (s)	15.0
Intersection Capacity Utilization	63.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: SE 7th Ave/Site Driveway & E Atlantic Ave

2016 Build - AM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	65	287	17	9	232	8	11	14	24	8	13	71
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frbp, ped/bikes	1.00	1.00		1.00	1.00			0.99		1.00	0.99	
Flpb, ped/bikes	0.98	1.00		0.99	1.00			1.00		1.00	1.00	
Frt	1.00	0.99		1.00	1.00			0.93		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			0.99		0.95	1.00	
Satd. Flow (prot)	1739	3501		1749	3516			1676		1770	1609	
Flt Permitted	0.51	1.00		0.42	1.00			0.95		0.72	1.00	
Satd. Flow (perm)	937	3501		770	3516			1614		1334	1609	
Peak-hour factor, PHF	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78	0.78
Adj. Flow (vph)	83	368	22	12	297	10	14	18	31	10	17	91
RTOR Reduction (vph)	0	5	0	0	2	0	0	10	0	0	30	0
Lane Group Flow (vph)	83	385	0	12	305	0	0	53	0	10	78	0
Confl. Peds. (#/hr)	10		8	8		10	1					1
Confl. Bikes (#/hr)									1			
Heavy Vehicles (%)	2%	2%	2%	2%	2%	2%	4%	4%	4%	2%	2%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	20.2	20.2		20.2	20.2			60.0		60.0	60.0	
Effective Green, g (s)	20.2	20.2		20.2	20.2			60.0		60.0	60.0	
Actuated g/C Ratio	0.22	0.22		0.22	0.22			0.67		0.67	0.67	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	209	784		172	787			1073		887	1070	
v/s Ratio Prot		c0.11			0.09						c0.05	
v/s Ratio Perm	0.09			0.02				0.03		0.01		
v/c Ratio	0.40	0.49		0.07	0.39			0.05		0.01	0.07	
Uniform Delay, d1	29.8	30.5		27.6	29.7			5.2		5.1	5.3	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	1.2	0.5		0.2	0.3			0.1		0.0	0.1	
Delay (s)	31.1	31.0		27.8	30.1			5.3		5.1	5.4	
Level of Service	C	C		C	C			A		A	A	
Approach Delay (s)		31.0			30.0			5.3			5.4	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	25.9	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.18		
Actuated Cycle Length (s)	90.2	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 0.4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	26	723	29	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	28	786	32	0	0

Major/Minor

	Minor1	Major1		
Conflicting Flow All	802	408	0	0
Stage 1	802	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	7.54	6.94	-	-
Critical Hdwy Stg 1	6.54	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	275	593	-	-
Stage 1	344	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	275	593	-	-
Mov Cap-2 Maneuver	275	-	-	-
Stage 1	344	-	-	-
Stage 2	-	-	-	-

Approach

	WB	NB
HCM Control Delay, s	11.4	0
HCM LOS	B	

Minor Lane/Major Mvmt

	NBT	NBRWBLn1
Capacity (veh/h)	-	- 593
HCM Lane V/C Ratio	-	- 0.048
HCM Control Delay (s)	-	- 11.4
HCM Lane LOS	-	- B
HCM 95th %tile Q(veh)	-	- 0.1

Intersection

Int Delay, s/veh 2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	13	55	0	2	22	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	14	60	0	2	24	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	74	46
Stage 1	-	-	44
Stage 2	-	-	2
Critical Hdwy	-	4.12	6.42
Critical Hdwy Stg 1	-	-	5.42
Critical Hdwy Stg 2	-	-	5.42
Follow-up Hdwy	-	2.218	3.518
Pot Cap-1 Maneuver	-	1526	964
Stage 1	-	-	978
Stage 2	-	-	1021
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	1526	964
Mov Cap-2 Maneuver	-	-	964
Stage 1	-	-	978
Stage 2	-	-	1021

Approach	EB	WB	NB
HCM Control Delay, s	0	0	8.8
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	964	-	-	1526	-
HCM Lane V/C Ratio	0.025	-	-	-	-
HCM Control Delay (s)	8.8	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0	-

HCM Signalized Intersection Capacity Analysis

1: NE 5th Ave & NE 1st St

2016 Build - PM Peak Hour




















Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔					↔	↔↔		
Volume (vph)	0	82	77	110	125	0	0	0	0	87	980	65	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0			5.0					5.0	5.0		
Lane Util. Factor		1.00			1.00					1.00	0.95		
Frbp, ped/bikes		0.99			1.00					1.00	1.00		
Flpb, ped/bikes		1.00			1.00					0.95	1.00		
Frt		0.93			1.00					1.00	0.99		
Flt Protected		1.00			0.98					0.95	1.00		
Satd. Flow (prot)		1736			1831					1701	3529		
Flt Permitted		1.00			0.64					0.95	1.00		
Satd. Flow (perm)		1736			1200					1701	3529		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	
Adj. Flow (vph)	0	89	84	120	136	0	0	0	0	95	1065	71	
RTOR Reduction (vph)	0	31	0	0	0	0	0	0	0	0	4	0	
Lane Group Flow (vph)	0	142	0	0	256	0	0	0	0	95	1132	0	
Confl. Peds. (#/hr)			6	6						14		10	
Confl. Bikes (#/hr)			1									2	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			8						6		
Permitted Phases				8						6			
Actuated Green, G (s)		24.6			24.6					75.0	75.0		
Effective Green, g (s)		24.6			24.6					75.0	75.0		
Actuated g/C Ratio		0.22			0.22					0.68	0.68		
Clearance Time (s)		5.0			5.0					5.0	5.0		
Vehicle Extension (s)		3.0			3.0					3.0	3.0		
Lane Grp Cap (vph)		389			269					1164	2414		
v/s Ratio Prot		0.08									c0.32		
v/s Ratio Perm					c0.21					0.06			
v/c Ratio		0.36			0.95					0.08	0.47		
Uniform Delay, d1		35.9			41.9					5.8	8.0		
Progression Factor		1.00			1.00					1.00	1.00		
Incremental Delay, d2		0.6			41.6					0.1	0.7		
Delay (s)		36.5			83.5					5.9	8.7		
Level of Service		D			F					A	A		
Approach Delay (s)		36.5			83.5			0.0			8.5		
Approach LOS		D			F			A			A		
Intersection Summary													
HCM 2000 Control Delay			23.0									HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio			0.59										
Actuated Cycle Length (s)			109.6									Sum of lost time (s)	10.0
Intersection Capacity Utilization			75.1%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Unsignalized Intersection Capacity Analysis

2: N Federal Hwy & NE 1st St

2016 Build - PM Peak Hour

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (veh/h)	70	99	0	0	88	44	147	1251	115	0	0	0
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.97	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.82	0.82	0.82
Hourly flow rate (vph)	72	99	0	0	91	45	152	1290	119	0	0	0
Pedestrians		14			13						6	
Lane Width (ft)		12.0			12.0						0.0	
Walking Speed (ft/s)		4.0			4.0						4.0	
Percent Blockage		1			1						0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	1059	1738	14	1715	1679	723	14			1421		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1059	1738	14	1715	1679	723	14			1421		
tC, single (s)	7.5	6.5	6.9	7.5	6.5	6.9	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 %	0	0	100	0	0	88	90			100		
cM capacity (veh/h)	0	77	1053	0	84	367	1591			475		
Direction, Lane #	EB 1	WB 1	NB 1	NB 2	NB 3							
Volume Total	171	136	152	860	548							
Volume Left	72	0	152	0	0							
Volume Right	0	45	0	0	119							
cSH	0	113	1591	1700	1700							
Volume to Capacity	Err	1.20	0.10	0.51	0.32							
Queue Length 95th (ft)	Err	218	8	0	0							
Control Delay (s)	Err	222.3	7.5	0.0	0.0							
Lane LOS	F	F	A									
Approach Delay (s)	Err	222.3	0.7									
Approach LOS	F	F										
Intersection Summary												
Average Delay			Err									
Intersection Capacity Utilization			66.0%		ICU Level of Service				C			
Analysis Period (min)			15									

Intersection

Int Delay, s/veh 1.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	127	87	0	92	40	0
Conflicting Peds, #/hr	0	4	4	0	3	19
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	1	1	1	1
Mvmt Flow	134	92	0	97	42	0

Major/Minor	Major1	Major2	Minor1
Conflicting Flow All	0	0	244
Stage 1	-	-	198
Stage 2	-	-	97
Critical Hdwy	-	-	4.11
Critical Hdwy Stg 1	-	-	5.41
Critical Hdwy Stg 2	-	-	5.41
Follow-up Hdwy	-	-	2.209
Pot Cap-1 Maneuver	-	-	1328
Stage 1	-	-	838
Stage 2	-	-	929
Platoon blocked, %	-	-	-
Mov Cap-1 Maneuver	-	-	1324
Mov Cap-2 Maneuver	-	-	-
Stage 1	-	-	825
Stage 2	-	-	926

Approach	EB	WB	NB
HCM Control Delay, s	0	0	10.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	685	-	-	1324	-
HCM Lane V/C Ratio	0.061	-	-	-	-
HCM Control Delay (s)	10.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

HCM Signalized Intersection Capacity Analysis

4: NE 5th Ave & E Atlantic Ave

2016 Build - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↗		↖	↖					↖	↖↗	↖
Volume (vph)	0	414	57	165	362	0	0	0	0	210	802	155
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0		5.0	5.0					5.0	5.0	
Lane Util. Factor		1.00		1.00	1.00					1.00	0.95	
Frbp, ped/bikes		0.96		1.00	1.00					1.00	0.95	
Flpb, ped/bikes		1.00		1.00	1.00					0.90	1.00	
Frt		0.98		1.00	1.00					1.00	0.98	
Flt Protected		1.00		0.95	1.00					0.95	1.00	
Satd. Flow (prot)		1775		1787	1881					1615	3322	
Flt Permitted		1.00		0.14	1.00					0.95	1.00	
Satd. Flow (perm)		1775		259	1881					1615	3322	
Peak-hour factor, PHF	0.94	0.94	0.94	0.94	0.94	0.94	0.97	0.97	0.97	0.94	0.94	0.94
Adj. Flow (vph)	0	440	61	176	385	0	0	0	0	223	853	165
RTOR Reduction (vph)	0	5	0	0	0	0	0	0	0	0	14	0
Lane Group Flow (vph)	0	496	0	176	385	0	0	0	0	223	1004	0
Confl. Peds. (#/hr)			224	224						50		86
Confl. Bikes (#/hr)			1									2
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type		NA		pm+pt	NA					Perm	NA	
Protected Phases		4		3	8						6	
Permitted Phases				8						6		
Actuated Green, G (s)		32.8		47.4	47.4					45.3	45.3	
Effective Green, g (s)		32.8		47.4	47.4					45.3	45.3	
Actuated g/C Ratio		0.32		0.46	0.46					0.44	0.44	
Clearance Time (s)		5.0		5.0	5.0					5.0	5.0	
Vehicle Extension (s)		3.0		3.0	3.0					3.0	3.0	
Lane Grp Cap (vph)		566		262	868					712	1465	
v/s Ratio Prot		c0.28		c0.06	0.20						c0.30	
v/s Ratio Perm				0.25						0.14		
v/c Ratio		0.88		0.67	0.44					0.31	0.69	
Uniform Delay, d1		33.0		20.9	18.7					18.6	23.0	
Progression Factor		1.00		1.00	1.00					1.00	1.00	
Incremental Delay, d2		14.3		6.6	0.4					1.1	2.6	
Delay (s)		47.3		27.5	19.1					19.8	25.6	
Level of Service		D		C	B					B	C	
Approach Delay (s)		47.3			21.7			0.0			24.6	
Approach LOS		D			C			A			C	
Intersection Summary												
HCM 2000 Control Delay			28.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.76									
Actuated Cycle Length (s)			102.7			Sum of lost time (s)			15.0			
Intersection Capacity Utilization			75.9%			ICU Level of Service				D		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

5: N Federal Hwy & E Atlantic Ave

2016 Build - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕↕			↕↕		↕	↕↕				
Volume (vph)	206	418	0	0	432	233	95	1100	139	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0				
Lane Util. Factor		0.95			0.95		1.00	0.95				
Frbp, ped/bikes		1.00			0.94		1.00	0.99				
Flpb, ped/bikes		1.00			1.00		0.90	1.00				
Frt		1.00			0.95		1.00	0.98				
Flt Protected		0.98			1.00		0.95	1.00				
Satd. Flow (prot)		3516			3191		1602	3494				
Flt Permitted		0.54			1.00		0.95	1.00				
Satd. Flow (perm)		1919			3191		1602	3494				
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.81	0.81	0.81
Adj. Flow (vph)	210	427	0	0	441	238	97	1122	142	0	0	0
RTOR Reduction (vph)	0	0	0	0	73	0	0	8	0	0	0	0
Lane Group Flow (vph)	0	637	0	0	606	0	97	1256	0	0	0	0
Confl. Peds. (#/hr)	84					84	56		21			
Confl. Bikes (#/hr)									2			
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	pm+pt	NA			NA		Perm	NA				
Protected Phases	7	4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		43.5			25.5		45.1	45.1				
Effective Green, g (s)		43.5			25.5		45.1	45.1				
Actuated g/C Ratio		0.44			0.26		0.46	0.46				
Clearance Time (s)		5.0			5.0		5.0	5.0				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)		1057			825		732	1598				
v/s Ratio Prot		c0.08			c0.19			c0.36				
v/s Ratio Perm		0.19					0.06					
v/c Ratio		0.60			0.73		0.13	0.79				
Uniform Delay, d1		21.0			33.4		15.5	22.7				
Progression Factor		1.00			1.00		1.00	1.00				
Incremental Delay, d2		1.0			3.4		0.4	4.0				
Delay (s)		21.9			36.9		15.8	26.6				
Level of Service		C			D		B	C				
Approach Delay (s)		21.9			36.9			25.9			0.0	
Approach LOS		C			D			C			A	

Intersection Summary

HCM 2000 Control Delay	27.7	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.75		
Actuated Cycle Length (s)	98.6	Sum of lost time (s)	15.0
Intersection Capacity Utilization	86.4%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis

6: SE 7th Ave/Site Driveway & E Atlantic Ave

2016 Build - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Volume (vph)	129	394	34	25	423	19	6	32	35	17	31	213
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Lane Util. Factor	1.00	0.95		1.00	0.95			1.00		1.00	1.00	
Frbp, ped/bikes	1.00	0.97		1.00	0.99			0.99		1.00	0.98	
Flpb, ped/bikes	0.89	1.00		0.85	1.00			1.00		0.98	1.00	
Frt	1.00	0.99		1.00	0.99			0.94		1.00	0.87	
Flt Protected	0.95	1.00		0.95	1.00			1.00		0.95	1.00	
Satd. Flow (prot)	1597	3434		1521	3510			1731		1744	1600	
Flt Permitted	0.37	1.00		0.39	1.00			0.98		0.71	1.00	
Satd. Flow (perm)	626	3434		619	3510			1704		1300	1600	
Peak-hour factor, PHF	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Adj. Flow (vph)	134	410	35	26	441	20	6	33	36	18	32	222
RTOR Reduction (vph)	0	7	0	0	4	0	0	13	0	0	27	0
Lane Group Flow (vph)	134	438	0	26	457	0	0	62	0	18	227	0
Confl. Peds. (#/hr)	83		112	112		83	15		6	15		6
Confl. Bikes (#/hr)			6			1			1			4
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)	25.2	25.2		25.2	25.2			60.1		60.1	60.1	
Effective Green, g (s)	25.2	25.2		25.2	25.2			60.1		60.1	60.1	
Actuated g/C Ratio	0.26	0.26		0.26	0.26			0.63		0.63	0.63	
Clearance Time (s)	5.0	5.0		5.0	5.0			5.0		5.0	5.0	
Vehicle Extension (s)	3.0	3.0		3.0	3.0			3.0		3.0	3.0	
Lane Grp Cap (vph)	165	908		163	928			1074		819	1009	
v/s Ratio Prot		0.13			0.13						c0.14	
v/s Ratio Perm	c0.21			0.04				0.04		0.01		
v/c Ratio	0.81	0.48		0.16	0.49			0.06		0.02	0.23	
Uniform Delay, d1	32.8	29.6		26.9	29.6			6.7		6.6	7.6	
Progression Factor	1.00	1.00		1.00	1.00			1.00		1.00	1.00	
Incremental Delay, d2	25.3	0.4		0.5	0.4			0.1		0.0	0.5	
Delay (s)	58.1	30.0		27.4	30.1			6.8		6.6	8.1	
Level of Service	E	C		C	C			A		A	A	
Approach Delay (s)		36.5			29.9			6.8			8.0	
Approach LOS		D			C			A			A	

Intersection Summary

HCM 2000 Control Delay	27.2	HCM 2000 Level of Service	C
HCM 2000 Volume to Capacity ratio	0.40		
Actuated Cycle Length (s)	95.3	Sum of lost time (s)	10.0
Intersection Capacity Utilization	62.5%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group

Intersection

Int Delay, s/veh 0.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Vol, veh/h	0	57	1456	83	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	0	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	0	62	1583	90	0	0

Major/Minor

	Minor1	Major1		
Conflicting Flow All	1628	835	0	0
Stage 1	1628	-	-	-
Stage 2	0	-	-	-
Critical Hdwy	7.54	6.94	-	-
Critical Hdwy Stg 1	6.54	-	-	-
Critical Hdwy Stg 2	-	-	-	-
Follow-up Hdwy	3.52	3.32	-	-
Pot Cap-1 Maneuver	68	311	-	-
Stage 1	106	-	-	-
Stage 2	-	-	-	-
Platoon blocked, %			-	-
Mov Cap-1 Maneuver	68	311	-	-
Mov Cap-2 Maneuver	68	-	-	-
Stage 1	106	-	-	-
Stage 2	-	-	-	-

Approach

	WB	NB
HCM Control Delay, s	19.4	0
HCM LOS	C	

Minor Lane/Major Mvmt

	NBT	NBRWBLn1
Capacity (veh/h)	-	- 311
HCM Lane V/C Ratio	-	- 0.199
HCM Control Delay (s)	-	- 19.4
HCM Lane LOS	-	- C
HCM 95th %tile Q(veh)	-	- 0.7

Intersection	
Int Delay, s/veh	3.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Vol, veh/h	17	110	0	14	78	0
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	18	120	0	15	85	0

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	138	0	93	78
Stage 1	-	-	-	-	78	-
Stage 2	-	-	-	-	15	-
Critical Hdwy	-	-	4.12	-	6.42	6.22
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.218	-	3.518	3.318
Pot Cap-1 Maneuver	-	-	1446	-	907	983
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	1008	-
Platoon blocked, %	-	-	-	-	-	-
Mov Cap-1 Maneuver	-	-	1446	-	907	983
Mov Cap-2 Maneuver	-	-	-	-	907	-
Stage 1	-	-	-	-	945	-
Stage 2	-	-	-	-	1008	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	9.4
HCM LOS			A

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	907	-	-	1446	-
HCM Lane V/C Ratio	0.093	-	-	-	-
HCM Control Delay (s)	9.4	-	-	0	-
HCM Lane LOS	A	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0	-

HCM Signalized Intersection Capacity Analysis

1: NE 5th Ave & NE 1st St

2016 Build with Improvements - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	
Lane Configurations		↔			↔					↔	↔↔		
Volume (vph)	0	82	77	110	125	0	0	0	0	87	980	65	
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	
Total Lost time (s)		5.0			5.0					5.0	5.0		
Lane Util. Factor		1.00			1.00					1.00	0.95		
Frbp, ped/bikes		0.99			1.00					1.00	1.00		
Flpb, ped/bikes		1.00			1.00					0.96	1.00		
Frt		0.93			1.00					1.00	0.99		
Flt Protected		1.00			0.98					0.95	1.00		
Satd. Flow (prot)		1739			1832					1719	3530		
Flt Permitted		1.00			0.70					0.95	1.00		
Satd. Flow (perm)		1739			1314					1719	3530		
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.93	0.93	0.93	0.92	0.92	0.92	
Adj. Flow (vph)	0	89	84	120	136	0	0	0	0	95	1065	71	
RTOR Reduction (vph)	0	39	0	0	0	0	0	0	0	0	3	0	
Lane Group Flow (vph)	0	134	0	0	256	0	0	0	0	95	1133	0	
Confl. Peds. (#/hr)			6	6						14		10	
Confl. Bikes (#/hr)			1									2	
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	
Turn Type		NA		Perm	NA					Perm	NA		
Protected Phases		4			8						6		
Permitted Phases				8						6			
Actuated Green, G (s)		22.5			22.5					55.1	55.1		
Effective Green, g (s)		22.5			22.5					55.1	55.1		
Actuated g/C Ratio		0.26			0.26					0.63	0.63		
Clearance Time (s)		5.0			5.0					5.0	5.0		
Vehicle Extension (s)		3.0			3.0					3.0	3.0		
Lane Grp Cap (vph)		446			337					1081	2220		
v/s Ratio Prot		0.08									c0.32		
v/s Ratio Perm					c0.19					0.06			
v/c Ratio		0.30			0.76					0.09	0.51		
Uniform Delay, d1		26.2			30.1					6.4	8.9		
Progression Factor		1.00			1.00					1.00	1.00		
Incremental Delay, d2		0.4			9.5					0.2	0.8		
Delay (s)		26.6			39.5					6.5	9.7		
Level of Service		C			D					A	A		
Approach Delay (s)		26.6			39.5			0.0			9.5		
Approach LOS		C			D			A			A		
Intersection Summary													
HCM 2000 Control Delay			15.9									HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio			0.58										
Actuated Cycle Length (s)			87.6									Sum of lost time (s)	10.0
Intersection Capacity Utilization			75.1%									ICU Level of Service	D
Analysis Period (min)			15										
c Critical Lane Group													

HCM Signalized Intersection Capacity Analysis

2: N Federal Hwy & NE 1st St

2016 Build with Improvements - PM Peak Hour



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		↕			↕		↕	↕↕				
Volume (vph)	70	99	0	0	88	44	147	1251	115	0	0	0
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.0			5.0		5.0	5.0				
Lane Util. Factor		1.00			1.00		1.00	0.95				
Frbp, ped/bikes		1.00			0.99		1.00	1.00				
Flpb, ped/bikes		1.00			1.00		0.96	1.00				
Frt		1.00			0.96		1.00	0.99				
Flt Protected		0.98			1.00		0.95	1.00				
Satd. Flow (prot)		1836			1784		1719	3512				
Flt Permitted		0.81			1.00		0.95	1.00				
Satd. Flow (perm)		1520			1784		1719	3512				
Peak-hour factor, PHF	0.97	1.00	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.82	0.82	0.82
Adj. Flow (vph)	72	99	0	0	91	45	152	1290	119	0	0	0
RTOR Reduction (vph)	0	0	0	0	21	0	0	5	0	0	0	0
Lane Group Flow (vph)	0	171	0	0	115	0	152	1404	0	0	0	0
Confl. Peds. (#/hr)	6						6	14		13		
Confl. Bikes (#/hr)							1			3		
Heavy Vehicles (%)	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%	1%
Turn Type	Perm	NA			NA		Perm	NA				
Protected Phases		4			8			2				
Permitted Phases	4						2					
Actuated Green, G (s)		20.0			20.0		56.5	56.5				
Effective Green, g (s)		20.0			20.0		56.5	56.5				
Actuated g/C Ratio		0.23			0.23		0.65	0.65				
Clearance Time (s)		5.0			5.0		5.0	5.0				
Vehicle Extension (s)		3.0			3.0		3.0	3.0				
Lane Grp Cap (vph)		351			412		1122	2293				
v/s Ratio Prot					0.06			c0.40				
v/s Ratio Perm		c0.11					0.09					
v/c Ratio		0.49			0.28		0.14	0.61				
Uniform Delay, d1		28.8			27.3		5.7	8.7				
Progression Factor		1.00			1.00		1.00	1.00				
Incremental Delay, d2		1.1			0.4		0.3	1.2				
Delay (s)		29.9			27.7		6.0	9.9				
Level of Service		C			C		A	A				
Approach Delay (s)		29.9			27.7			9.5			0.0	
Approach LOS		C			C			A			A	

Intersection Summary

HCM 2000 Control Delay	12.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	86.5	Sum of lost time (s)	10.0
Intersection Capacity Utilization	84.2%	ICU Level of Service	E
Analysis Period (min)	15		

c Critical Lane Group