



**Memorandum**

To: Joan Shen, Ph.D, P.E., PTOE  
Miami-Dade County Public Works and Waste Management Department  
Traffic Engineering Division

From: Adrian K. Dabkowski, P.E. (LA), PTOE    
John J. McWilliams, P.E.

Cc: Tony Cotarelo, P.E., Miami-Dade County  
Muhammad Khan, P.E. PTOE, Miami-Dade County  
Jeff Cohen, P.E., Miami-Dade County  
Yelenys Eymil, Miami-Dade County  
Carlos Cruz-Casas, P.E., City of Miami  
Thomas Rodrigues, City of Miami  
Lee-fang Chow, P.E., Florida Department of Transportation  
Omar Meitin, P.E., Florida Department of Transportation  
Jose Gonzalez, FECl  
Alex Gonzalez, FECl

Date: June 11, 2014

**Subject: FECl All Aboard Florida – Miami Station  
Traffic Study Response to Comments**

We have received comments provided by Miami-Dade County Public Works and Waste Management Department for the FECl All Aboard Florida – Miami Station traffic study on Wednesday, June 4, 2014. We offer the following responses:

- 1. Many transit routes are listed on page 13 of the report serving the study area with headways as little as 7.5 minutes. However, no incorporation of bus blockage/bus parking was found in any level of service analysis provided in Appendixes D, J and K. Therefore, the level of service analysis should be revised with appropriately combined transit blockage factors. Furthermore, the transit center is suggested just west of Multi-use Tower along NW 3 Street, additional transit operation should also be incorporated for the future level of service analysis.**

*Response: Consistent with the HCM 2010 methodology, Bus blockage factors were updated for intersections where bus stops are located with 250 feet. The update includes existing, background, and future total conditions.*

*Please note that the Miami-Dade MPO's future transit center was not included in the traffic study as the project is still early in the planning phase. This potential project has not been*

*approved nor has funding been allocated for it. It is anticipated that the potential transit center will not be operational until after the All Aboard Florida – Miami Station is operational. Therefore, the potential project was not included as a background condition in the traffic study.*

- 2. No pedestrian counts are added based on train stations and the proposed development. It is required that the intersection level of service analysis be revised based on the projected and increased pedestrian counts.**

*Response: The area wide growth rate was applied to pedestrian conflicting movements and pedestrian calls. Furthermore, pedestrian project trips were assigned to study area intersections based on the trip generation pedestrian reduction factor. Pedestrian trip generation information is provided in Appendix I of the report. Please note that all intersections continue to operate at or above adopted level of service.*

- 3. NW 3 Street is providing a very important access for OB3 and Mixed-use Tower parking garages. It will become a heavily used roadway with the Hickman Parking Garage, Miami Charter School, Law Enforcement Officers Memorial High School, proposed transit center and Children’s Court House located adjacent to the roadway. Currently, NW 3 Street west of NW 1 Avenue is composed of one eastbound and two westbound lanes only. It is required that this roadway section be improved to a four lane, undivided segment at least along the project’s frontage. This improvement can provide separate eastbound left and right turn movements at NW 1 Avenue to avoid any blockage of Mixed-use office driveway.**

*Response: Please note that the intersection of NW 1<sup>st</sup> Avenue and NW 3<sup>rd</sup> Street is expected to operate at adopted levels of service during all analysis conditions. A detailed 95<sup>th</sup> percentile queue length analysis was conducted of the eastbound approach at the subject intersection. The results of the future total conditions analysis revealed that, during the A.M. peak hour, the eastbound queue length at the intersection of NW 3<sup>rd</sup> Street and NW 1<sup>st</sup> Avenue is expected to extend across the mixed-use tower office and Overbuild #3 block driveway.*

*Based on the results of the queuing analysis, the eastbound and westbound approaches are proposed to be re-designated to accommodate the vehicle queue and maintain the existing 3-lane roadway section. The westbound approach will consist of an exclusive left-turn lane and shared through/right-turn lane with on-street parking adjacent to the exclusive left-turn lane. The eastbound approach will consist of a two-way left-turn lane between the eastbound mixed-use tower office/Overbuild #3 block driveway and NW 1<sup>st</sup> Avenue and an exclusive right-turn lane. The westbound left-turn queue length for mixed-use tower office/Overbuild #3 block driveway and NW 3<sup>rd</sup> Street was also examined to determine if the storage length of the proposed two-way left-turn lane could accommodate the back to back queues. The detailed analysis is contained in the updated traffic impact study.*

**4. The following improvements should be provided to enhance the level of service at the approaches:**

**a. Optimize signal timing for westbound left-turn movement at NW 6 Street and NW 2 Avenue intersection**

*Response: Optimized. Intersection continues to operate at adopted levels of service during the future total analysis period for both A.M. and P.M. peak hours.*

**b. Extend westbound left-turn lane at NW 3 Street and NW 2 Avenue intersection**

*Response: Please note that the newly installed mid-block pedestrian crosswalk on NW 3<sup>rd</sup> Street prevents the westbound left-turn lane from being extended to the east. Additionally, the future total conditions 95<sup>th</sup> percentile queue length for both A.M. and P.M. peak hours can be accommodated within the existing turn lane with optimized signal timings. Detailed analyses are included in the revised traffic impact study.*

**c. Extend northbound left-turn lane at NW 6 Street and NW 1 Avenue intersection**

*Response: A detailed intersection analysis which included a 95<sup>th</sup> percentile queue length analysis was conducted for the subject intersection. Please note that the 95<sup>th</sup> percentile queue length for the northbound left-turn lane during future total conditions for both A.M. and P.M. peak hours is expected to be accommodated within the existing turn lane. Furthermore, the turn lane is 'back-to-back' with the southbound left-turn lane at the intersection of NW 5<sup>th</sup> Street and NW 1<sup>st</sup> Avenue and cannot be extended without shortening that turn lane.*

**5. Table 8 on page 27 summarizes the Entry Gate Analysis for parking garages. Upon review of the accessing volumes, the available queue storages should be increased for the following garages:**

- a. Mixed-use Tower – Hotel and Residential Parking Garage**
- b. CRA Parking Garage (two entry lanes) permanent queue storage should be increased**

*Response: Noted. Final determination of the entry gate locations will occur as part of the site plan approval process.*

**6. Bicycle routing on street and on site need to be included in addressing non-motorized access to the proposed site and between transit modes.**

*Response: Bicycle routing will be determined when the project seeks site plan approval. Please note that the location of on-site bicycle parking has not been made. Furthermore, bicycle accommodations on-site and on trains will be determined at a later stage of the project.*

- 7. The proposed Baylink light rail system should be integrated into the development frontage. If the Baylink routing adopts a westbound to northbound right turn from NW 2 Street to NW 1 Avenue, it would be preferred if both directions of track can be placed on the west side of NW 1 Avenue. This will achieve a bi-directional stop to be placed on the same side of the avenue as the AAF station entrance. A sliver of right of way and/or easement may be needed on the west side of NW 1 Avenue between NW 2 Street and NW 3 Street if the Avenue's right of way is insufficient.**

*Response: We will continue to coordinate with the Miami-Dade MPO regarding the Baylink study.*

Following comments as also provided previously and should also be incorporated in future phases of the project:

- 8. The following recommendations are provided to reduce vehicle-pedestrian conflicts:**
  - a. All the Metrorail to heavy rail transfers should be achieved with minimal vehicular conflicts.**

*Response: A grade-separated pedestrian transfer connection is being contemplated between the Government Center Metrorail/Metromover station and the South Concourse of the All Aboard Florida – Miami Station. Please note that at the Overtown station a grade-separated pedestrian transfer connection is not being contemplated due to the varying heights of the platforms, separate security, ticketing, and operations. At the Overtown station an at-grade pedestrian transfer connection will be provided in a manner to minimize the conflicts with vehicular traffic.*

- b. Pedestrian connections can be considered between the Wilkie D. Ferguson, Jr. Metromover station and other proposed buildings such as OB1 and OB2.**

*Response: As discussed in our June 4 meeting, a grade-separated pedestrian connection may not be feasible based on the various platform heights. Please note that a grade-separated pedestrian connection is being contemplated at the Government Center Metromover station.*

- c. All buildings (OB1, OB2, and OB3) in the proposed project should have a common level to allow for pedestrians transfer from one building to another without accessing the surface level.**

*Response: As discussed in our June 4 meeting, some aspects of the buildings will not allow for grade-separated pedestrian connections. In those instances, pedestrians will access the various buildings at-grade.*

- d. Field observations should be performed around the proposed development for sidewalk availability and continuity, availability for countdown pedestrian signal heads and bike lane and bike stand conditions on and around the site.**

*Response: Field observation of pedestrian amenities (sidewalks and countdown pedestrian signal heads) was conducted. Recommendations and deficiencies are discussed in the updated traffic study.*

- e. Development projects in urban areas significantly rely on transit. Therefore, field observations should be performed for transit occupancy and operations in order to make suggestions to improve transit, such as additional cars to Metromover and Metrorail, and increased frequency for bus service, etc.**

*Response: Transit ridership data and headway data for Metrorail and Metromover was collected in 15-minute intervals during the A.M. peak period (7:30 to 9:30 A.M.) and P.M. peak period (4:00 to 6:00 P.M.). Metrorail ridership data was collected at the Government Center and Overtown stations. Metromover ridership data was collected at the Government Center and Wilkie Ferguson stations. The transit ridership data was utilized in the roadway segment analysis and revealed that at a minimum of 28 percent to 63 percent of capacity is available on the Metrorail, while 42 to 66 percent of capacity is available on the Metromover. Detailed data and analyses are provided in the updated traffic study.*

**9. The following locations should also be added for the level of service review:**

- a. NW 5 Street and NW 3 Avenue**
- b. NW 1 Street and NW 3 Avenue**
- c. NE 5 Street corridor east of NW 1 Avenue**

*Response: The two (2) additional intersections and one (1) segment were included in the traffic study. Please note that the additional study area intersections and roadway segment operate at or above adopted levels of service for all analysis conditions.*

**10. No signal warrant analysis was found in the report. It is recommended that a signal warrant analysis should be provided at the intersection of NW 6 Street and NW 1 Avenue.**

*Response: Signal warrant analyses were conducted for the intersection of NW 6<sup>th</sup> Street and NW 1<sup>st</sup> Avenue. Two analyses were conducted (a) assumed the major street as NW 6<sup>th</sup>*

*Street and (b) assumed the major street as NW 1<sup>st</sup> Avenue. In both analyses, the intersection did not satisfy any of the Federal Highway Administration's Manual of Uniform Traffic Control Devices (MUTCD) 8-hour traffic signal warrants. Detailed analyses are provided in Attachment A.*

We trust that these responses adequately address the comments provided. Please contact us if you have any questions.

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## **Attachment A**

NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
 COUNTED BY: W. ASSAM & R. MARTINEZ  
 NOT SIGNALIZED

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

Site Code : 00140065  
 Start Date: 03/20/14  
 File I.D. : 6ST\_1AVE  
 Page : 1

ALL VEHICLES

Date	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
03/20/14	-----																
07:00	0	0	13	18	0	0	13	2	0	19	6	0	0	0	0	0	71
07:15	0	0	10	47	0	1	35	3	0	28	3	0	0	0	0	0	127
07:30	0	0	10	47	0	0	34	4	0	39	8	0	0	0	0	0	142
07:45	0	0	20	75	0	1	47	1	0	59	10	0	0	0	0	0	213
Hr Total	0	0	53	187	0	2	129	10	0	145	27	0	0	0	0	0	553
08:00	1	0	19	41	0	2	64	6	0	39	19	0	0	0	0	0	191
08:15	0	0	24	40	0	7	56	6	0	34	14	0	0	0	0	0	181
08:30	0	0	28	37	0	8	43	1	0	35	11	0	0	0	0	0	163
08:45	0	0	31	31	0	7	50	1	0	25	12	0	0	0	0	0	157
Hr Total	1	0	102	149	0	24	213	14	0	133	56	0	0	0	0	0	692
09:00	0	0	17	19	0	12	35	1	0	23	16	0	0	0	0	0	123
09:15	0	0	24	22	0	3	29	0	0	24	10	0	0	0	0	0	112
09:30	0	0	13	19	0	7	50	1	0	18	15	0	0	0	0	0	123
09:45	0	0	18	13	0	7	54	2	2	15	11	0	0	0	0	0	122
Hr Total	0	0	72	73	0	29	168	4	2	80	52	0	0	0	0	0	480
10:00	0	0	15	6	0	7	49	0	0	25	17	0	0	0	0	0	119
10:15	0	0	25	16	0	4	41	1	1	16	15	0	0	0	0	0	119
10:30	0	0	14	8	0	0	34	1	2	16	13	0	0	0	0	0	88
10:45	0	0	11	5	0	3	36	4	2	23	20	0	0	0	0	0	104
Hr Total	0	0	65	35	0	14	160	6	5	80	65	0	0	0	0	0	430
11:00	0	0	10	10	0	2	55	4	0	19	14	0	0	0	0	0	114
11:15	0	0	7	11	0	2	51	4	1	19	13	0	0	0	0	0	108
11:30	0	0	16	14	0	1	30	4	0	18	13	0	0	0	0	0	96
11:45	0	0	19	14	0	1	48	2	0	17	29	0	0	0	0	0	130
Hr Total	0	0	52	49	0	6	184	14	1	73	69	0	0	0	0	0	448
12:00	0	0	8	8	0	3	71	9	2	16	21	0	0	0	0	0	138
12:15	0	0	9	13	0	2	59	6	0	23	25	0	0	0	0	0	137
12:30	0	0	13	10	0	4	69	3	1	24	19	0	0	0	0	0	143
12:45	1	0	15	9	0	2	56	5	0	18	18	0	0	0	0	0	124
Hr Total	1	0	45	40	0	11	255	23	3	81	83	0	0	0	0	0	542
13:00	0	0	11	9	0	4	47	3	0	20	17	0	0	0	0	0	111
13:15	0	0	11	7	0	3	42	3	0	19	9	0	0	0	0	0	94
13:30	0	0	14	16	0	2	56	3	1	14	20	0	0	0	0	0	126
13:45	0	0	14	17	0	6	71	3	0	28	22	0	0	0	0	0	161
Hr Total	0	0	50	49	0	15	216	12	1	81	68	0	0	0	0	0	492

NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
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ALL VEHICLES

Date	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
03/20/14																	
14:00	0	0	10	11	0	3	69	1	1	23	17	0	0	0	0	0	135
14:15	1	0	10	6	0	2	58	5	1	10	15	0	0	0	0	0	108
14:30	1	0	16	15	0	3	48	3	0	18	26	0	0	0	0	0	130
14:45	0	0	9	19	0	3	39	5	1	14	13	0	0	0	0	0	103
Hr Total	2	0	45	51	0	11	214	14	3	65	71	0	0	0	0	0	476
15:00	1	0	5	8	0	6	71	5	0	30	28	0	0	0	0	0	154
15:15	1	0	10	9	0	1	51	3	1	19	21	0	0	0	0	0	116
15:30	3	0	14	16	0	1	88	6	1	29	19	0	0	0	0	0	177
15:45	3	0	17	29	0	1	65	3	0	23	30	0	0	0	0	0	171
Hr Total	8	0	46	62	0	9	275	17	2	101	98	0	0	0	0	0	618
16:00	0	0	9	5	0	3	101	5	1	19	35	0	0	0	0	0	178
16:15	0	0	7	5	0	2	85	9	0	12	18	0	0	0	0	0	138
16:30	0	0	13	5	0	1	111	7	1	15	41	0	0	0	0	0	194
16:45	0	0	10	4	0	2	93	9	0	22	37	0	0	0	0	0	177
Hr Total	0	0	39	19	0	8	390	30	2	68	131	0	0	0	0	0	687
17:00	0	0	10	5	0	3	141	7	0	12	32	0	0	0	0	0	210
17:15	4	0	11	9	0	0	101	4	0	14	47	0	0	0	0	0	190
17:30	1	0	9	6	0	2	72	6	0	11	41	0	0	0	0	0	148
17:45	0	0	10	15	0	4	65	6	0	12	28	0	0	0	0	0	140
Hr Total	5	0	40	35	0	9	379	23	0	49	148	0	0	0	0	0	688
18:00	0	0	12	4	0	0	76	6	0	7	21	0	0	0	0	0	126
18:15	1	0	5	2	0	2	75	4	1	7	14	0	0	0	0	0	111
18:30	1	0	9	5	0	0	71	8	0	6	8	0	0	0	0	0	108
18:45	0	0	7	1	0	1	45	4	0	2	12	0	0	0	0	0	72
Hr Total	2	0	33	12	0	3	267	22	1	22	55	0	0	0	0	0	417
19:00	1	0	4	2	0	2	43	1	0	5	10	0	0	0	0	0	68
19:15	0	0	7	5	0	0	49	2	1	5	4	0	0	0	0	0	73
19:30	0	0	6	2	0	3	52	6	1	1	10	0	0	0	0	0	81
19:45	0	0	1	0	0	1	20	1	0	1	7	0	0	0	0	0	31
Hr Total	1	0	18	9	0	6	164	10	2	12	31	0	0	0	0	0	253
20:00	0	0	3	4	0	1	23	3	0	0	4	0	0	0	0	0	38
20:15	0	0	3	1	0	0	41	5	0	2	6	0	0	0	0	0	58
20:30	0	0	6	4	0	0	26	3	0	1	7	0	0	0	0	0	47
20:45	0	0	1	3	0	1	28	2	0	4	12	0	0	0	0	0	51
Hr Total	0	0	13	12	0	2	118	13	0	7	29	0	0	0	0	0	194

NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
 COUNTED BY: W. ASSAM & R. MARTINEZ  
 NOT SIGNALIZED

Traffic Survey Specialists, Inc.  
 624 Gardenia Terrace  
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Site Code : 00140065  
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 File I.D. : 6ST\_1AVE  
 Page : 3

ALL VEHICLES

NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
Date 03/20/14																
*TOTAL*	20	0	673	782	0	149	3132	212	22	997	983	0	0	0	0	6970

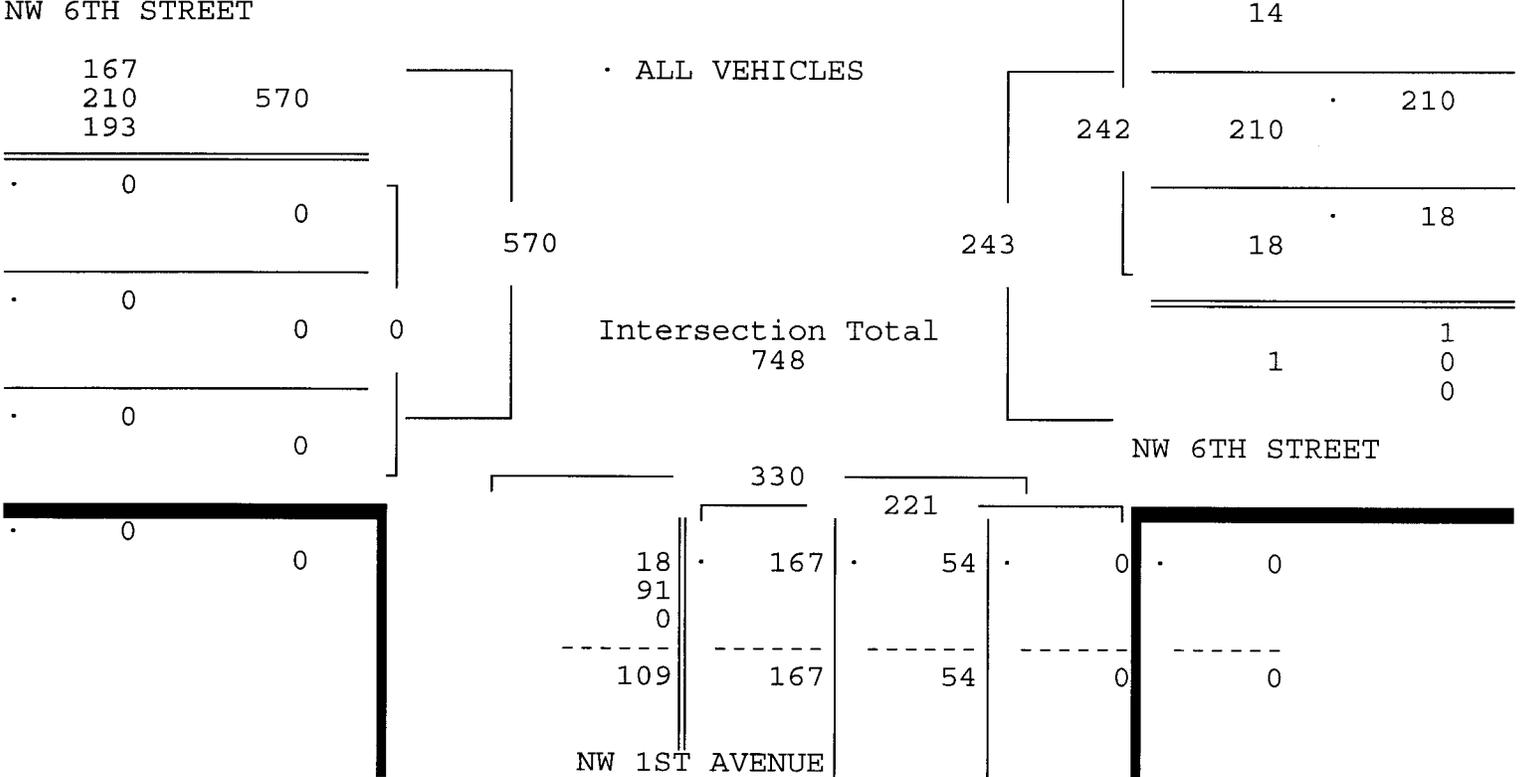
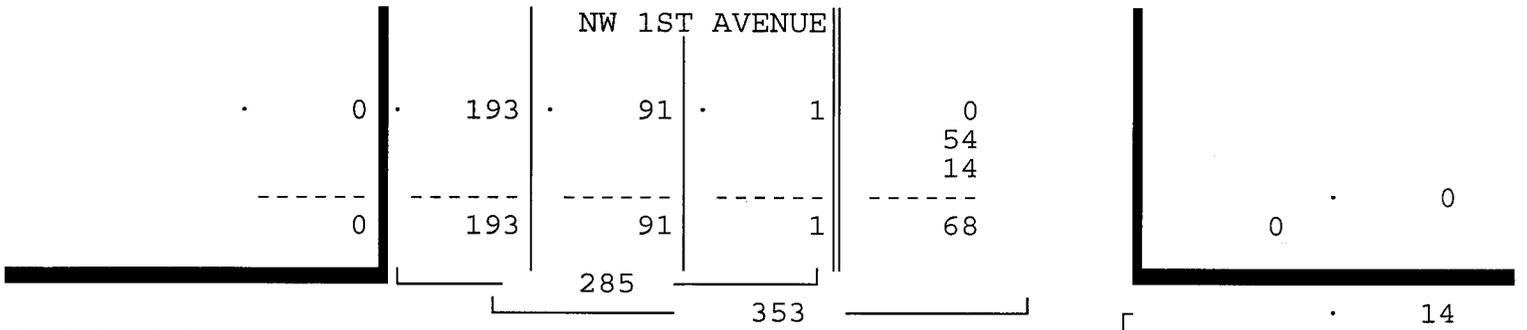
NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
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Traffic Survey Specialists, Inc.  
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ALL VEHICLES

Date	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
03/20/14	Peak Hour Analysis By Entire Intersection for the Period: 07:30 to 09:30 on 03/20/14																
Peak start	07:45				07:45				07:45				07:45				
Volume	1	0	91	193	0	18	210	14	0	167	54	0	0	0	0	0	
Percent	0%	0%	32%	68%	0%	7%	87%	6%	0%	76%	24%	0%	0%	0%	0%	0%	
Pk total	285				242				221				0				
Highest	07:45				08:00				07:45				07:00				
Volume	0	0	20	75	0	2	64	6	0	59	10	0	0	0	0	0	
Hi total	95				72				69				0				
PHF	.75				.84				.80				.0				



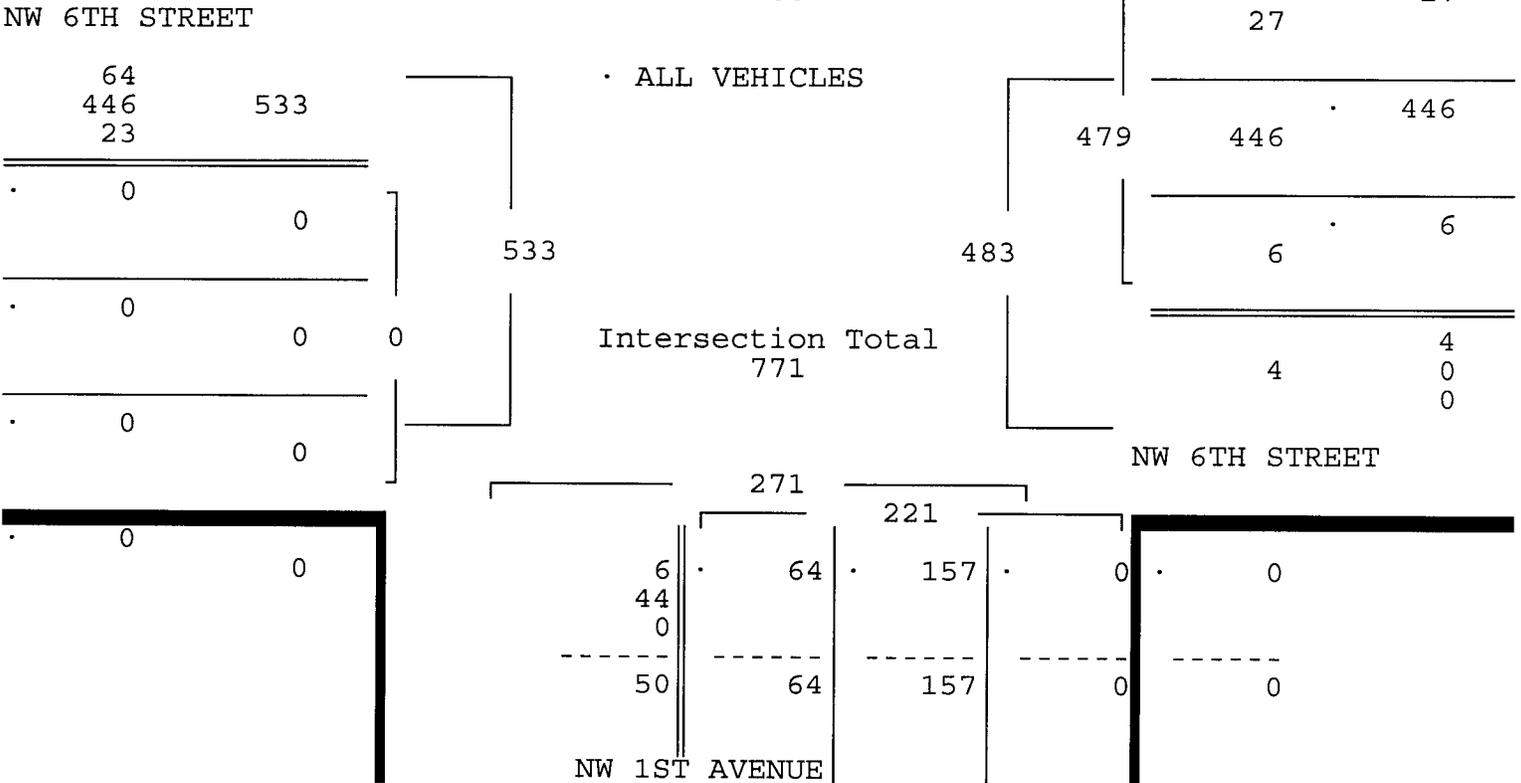
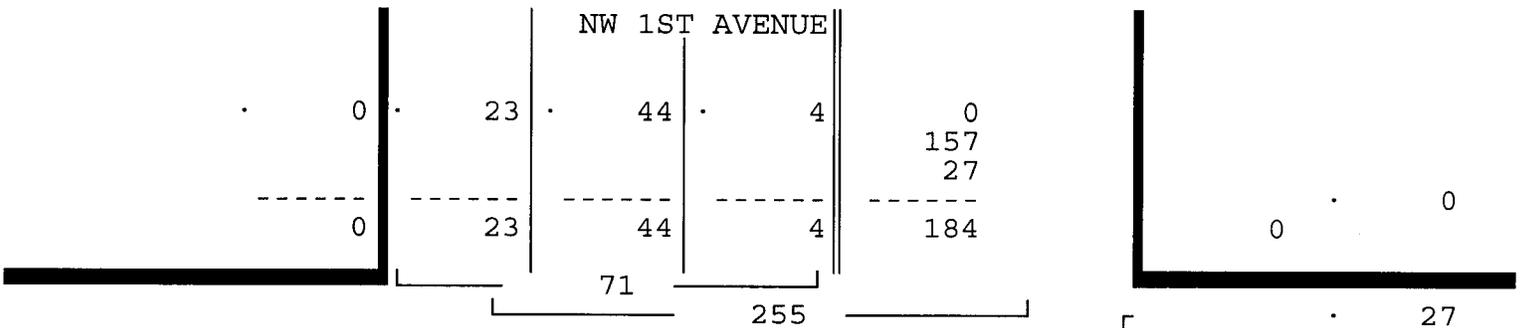
NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
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Site Code : 00140065  
 Start Date: 03/20/14  
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 Page : 4

ALL VEHICLES

	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	
Date 03/20/14	-----																
Peak Hour Analysis By Entire Intersection for the Period: 07:00 to 21:00 on 03/20/14																	
Peak start 16:30					16:30				16:30				16:30				
Volume	4	0	44	23	0	6	446	27	1	63	157	0	0	0	0	0	
Percent	6%	0%	62%	32%	0%	1%	93%	6%	0%	29%	71%	0%	0%	0%	0%	0%	
Pk total	71				479				221				0				
Highest	17:15				17:00				17:15				07:00				
Volume	4	0	11	9	0	3	141	7	0	14	47	0	0	0	0	0	
Hi total	24				151				61				0				
PHF	.74				.79				.91				.0				



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 MIAMI, FLORIDA  
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PEDESTRIANS

Date	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
03/20/14	-----																
07:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	16	18
07:15	0	0	0	7	0	0	0	3	0	0	0	0	0	0	0	7	17
07:30	0	0	0	9	0	0	0	3	0	0	0	1	0	0	0	2	15
07:45	0	0	0	5	0	0	0	5	0	0	0	2	0	0	0	2	14
Hr Total	0	0	0	21	0	0	0	12	0	0	0	4	0	0	0	27	64
08:00	0	0	0	1	0	0	0	2	0	0	0	3	0	0	0	3	9
08:15	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	5	9
08:30	0	0	0	3	0	0	0	4	0	0	0	1	0	0	0	8	16
08:45	0	0	0	1	0	0	0	4	0	0	0	2	0	0	0	8	15
Hr Total	0	0	0	7	0	0	0	12	0	0	0	6	0	0	0	24	49
09:00	0	0	0	4	0	0	0	2	0	0	0	0	0	0	0	5	11
09:15	0	0	0	2	0	0	0	2	0	0	0	0	0	0	0	3	7
09:30	0	0	0	4	0	0	0	1	0	0	0	3	0	0	0	5	13
09:45	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	6	13
Hr Total	0	0	0	13	0	0	0	9	0	0	0	3	0	0	0	19	44
10:00	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	4	6
10:15	0	0	0	3	0	0	0	2	0	0	0	1	0	0	0	3	9
10:30	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	3	5
10:45	0	0	0	1	0	0	0	5	0	0	0	4	0	0	0	3	13
Hr Total	0	0	0	5	0	0	0	10	0	0	0	5	0	0	0	13	33
11:00	0	0	0	5	0	0	0	1	0	0	0	0	0	0	0	4	10
11:15	0	0	0	0	0	0	0	3	0	0	0	2	0	0	0	4	9
11:30	0	0	0	2	0	0	0	1	0	0	0	0	0	0	0	2	5
11:45	0	0	0	0	0	0	0	3	0	0	0	1	0	0	0	3	7
Hr Total	0	0	0	7	0	0	0	8	0	0	0	3	0	0	0	13	31
12:00	0	0	0	2	0	0	0	1	0	0	0	3	0	0	0	4	10
12:15	0	0	0	1	0	0	0	3	0	0	0	1	0	0	0	6	11
12:30	0	0	0	0	0	0	0	2	0	0	0	1	0	0	0	3	6
12:45	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	6	7
Hr Total	0	0	0	4	0	0	0	6	0	0	0	5	0	0	0	19	34
13:00	0	0	0	3	0	0	0	4	0	0	0	0	0	0	0	1	8
13:15	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	12	16
13:30	0	0	0	1	0	0	0	1	0	0	0	3	0	0	0	14	19
13:45	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	8	10
Hr Total	0	0	0	7	0	0	0	7	0	0	0	4	0	0	0	35	53

NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
 COUNTED BY: W. ASSAM & R. MARTINEZ  
 NOT SIGNALIZED

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

Site Code : 00140065  
 Start Date: 03/20/14  
 File I.D. : 6ST\_1AVE  
 Page : 2

PEDESTRIANS

Date	NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total
	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	
03/20/14	-----																
14:00	0	0	0	4	0	0	0	4	0	0	0	4	0	0	0	1	13
14:15	0	0	0	5	0	0	0	7	0	0	0	2	0	0	0	6	20
14:30	0	0	0	4	0	0	0	8	0	0	0	4	0	0	0	14	30
14:45	0	0	0	1	0	0	0	4	0	0	0	0	0	0	0	17	22
Hr Total	0	0	0	14	0	0	0	23	0	0	0	10	0	0	0	38	85
15:00	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	4	8
15:15	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0	8	12
15:30	0	0	0	0	0	0	0	6	0	0	0	11	0	0	0	14	31
15:45	0	0	0	2	0	0	0	2	0	0	0	2	0	0	0	44	50
Hr Total	0	0	0	5	0	0	0	11	0	0	0	15	0	0	0	70	101
16:00	0	0	0	1	0	0	0	4	0	0	0	1	0	0	0	12	18
16:15	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	4	7
16:30	0	0	0	1	0	0	0	2	0	0	0	2	0	0	0	3	8
16:45	0	0	0	3	0	0	0	2	0	0	0	2	0	0	0	9	16
Hr Total	0	0	0	6	0	0	0	10	0	0	0	5	0	0	0	28	49
17:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	10	12
17:15	0	0	0	1	0	0	0	2	0	0	0	0	0	0	0	20	23
17:30	0	0	0	1	0	0	0	2	0	0	0	1	0	0	0	8	12
17:45	0	0	0	3	0	0	0	4	0	0	0	1	0	0	0	17	25
Hr Total	0	0	0	5	0	0	0	9	0	0	0	3	0	0	0	55	72
18:00	0	0	0	0	0	0	0	1	0	0	0	5	0	0	0	8	14
18:15	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	3	3
18:30	0	0	0	5	0	0	0	2	0	0	0	2	0	0	0	9	18
18:45	0	0	0	3	0	0	0	2	0	0	0	0	0	0	0	4	9
Hr Total	0	0	0	8	0	0	0	5	0	0	0	7	0	0	0	24	44
19:00	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	1	3
19:15	0	0	0	2	0	0	0	1	0	0	0	3	0	0	0	7	13
19:30	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2	4
19:45	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	3	4
Hr Total	0	0	0	3	0	0	0	3	0	0	0	5	0	0	0	13	24
20:00	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	1	4
20:15	0	0	0	3	0	0	0	1	0	0	0	0	0	0	0	1	5
20:30	0	0	0	5	0	0	0	1	0	0	0	1	0	0	0	1	8
20:45	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3	6
Hr Total	0	0	0	12	0	0	0	3	0	0	0	2	0	0	0	6	23

NW 6TH STREET & NW 1ST AVENUE  
 MIAMI, FLORIDA  
 COUNTED BY: W. ASSAM & R. MARTINEZ  
 NOT SIGNALIZED

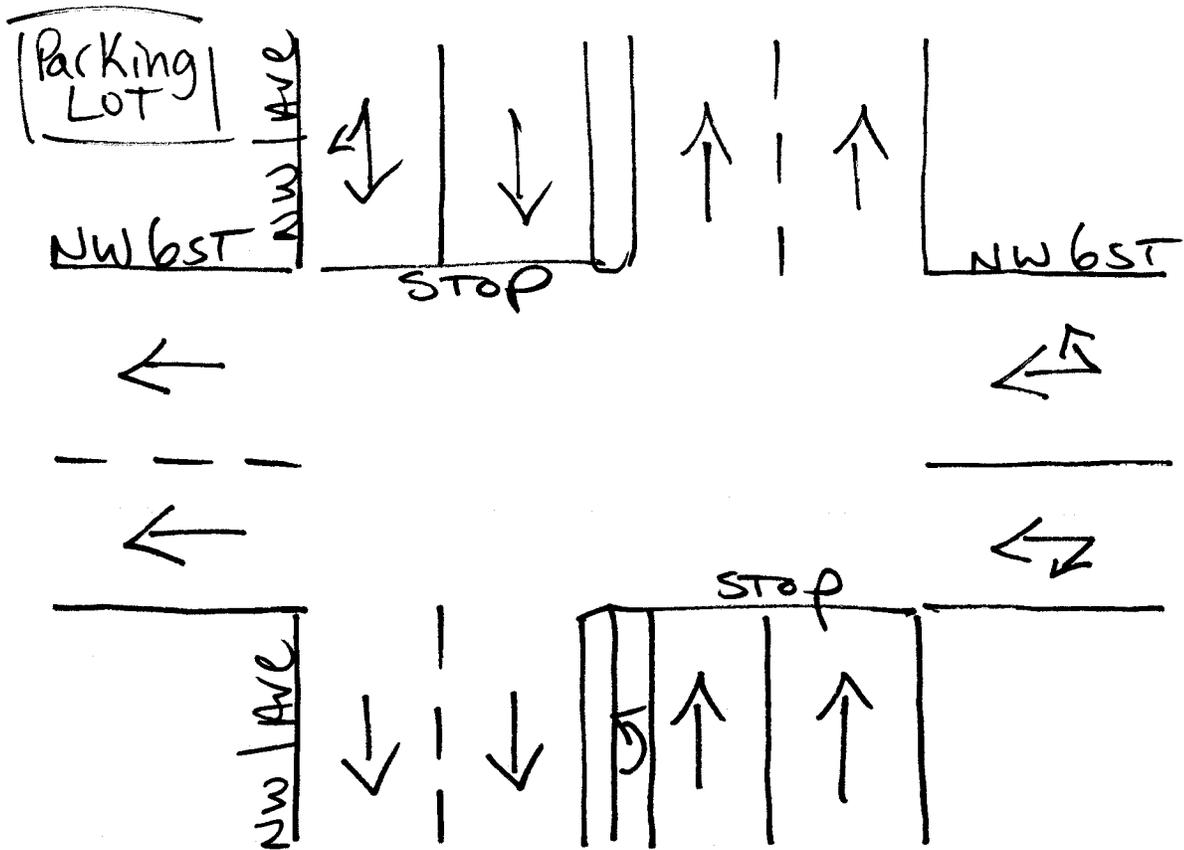
Traffic Survey Specialists, Inc.  
 624 Gardenia Terrace  
 Delray Beach, Florida 33444  
 Phone (561) 272-3255

Site Code : 00140065  
 Start Date: 03/20/14  
 File I.D. : 6ST\_1AVE  
 Page : 3

PEDESTRIANS

NW 1ST AVENUE From North				NW 6TH STREET From East				NW 1ST AVENUE From South				NW 6TH STREET From West				Total	
Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds	Left	Thru	Right	Peds		
Date 03/20/14																	
-----																	
*TOTAL*	0	0	0	117	0	0	0	128	0	0	0	77	0	0	0	384	706

↑  
North



Miami, Florida  
March 20, 2014  
drawn by: Luis Palomino  
NOT signalized

## Peak Hour Trips Generated

Hourly distribution obtained from ITE Trip Generation 9th  
Edition - Land Use 820

Time Interval		Hourly Distribution	
		Ins	Outs
12:00 AM	1:00 AM		
1:00 AM	2:00 AM		
2:00 AM	3:00 AM		
3:00 AM	4:00 AM		
4:00 AM	5:00 AM		
5:00 AM	6:00 AM		
6:00 AM	7:00 AM		
7:00 AM	8:00 AM		
8:00 AM	9:00 AM	3.10%	1.20%
9:00 AM	10:00 AM	5.50%	2.00%
10:00 AM	11:00 AM	7.00%	4.30%
11:00 AM	12:00 PM	8.40%	6.20%
12:00 PM	1:00 PM	9.40%	8.30%
1:00 PM	2:00 PM	8.20%	8.60%
2:00 PM	3:00 PM	7.70%	8.90%
3:00 PM	4:00 PM	7.80%	8.80%
4:00 PM	5:00 PM	8.00%	8.90%
5:00 PM	6:00 PM	8.40%	9.20%
6:00 PM	7:00 PM	8.00%	7.50%
7:00 PM	8:00 PM	7.90%	7.20%
8:00 PM	9:00 PM	4.30%	7.70%
9:00 PM	10:00 PM	1.80%	7.20%
10:00 PM	11:00 PM		
11:00 PM	12:00 AM		

**Approach Project Traffic Volumes**  
**NW 1st Avenue & NW 6th Street**

Time Interval	Hourly Dist.		Adjusted Hourly Dist.		Project Trips								
	Ins	Outs	Ins	Outs	Outs			Ins					
					NBL <sup>(2)</sup>	NBT <sup>(2)</sup>	SBR <sup>(2)</sup>	WBL <sup>(3)</sup>	WBT <sup>(3)</sup>	NBL <sup>(3)</sup>	SBT <sup>(3)</sup>	SBR <sup>(3)</sup>	
				1.0% 16.0% 9.0%			9.0% 6.0% 8.0% 13.0% 2.0%						
12:00 AM	1:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
1:00 AM	2:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
2:00 AM	3:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
3:00 AM	4:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
4:00 AM	5:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
5:00 AM	6:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
6:00 AM	7:00 AM	0.80%	0.30%	0.72%	0.27%	0	3	2	4	3	4	6	1
7:00 AM	8:00 AM	2.00%	0.90%	1.81%	0.81%	1	9	5	11	7	10	16	2
8:00 AM	9:00 AM	3.10%	1.20%	11.40%	6.10%	4	67	37	70	47	62	101	16
9:00 AM	10:00 AM	5.50%	2.00%	4.98%	1.80%	1	20	11	31	20	27	44	7
10:00 AM	11:00 AM	7.00%	4.30%	6.34%	3.87%	3	42	24	39	26	35	56	9
11:00 AM	12:00 PM	8.40%	6.20%	7.61%	5.58%	4	61	34	47	31	41	67	10
12:00 PM	1:00 PM	9.40%	8.30%	8.51%	7.47%	5	81	46	52	35	46	75	12
1:00 PM	2:00 PM	8.20%	8.60%	7.43%	7.74%	5	84	47	46	30	41	66	10
2:00 PM	3:00 PM	7.70%	8.90%	6.98%	8.01%	5	87	49	43	29	38	62	10
3:00 PM	4:00 PM	7.80%	8.80%	7.07%	7.92%	5	86	49	43	29	39	63	10
4:00 PM	5:00 PM	8.00%	8.90%	7.25%	8.01%	5	87	49	44	30	40	64	10
5:00 PM	6:00 PM	8.40%	9.20%	8.43%	13.28%	9	145	81	52	35	46	75	12
6:00 PM	7:00 PM	8.00%	7.50%	7.25%	6.75%	5	74	41	44	30	40	64	10
7:00 PM	8:00 PM	7.90%	7.20%	7.16%	6.48%	4	71	40	44	29	39	63	10
8:00 PM	9:00 PM	4.30%	7.70%	3.90%	6.93%	5	76	43	24	16	21	35	5
9:00 PM	10:00 PM	1.80%	7.20%	1.63%	6.48%	4	71	40	10	7	9	14	2
10:00 PM	11:00 PM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0
11:00 PM	12:00 AM	0.21%	0.35%	0.19%	0.31%	0	3	2	1	1	1	2	0

- Notes:
- <sup>(1)</sup> Peak Hour volumes obtained from Trip Generation Calculations
  - <sup>(2)</sup> Trips calculated with Outs hourly distribution
  - <sup>(3)</sup> Trips calculated with Ins hourly distribution

### Total Traffic Hourly Distribution

Daily Trips Generated

**13,634**

In: **6,817**

Out: **6,817**

		Hourly Distribution <sup>(1)</sup>		Adjusted Hourly Dist. <sup>(4)</sup>		Total Project Trips <sup>(8)</sup>		
		Ins	Outs	Ins	Outs	Ins	Outs	Total
12:00 AM	1:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
1:00 AM	2:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
2:00 AM	3:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
3:00 AM	4:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
4:00 AM	5:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
5:00 AM	6:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
6:00 AM	7:00 AM	0.80%	0.30%	0.72%	0.27%	49	18	68
7:00 AM	8:00 AM	2.00%	0.90%	1.81%	0.81%	124	55	179
8:00 AM	9:00 AM	3.10%	1.20%	11.40%	6.10%	777	416	1,193
9:00 AM	10:00 AM	5.50%	2.00%	4.98%	1.80%	340	123	462
10:00 AM	11:00 AM	7.00%	4.30%	6.34%	3.87%	432	264	696
11:00 AM	12:00 PM	8.40%	6.20%	7.61%	5.58%	519	380	899
12:00 PM	1:00 PM	9.40%	8.30%	8.51%	7.47%	580	509	1,090
1:00 PM	2:00 PM	8.20%	8.60%	7.43%	7.74%	506	528	1,034
2:00 PM	3:00 PM	7.70%	8.90%	6.98%	8.01%	475	546	1,021
3:00 PM	4:00 PM	7.80%	8.80%	7.07%	7.92%	482	540	1,021
4:00 PM	5:00 PM	8.00%	8.90%	7.25%	8.01%	494	546	1,040
5:00 PM	6:00 PM	8.40%	9.20%	8.43%	13.28%	575	905	1,480
6:00 PM	7:00 PM	8.00%	7.50%	7.25%	6.75%	494	460	954
7:00 PM	8:00 PM	7.90%	7.20%	7.16%	6.48%	488	442	929
8:00 PM	9:00 PM	4.30%	7.70%	3.90%	6.93%	266	472	738
9:00 PM	10:00 PM	1.80%	7.20%	1.63%	6.48%	111	442	553
10:00 PM	11:00 PM	0.21%	0.35%	0.19%	0.31%	13	21	35
11:00 PM	12:00 AM	0.21%	0.35%	0.19%	0.31%	13	21	35
<b>Total</b>		100.00%	100.00%	100.00%	100.00%			
<b>Peak Total <sup>(5)</sup></b>		11.50%	10.40%	19.83%	19.38%			
<b>Non Peak Total <sup>(6)</sup></b>		88.50%	89.60%	80.17%	80.62%			
<b>Peak Difference <sup>(7)</sup></b>		-	-	8.33%	8.98%			

(2)(3)

Notes:

- (1) Hourly distribution obtained from ITE Trip Generation 9th Edition - Land Use 820
- (2) Peak Hour volumes obtained from Trip Generation Calculations
- (3) Adjusted Hourly Distribution for peak hours calculated using peak and daily trip generation
- (4) Adjusted Hourly Distribution for non peak hours calculated by proportionally distributing the peak difference
- (5) PM Peak Hour percentage
- (6) Summation of all non peak hours
- (7) Difference of PM peaks of ITE Hourly Distribution and the the peaks calculated using trip generation volumes
- (8) Adjusted trips calculated with adjusted hourly distribution and daily trips

# NW 1st Avenue Major Street

Hour		Raw Existing TMCs													
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	2	129	10	0	145	27	0	0	0	53	187
8:00 AM	9:00 AM	0	0	0	24	213	14	0	133	56	0	1	0	102	149
9:00 AM	10:00 AM	0	0	0	29	168	4	2	80	52	0	0	0	72	73
10:00 AM	11:00 AM	0	0	0	14	160	6	5	80	65	0	0	0	65	35
11:00 AM	12:00 PM	0	0	0	6	184	14	1	73	69	0	0	0	52	49
12:00 PM	1:00 PM	0	0	0	11	255	23	3	81	83	0	1	0	45	40
1:00 PM	2:00 PM	0	0	0	15	216	12	1	81	68	0	0	0	50	49
2:00 PM	3:00 PM	0	0	0	11	214	14	3	65	71	0	2	0	45	51
3:00 PM	4:00 PM	0	0	0	9	275	17	2	101	98	0	8	0	46	62
4:00 PM	5:00 PM	0	0	0	8	390	30	2	68	131	0	0	0	39	19
5:00 PM	6:00 PM	0	0	0	9	379	23	0	49	148	0	5	0	40	35
6:00 PM	7:00 PM	0	0	0	3	267	22	1	22	55	0	2	0	33	12

Hour		Future 2018 Background TMCs													
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	2	141	11	0	159	30	0	0	0	58	205
8:00 AM	9:00 AM	0	0	0	26	234	15	0	146	61	0	1	0	112	163
9:00 AM	10:00 AM	0	0	0	32	184	4	2	88	57	0	0	0	79	80
10:00 AM	11:00 AM	0	0	0	15	175	7	5	88	71	0	0	0	71	38
11:00 AM	12:00 PM	0	0	0	7	202	15	1	80	76	0	0	0	57	54
12:00 PM	1:00 PM	0	0	0	12	280	25	3	89	91	0	1	0	49	44
1:00 PM	2:00 PM	0	0	0	16	237	13	1	89	75	0	0	0	55	54
2:00 PM	3:00 PM	0	0	0	12	235	15	3	71	78	0	2	0	49	56
3:00 PM	4:00 PM	0	0	0	10	302	19	2	111	107	0	9	0	50	68
4:00 PM	5:00 PM	0	0	0	9	428	33	2	75	144	0	0	0	43	21
5:00 PM	6:00 PM	0	0	0	10	416	25	0	54	162	0	5	0	44	38
6:00 PM	7:00 PM	0	0	0	3	293	24	1	24	60	0	2	0	36	13

Hour		Project Trips													
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	11	7	0	0	10	9	0	0	0	16	7
8:00 AM	9:00 AM	0	0	0	70	47	0	0	66	67	0	0	0	101	53
9:00 AM	10:00 AM	0	0	0	31	20	0	0	28	20	0	0	0	44	18
10:00 AM	11:00 AM	0	0	0	39	26	0	0	37	42	0	0	0	56	32
11:00 AM	12:00 PM	0	0	0	47	31	0	0	45	61	0	0	0	67	45
12:00 PM	1:00 PM	0	0	0	52	35	0	0	52	81	0	0	0	75	57
1:00 PM	2:00 PM	0	0	0	46	30	0	0	46	84	0	0	0	66	58
2:00 PM	3:00 PM	0	0	0	43	29	0	0	43	87	0	0	0	62	59
3:00 PM	4:00 PM	0	0	0	43	29	0	0	44	86	0	0	0	63	58
4:00 PM	5:00 PM	0	0	0	44	30	0	0	45	87	0	0	0	64	59
5:00 PM	6:00 PM	0	0	0	52	35	0	0	55	145	0	0	0	75	93
6:00 PM	7:00 PM	0	0	0	44	30	0	0	44	74	0	0	0	64	51

Hour		Future 2018 Total Without WB Right-Turn Reduction															
		Eastbound			Westbound			Northbound			Southbound			Major Street	Highest Minor		
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
7:00 AM	8:00 AM	0	0	0	13	148	11	0	169	39	0	1	0	74	212	494	173
8:00 AM	9:00 AM	0	0	0	96	281	15	0	212	128	0	1	0	213	216	771	392
9:00 AM	10:00 AM	0	0	0	63	204	4	2	116	77	0	0	0	123	98	416	271
10:00 AM	11:00 AM	0	0	0	54	201	7	5	125	113	0	0	0	127	70	441	262
11:00 AM	12:00 PM	0	0	0	54	233	15	1	125	137	0	0	0	124	99	486	302
12:00 PM	1:00 PM	0	0	0	64	315	25	3	141	172	0	1	0	124	101	542	404
1:00 PM	2:00 PM	0	0	0	62	267	13	1	135	159	0	0	0	121	112	527	342
2:00 PM	3:00 PM	0	0	0	55	264	15	3	114	165	0	2	0	111	115	511	334
3:00 PM	4:00 PM	0	0	0	53	331	19	2	155	193	0	9	0	113	126	599	402
4:00 PM	5:00 PM	0	0	0	53	458	33	2	120	231	0	0	0	107	80	539	543
5:00 PM	6:00 PM	0	0	0	62	451	25	0	109	307	0	5	0	119	131	672	538
6:00 PM	7:00 PM	0	0	0	47	323	24	1	68	134	0	2	0	100	64	370	394

Hour		Future 2018 Total With WB Right-Turn Reduction																
		Pagones Reduction	Eastbound			Westbound			Northbound			Southbound			Major Street	Highest Minor		
Start	End	WBR	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR		
7:00 AM	8:00 AM	30%	0	0	0	13	148	8	0	169	39	0	0	0	74	212	494	169
8:00 AM	9:00 AM	30%	0	0	0	96	281	11	0	212	128	0	1	0	213	216	771	388
9:00 AM	10:00 AM	30%	0	0	0	63	204	3	2	116	77	0	0	0	123	98	416	270
10:00 AM	11:00 AM	30%	0	0	0	54	201	5	5	125	113	0	0	0	127	70	441	260
11:00 AM	12:00 PM	30%	0	0	0	54	233	11	1	125	137	0	0	0	124	99	486	297
12:00 PM	1:00 PM	30%	0	0	0	64	315	18	3	141	172	0	1	0	124	101	542	396
1:00 PM	2:00 PM	30%	0	0	0	62	267	9	1	135	159	0	0	0	121	112	527	339
2:00 PM	3:00 PM	30%	0	0	0	55	264	11	3	114	165	0	2	0	111	115	511	329
3:00 PM	4:00 PM	30%	0	0	0	53	331	13	2	155	193	0	9	0	113	126	599	396
4:00 PM	5:00 PM	30%	0	0	0	53	458	23	2	120	231	0	0	0	107	80	539	533
5:00 PM	6:00 PM	30%	0	0	0	62	451	18	0	109	307	0	5	0	119	131	672	530
6:00 PM	7:00 PM	30%	0	0	0	47	323	17	1	68	134	0	2	0	100	64	370	387

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# NW 1st Avenue and NW 6th Street

SCENARIO: 30% Southbound Right-Turn Reductions  
TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 1st Avenue and NW 6th Street

SCENARIO: NW 1st Avenue: Future (2018) Traffic with Project (N/S)  
NW 6th Street: Future (2018) Traffic with Project (E/W)

MAJOR STREET: NW 1st Avenue

# OF APPROACH LANES: 3

MINOR STREET: NW 6th Street

# OF APPROACH LANES: 2

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST NORTHBOUND/S OUTBOUND	MINOR ST WESTBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A & 1-B						WARRANT 2	WARRANT 3
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	WARRANT 1-A			WARRANT 1-B				
									MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	200		900	100		480	160		720	80			
07:00 AM TO 08:00 AM	494	169					Y		Y	Y	Y		Y			
08:00 AM TO 09:00 AM	771	388	Y	Y	Y		Y		Y	Y	Y	Y	Y	Y	Y	
09:00 AM TO 10:00 AM	416	270		Y			Y			Y			Y			
10:00 AM TO 11:00 AM	441	260		Y			Y			Y			Y			
11:00 AM TO 12:00 PM	486	297		Y			Y		Y	Y	Y		Y			
12:00 PM TO 01:00 PM	542	396		Y			Y		Y	Y	Y		Y			
01:00 PM TO 02:00 PM	527	339		Y			Y		Y	Y	Y		Y			
02:00 PM TO 03:00 PM	511	329		Y			Y		Y	Y	Y		Y			
03:00 PM TO 04:00 PM	599	396		Y			Y		Y	Y	Y		Y		Y	
04:00 PM TO 05:00 PM	539	533		Y			Y		Y	Y	Y		Y		Y	
05:00 PM TO 06:00 PM	672	530	Y	Y	Y		Y		Y	Y	Y		Y		Y	
06:00 PM TO 07:00 PM	370	387		Y			Y			Y			Y			
			2			0			9			1			4	0
			8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED NOT SATISFIED						4 HRS NEEDED SATISFIED	1 HR NEEDED NOT SATISFIED

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour

# NW 6th Street Major Street

Hour		Raw Existing TMCs												Major Street	Highest Minor
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	2	129	10	0	145	27	0	0	0	53	187
8:00 AM	9:00 AM	0	0	0	24	213	14	0	133	56	0	1	0	102	149
9:00 AM	10:00 AM	0	0	0	29	168	4	2	80	52	0	0	0	72	73
10:00 AM	11:00 AM	0	0	0	14	160	6	5	80	65	0	0	0	65	35
11:00 AM	12:00 PM	0	0	0	6	184	14	1	73	69	0	0	0	52	49
12:00 PM	1:00 PM	0	0	0	11	255	23	3	81	83	0	1	0	45	40
1:00 PM	2:00 PM	0	0	0	15	216	12	1	81	68	0	0	0	50	49
2:00 PM	3:00 PM	0	0	0	11	214	14	3	65	71	0	2	0	45	51
3:00 PM	4:00 PM	0	0	0	9	275	17	2	101	98	0	8	0	46	62
4:00 PM	5:00 PM	0	0	0	8	390	30	2	68	131	0	0	0	39	19
5:00 PM	6:00 PM	0	0	0	9	379	23	0	49	148	0	5	0	40	35
6:00 PM	7:00 PM	0	0	0	3	267	22	1	22	55	0	2	0	33	12

Hour		Future 2018 Background TMCs												Major Street	Highest Minor
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	2	141	11	0	159	30	0	0	0	58	205
8:00 AM	9:00 AM	0	0	0	26	234	15	0	146	61	0	1	0	112	163
9:00 AM	10:00 AM	0	0	0	32	184	4	2	88	57	0	0	0	79	80
10:00 AM	11:00 AM	0	0	0	15	175	7	5	88	71	0	0	0	71	38
11:00 AM	12:00 PM	0	0	0	7	202	15	1	80	76	0	0	0	57	54
12:00 PM	1:00 PM	0	0	0	12	280	25	3	89	91	0	1	0	49	44
1:00 PM	2:00 PM	0	0	0	16	237	13	1	89	75	0	0	0	55	54
2:00 PM	3:00 PM	0	0	0	12	235	15	3	71	78	0	2	0	49	56
3:00 PM	4:00 PM	0	0	0	10	302	19	2	111	107	0	9	0	50	68
4:00 PM	5:00 PM	0	0	0	9	428	33	2	75	144	0	0	0	43	21
5:00 PM	6:00 PM	0	0	0	10	416	25	0	54	162	0	5	0	44	38
6:00 PM	7:00 PM	0	0	0	3	293	24	1	24	60	0	2	0	36	13

Hour		Project Trips												Major Street	Highest Minor
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	11	7	0	0	10	9	0	0	0	16	7
8:00 AM	9:00 AM	0	0	0	70	47	0	0	66	67	0	0	0	101	53
9:00 AM	10:00 AM	0	0	0	31	20	0	0	28	20	0	0	0	44	18
10:00 AM	11:00 AM	0	0	0	39	26	0	0	38	42	0	0	0	56	33
11:00 AM	12:00 PM	0	0	0	47	31	0	0	45	61	0	0	0	67	44
12:00 PM	1:00 PM	0	0	0	52	35	0	0	51	81	0	0	0	75	58
1:00 PM	2:00 PM	0	0	0	46	30	0	0	46	84	0	0	0	66	57
2:00 PM	3:00 PM	0	0	0	43	29	0	0	43	87	0	0	0	62	59
3:00 PM	4:00 PM	0	0	0	43	29	0	0	44	86	0	0	0	63	59
4:00 PM	5:00 PM	0	0	0	44	30	0	0	45	87	0	0	0	64	59
5:00 PM	6:00 PM	0	0	0	52	35	0	0	55	145	0	0	0	75	93
6:00 PM	7:00 PM	0	0	0	44	30	0	0	45	74	0	0	0	64	51

Hour		Future 2018 Total												Major Street	Highest Minor
		Eastbound			Westbound			Northbound			Southbound				
Start	End	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL	SBT	SBR
7:00 AM	8:00 AM	0	0	0	13	148	11	0	169	39	0	1	0	74	212
8:00 AM	9:00 AM	0	0	0	96	281	15	0	212	128	0	1	0	213	216
9:00 AM	10:00 AM	0	0	0	63	204	4	2	116	77	0	0	0	123	98
10:00 AM	11:00 AM	0	0	0	54	201	7	5	126	113	0	0	0	127	71
11:00 AM	12:00 PM	0	0	0	54	233	15	1	125	137	0	0	0	124	98
12:00 PM	1:00 PM	0	0	0	64	315	25	3	140	172	0	1	0	124	102
1:00 PM	2:00 PM	0	0	0	62	267	13	1	135	159	0	0	0	121	111
2:00 PM	3:00 PM	0	0	0	55	264	15	3	114	165	0	2	0	111	115
3:00 PM	4:00 PM	0	0	0	53	331	19	2	155	193	0	9	0	113	127
4:00 PM	5:00 PM	0	0	0	53	458	33	2	120	231	0	0	0	107	80
5:00 PM	6:00 PM	0	0	0	62	451	25	0	109	307	0	5	0	119	131
6:00 PM	7:00 PM	0	0	0	47	323	24	1	69	134	0	2	0	100	64

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# NW 1st Avenue and NW 6th Street

SCENARIO: 30% Southbound Right-Turn Reductions  
TRAFFIC SIGNAL VOLUME WARRANT ANALYSIS

INTERSECTION NAME: NW 1st Avenue and NW 6th Street

SCENARIO: NW 1st Avenue: Future (2018) Traffic with Project (N/S)  
NW 6th Street: Future (2018) Traffic with Project (E/W)

MAJOR STREET: NW 6th Street

# OF APPROACH LANES: 2

MINOR STREET: NW 1st Avenue

# OF APPROACH LANES: 3

ISOLATED COMMUNITY WITH POPULATION LESS THAN 10,000 (Y OR N): N

85TH PERCENTILE SPEED GREATER THAN 40 MPH ON MAJOR STREET (Y OR N): N

	MAJOR ST WESTBOUND	MINOR ST NORTHBOUND	WARRANT 1-A			WARRANT 1-B			COMBINATION OF WARRANT 1-A & 1-B						WARRANT 2	WARRANT 3
			MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET	WARRANT 1-A			WARRANT 1-B				
									MAJOR STREET	MINOR STREET	BOTH MET	MAJOR STREET	MINOR STREET	BOTH MET		
THRESHOLD VALUES			600	200		900	100		480	160		720	80			
07:00 AM TO 08:00 AM	173	208		Y			Y			Y			Y			
08:00 AM TO 09:00 AM	392	340		Y			Y			Y			Y			
09:00 AM TO 10:00 AM	271	195					Y			Y			Y			
10:00 AM TO 11:00 AM	262	244		Y			Y			Y			Y			
11:00 AM TO 12:00 PM	302	263		Y			Y			Y			Y			
12:00 PM TO 01:00 PM	404	315		Y			Y			Y			Y			
01:00 PM TO 02:00 PM	342	294		Y			Y			Y			Y			
02:00 PM TO 03:00 PM	334	282		Y			Y			Y			Y			
03:00 PM TO 04:00 PM	402	350		Y			Y			Y			Y			
04:00 PM TO 05:00 PM	543	352		Y			Y		Y	Y	Y		Y			
05:00 PM TO 06:00 PM	538	416		Y			Y		Y	Y	Y		Y			
06:00 PM TO 07:00 PM	394	205		Y			Y			Y			Y			
	4,358	3,465	0			0			2			0			0	0
			8 HOURS NEEDED NOT SATISFIED			8 HOURS NEEDED NOT SATISFIED			8 HOURS OF BOTH WARR #1-A AND WARR #1-B NEEDED NOT SATISFIED						4 HRS NEEDED NOT SATISFIED	1 HR NEEDED NOT SATISFIED

WARRANT 1 -- Eight Hour Vehicular Volume

WARRANT 2 -- Four Hour Vehicular Volume

WARRANT 3 -- Peak Hour