7-Eleven – Store #41157

900 Pembroke Road

Hallandale Beach, Florida

TRAFFIC IMPACT STUDY

prepared for:
Creighton Companies, LLC

KBP CONSULTING, INC.

January 2020
Updated April 2020

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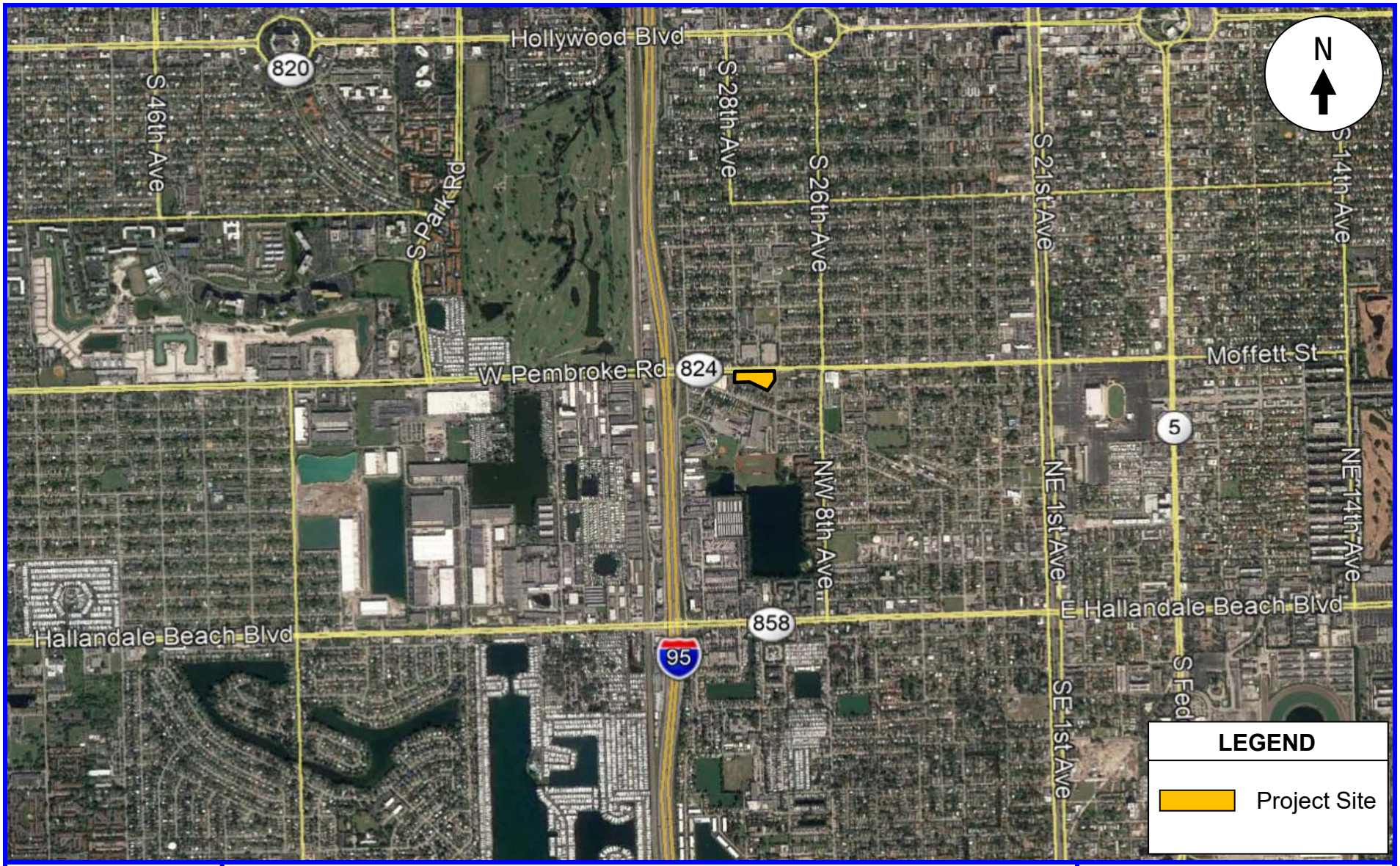
INTRODUCTION

7-Eleven proposes to construct a new gasoline / service station with convenience market on the south side of Pembroke Road (State Road 824) between NW 9th Avenue and NW 10th Avenue in Hallandale Beach, Broward County, Florida. More specifically, the subject site is located at 900 Pembroke Road. The location of this project site is illustrated in Figure 1 on the following page.

KBP Consulting, Inc. has been retained by Creighton Companies, LLC to conduct a traffic impact study in connection with the development of this commercial project.[1] This study addresses the trip generation, site access, and the traffic impacts created by the proposed project on the nearby transportation network. This study is divided into seven (7) sections, as listed below:

1. Inventory
2. Existing Conditions
3. Traffic Counts
4. Trip Generation
5. Trip Distribution and Traffic Assignment
6. Traffic Analyses
7. Summary & Conclusions

[1] The preliminary methodology for this traffic impact study was developed by Michael Miller Planning Associates, Inc. in November 2019. This preliminary methodology memorandum is presented in Appendix A of this report. Subsequent meetings and discussions were held with City staff and the project team. As a result, some modifications were made to the development program and to the proposed traffic study methodology. This study reflects those discussions and the latest development program.



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Project Location Map

FIGURE 1
7-Eleven
Hallandale Beach, Florida

INVENTORY

Existing Land Uses and Access

The subject +/- 1.93-acre site consists of a stone and statue retail store with a building area of approximately 1,628 square feet and a marble and granite industrial site with approximately 12,610 square feet of building area. Access to the overall site is currently provided by five (5) full access driveways along Pembroke Road, one (1) full access driveway on NW 9th Avenue and one (1) full access driveway on NW 10th Street.

Proposed Land Use and Access

The subject site will be developed with a new 7-Eleven that will include 12 fueling positions, a 3,926 square foot convenience store, and an automated car wash. Access will be provided via one (1) right-turn in / right-turn out only driveway on Pembroke Road, one (1) full access driveway on NW 9th Avenue, and one (1) full access driveway on NW 10th Street. Appendix B contains the preliminary site plan for this project and the anticipated buildout year is 2021.

Delivery Truck Circulation

The subject site has been designed in a manner that will allow delivery trucks to enter and exit the site via the driveway located on Pembroke Road. Specifically, the fuel delivery truck will travel eastbound on Pembroke Road, turn right into the site via the Pembroke Road driveway, access the fuel storage tanks in the northeast corner of the site, circulate through the site and exit via the same driveway. This truck circulation plan is presented in Appendix B.

Transit Service and Facilities

Broward County Transit (BCT) Route 5 serves the project site. This route provides transit service from Memorial Hospital West to Hallandale City Hall generally along the Pembroke Road (SR 824) corridor. There are three (3) bus stops located in the immediate vicinity of the subject 7-Eleven site. In addition, the immediate area of the proposed 7-Eleven is served by the City of Hallandale Beach Community Bus System. Specifically, Green Route 3 and Orange Route 4 both provide service along Pembroke Road, NW 10th Avenue and Foster Road. The routes provide access to the Hallandale Beach City Hall and Library and the Tri-Rail station as well as other medical facilities and shopping locations.

EXISTING CONDITIONS

This section of the report addresses the transportation system located in the vicinity of the 7-Eleven site.

Roadway System

Pembroke Road (State Road 824), located on the north side of the site, is a four-lane divided arterial roadway oriented in the east-west direction with two (2) eastbound lanes and two (2) westbound lanes. The Access Classification of this roadway is "5 – Restrictive". NW 9th Avenue, NW 10th Avenue, and NW 10th Street each border the site and are locally maintained two-lane roadways. The roadway segments to be evaluated as part of this analysis include the following:

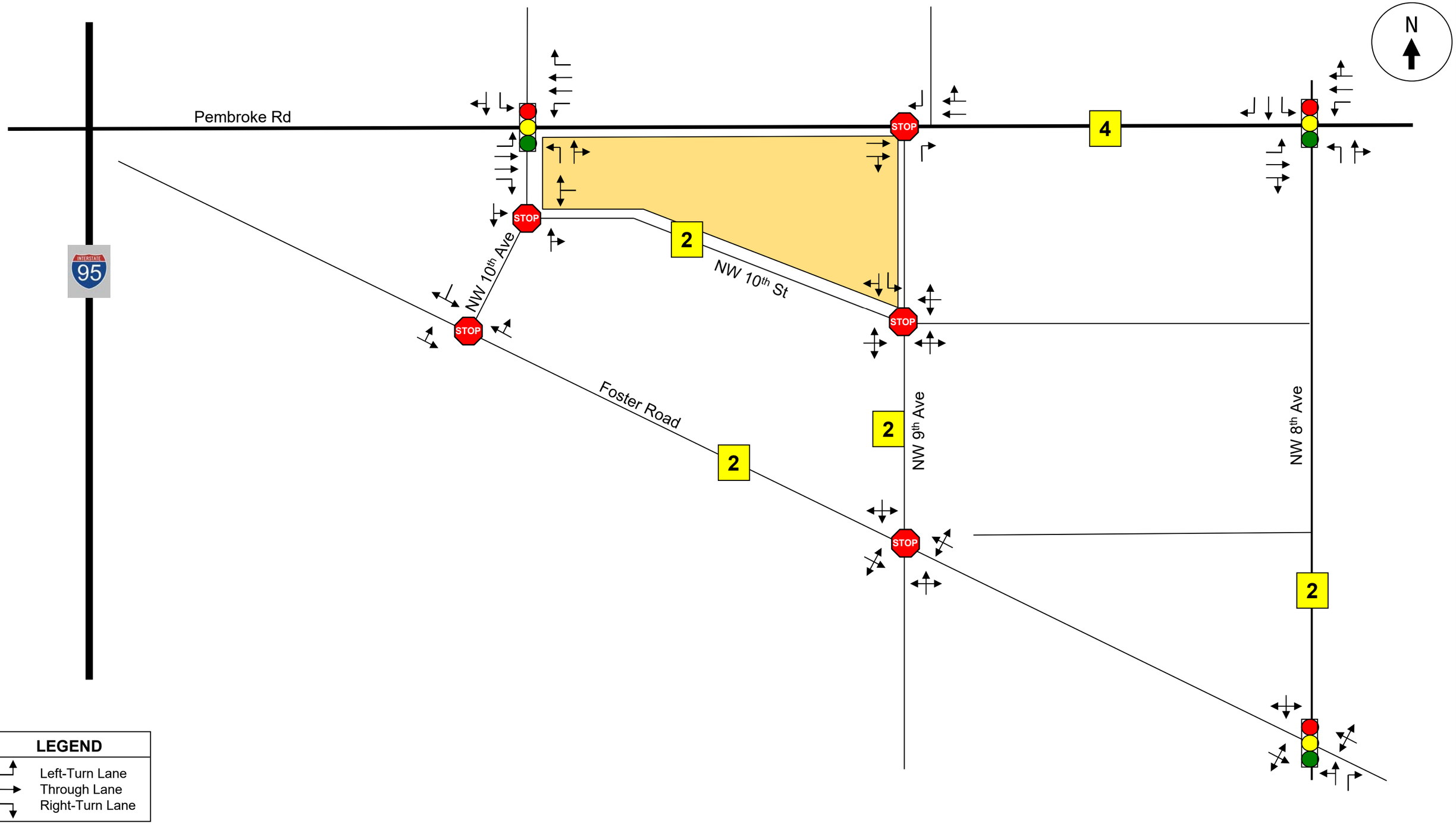
- Interstate 95 and Pembroke Road – On / Off Ramps
- Pembroke Road between I-95 and Dixie Highway / NW 1st Avenue
- NW 8th Avenue between Pembroke Road and Hallandale Beach Boulevard
- Foster Road between NW 10th Avenue and NW 8th Avenue
- NW 10th Street between NW 10th Avenue and NW 8th Avenue

Study Intersections

For purposes of this study, the following eight (8) intersections were selected for detailed analysis purposes. These intersections are:

- Pembroke Road and NW 10th Avenue (signalized)
- Pembroke Road and NW 9th Avenue (unsignalized)
- Pembroke Road and NW 8th Avenue (signalized)
- NW 10th Avenue and NW 10th Street (unsignalized)
- NW 10th Avenue and Foster Road (unsignalized)
- NW 9th Avenue and NW 10th Street (unsignalized)
- NW 9th Avenue and Foster Road (unsignalized)
- NW 8th Avenue and Foster Road (signalized)

Figure 2 depicts the number of lanes on the roadways located within the study area of the proposed project. The geometry of the intersections selected for detailed analysis purposes are also illustrated in this figure.



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Existing Lane Geometry

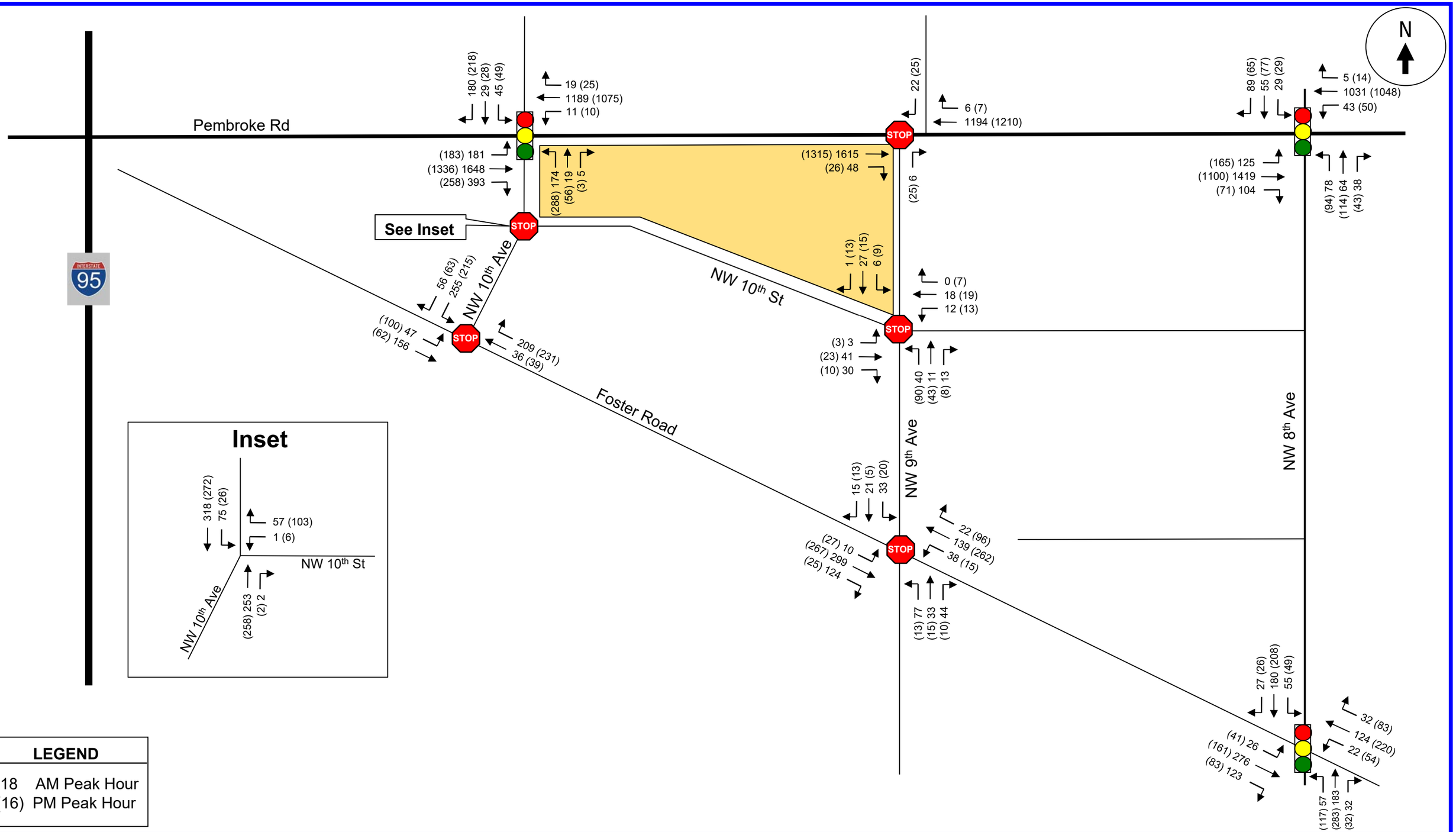
FIGURE 2
7-Eleven
Hallandale Beach, Florida

TRAFFIC COUNTS

KBP Consulting, Inc., in association with Traffic Survey Specialists, Inc., collected traffic data at the following locations:

- Pembroke Road and NW 10th Avenue
- Pembroke Road and NW 9th Avenue
- Pembroke Road and NW 8th Avenue
- NW 10th Avenue and NW 10th Street
- NW 10th Avenue and Foster Road
- NW 9th Avenue and NW 10th Street
- NW 9th Avenue and Foster Road
- NW 8th Avenue and Foster Road

These intersection turning movement counts were collected on Wednesday, November 13, 2019 during the AM peak period (7:00 AM to 9:00 AM) and the PM peak period (4:00 PM to 6:00 PM). Figure 3 summarizes the results of this traffic data collection effort. Appendix C contains the traffic data as collected in the field. *(Note that the volumes presented in Figure 3 have been adjusted to reflect average peak season volumes.)*



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Existing (2019) Intersection Turning Movement Counts
(Source: Traffic Survey Specialists, Inc., 11/13/19 – Adjusted to Reflect Average Peak Season Conditions)

FIGURE 3
7-Eleven
Hallandale Beach, Florida

TRIP GENERATION

A trip generation analysis has been conducted for the existing development and the proposed 7-Eleven development. The analysis was performed using the trip generation rates and equations published in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual (10th Edition)*. The trip generation analysis was undertaken for daily, AM peak hour, and PM peak hour conditions. According to the ITE report, the most appropriate "land use" categories for the existing and proposed development are as follows:

ITE Land Use #820 – Commercial / Retail (Shopping Center)

- Weekday: T = 37.75 (X)
  where T = number of trips and X = 1,000 square feet of gross leasable area
- AM Peak Hour: T = 0.94 (X) (62% in / 38% out)
- PM Peak Hour: T = 3.81 (X) (48% in / 52% out)
- Pass-By: 34%

ITE Land Use #110 – General Light Industrial

- Weekday: T = 4.96 (X)
  where T = number of trips and X = 1,000 square feet of gross floor area
- AM Peak Hour: T = 0.70 (X) (88% in / 12% out)
- PM Peak Hour: T = 0.63 (X) (13% in / 87% out)

ITE Land Use #960 – Super Convenience Market / Gas Station

- Weekday: T = 837.58 (GFA)
  where T = number of trips and GFA = 1,000 square feet of gross floor area
- AM Peak Hour: T = 16.1 (VFP) + 135 (GFA) – 483 (50% in / 50% out)
  where VFP = Vehicle Fueling Positions
- PM Peak Hour: T = 11.5 (VFP) + 82.9 (GFA) – 226 (50% in / 50% out)
- Pass-By: 78% [1]

[1] The ITE *Trip Generation Handbook (3rd Edition)* lacks pass-by data for this land use; however, the Florida Department of Transportation (FDOT) has documented a pass-by rate within the state of Florida of 78% for large gas stations / convenience stores. This information is presented in the publication entitled *Trip Generation – Characteristics of Large Gas Stations / Convenience Stores and Student Apartments*. This information as well as the ITE trip generation data is presented in Appendix D.

Utilizing the above-listed trip generation and pass-by rates from the referenced ITE document, a trip generation analysis was undertaken for the subject 7-Eleven site. The results of this effort are documented in Table 1 below.

Table 1
Trip Generation Summary
7-Eleven (900 Pembroke Road) - Hallandale Beach, Florida

Land Use	Size	Daily Trips	AM Peak Hour Trips			PM Peak Hour Trips		
			In	Out	Total	In	Out	Total
Existing								
Commercial / Retail	1,628 SF	61	1	1	2	3	3	6
- Pass-By (34%)		*(21)*	*0*	*(1)*	*(1)*	*(1)*	*(1)*	*(2)*
General Light Industrial	12,610 SF	63	8	1	9	1	7	8
Sub Total		**103**	**9**	**1**	**10**	**3**	**9**	**12**
Proposed								
Gas Station w/C-Store	12 FP	3,288	120	120	240	119	118	237
- Pass-By (78%)	3,926 SF	*(2,565)*	*(94)*	*(93)*	*(187)*	*(93)*	*(92)*	*(185)*
Sub Total		**723**	**26**	**27**	**53**	**26**	**26**	**52**
Difference (Proposed - Existing)		**620**	**17**	**26**	**43**	**23**	**17**	**40**

Compiled by: KBP Consulting, Inc. (April 2020).
Source: Institute of Transportation Engineers (ITE) Trip Generation Manual (10th Edition).

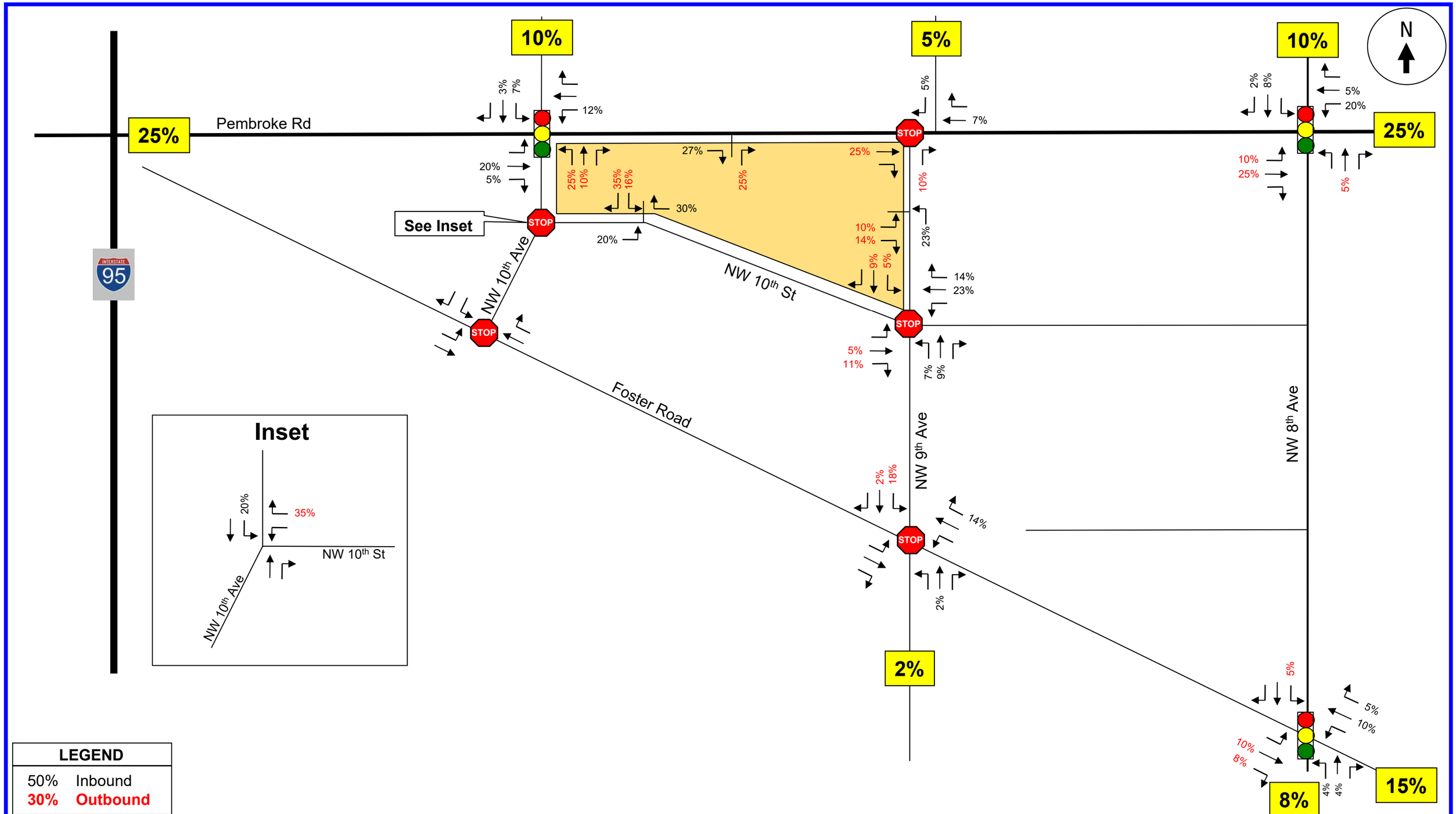
As indicated in Table 1 above, the proposed project is anticipated to generate 620 net new daily vehicle trips, 43 net new AM peak hour vehicle trips (17 inbound and 26 outbound) and 40 net new vehicle trips (23 inbound and 17 outbound) during the typical afternoon peak hour. *(Note: Due to the low number existing trips associated with the site, no credit or deduction has been applied. The subsequent analysis includes all of the trips associated with the proposed development.)*

TRIP DISTRIBUTION AND TRAFFIC ASSIGNMENT

The trip distribution and traffic assignment for the 7-Eleven project was developed based upon knowledge of the study area, examination of the surrounding roadway network characteristics, review of current traffic volumes and existing land use patterns, and input from the project team. The trip distribution for the primary project trips is presented in Figure 4 and the trip distribution for the pass-by trips is presented in Figure 5. Regarding the pass-by trips associated with this development, it is projected that the overwhelming majority will be derived from the background traffic on Pembroke Road. Furthermore, due to the location of the site and the surrounding roadway network, it is estimated that 70% of the pass-by traffic will be derived from the eastbound traffic on Pembroke Road with the balance being derived from the westbound traffic. This is purely a function of convenience and the ease of returning to the eastbound lanes of Pembroke Road.[1]

Figure 6 depicts the anticipated AM and PM peak hour primary trip assignment for the project based upon the estimated trip distribution patterns. And, Figure 7 depicts the anticipated AM and PM peak hour pass-by trip assignment.

[1] It is acknowledged that some pass-by traffic may be derived from the adjacent local streets such as NW 10th Street, NW 9th Avenue and NW 10th Avenue. A review of the existing traffic volumes reveals that approximately 90% of the peak hour traffic passing the subject site will do so on Pembroke Road. As such, the analysis has been conducted by assigning all of the pass-by traffic to and from Pembroke Road for report clarity and presentation of a worst-case scenario relative to the driveway / intersection operations on Pembroke Road.



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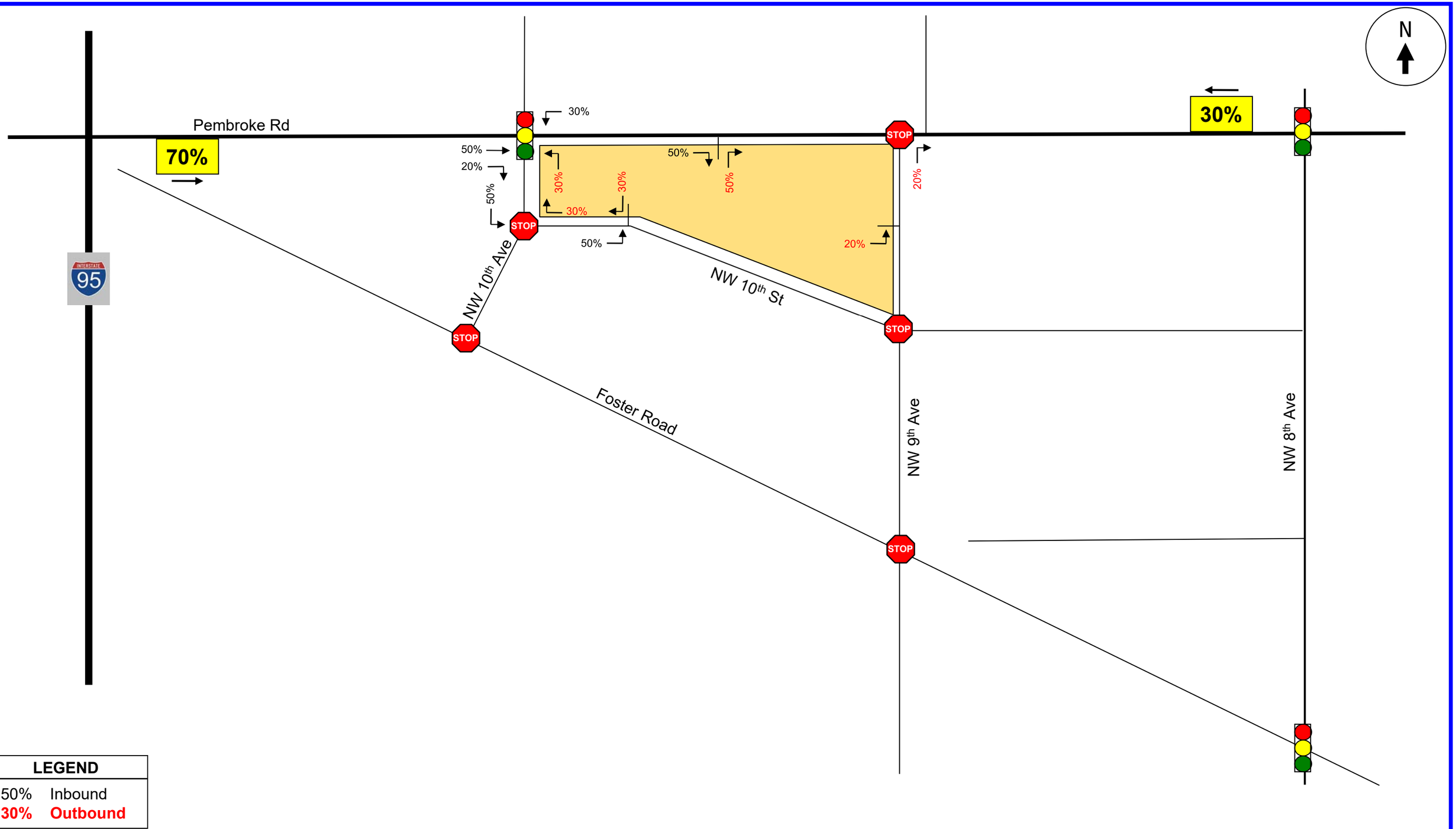
Trip Distribution – Primary Project Trips

FIGURE 4
7-Eleven
Hallandale Beach, Florida



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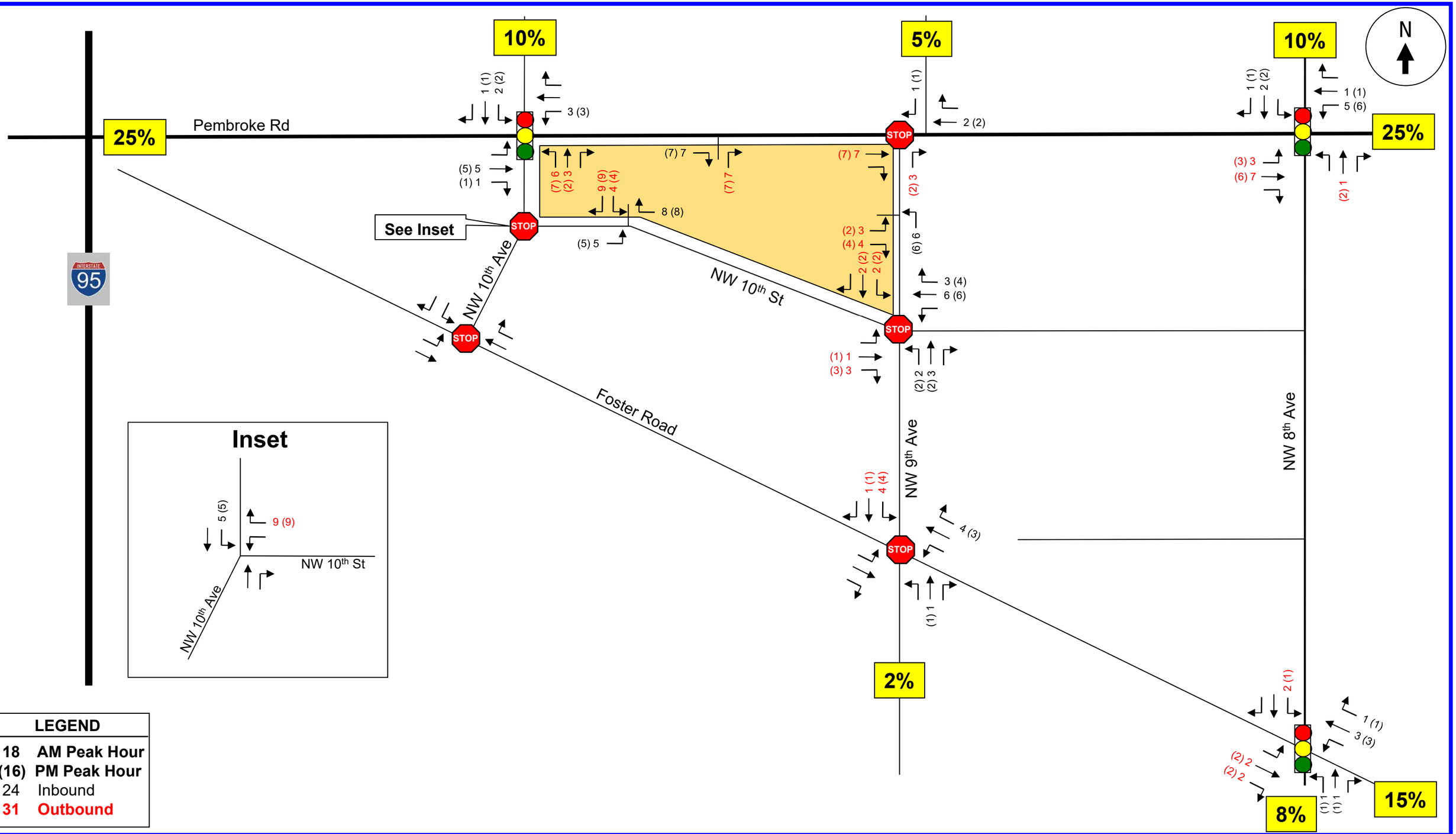
Trip Distribution – Pass-By Project Trips

FIGURE 5
7-Eleven
Hallandale Beach, Florida



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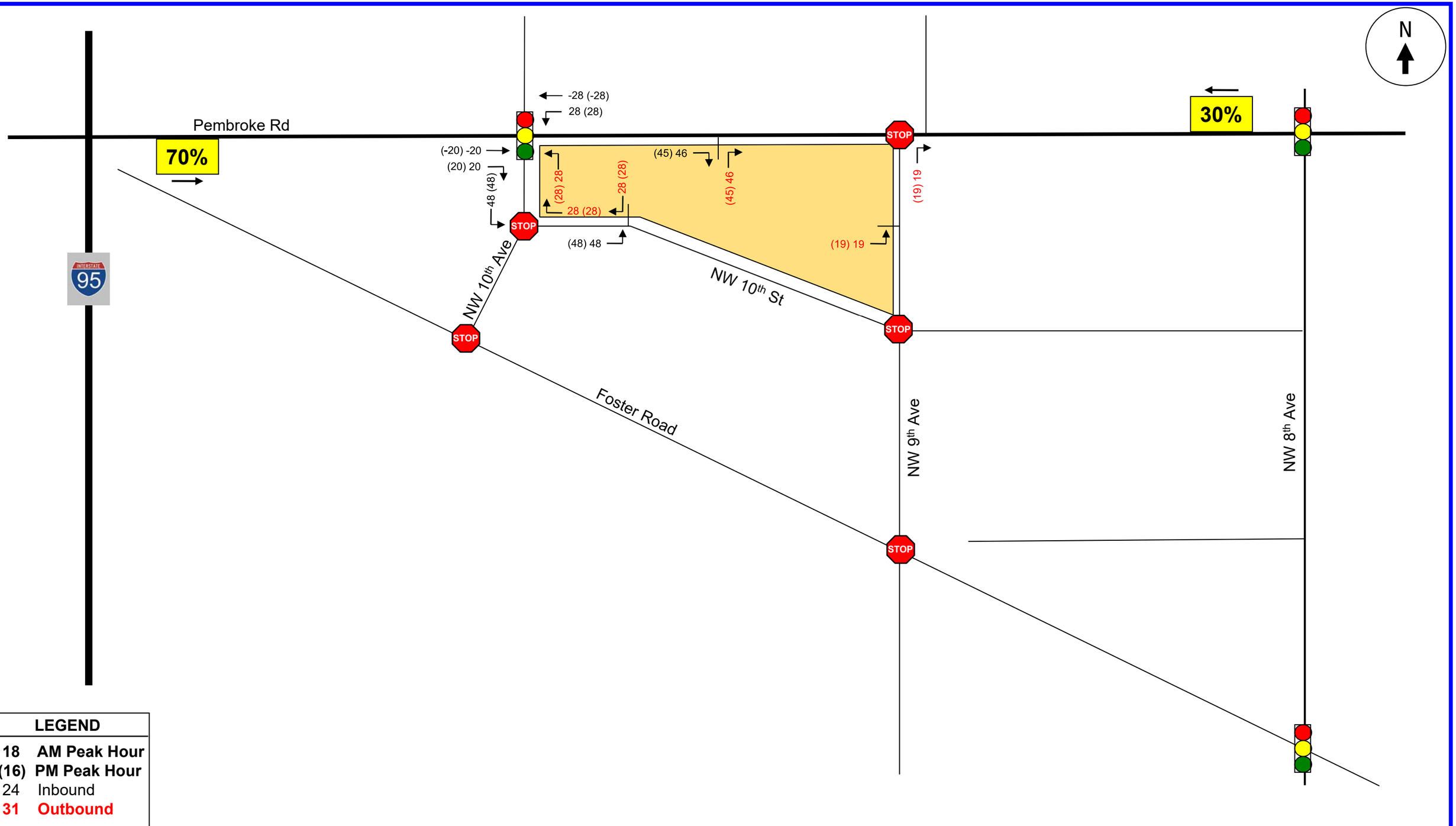
Project Traffic Assignment – Primary Trips

FIGURE 6
7-Eleven
Hallandale Beach, Florida



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Project Traffic Assignment – Pass-By Trips

FIGURE 7
7-Eleven
Hallandale Beach, Florida

TRAFFIC ANALYSES

This section of the study is divided into three (3) parts. The first part of this section involves the development of the future (2021) traffic volumes for the study area. The second part includes level-of-service analyses for existing and future conditions at the study intersections. The third part of this section considers the link analyses for the study area.

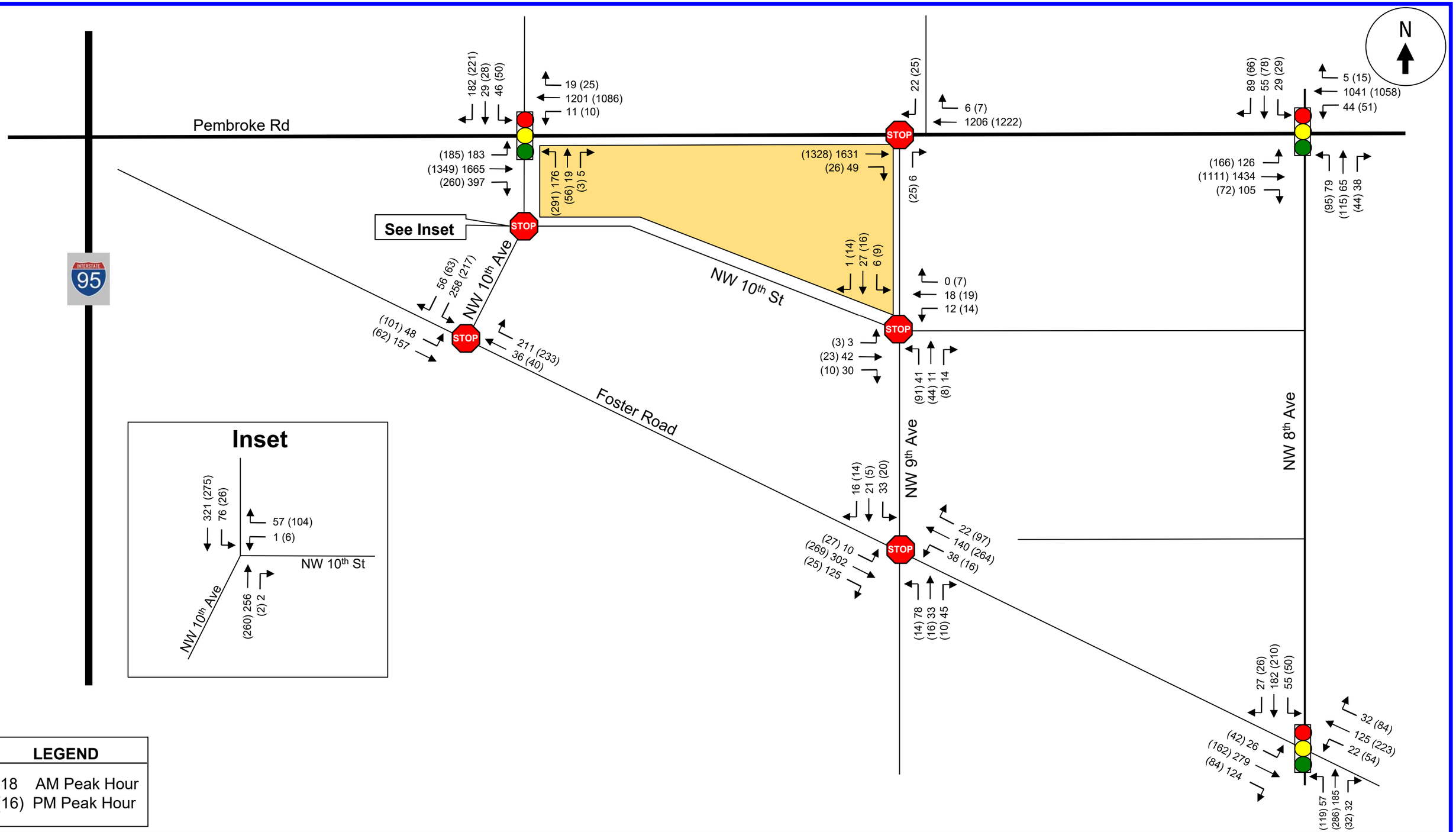
Future Conditions Traffic Volumes

Future, build-out year (2021) traffic volumes were developed for the project study area in the following manner:

- **Average Peak Season Conversion Factor:** Traffic data collected on Wednesday, November 13, 2019 was reviewed with respect to average peak season conditions. Based on FDOT's Peak Season Factor Category report (see Appendix E), the appropriate adjustment factor is 1.03.

- **Historic Growth:** The Florida Department of Transportation (FDOT) maintains three (3) traffic count stations in the immediate area of the subject project. Station #860078 is located on Pembroke Road west of Interstate 95. Station #865181 is located on Pembroke Road east of Interstate 95. And, Station # 867312 is located on NW 8th Avenue north of Hallandale Beach Boulevard. The Annual Average Daily Traffic Volumes for these count stations for the past five (5) years exhibit a minimal decline. For the purposes of this analysis, an annual growth rate of 0.5% has been applied. (The data from FDOT and the growth rate analysis are presented in Appendix F. Also included in this appendix are the historical traffic counts published by FDOT for each of the ramps (i.e. both on- and off-ramps) at the Interstate 95 and Pembroke Road interchange.

The future traffic calculations (peak season adjustments, background traffic growth, and the traffic associated with the proposed 7-Eleven project) for the study intersections are contained in Appendix G in tabular format. Figures 8 and 9 present the future traffic volumes for the study area. Figure 8 includes future background traffic only (without the proposed project) and Figure 9 includes the additional traffic anticipated to be generated by the 7-Eleven project.



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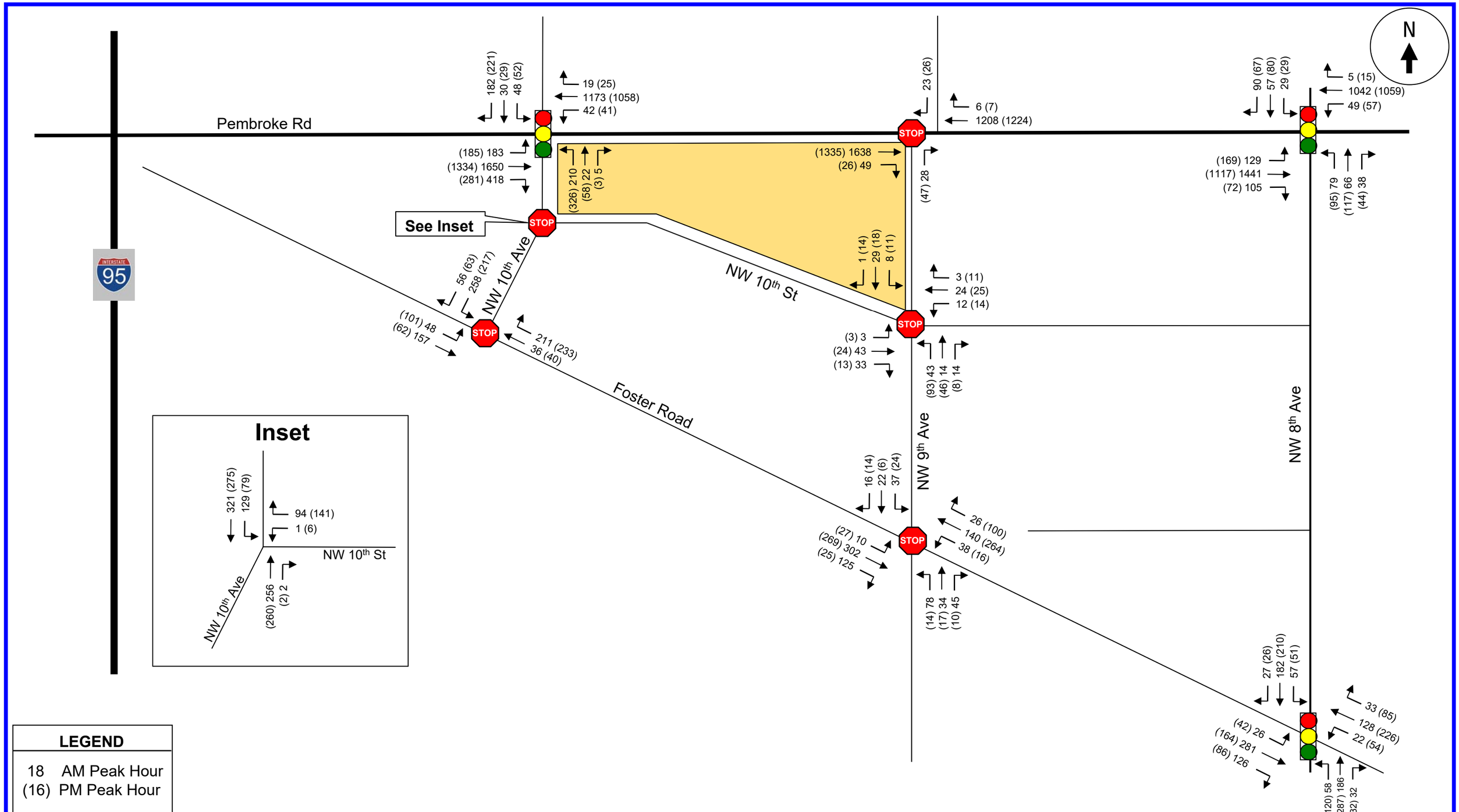
Future (2021) Background (w/out Project) Traffic Volumes

FIGURE 8
7-Eleven
Hallandale Beach, Florida



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Future (2021) Total (w/ Project) Traffic Volumes

FIGURE 9
7-Eleven
Hallandale Beach, Florida

Level of Service (LOS) Analyses – Intersections

Intersection capacity/level of service (LOS) analyses were conducted for the study intersections. These analyses were undertaken following the capacity / level of service procedures outlined in the Highway Capacity Manual (HCM) using the SYNCHRO software for the signalized and unsignalized intersections. The results of these capacity analyses are summarized in Table 2 below. The signal timing data from Broward County Traffic Engineering Division (BCTED) is presented in Appendix H and the SYNCHRO printouts of the intersection capacity analyses are contained in Appendix I.

Table 2
Levels of Service - Intersections
7-Eleven - Hallandale Beach, Florida

	Existing (2019) Conditions		Future (2021) Conditions Without Project Traffic		Future (2021) Conditions With Project Traffic	
Intersection	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**	**AM Peak Hour**	**PM Peak Hour**
Pembroke Road & NW 10th Avenue **	C (28.0)	D (49.2)	C (28.5)	D (50.1)	C (32.9)	E (56.6)
Optimized	--	--	--	--	--	*D (48.0)*
Pembroke Road & NW 9th Avenue *	B (11.7)	B (11.3)	B (11.7)	B (11.3)	B (11.7)	B (11.3)
Pembroke Road & NW 8th Avenue **	B (16.4)	C (23.6)	B (16.5)	C (23.7)	B (16.7)	C (23.9)
NW 10th Avenue & NW 10th Street *	B (10.4)	B (11.1)	B (10.4)	B (11.1)	B (10.8)	B (11.6)
NW 10th Avenue & Foster Road *	C (18.4)	C (19.0)	C (18.7)	C (19.3)	C (18.7)	C (19.3)
NW 9th Avenue & NW 10th Street *	B (11.8)	B (11.7)	B (11.9)	B (11.8)	B (12.0)	B (12.0)
NW 9th Avenue & Foster Road *	D (26.6)	C (15.9)	D (27.2)	C (16.2)	D (27.8)	C (16.3)
NW 8th Avenue & Foster Road **	B (12.4)	B (14.7)	B (12.5)	B (15.4)	B (12.5)	B (16.0)

Source: Highway Capacity Manual and SYNCHRO.
Legend: C (21.4) = LOS (Average Delay in Seconds / Vehicle)
* At stop-control intersections, the LOS for the critical approach is documented in this table.
** At signalized intersections, the LOS for the intersection as a whole is documented in this table.

As indicated in Table 2 above, with the exception of the intersection at Pembroke Road and NW 10th Avenue, each of the study intersections are currently operating adequately during the AM and PM peak hours and will continue to do so in the year 2021 with the proposed 7-Eleven development. Concerning the intersection of Pembroke Road and NW 10th Avenue, the project traffic associated with the proposed 7-Eleven is projected to cause the Level of Service (LOS) to degrade to "E". As such, the signal timings were optimized by holding the cycle length constant and modifying the timing splits. In doing do, a LOS of "D" can be achieved. Upon completion of the project, the Applicant will coordinate with the City to request that a signal timing review / optimization analysis be performed by BCTED.

Level of Service (LOS) Analyses – Links

Link analyses were performed for the roadway links within the immediate project study area as well as well as those within a one (1) mile radius as prescribed in the traffic study methodology. Traffic volumes on the primary study roadway segments are based upon traffic counts performed for this study. (Traffic counts on the ramps at the Interstate 95 and Pembroke Road interchange were obtained from the FDOT traffic data base along with the applicable K-factor.) The results of the link analyses are presented in Tables 3 and 4 below.

Table 3
Link Analyses - AM Peak Hour
7-Eleven - Hallandale Beach, Florida

			Existing Conditions - 2019		Future Background Conditions - 2021		Future Total Conditions - 2021	
Roadway Segment	**Lanes**	**Capacity**	**Volume [4]**	**LOS**	**Volume [6]**	**LOS**	**Volume**	**LOS**
Pembroke Road (State Road 824)								
- Interstate 95 to NW 10th Avenue	4	2,920 [1]	3,765	F	3,803	F	3,815	F
- NW 10th Avenue to NW 9th Avenue	4	2,920 [1]	2,898	D	2,927	E	2,937	E
- NW 9th Avenue to NW 8th Avenue	4	2,920 [1]	2,834	D	2,862	D	2,874	D
- NW 8th Avenue to NW 2nd Avenue	4	2,920 [1]	2,270	D	2,293	D	2,306	D
- NW 2nd Avenue to N. Dixie Highway	4	2,920 [1]	1,837	D	1,855	D	1,868	D
Interstate 95 at Pembroke Road								
- Northbound On-Ramp	1	2,000 [2]	1,665 [5]	D	1,721	D	1,723	D
- Northbound Off-Ramp	1	2,000 [2]	1,080 [5]	C	1,170	C	1,171	C
- Southbound On-Ramp	1	2,000 [2]	945 [5]	C	985	C	987	C
- Southbound Off-Ramp	1	2,000 [2]	1,755 [5]	D	1,755	D	1,756	D
NW 10th Street								
- NW 10th Avenue to NW 9th Avenue	2	1,197 [3]	134	C	135	C	149	C
- NW 9th Avenue to NW 8th Avenue	2	1,197 [3]	90	C	91	C	103	C
Foster Road								
- NW 10th Avenue to NW 9th Avenue	2	1,197 [3]	660	D	667	D	667	D
- NW 9th Avenue to NW 8th Avenue	2	1,197 [3]	604	D	610	D	618	D
NW 8th Avenue								
- Pembroke Road to NW 10th Street	2	1,197 [3]	382	C	386	C	394	C
- NW 10th Street to Foster Road	2	1,197 [3]	503	C	508	C	512	C
- Foster Road to Hallandale Beach Blvd.	2	1,197 [3]	597	D	603	D	607	D

[1] *Roadway capacities obtained from the Broward County Roadway Capacity and Level of Service Analysis tables provided by the Broward MPO.*
[2] *Ramp capacity based upon recent FDOT interstate studies / analyses and TRB / HCM data.*
[3] *Roadway capacity based upon FDOT data for non-state roadways.*
[4] *Link volumes for each roadway segment are based upon 2019 traffic counts collected for this study. (Link volumes for Pembroke Road between NW 2nd Avenue and N. Dixie Highway are based upon counts collected for the Hallandale City Center project.)*
[5] *Ramp volumes are based upon 2018 data published by FDOT and the appropriate K-factor.*
[6] *Future (2021) volumes for each roadway segment are based upon the areawide growth rate developed for the nearby intersections. For the I-95 ramps, future volumes are based upon the growth rate for individual segments as documented in Appendix F.*

Table 4 Link Analyses - PM Peak Hour 7-Eleven - Hallandale Beach, Florida								
			Existing Conditions - 2019		Future Background Conditions - 2021		Future Total Conditions - 2021	
Roadway Segment	**Lanes**	**Capacity**	**Volume [4]**	**LOS**	**Volume [6]**	**LOS**	**Volume**	**LOS**
Pembroke Road (State Road 824)								
- Interstate 95 to NW 10th Avenue	4	2,920 [1]	3,358	F	3,392	F	3,404	F
- NW 10th Avenue to NW 9th Avenue	4	2,920 [1]	2,537	D	2,562	D	2,572	D
- NW 9th Avenue to NW 8th Avenue	4	2,920 [1]	2,550	D	2,576	D	2,587	D
- NW 8th Avenue to NW 2nd Avenue	4	2,920 [1]	2,215	D	2,237	D	2,251	D
- NW 2nd Avenue to N. Dixie Highway	4	2,920 [1]	1,983	D	2,003	D	2,017	D
Interstate 95 at Pembroke Road								
- Northbound On-Ramp	1	2,000 [2]	1,665 [5]	D	1,721	D	1,723	D
- Northbound Off-Ramp	1	2,000 [2]	1,080 [5]	C	1,170	C	1,171	C
- Southbound On-Ramp	1	2,000 [2]	945 [5]	C	985	C	987	C
- Southbound Off-Ramp	1	2,000 [2]	1,755 [5]	D	1,755	D	1,756	D
NW 10th Street								
- NW 10th Avenue to NW 9th Avenue	2	1,197 [3]	148	C	149	C	163	C
- NW 9th Avenue to NW 8th Avenue	2	1,197 [3]	79	C	80	C	93	C
Foster Road								
- NW 10th Avenue to NW 9th Avenue	2	1,197 [3]	592	C	598	D	598	D
- NW 9th Avenue to NW 8th Avenue	2	1,197 [3]	659	D	666	D	673	D
NW 8th Avenue								
- Pembroke Road to NW 10th Street	2	1,197 [3]	449	C	454	C	464	C
- NW 10th Street to Foster Road	2	1,197 [3]	690	D	697	D	700	D
- Foster Road to Hallandale Beach Blvd.	2	1,197 [3]	777	D	785	D	789	D

[1] *Roadway capacities obtained from the Broward County Roadway Capacity and Level of Service Analysis tables provided by the Broward MPO.*
[2] *Ramp capacity based upon recent FDOT interstate studies / analyses and TRB / HCM data.*
[3] *Roadway capacity based upon FDOT data for non-state roadways.*
[4] *Link volumes for each roadway segment are based upon 2019 traffic counts collected for this study. (Link volumes for Pembroke Road between NW 2nd Avenue and N. Dixie Highway are based upon counts collected for the Hallandale City Center project.)*
[5] *Ramp volumes are based upon 2018 data published by FDOT and the appropriate K-factor.*
[6] *Future (2021) volumes for each roadway segment are based upon the areawide growth rate developed for the nearby intersections. For the I-95 ramps, future volumes are based upon the growth rate for individual segments as documented in Appendix F.*

As indicated in the tables above, with the exception of the roadway segment of Pembroke Road between I-95 and NW 10th Avenue, each of the roadway segments within the project study area are currently operating at an acceptable Level of Service (LOS) and will continue to do so in the project buildout year of 2021 both with and without the project traffic associated with the 7-Eleven project. Concerning the segment of Pembroke Road between I-95 and NW 10th Avenue, the project traffic does not cause a degradation of the Level of Service (LOS) and is considered to be de minimis.

SUMMARY & CONCLUSIONS

7-Eleven proposes to construct a new gasoline / service station with convenience market on the south side of Pembroke Road (State Road 824) between NW 9th Avenue and NW 10th Avenue in Hallandale Beach, Broward County, Florida. This facility will include 12 fueling positions, a 3,926 square foot convenience store, and an automated car wash. The proposed project is anticipated to be completed by 2021.

The trip generation analysis indicates that the net new external vehicle trips anticipated to be generated by the proposed 7-Eleven project consists of approximately 620 vehicle trips during a typical weekday, 43 vehicle trips during the weekday AM peak hour (17 inbound and 26 outbound), and 40 vehicle trips during the weekday PM peak hour (23 inbound and 17 outbound).

Intersection capacity / level of service (LOS) analyses were conducted for the study intersections and roadway capacity / level of service (LOS) analyses were conducted for the roadway segments within the project's study area. All study intersections (with the exception of the intersection at Pembroke Road and NW 10th Avenue) and all roadway segments (with the exception of Pembroke Road between I-95 and NW 10th Avenue) in the project study area are currently operating at an acceptable Level of Service (LOS) and will continue to do so in the buildout year of 2021 both with and without the project traffic associated with the 7-Eleven project.

Concerning the intersection of Pembroke Road and NW 10th Avenue, the project traffic associated with the proposed 7-Eleven is projected to cause the Level of Service (LOS) to degrade to "E". As such, the signal timings were optimized by holding the cycle length constant and modifying the timing splits. In doing do, a LOS of "D" can be achieved. Upon completion of the project, the project team will contact Broward County Traffic Engineering and request that the signal timing be optimized to accommodate the modified traffic volumes and patterns at this intersection. Regarding the segment of Pembroke Road between I-95 and NW 10th Avenue, the project traffic does not cause a degradation of the Level of Service (LOS) and is considered to be de minimis.

APPENDIX A

7-Eleven

Traffic Study Methodology

November 6th, 2019

City of Hallandale Beach, Florida
Land Development Application
Traffic Statement / Study Methodology

Project: 7-Eleven C-Store / Gas Station

Address: 924 Pembroke Road

Location: South of Pembroke Road / North of NW 10th Street
West of NW 9th Avenue / East of NW 10th Avenue

Traffic Statement – Required for small-scale land development applications generating 100 or fewer new average daily trips. In this instance roadways / intersections within 1,000 feet of the site shall be analyzed for traffic impacts. (Comprehensive Plan Policy 1.3.7)

Traffic Study – Required for larger-scale land development applications generating over 100 new average daily trips. In this instance roadways / intersections within one (1) mile of the site shall be analyzed for traffic impacts. (Comprehensive Plan Policy 1.3.7)

Traffic Analysis – A description of vehicular traffic generated by the proposed development and its impact on average daily and peak hour basis as related to both current roadway usage, projected roadway usage, and design capacities at (1) vehicular access points to the site, and (2) street intersections within a 1,000-foot radius of the site (Section 32-788(g)).

Existing Land Uses

14,238+/- sq. ft. of small-scale industrial buildings (Granite & Marble / ITE 812)

Proposed Land Uses

3,454 sq. ft. Combination C-Store / Gas Station / Car Wash (ITE 960)

Estimated Traffic Generation

AADT = 474 Net New Daily Trips AMPH = 32 PMPH = 30
(Traffic Study Required)

Proposed Access Description

Access to the 1.93 acre site is proposed via three (3) driveways connections to existing adjoining roadways (Pembroke Rd. / NW 9th Ave. / NW 10th St.). Access to Pembroke Road (SR 824) is proposed via a 35' wide two-way right-turn-in / right-turn-out only driveway centered about 200' west of NW 9th Ave. Access to NW 9th Ave. is proposed via a 35' wide two-way driveway located centered about 50' south of Pembroke Road. Access to NW 10th Street is proposed via a new 24' wide two-way driveway centered about 100' east of NW 10th Avenue.

Pembroke Road is classified as an 94' wide Urban Principal Arterial (UPA) roadway. The roadway is constructed as a 4-lane partially divided (4LD) road. About one-half of the length of the site's street frontage on Pembroke Road has a raised median (near NW 9th Ave.). NW 9th Avenue, NW 10th Avenue and NW 10th Street are classified as 50' wide local roadways.

Traffic Study Methodology

Following is the methodology to be used for the Traffic Study required for the above referenced land development project:

Data Collection *(May use other project's traffic count information if data is within 3 months)*

Four-hour (7:00-9:00 a.m. and 4:00-6:00 p.m.) turning-movement counts will be collected at the following intersections (2,000 foot distance from site vs. 1 mile – adjusted by MMPA):

Primary Intersections (Ops Analysis & Project Impacts for AM / PM Peak Hours)

- I-95 at Pembroke Road
- Pembroke Road at NW 10th Avenue
- Pembroke Road at NW 9th Avenue
- Pembroke Road at NW 8th Avenue
- NW 10th Avenue at NW 10th Street
- NW 10th Avenue at Foster Road
- NW 9th Avenue at NW 10th Street
- NW 9th Avenue at NW 9th Street / Foster Road (5-way intersection)
- NW 8th Avenue at Foster Road

Roadway link volumes may be obtained via original traffic counts and/or from the Florida Department of Transportation's (FDOT) Online Traffic Data for the latest year of collected data (currently 2018). Also, traffic volumes may be included from other recent (within 1 year) land development projects located within ½ half mile of the site. The studied roadway links are proposed to be (1 mile distance from site – adjusted by MMPA):

- Pembroke Road between I-95 and Dixie Highway / NW 1st Avenue
- NW 8th Avenue between Pembroke Road and Hallandale Beach Blvd.
- Foster Road between NW 10th Avenue and NW 8th Avenue
- NW 10th Street between NW 10th Avenue and NW 8th Avenue

All traffic counts will be adjusted to reflect peak season conditions by the use of a Peak Season Factor obtained from FDOT.

Traffic signal timing plans for each signalized intersection will be obtained from Broward County's Traffic Engineering Division and roadway geometrics will be obtained from field reviews and a review of aerial maps.

Trip Generation, Distribution and Assignment

Project trips shall be estimated using trip generation characteristics data obtained from the Institute of Transportation Engineers' (ITE) *Trip Generation M*anual, 10th Edition. Provide Average Annual Daily / AM Peak Hour / PM Peak Hour trip generation calculations. Project trips will be distributed onto the study area roadway network based on knowledge of the local area roadways and a review of traffic volumes on those roadways.

Background Traffic

An annual growth rate will be developed by analyzing historic Annual Average Daily Traffic (AADT) volumes on the roadways within and near the study area. The existing traffic volumes collected in 2018-2019 will be "grown" by the application of the annual growth factor to reflect the volumes expected in the buildout year of 2023.

In addition, committed development project trips will also be added to the buildout year adjusted traffic volumes. The list of approved City projects (under construction / not built as yet) will be provided by City staff. The sum of the annual growth rate adjustments and committed development trips will comprise the background conditions traffic volumes.

Capacity Analysis

All studied intersections will be analyzed using Synchro software, Version 9. The capacity analyses will be completed for the existing conditions, background conditions and total traffic conditions (background plus project trips). Roadway segment capacity analyses will be completed using information contained in the Broward County MPO's latest version of *Roadway Capacity and Level of Service Analysis*.

Parking Analysis

It appears the applicant's design meets the City's off-street parking requirements (17 spaces required / 26 provided). Review the proposed air / water station location (spaces do not count).

Site Circulation / Queuing

In addition to project site access, traffic circulation within the project site will be examined with particular attention given to the circulation within the overall site and to pedestrian access from the adjoining roadways. There appears to be a conflict with the FDOT pre-app letter driveway design requirements and the current site plan design (25' setback to 1st conflict point – PR east).

Mitigation

If it is determined that roadway, pedestrian or signalization impacts will occur, the study must include recommendation(s) to dedicate right-of-way / easements, and to construct / fund physical improvements to mitigate the impacts. This may include fees in lieu of improvements.

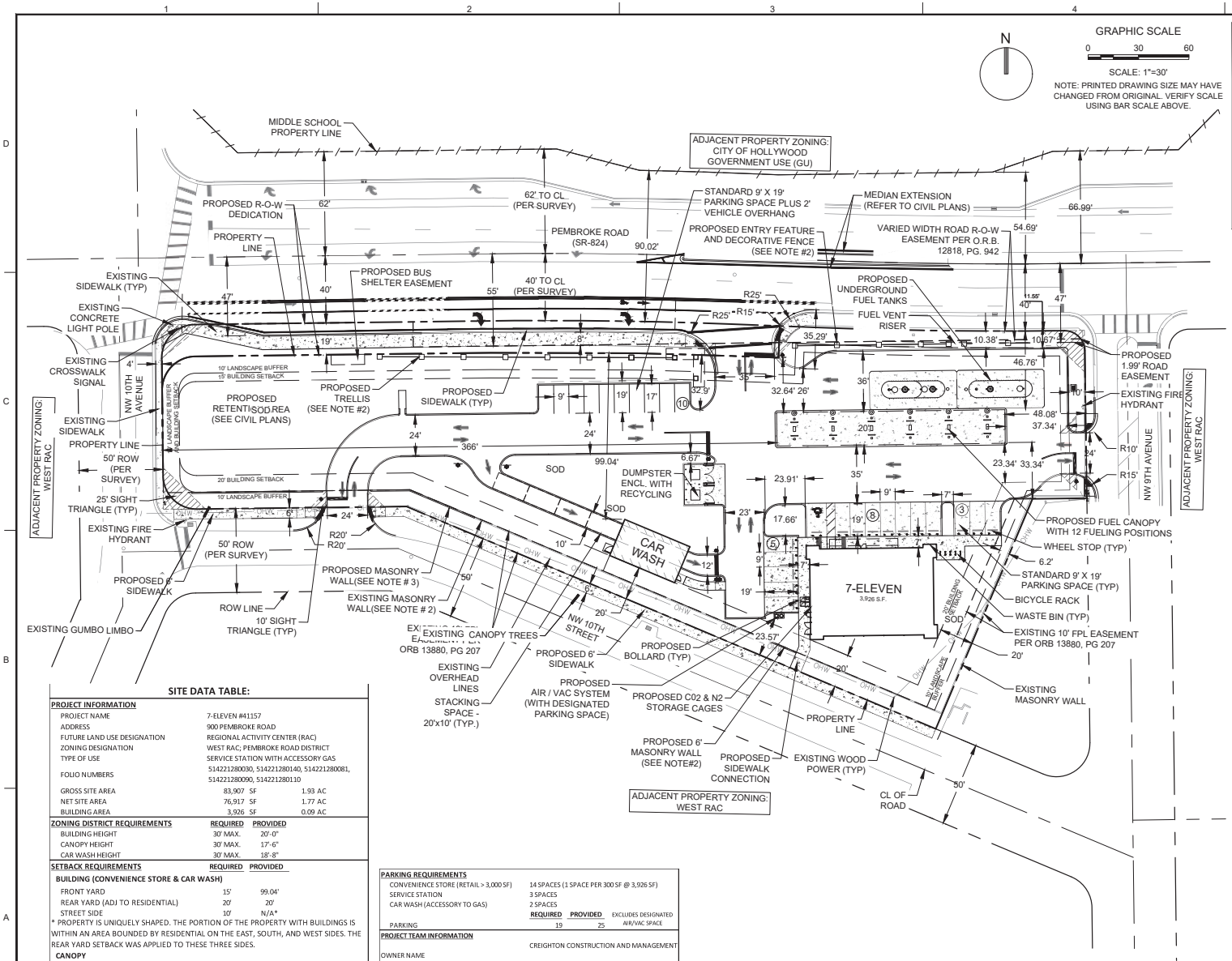
Report

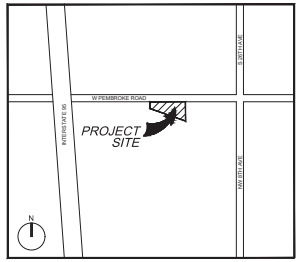
A summary report will be prepared that summarizes the analyses and findings described above. The report will provide graphics and tables as appropriate to illustrate the data and findings. An electronic copy of the report and up to seven hard copies will be provided to the City of Hallandale Beach for their use.

APPENDIX B

7-Eleven

Preliminary Site Plan &
Truck Circulation Plan





VICINITY MAP
(NOT TO SCALE)

SITE DATA TABLE:

PROJECT INFORMATION		
PROJECT NAME	7-ELEVEN #41157	
ADDRESS	900 PEMBROKE ROAD	
FUTURE LAND USE DESIGNATION	REGIONAL ACTIVITY CENTER (RAC)	
ZONING DESIGNATION	WEST RAC; PEMBROKE ROAD DISTRICT	
TYPE OF USE	SERVICE STATION WITH ACCESSORY GAS	
FOLIO NUMBERS	514221280030, 514221280140, 514221280081, 514221280090, 514221280110	
GROSS SITE AREA	83,907 SF	1.93 AC
NET SITE AREA	76,917 SF	1.77 AC
BUILDING AREA	3,926 SF	0.09 AC

ZONING DISTRICT REQUIREMENTS	REQUIRED	PROVIDED
BUILDING HEIGHT	30' MAX.	20'-0"
CANOPY HEIGHT	30' MAX.	17'-6"
CAR WASH HEIGHT	30' MAX.	18'-8"

SETBACK REQUIREMENTS	REQUIRED	PROVIDED
BUILDING (CONVENIENCE STORE & CAR WASH)		
FRONT YARD	15'	99.04'
REAR YARD (ADJ TO RESIDENTIAL)	20'	20'
STREET SIDE	10'	N/A*

* PROPERTY IS UNIQUELY SHAPED. THE PORTION OF THE PROPERTY WITH BUILDINGS IS WITHIN AN AREA BOUNDED BY RESIDENTIAL ON THE EAST, SOUTH, AND WEST SIDES. THE REAR YARD SETBACK WAS APPLIED TO THESE THREE SIDES.

CANOPY		
FRONT YARD	15'	32.64'
REAR YARD (ADJ TO RESIDENTIAL)	20'	33.34'
STREET SIDE (EAST)	10'	48.08'
STREET SIDE (WEST)	10'	366'

SITE AREA CALCULATIONS	REQUIRED	PROVIDED
PERVIOUS AREA/OPENSPACE	15% MIN	45%

PARKING REQUIREMENTS			
CONVENIENCE STORE (RETAIL > 3,000 SF)	14 SPACES (1 SPACE PER 300 SF @ 3,926 SF)		
SERVICE STATION	3 SPACES		
CAR WASH (ACCESSORY TO GAS)	2 SPACES		
	REQUIRED	PROVIDED	EXCLUDES DESIGNATED AIR/VAC SPACE
PARKING	19	25	

PROJECT TEAM INFORMATION	
	CREIGHTON CONSTRUCTION AND MANAGEMENT
OWNER NAME	
OWNER ADDRESS	900 SW PINE ISLAND ROAD #202, KEITH
DESIGNER FIRM	
DESIGNER ADDRESS	301 E. ATLANTIC BOULEVARD CREIGHTON CONSTRUCTION AND MANAGEMENT
DEVELOPER	
DEVELOPER ADDRESS	900 SW PINE ISLAND ROAD #202,

NOTES:

1. REFER TO SURVEY FOR FULL LEGAL DESCRIPTION
2. REFER TO ARCHITECTURAL PLANS FOR TRELLIS AND BUFFER WALL DETAILS
3. PROPOSED MASONRY WALL TEXTURE TO MATCH EXISTING MASONRY

HALLANDALE BEACH

KEITH
301 East Atlantic Boulevard
Pompano Beach, FL 33060
PH: (954) 788-3400
Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

REVISIONS

NO.	DESCRIPTION	DATE

PRELIMINARY PLAN
NOT FOR CONSTRUCTION
THESE PLANS ARE NOT FULLY PERMITTED AND ARE SUBJECT TO REVISIONS MADE DURING THE PERMITTING PROCESS. RESPONSIBILITY FOR THE USE OF THESE PLANS PRIOR TO OBTAINING PERMITS FROM ALL AGENCIES HAVING JURISDICTION OVER THE PROJECT WILL FALL SOLELY UPON THE USER.

#41157
900 PEMBROKE ROAD
HALLANDALE BEACH
FLORIDA 33309

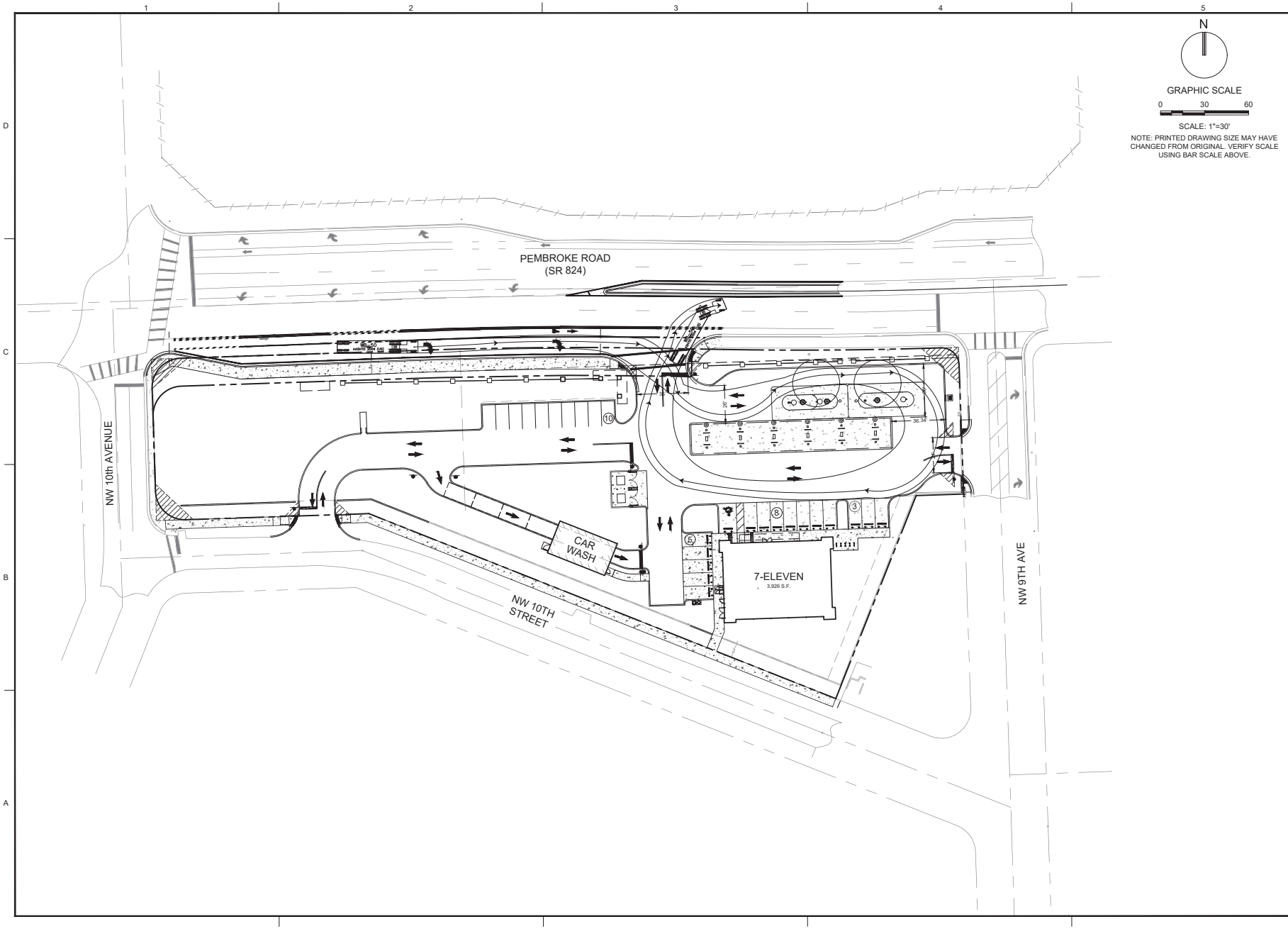
SCALE:	AS NOTED
DATE ISSUED:	JUNE 2019
DRAWN BY:	AM
DESIGNED BY:	AM
CHECKED BY:	TD

THOMAS F. DONAHUE, P.E.
FLORIDA REG. NO. 60529
(FOR THE FIRM)

SHEET TITLE
SITE PLAN

SHEET NUMBER
SP-101

PROJECT NO. 09725.69



KEITH
301 East Atlantic Boulevard
Pompano Beach, FL 33060
PH: (954) 788-3400
Florida Certificate of Authorization # - 7928

BID / CONTRACT NO. :

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#41157
900 PEMBROKE ROAD
HALLANDALE BEACH
FLORIDA 33309

SCALE:	AS NOTED
DATE ISSUED:	JUNE 2019
DRAWN BY:	AM
DESIGNED BY:	AM
CHECKED BY:	TD

THOMAS F. DONAHUE, P.E.
FLORIDA REG. NO. 60529
(FOR THE FIRM)

SHEET TITLE

CONCEPTUAL
TRUCK ROUTE

SHEET NUMBER

TR-101

PROJECT NO. 09725.69

APPENDIX C

Traffic Counts

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

NW 10TH STREET & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
NOT SIGNALIZED

File Name : 10ST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

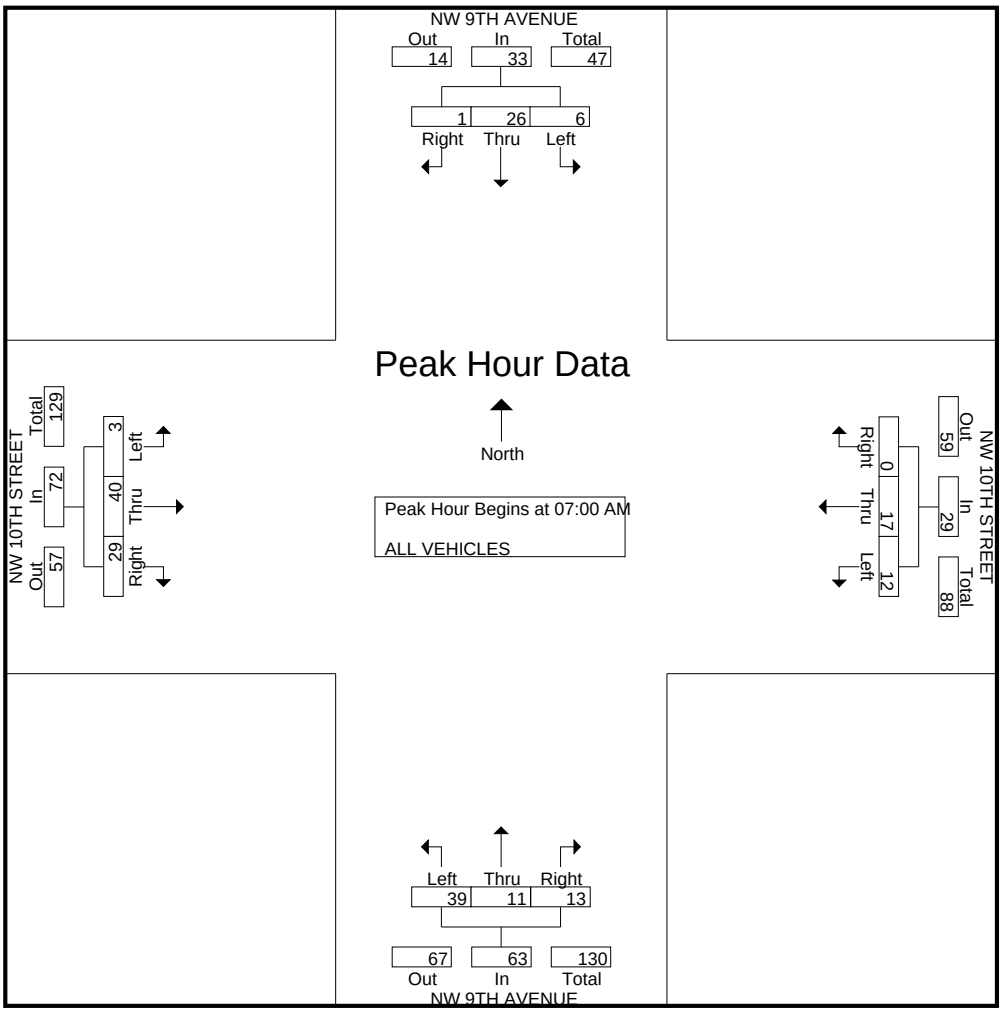
	NW 9TH AVENUE From North				NW 10TH STREET From East				NW 9TH AVENUE From South				NW 10TH STREET From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	2	5	0	0	2	5	0	0	15	0	2	0	1	6	12	50
07:15 AM	0	2	9	1	1	5	8	0	0	12	6	9	0	2	13	7	75
07:30 AM	0	2	5	0	0	2	2	0	0	5	3	0	0	0	13	4	36
07:45 AM	0	0	7	0	0	2	2	0	0	7	2	2	0	0	8	6	36
Total	0	6	26	1	1	11	17	0	0	39	11	13	0	3	40	29	197
08:00 AM	0	2	7	0	0	1	6	0	0	5	1	0	0	0	4	2	28
08:15 AM	0	4	12	0	0	0	0	0	0	3	1	1	0	0	4	4	29
08:30 AM	0	2	9	0	0	1	0	0	0	0	4	1	0	1	4	6	28
08:45 AM	0	2	9	1	0	0	1	0	0	1	0	1	0	0	4	3	22
Total	0	10	37	1	0	2	7	0	0	9	6	3	0	1	16	15	107
04:00 PM	0	1	3	0	0	0	2	1	0	7	4	2	0	1	3	5	29
04:15 PM	0	1	3	0	0	4	5	0	0	5	3	2	0	0	5	2	30
04:30 PM	0	2	5	1	0	0	3	1	0	6	6	3	0	1	3	4	35
04:45 PM	0	0	5	1	0	1	8	0	0	6	4	2	0	2	6	3	38
Total	0	4	16	2	0	5	18	2	0	24	17	9	0	4	17	14	132
05:00 PM	0	1	2	3	0	3	7	1	0	24	9	1	0	0	5	1	57
05:15 PM	0	5	6	5	1	4	6	2	0	22	10	3	0	1	9	2	76
05:30 PM	0	0	3	2	0	4	3	2	0	21	10	2	0	0	2	2	51
05:45 PM	0	3	4	3	0	1	2	2	0	20	13	2	0	2	6	5	63
Total	0	9	15	13	1	12	18	7	0	87	42	8	0	3	22	10	247
Grand Total	0	29	94	17	2	30	60	9	0	159	76	33	0	11	95	68	683
Apprch %	0	20.7	67.1	12.1	2	29.7	59.4	8.9	0	59.3	28.4	12.3	0	6.3	54.6	39.1	
Total %	0	4.2	13.8	2.5	0.3	4.4	8.8	1.3	0	23.3	11.1	4.8	0	1.6	13.9	10	

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

NW 10TH STREET & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
NOT SIGNALIZED

File Name : 10ST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	NW 9TH AVENUE From North					NW 10TH STREET From East					NW 9TH AVENUE From South					NW 10TH STREET From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**2**	5	0	7	0	2	5	0	7	0	**15**	0	2	17	0	1	6	**12**	19	50
07:15 AM	0	2	**9**	**1**	**12**	**1**	**5**	**8**	0	**14**	0	12	**6**	**9**	**27**	0	**2**	**13**	7	**22**	**75**
07:30 AM	0	2	5	0	7	0	2	2	0	4	0	5	3	0	8	0	0	13	4	17	36
07:45 AM	0	0	7	0	7	0	2	2	0	4	0	7	2	2	11	0	0	8	6	14	36
Total Volume	0	6	26	1	33	1	11	17	0	29	0	39	11	13	63	0	3	40	29	72	197
% App. Total	0	18.2	78.8	3		3.4	37.9	58.6	0		0	61.9	17.5	20.6		0	4.2	55.6	40.3		
PHF	.000	.750	.722	.250	.688	.250	.550	.531	.000	.518	.000	.650	.458	.361	.583	.000	.375	.769	.604	.818	.657

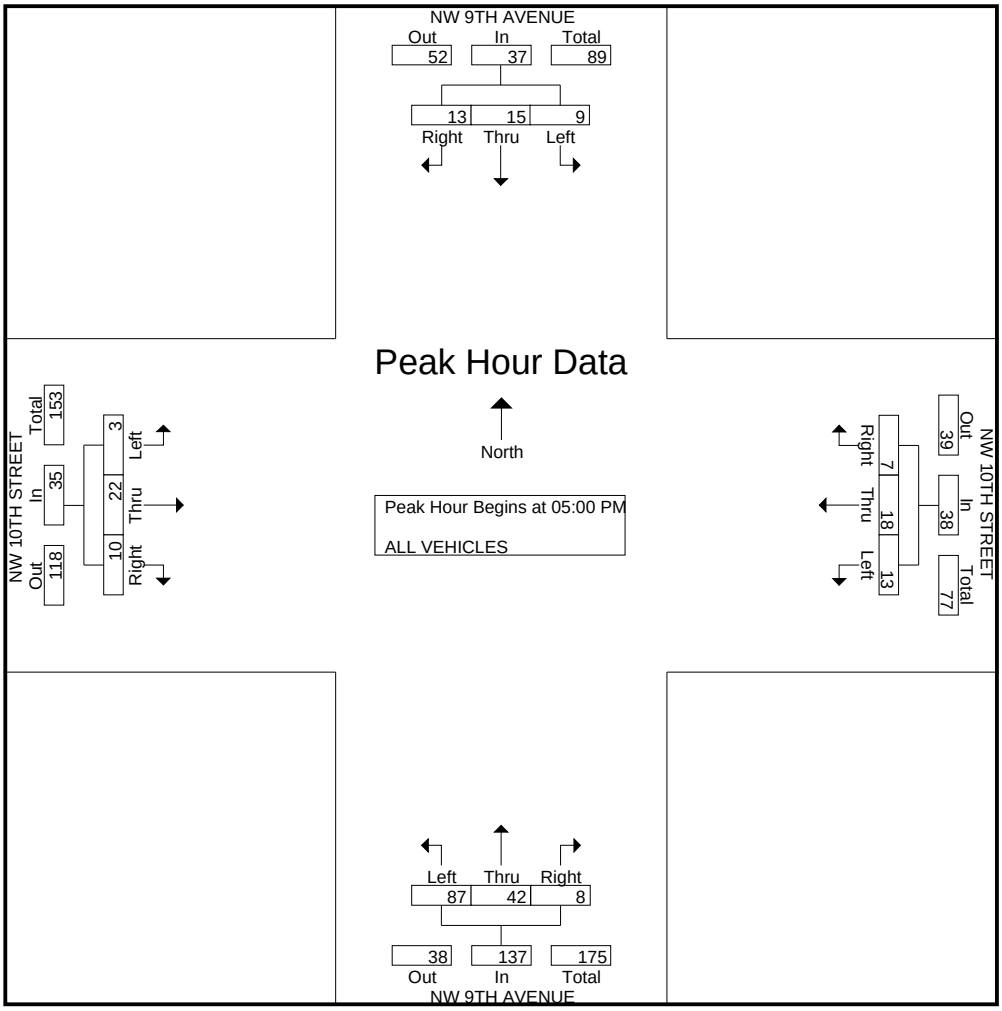


Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

NW 10TH STREET & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
NOT SIGNALIZED

File Name : 10ST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	NW 9TH AVENUE From North					NW 10TH STREET From East					NW 9TH AVENUE From South					NW 10TH STREET From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	1	2	3	6	0	3	**7**	1	11	0	**24**	9	1	34	0	0	5	1	6	57
05:15 PM	0	**5**	**6**	**5**	**16**	**1**	**4**	6	**2**	**13**	0	22	10	**3**	**35**	0	1	**9**	2	12	**76**
05:30 PM	0	0	3	2	5	0	4	3	2	9	0	21	10	2	33	0	0	2	2	4	51
05:45 PM	0	3	4	3	10	0	1	2	2	5	0	20	**13**	2	35	0	**2**	6	**5**	**13**	63
Total Volume	0	9	15	13	37	1	12	18	7	38	0	87	42	8	137	0	3	22	10	35	247
% App. Total	0	24.3	40.5	35.1		2.6	31.6	47.4	18.4		0	63.5	30.7	5.8		0	8.6	62.9	28.6		
PHF	.000	.450	.625	.650	.578	.250	.750	.643	.875	.731	.000	.906	.808	.667	.979	.000	.375	.611	.500	.673	.813



Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

NW 10TH STREET & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: ROLANDO MARTINEZ
NOT SIGNALIZED

File Name : 10ST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	NW 9TH AVENUE From North				NW 10TH STREET From East				NW 9TH AVENUE From South				NW 10TH STREET From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	0	0	0	0	12	0	3	0	0	0	0	0	2	0	0	0	17
07:15 AM	0	0	0	0	8	0	0	0	0	0	0	0	0	0	0	0	8
07:30 AM	1	0	0	0	3	0	0	0	0	0	0	0	3	0	0	0	7
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	23	0	3	0	1	0	0	0	5	0	0	0	33
08:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
08:45 AM	0	0	0	0	2	0	0	0	0	0	0	0	3	0	0	0	5
Total	0	0	0	0	3	0	0	0	0	0	0	0	4	0	1	0	8
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
Total	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	2
05:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
05:15 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	0	0	2	0	0	0	0	0	1	0	0	0	0	0	3
Grand Total	1	0	0	0	28	0	3	0	1	0	1	0	10	0	2	0	46
Apprch %	100	0	0	0	90.3	0	9.7	0	50	0	50	0	83.3	0	16.7	0	
Total %	2.2	0	0	0	60.9	0	6.5	0	2.2	0	2.2	0	21.7	0	4.3	0	

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

NW 10TH STREET & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

File Name : 10ST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	NW 10TH AVENUE From North				NW 10TH STREET From East				NW 10TH AVENUE From South				----- From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	19	67	0	0	0	0	19	0	0	60	0	0	0	0	0	165
07:15 AM	0	19	75	0	0	1	0	20	0	0	73	1	0	0	0	0	189
07:30 AM	1	17	68	0	0	0	0	8	0	0	63	0	0	0	0	0	157
07:45 AM	2	15	99	0	0	0	0	8	0	0	50	1	0	0	0	0	175
Total	3	70	309	0	0	1	0	55	0	0	246	2	0	0	0	0	686
08:00 AM	1	5	89	0	0	1	0	10	0	0	44	0	0	0	0	0	150
08:15 AM	0	11	105	0	0	1	0	2	0	0	45	0	0	0	0	0	164
08:30 AM	0	9	86	0	0	0	0	1	0	0	34	1	0	0	0	0	131
08:45 AM	0	7	110	0	0	0	0	3	0	0	46	1	0	0	0	0	167
Total	1	32	390	0	0	2	0	16	0	0	169	2	0	0	0	0	612
04:00 PM	0	7	62	0	0	0	0	11	0	0	63	2	0	0	0	0	145
04:15 PM	0	6	52	0	0	0	0	9	0	0	84	0	0	0	0	0	151
04:30 PM	0	9	68	0	0	1	0	12	0	0	61	1	0	0	0	0	152
04:45 PM	0	7	76	0	0	1	0	12	0	0	83	0	0	0	0	0	179
Total	0	29	258	0	0	2	0	44	0	0	291	3	0	0	0	0	627
05:00 PM	0	5	63	0	0	2	0	27	0	0	55	1	0	0	0	0	153
05:15 PM	0	9	64	0	0	3	0	32	0	0	48	1	0	0	0	0	157
05:30 PM	0	4	61	0	0	0	0	29	0	0	64	0	0	0	0	0	158
05:45 PM	0	9	79	0	0	1	0	18	0	0	51	0	0	0	0	0	158
Total	0	27	267	0	0	6	0	106	0	0	218	2	0	0	0	0	626
Grand Total	4	158	1224	0	0	11	0	221	0	0	924	9	0	0	0	0	2551
Apprch %	0.3	11.4	88.3	0	0	4.7	0	95.3	0	0	99	1	0	0	0	0	
Total %	0.2	6.2	48	0	0	0.4	0	8.7	0	0	36.2	0.4	0	0	0	0	

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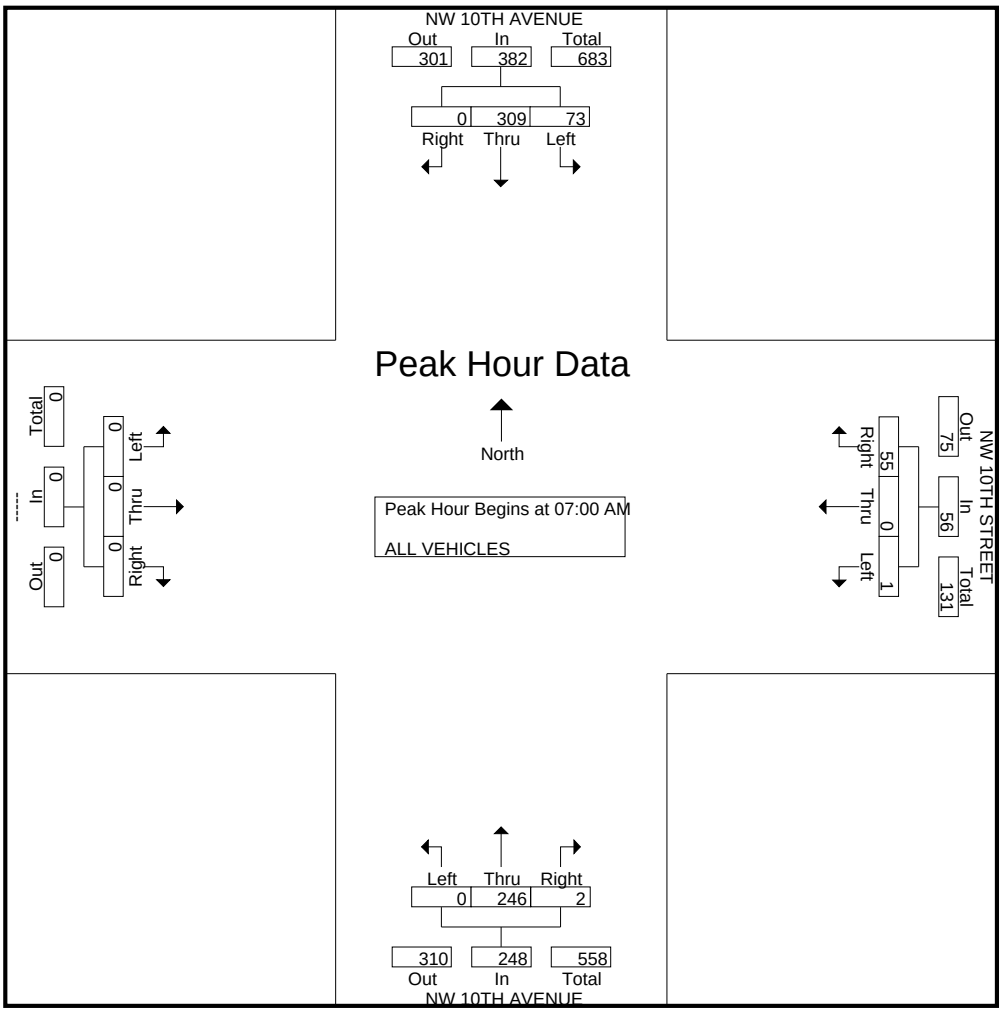
NW 10TH STREET & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

File Name : 10ST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	NW 10TH AVENUE From North					NW 10TH STREET From East					NW 10TH AVENUE From South					----- From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 11:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	**19**	67	0	86	0	0	0	19	19	0	0	60	0	60	0	0	0	0	0	165
07:15 AM	0	19	75	0	94	0	**1**	0	**20**	**21**	0	0	**73**	**1**	**74**	0	0	0	0	0	**189**
07:30 AM	1	17	68	0	86	0	0	0	8	8	0	0	63	0	63	0	0	0	0	0	157
07:45 AM	**2**	15	**99**	0	**116**	0	0	0	8	8	0	0	50	1	51	0	0	0	0	0	175
Total Volume	3	70	309	0	382	0	1	0	55	56	0	0	246	2	248	0	0	0	0	0	686
% App. Total	0.8	18.3	80.9	0		0	1.8	0	98.2		0	0	99.2	0.8		0	0	0	0		
PHF	.375	.921	.780	.000	.823	.000	.250	.000	.688	.667	.000	.000	.842	.500	.838	.000	.000	.000	.000	.000	.907



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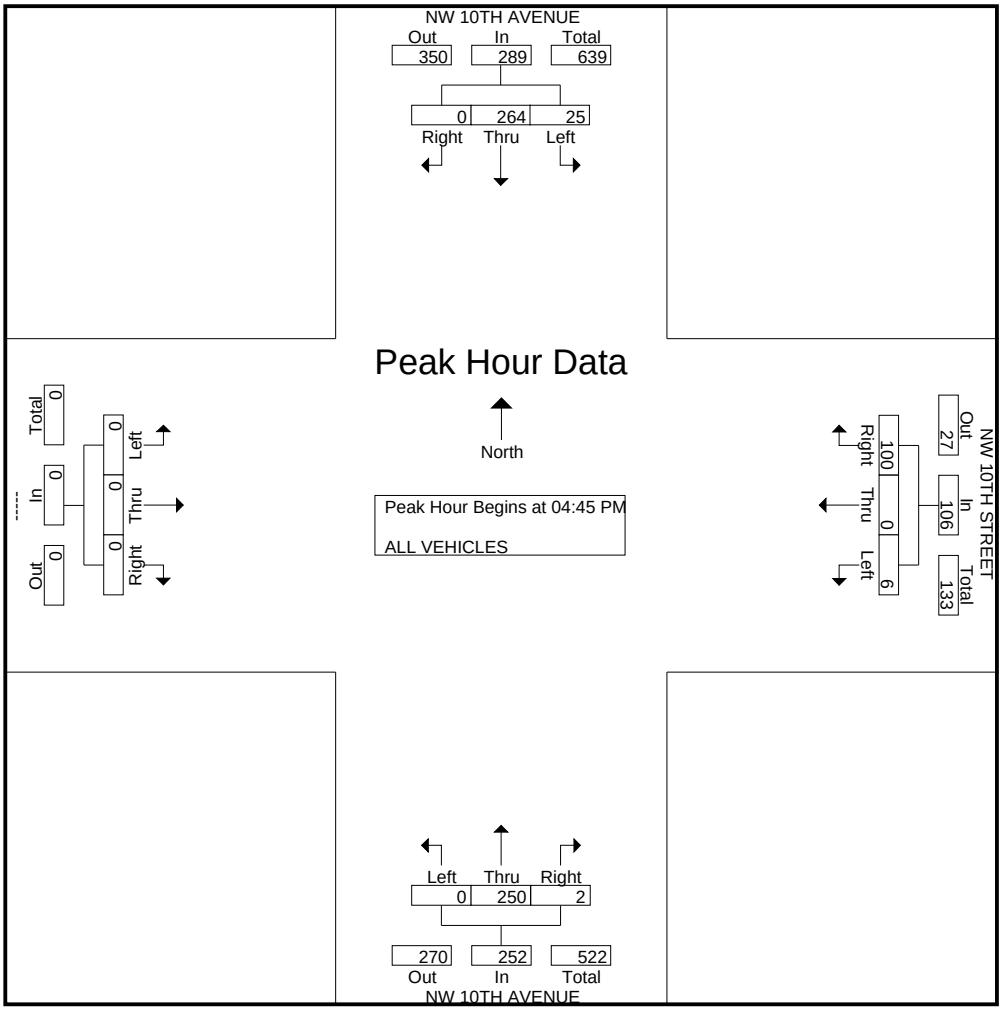
NW 10TH STREET & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

File Name : 10ST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	NW 10TH AVENUE From North					NW 10TH STREET From East					NW 10TH AVENUE From South					----- From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 12:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	7	**76**	0	**83**	0	1	0	12	13	0	0	**83**	0	**83**	0	0	0	0	0	**179**
05:00 PM	0	5	63	0	68	0	2	0	27	29	0	0	55	**1**	56	0	0	0	0	0	153
05:15 PM	0	**9**	64	0	73	0	**3**	0	**32**	**35**	0	0	48	1	49	0	0	0	0	0	157
05:30 PM	0	4	61	0	65	0	0	0	29	29	0	0	64	0	64	0	0	0	0	0	158
Total Volume	0	25	264	0	289	0	6	0	100	106	0	0	250	2	252	0	0	0	0	0	647
% App. Total	0	8.7	91.3	0		0	5.7	0	94.3		0	0	99.2	0.8		0	0	0	0		
PHF	.000	.694	.868	.000	.870	.000	.500	.000	.781	.757	.000	.000	.753	.500	.759	.000	.000	.000	.000	.000	.904



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NW 10TH STREET & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ
NOT SIGNALIZED

File Name : 10ST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	NW 10TH AVENUE From North				NW 10TH STREET From East				NW 10TH AVENUE From South				----- From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	1	0	0	0	5	0	1	0	1	0	0	0	0	0	0	0	8
07:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
07:30 AM	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	2
07:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	1	0	0	0	8	0	1	0	3	0	0	0	0	0	0	0	13
08:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
04:00 PM	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	2
04:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
Total	1	0	0	0	6	0	0	0	0	0	0	0	0	0	0	0	7
Grand Total	2	0	0	0	14	0	1	0	4	0	0	0	0	0	0	0	21
Apprch %	100	0	0	0	93.3	0	6.7	0	100	0	0	0	0	0	0	0	
Total %	9.5	0	0	0	66.7	0	4.8	0	19	0	0	0	0	0	0	0	

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FOSTER ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

File Name : FOST_8AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	NW 8TH AVENUE From North				FOSTER ROAD From East				NW 8TH AVENUE From South				FOSTER ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	7	27	6	0	3	18	10	0	12	34	8	0	9	32	12	178
07:15 AM	0	11	40	13	0	8	39	11	0	20	47	6	0	15	49	38	297
07:30 AM	0	20	58	5	0	4	18	7	0	13	48	8	0	2	76	22	281
07:45 AM	0	12	36	3	0	5	40	5	0	12	43	12	1	4	71	31	275
Total	0	50	161	27	0	20	115	33	0	57	172	34	1	30	228	103	1031
08:00 AM	0	10	41	5	0	4	23	8	0	10	40	5	0	3	72	28	249
08:15 AM	0	13	36	3	1	3	22	5	0	17	27	4	0	4	67	31	233
08:30 AM	0	7	35	3	0	7	20	8	0	7	34	4	0	2	74	25	226
08:45 AM	0	4	35	3	0	6	21	4	0	9	18	3	0	1	44	33	181
Total	0	34	147	14	1	20	86	25	0	43	119	16	0	10	257	117	889
04:00 PM	0	6	33	2	0	3	26	15	0	14	54	4	0	7	35	19	218
04:15 PM	0	5	44	6	0	9	42	10	0	9	45	8	0	2	34	17	231
04:30 PM	0	11	29	4	0	6	52	11	0	16	43	7	0	3	39	28	249
04:45 PM	0	4	37	7	0	8	46	14	0	16	47	8	0	4	34	29	254
Total	0	26	143	19	0	26	166	50	0	55	189	27	0	16	142	93	952
05:00 PM	0	11	41	5	0	9	58	16	0	30	67	7	0	6	34	14	298
05:15 PM	0	15	47	7	0	9	50	23	0	26	68	10	0	12	36	25	328
05:30 PM	0	10	65	7	0	17	48	23	0	31	81	6	0	13	40	24	365
05:45 PM	0	12	49	6	0	17	58	19	0	27	59	8	0	9	46	18	328
Total	0	48	202	25	0	52	214	81	0	114	275	31	0	40	156	81	1319
Grand Total	0	158	653	85	1	118	581	189	0	269	755	108	1	96	783	394	4191
Apprch %	0	17.6	72.9	9.5	0.1	13.3	65.4	21.3	0	23.8	66.7	9.5	0.1	7.5	61.5	30.9	
Total %	0	3.8	15.6	2	0	2.8	13.9	4.5	0	6.4	18	2.6	0	2.3	18.7	9.4	

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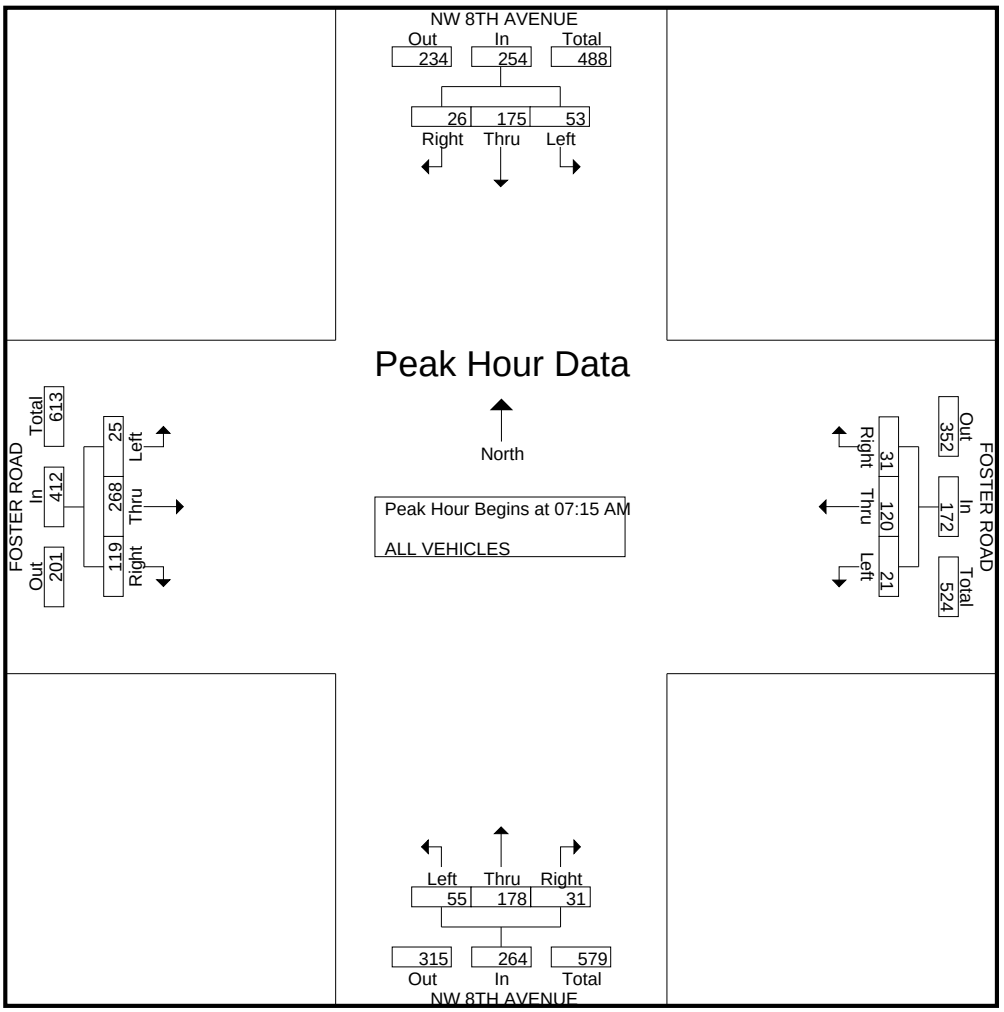
FOSTER ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

File Name : FOST_8AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	NW 8TH AVENUE From North					FOSTER ROAD From East					NW 8TH AVENUE From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:15 AM																					
07:15 AM	0	11	40	**13**	64	0	**8**	39	**11**	**58**	0	**20**	47	6	**73**	0	**15**	49	**38**	102	**297**
07:30 AM	0	**20**	**58**	5	**83**	0	4	18	7	29	0	13	**48**	8	69	0	2	**76**	22	100	281
07:45 AM	0	12	36	3	51	0	5	**40**	5	50	0	12	43	**12**	67	**1**	4	71	31	**107**	275
08:00 AM	0	10	41	5	56	0	4	23	8	35	0	10	40	5	55	0	3	72	28	103	249
Total Volume	0	53	175	26	254	0	21	120	31	172	0	55	178	31	264	1	24	268	119	412	1102
% App. Total	0	20.9	68.9	10.2		0	12.2	69.8	18		0	20.8	67.4	11.7		0.2	5.8	65	28.9		
PHF	.000	.663	.754	.500	.765	.000	.656	.750	.705	.741	.000	.688	.927	.646	.904	.250	.400	.882	.783	.963	.928



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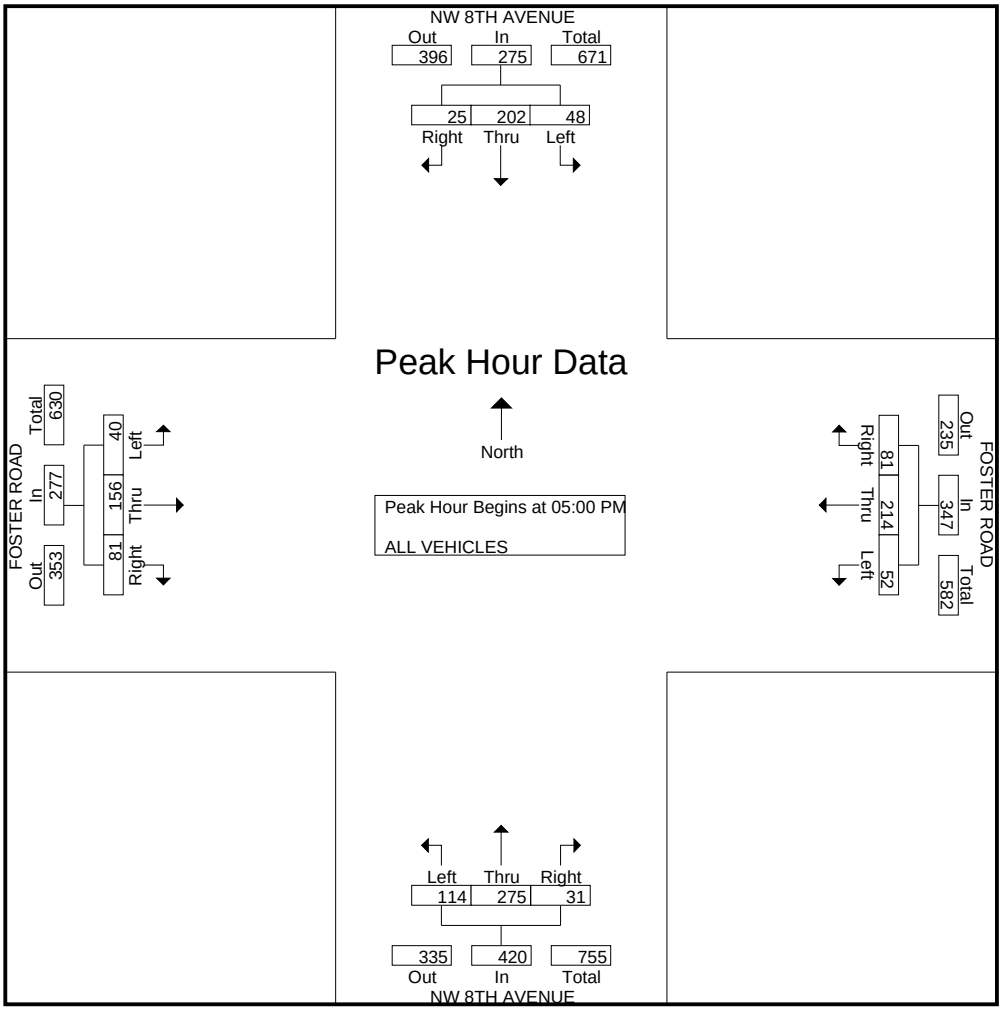
FOSTER ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

File Name : FOST_8AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	NW 8TH AVENUE From North					FOSTER ROAD From East					NW 8TH AVENUE From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	0	11	41	5	57	0	9	**58**	16	83	0	30	67	7	104	0	6	34	14	54	298
05:15 PM	0	**15**	47	**7**	69	0	9	50	**23**	82	0	26	68	**10**	104	0	12	36	**25**	73	328
05:30 PM	0	10	**65**	7	**82**	0	**17**	48	23	88	0	**31**	**81**	6	**118**	0	**13**	40	24	**77**	**365**
05:45 PM	0	12	49	6	67	0	17	58	19	**94**	0	27	59	8	94	0	9	**46**	18	73	328
Total Volume	0	48	202	25	275	0	52	214	81	347	0	114	275	31	420	0	40	156	81	277	1319
% App. Total	0	17.5	73.5	9.1		0	15	61.7	23.3		0	27.1	65.5	7.4		0	14.4	56.3	29.2		
PHF	.000	.800	.777	.893	.838	.000	.765	.922	.880	.923	.000	.919	.849	.775	.890	.000	.769	.848	.810	.899	.903



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FOSTER ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO
SIGNALIZED

File Name : FOST_8AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	NW 8TH AVENUE From North				FOSTER ROAD From East				NW 8TH AVENUE From South				FOSTER ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	13	0	1	0	0	0	0	0	1	0	0	0	4	0	0	0	19
07:15 AM	7	0	1	0	1	0	1	0	5	0	1	0	1	0	0	0	17
07:30 AM	2	0	2	0	0	0	0	0	0	0	1	0	0	0	0	0	5
07:45 AM	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	3
Total	24	0	4	0	2	0	1	0	6	0	2	0	5	0	0	0	44
08:00 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:15 AM	1	0	1	0	0	0	0	0	2	0	0	0	0	0	1	0	5
08:30 AM	4	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	5	0	3	0	0	0	0	0	2	0	0	0	0	0	1	0	11
04:00 PM	5	0	2	0	0	0	0	0	4	0	0	0	1	0	0	0	12
04:15 PM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	1	0	4
04:30 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3
Total	6	0	4	0	3	0	0	0	4	0	0	0	2	0	1	0	20
05:00 PM	9	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	10
05:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	2	0	0	0	4	0	0	0	1	0	0	0	0	0	0	0	7
Total	13	0	3	0	5	0	0	0	1	0	0	0	0	0	0	0	22
Grand Total	48	0	14	0	10	0	1	0	13	0	2	0	7	0	2	0	97
Apprch %	77.4	0	22.6	0	90.9	0	9.1	0	86.7	0	13.3	0	77.8	0	22.2	0	
Total %	49.5	0	14.4	0	10.3	0	1	0	13.4	0	2.1	0	7.2	0	2.1	0	

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85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
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FOSTER ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

File Name : FOST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

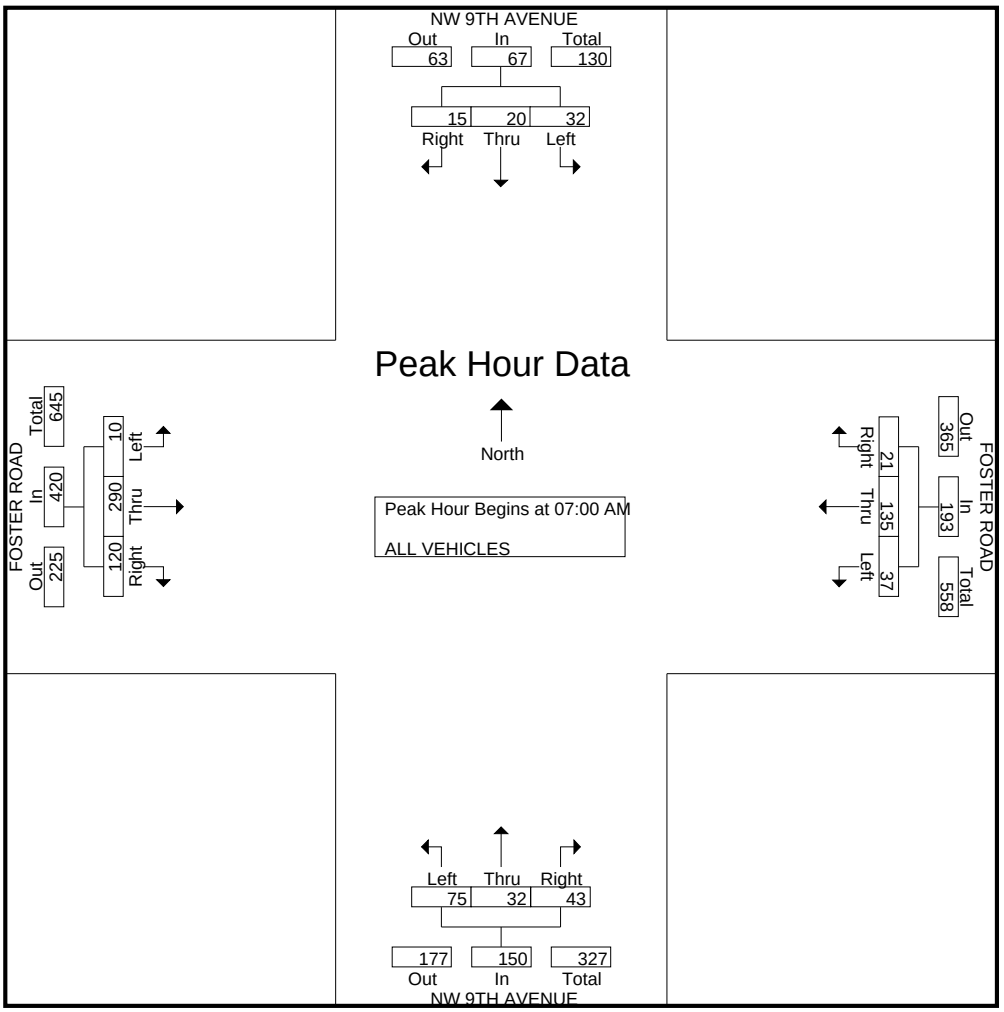
	NW 9TH AVENUE From North				FOSTER ROAD From East				NW 9TH AVENUE From South				FOSTER ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	6	8	3	0	5	30	6	0	26	8	12	0	3	37	42	186
07:15 AM	0	9	7	6	0	16	37	8	0	21	13	17	0	6	57	44	241
07:30 AM	0	7	3	2	0	12	24	1	0	19	8	8	0	0	91	21	196
07:45 AM	0	10	2	4	0	4	44	6	0	9	3	6	0	1	105	13	207
Total	0	32	20	15	0	37	135	21	0	75	32	43	0	10	290	120	830
08:00 AM	0	9	1	2	0	1	29	1	0	3	5	5	0	0	89	7	152
08:15 AM	0	12	3	0	0	3	34	1	0	5	2	4	0	1	94	8	167
08:30 AM	0	10	3	1	0	3	32	0	0	3	5	4	0	0	87	6	154
08:45 AM	0	9	2	0	0	2	32	1	0	6	1	1	0	0	83	7	144
Total	0	40	9	3	0	9	127	3	0	17	13	14	0	1	353	28	617
04:00 PM	0	6	2	0	0	0	34	6	0	7	1	0	0	6	49	8	119
04:15 PM	0	4	1	4	0	0	53	6	0	10	3	1	0	1	52	4	139
04:30 PM	0	7	2	0	0	0	56	6	0	3	0	2	0	8	62	11	157
04:45 PM	0	7	2	1	1	0	66	8	0	7	1	2	0	3	64	5	167
Total	0	24	7	5	1	0	209	26	0	27	5	5	0	18	227	28	582
05:00 PM	1	4	1	1	0	4	66	26	0	2	5	4	0	4	49	7	174
05:15 PM	0	5	1	7	0	5	51	23	0	3	4	4	0	8	68	7	186
05:30 PM	0	4	1	4	0	5	64	25	0	4	5	1	0	4	71	7	195
05:45 PM	0	5	2	1	0	1	73	19	0	4	1	1	0	10	71	3	191
Total	1	18	5	13	0	15	254	93	0	13	15	10	0	26	259	24	746
Grand Total	1	114	41	36	1	61	725	143	0	132	65	72	0	55	1129	200	2775
Apprch %	0.5	59.4	21.4	18.8	0.1	6.6	78	15.4	0	49.1	24.2	26.8	0	4	81.6	14.5	
Total %	0	4.1	1.5	1.3	0	2.2	26.1	5.2	0	4.8	2.3	2.6	0	2	40.7	7.2	

Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

FOSTER ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

File Name : FOST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	NW 9TH AVENUE From North					FOSTER ROAD From East					NW 9TH AVENUE From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	6	**8**	3	17	0	5	30	6	41	0	**26**	8	12	46	0	3	37	42	82	186
07:15 AM	0	9	7	**6**	**22**	0	**16**	37	**8**	**61**	0	21	**13**	**17**	**51**	0	**6**	57	**44**	107	**241**
07:30 AM	0	7	3	2	12	0	12	24	1	37	0	19	8	8	35	0	0	91	21	112	196
07:45 AM	0	**10**	2	4	16	0	4	**44**	6	54	0	9	3	6	18	0	1	**105**	13	**119**	207
Total Volume	0	32	20	15	67	0	37	135	21	193	0	75	32	43	150	0	10	290	120	420	830
% App. Total	0	47.8	29.9	22.4		0	19.2	69.9	10.9		0	50	21.3	28.7		0	2.4	69	28.6		
PHF	.000	.800	.625	.625	.761	.000	.578	.767	.656	.791	.000	.721	.615	.632	.735	.000	.417	.690	.682	.882	.861



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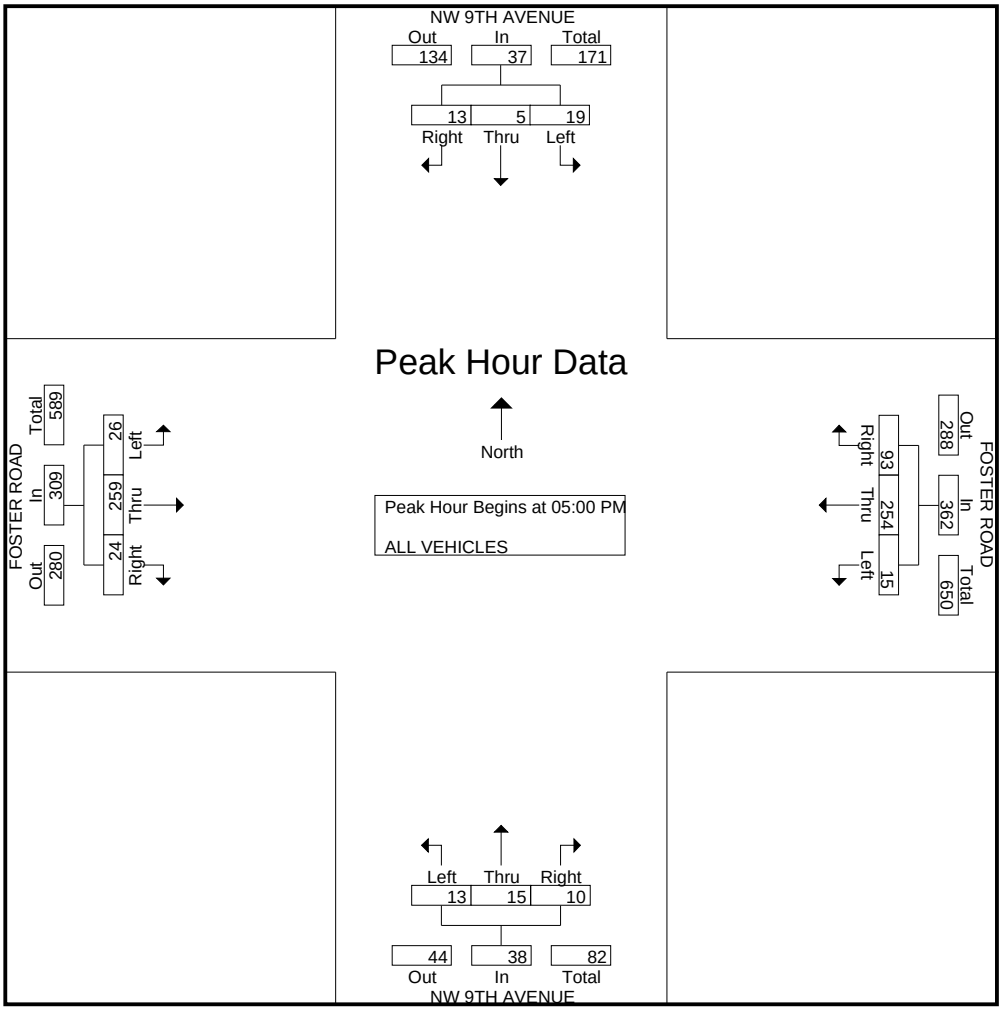
FOSTER ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

File Name : FOST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	NW 9TH AVENUE From North					FOSTER ROAD From East					NW 9TH AVENUE From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 05:00 PM																					
05:00 PM	**1**	4	1	1	7	0	4	66	**26**	**96**	0	2	**5**	**4**	**11**	0	4	49	**7**	60	174
05:15 PM	0	**5**	1	**7**	**13**	0	**5**	51	23	79	0	3	4	4	11	0	8	68	7	83	186
05:30 PM	0	4	1	4	9	0	5	64	25	94	0	**4**	5	1	10	0	4	**71**	7	82	**195**
05:45 PM	0	5	**2**	1	8	0	1	**73**	19	93	0	4	1	1	6	0	**10**	71	3	**84**	191
Total Volume	1	18	5	13	37	0	15	254	93	362	0	13	15	10	38	0	26	259	24	309	746
% App. Total	2.7	48.6	13.5	35.1		0	4.1	70.2	25.7		0	34.2	39.5	26.3		0	8.4	83.8	7.8		
PHF	.250	.900	.625	.464	.712	.000	.750	.870	.894	.943	.000	.813	.750	.625	.864	.000	.650	.912	.857	.920	.956



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FOSTER ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: LUIS PALOMINO
NOT SIGNALIZED

File Name : FOST_9AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	NW 9TH AVENUE From North				FOSTER ROAD From East				NW 9TH AVENUE From South				FOSTER ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	0	0	0	0	9	0	0	0	1	0	1	0	8	0	0	0	19
07:15 AM	2	0	0	0	5	0	0	0	1	0	0	0	14	0	0	0	22
07:30 AM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
07:45 AM	3	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	5
Total	5	0	2	0	14	0	0	0	3	0	1	0	22	0	0	0	47
08:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
08:30 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
08:45 AM	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3
Total	0	0	0	0	1	0	0	0	4	0	0	0	1	0	0	0	6
04:00 PM	3	0	0	0	0	0	0	0	3	0	0	0	0	0	0	0	6
04:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
04:30 PM	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
04:45 PM	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
Total	9	0	1	0	0	0	1	0	4	0	0	0	0	0	0	0	15
05:00 PM	5	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	6
05:15 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
05:30 PM	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	3
05:45 PM	2	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	5
Total	10	0	2	0	1	0	0	0	2	0	0	0	1	0	0	0	16
Grand Total	24	0	5	0	16	0	1	0	13	0	1	0	24	0	0	0	84
Apprch %	82.8	0	17.2	0	94.1	0	5.9	0	92.9	0	7.1	0	100	0	0	0	
Total %	28.6	0	6	0	19	0	1.2	0	15.5	0	1.2	0	28.6	0	0	0	

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FOSTER ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MELISSA INOJOSA
NOT SIGNALIZE

File Name : FOST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	NW 10TH AVENUE From North				FOSTER ROAD From East				----- From South				FOSTER ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	50	0	14	0	0	12	53	0	0	0	0	0	12	34	0	175
07:15 AM	0	59	0	17	0	0	10	62	0	0	0	0	0	9	40	0	197
07:30 AM	0	58	0	8	0	0	3	45	0	0	0	0	0	12	40	0	166
07:45 AM	0	81	0	15	0	0	10	43	0	0	0	0	0	13	37	0	199
Total	0	248	0	54	0	0	35	203	0	0	0	0	0	46	151	0	737
08:00 AM	0	74	0	16	0	0	7	31	0	0	0	0	0	11	19	0	158
08:15 AM	0	79	0	23	0	0	5	38	0	0	0	0	0	8	24	0	177
08:30 AM	1	72	0	16	0	0	5	28	0	0	0	0	0	4	17	0	143
08:45 AM	0	76	0	27	0	0	10	30	0	0	0	0	0	19	12	0	174
Total	1	301	0	82	0	0	27	127	0	0	0	0	0	42	72	0	652
04:00 PM	0	38	0	24	0	0	7	43	0	0	0	0	0	35	15	0	162
04:15 PM	0	45	0	4	0	0	11	54	0	0	0	0	0	26	11	0	151
04:30 PM	0	66	0	13	0	0	10	63	0	0	0	0	0	15	19	0	186
04:45 PM	0	60	0	20	0	0	10	64	0	0	0	0	0	21	15	0	190
Total	0	209	0	61	0	0	38	224	0	0	0	0	0	97	60	0	689
05:00 PM	0	49	0	14	0	0	4	40	0	0	0	0	0	18	9	0	134
05:15 PM	0	58	0	17	0	0	5	56	0	0	0	0	1	6	22	0	165
05:30 PM	0	50	0	13	0	0	8	54	0	0	0	0	0	15	23	0	163
05:45 PM	0	58	0	21	0	0	6	41	0	0	0	0	0	13	18	0	157
Total	0	215	0	65	0	0	23	191	0	0	0	0	1	52	72	0	619
Grand Total	1	973	0	262	0	0	123	745	0	0	0	0	1	237	355	0	2697
Apprch %	0.1	78.7	0	21.2	0	0	14.2	85.8	0	0	0	0	0.2	40	59.9	0	
Total %	0	36.1	0	9.7	0	0	4.6	27.6	0	0	0	0	0	8.8	13.2	0	

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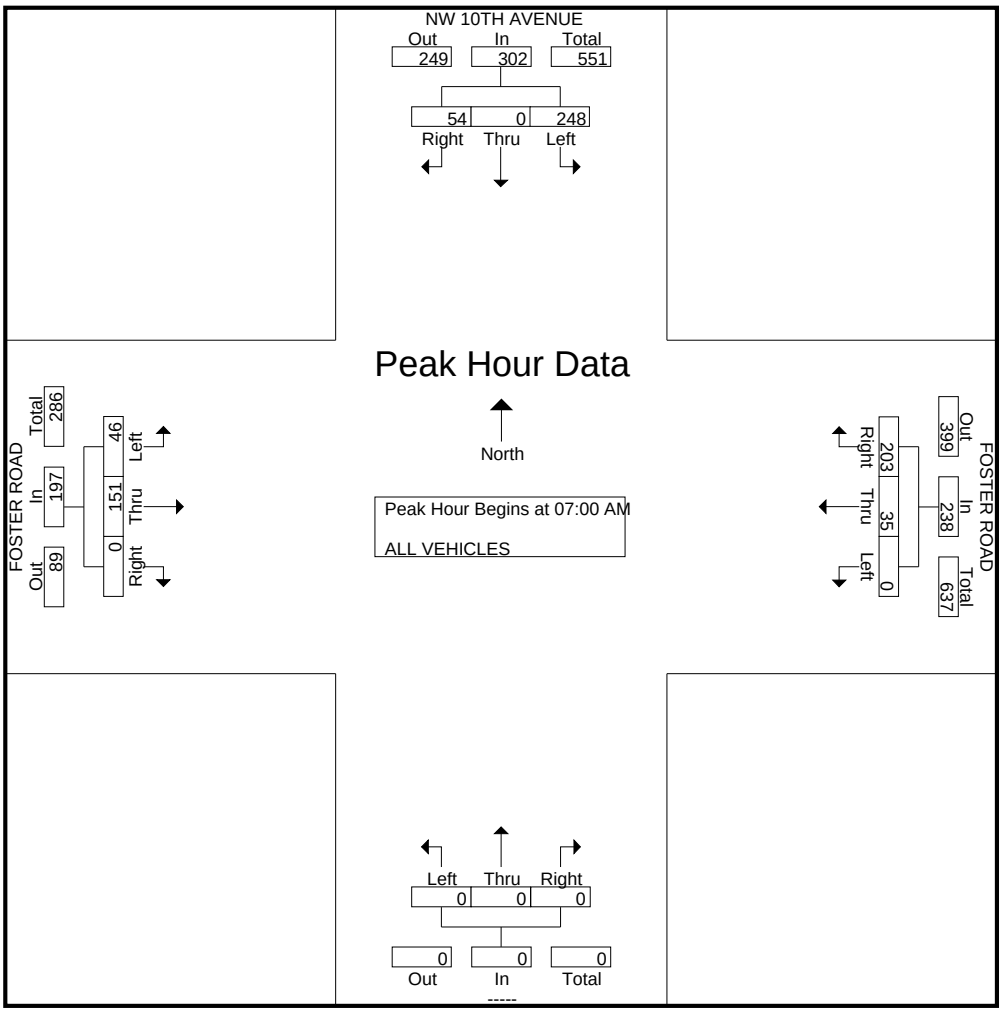
FOSTER ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MELISSA INOJOSA
NOT SIGNALIZE

File Name : FOST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	NW 10TH AVENUE From North					FOSTER ROAD From East					----- From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:00 AM																					
07:00 AM	0	50	0	14	64	0	0	**12**	53	65	0	0	0	0	0	0	12	34	0	46	175
07:15 AM	0	59	0	**17**	76	0	0	10	**62**	**72**	0	0	0	0	0	0	9	**40**	0	49	197
07:30 AM	0	58	0	8	66	0	0	3	45	48	0	0	0	0	0	0	12	40	0	**52**	166
07:45 AM	0	**81**	0	15	**96**	0	0	10	43	53	0	0	0	0	0	0	**13**	37	0	50	**199**
Total Volume	0	248	0	54	302	0	0	35	203	238	0	0	0	0	0	0	46	151	0	197	737
% App. Total	0	82.1	0	17.9		0	0	14.7	85.3		0	0	0	0		0	23.4	76.6	0		
PHF	.000	.765	.000	.794	.786	.000	.000	.729	.819	.826	.000	.000	.000	.000	.000	.000	.885	.944	.000	.947	.926



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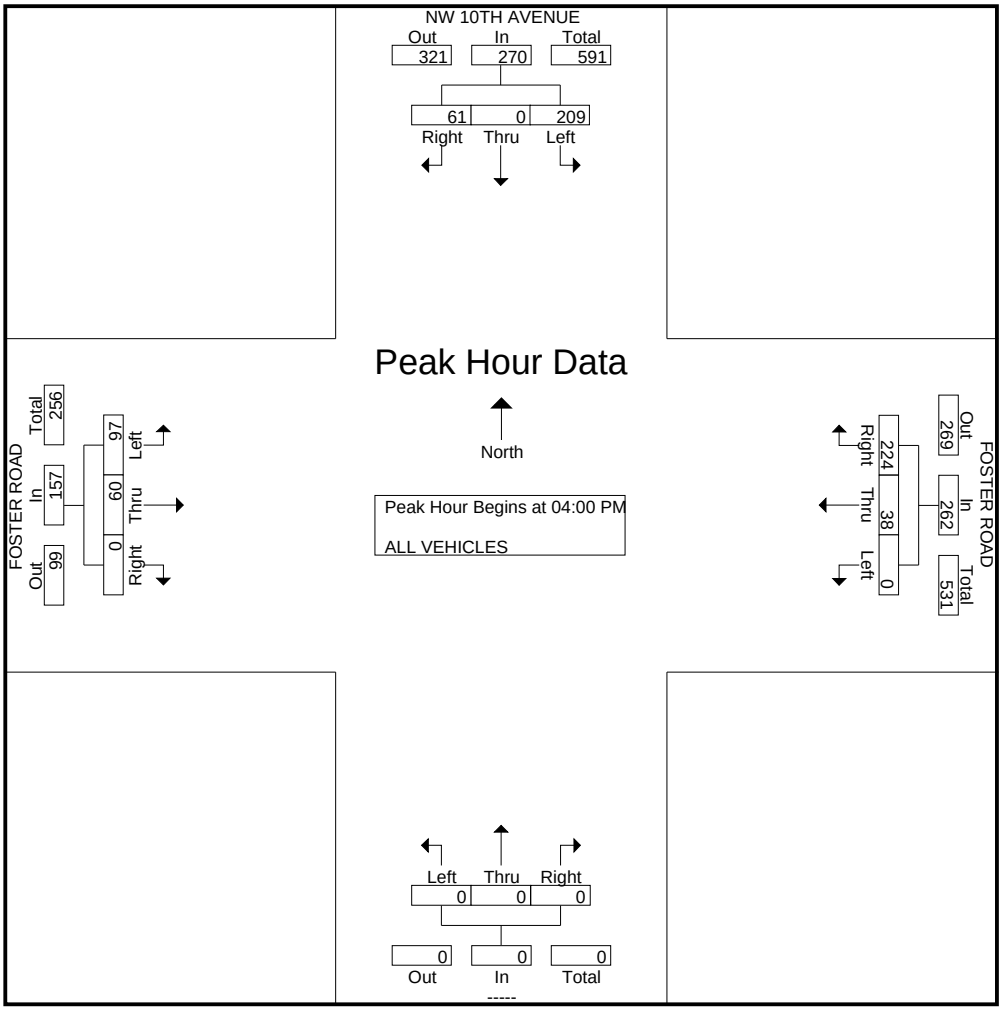
FOSTER ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MELISSA INOJOSA
NOT SIGNALIZE

File Name : FOST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	NW 10TH AVENUE From North					FOSTER ROAD From East					----- From South					FOSTER ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:00 PM																					
04:00 PM	0	38	0	**24**	62	0	0	7	43	50	0	0	0	0	0	0	**35**	15	0	**50**	162
04:15 PM	0	45	0	4	49	0	0	**11**	54	65	0	0	0	0	0	0	26	11	0	37	151
04:30 PM	0	**66**	0	13	79	0	0	10	63	73	0	0	0	0	0	0	15	**19**	0	34	186
04:45 PM	0	60	0	20	**80**	0	0	10	**64**	**74**	0	0	0	0	0	0	21	15	0	36	**190**
Total Volume	0	209	0	61	270	0	0	38	224	262	0	0	0	0	0	0	97	60	0	157	689
% App. Total	0	77.4	0	22.6		0	0	14.5	85.5		0	0	0	0		0	61.8	38.2	0		
PHF	.000	.792	.000	.635	.844	.000	.000	.864	.875	.885	.000	.000	.000	.000	.000	.000	.693	.789	.000	.785	.907



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FOSTER ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MELISSA INOJOSA
NOT SIGNALIZE

File Name : FOST10AV
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	NW 10TH AVENUE From North				FOSTER ROAD From East				----- From South				FOSTER ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:45 AM	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
Total	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	2
08:30 AM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
Total	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
05:30 PM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Total	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
Grand Total	3	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	5
Apprch %	100	0	0	0	0	0	0	0	100	0	0	0	100	0	0	0	
Total %	60	0	0	0	0	0	0	0	20	0	0	0	20	0	0	0	

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PEMBROKE ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : Pembroke & 8th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	S 26TH AVENUE From North				PEMBROKE ROAD From East				NW 8TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	10	27	16	0	13	216	8	0	21	24	10	0	22	231	3	601
07:15 AM	0	13	32	21	0	22	175	10	1	16	47	10	0	29	191	7	574
07:30 AM	0	20	36	34	0	14	211	12	0	21	31	16	0	19	257	14	685
07:45 AM	0	9	27	17	0	13	192	5	0	16	23	16	2	36	327	13	696
Total	0	52	122	88	0	62	794	35	1	74	125	52	2	106	1006	37	2556
08:00 AM	0	3	13	14	0	13	221	1	0	17	19	14	0	31	363	27	736
08:15 AM	0	8	17	25	0	10	269	1	0	27	20	5	1	29	332	24	768
08:30 AM	0	12	13	23	0	13	253	3	0	23	12	11	0	31	349	27	770
08:45 AM	0	5	10	24	0	6	258	0	0	9	11	7	0	29	334	23	716
Total	0	28	53	86	0	42	1001	5	0	76	62	37	1	120	1378	101	2990
04:00 PM	0	4	16	14	0	11	257	4	0	37	38	8	0	27	218	18	652
04:15 PM	0	3	18	17	0	13	299	1	0	19	24	9	0	34	288	16	741
04:30 PM	0	10	18	14	0	7	216	5	0	30	29	9	0	35	234	16	623
04:45 PM	0	6	25	12	0	15	271	5	0	20	23	15	0	50	261	13	716
Total	0	23	77	57	0	46	1043	15	0	106	114	41	0	146	1001	63	2732
05:00 PM	0	9	14	20	0	14	231	3	0	22	35	9	0	41	285	24	707
05:15 PM	0	6	22	17	0	12	185	2	0	28	58	18	0	48	263	22	681
05:30 PM	0	8	20	15	0	8	187	4	0	28	48	7	0	48	256	22	651
05:45 PM	0	9	32	14	0	3	169	6	0	17	44	10	0	50	269	24	647
Total	0	32	88	66	0	37	772	15	0	95	185	44	0	187	1073	92	2686
Grand Total	0	135	340	297	0	187	3610	70	1	351	486	174	3	559	4458	293	10964
Apprch %	0	17.5	44	38.5	0	4.8	93.4	1.8	0.1	34.7	48	17.2	0.1	10.5	83.9	5.5	
Total %	0	1.2	3.1	2.7	0	1.7	32.9	0.6	0	3.2	4.4	1.6	0	5.1	40.7	2.7	

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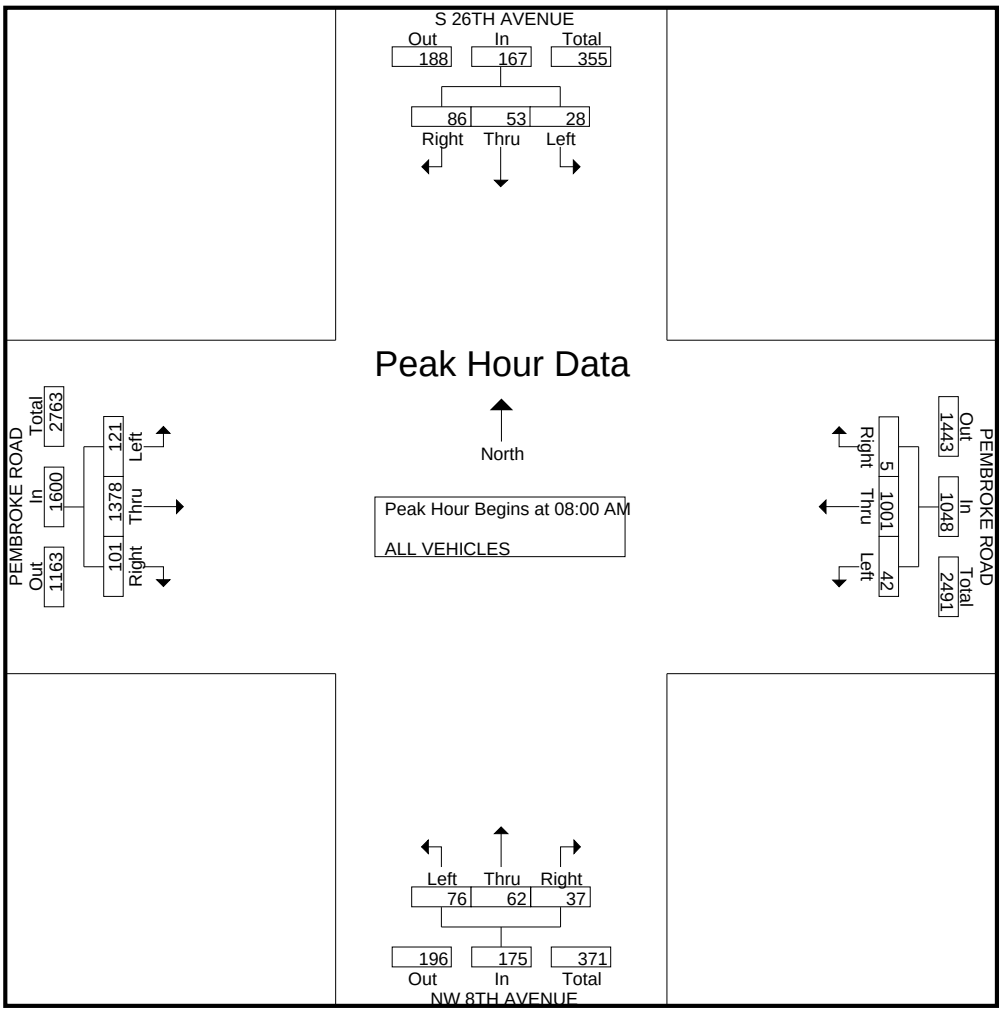
PEMBROKE ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : Pembroke & 8th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	S 26TH AVENUE From North					PEMBROKE ROAD From East					NW 8TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	3	13	14	30	0	**13**	221	1	235	0	17	19	**14**	50	0	**31**	**363**	**27**	**421**	736
08:15 AM	0	8	**17**	**25**	**50**	0	10	**269**	1	**280**	0	**27**	**20**	5	**52**	**1**	29	332	24	386	768
08:30 AM	0	**12**	13	23	48	0	13	253	**3**	269	0	23	12	11	46	0	31	349	27	407	**770**
08:45 AM	0	5	10	24	39	0	6	258	0	264	0	9	11	7	27	0	29	334	23	386	716
Total Volume	0	28	53	86	167	0	42	1001	5	1048	0	76	62	37	175	1	120	1378	101	1600	2990
% App. Total	0	16.8	31.7	51.5		0	4	95.5	0.5		0	43.4	35.4	21.1		0.1	7.5	86.1	6.3		
PHF	.000	.583	.779	.860	.835	.000	.808	.930	.417	.936	.000	.704	.775	.661	.841	.250	.968	.949	.935	.950	.971

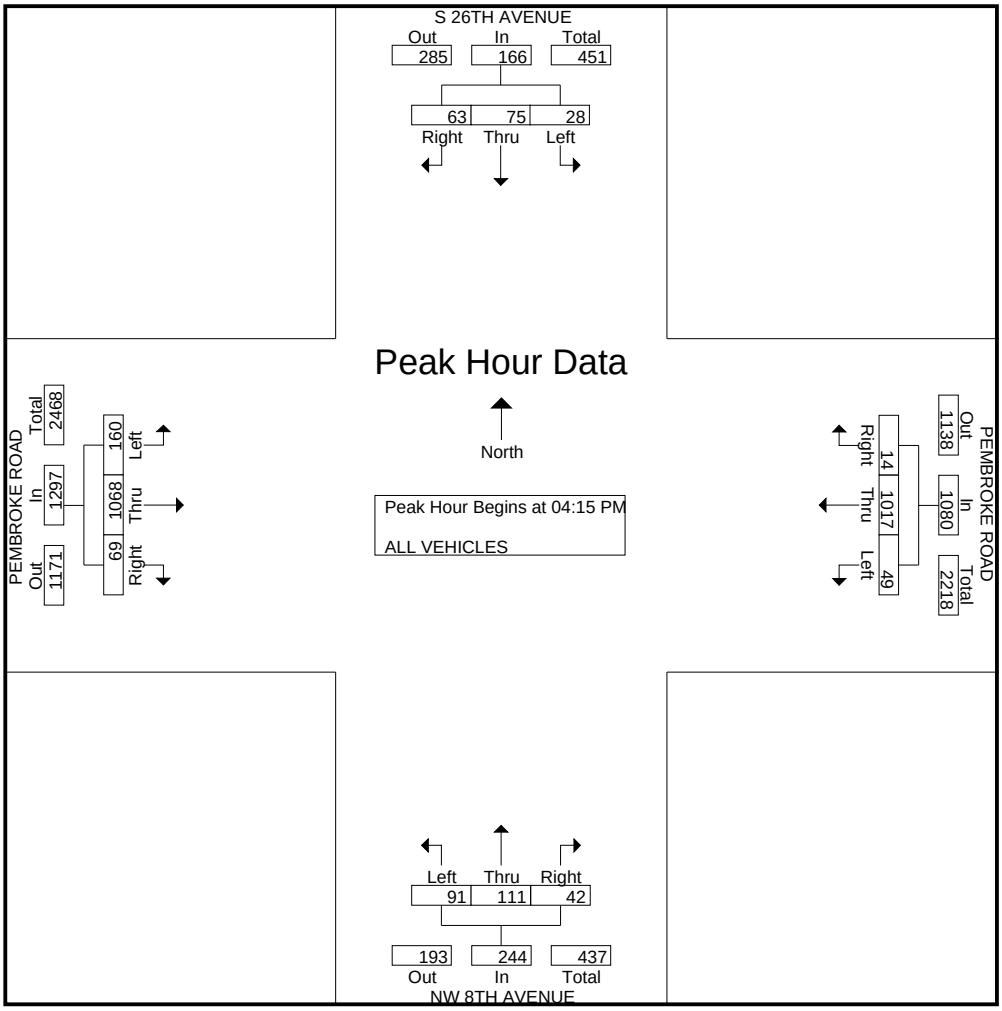


Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

PEMBROKE ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : Pembroke & 8th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	S 26TH AVENUE From North					PEMBROKE ROAD From East					NW 8TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	3	18	17	38	0	13	**299**	1	**313**	0	19	24	9	52	0	34	**288**	16	338	**741**
04:30 PM	0	**10**	18	14	42	0	7	216	**5**	228	0	**30**	29	9	**68**	0	35	234	16	285	623
04:45 PM	0	6	**25**	12	**43**	0	**15**	271	5	291	0	20	23	**15**	58	0	**50**	261	13	324	716
05:00 PM	0	9	14	**20**	43	0	14	231	3	248	0	22	**35**	9	66	0	41	285	**24**	**350**	707
Total Volume	0	28	75	63	166	0	49	1017	14	1080	0	91	111	42	244	0	160	1068	69	1297	2787
% App. Total	0	16.9	45.2	38		0	4.5	94.2	1.3		0	37.3	45.5	17.2		0	12.3	82.3	5.3		
PHF	.000	.700	.750	.788	.965	.000	.817	.850	.700	.863	.000	.758	.793	.700	.897	.000	.800	.927	.719	.926	.940



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PEMBROKE ROAD & NW 8TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : Pembroke & 8th
Site Code : 00190192
Start Date : 11/13/2019
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Groups Printed- PEDESTRIANS & BIKES

	S 26TH AVENUE From North				PEMBROKE ROAD From East				NW 8TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	0	0	0	0	4	0	1	0	3	0	0	0	3	0	1	0	12
07:15 AM	0	0	0	0	1	0	1	0	2	0	0	0	0	0	0	0	4
07:30 AM	0	0	0	0	0	0	0	0	2	0	2	0	1	0	0	0	5
07:45 AM	0	0	0	0	2	0	0	0	1	0	0	0	1	0	1	0	5
Total	0	0	0	0	7	0	2	0	8	0	2	0	5	0	2	0	26
08:00 AM	0	0	0	0	4	0	0	0	1	0	0	0	2	0	0	0	7
08:15 AM	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	2
08:45 AM	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	3
Total	2	0	1	0	4	0	1	0	2	0	0	0	2	0	0	0	12
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
04:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	2	0	1	0	4
04:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
04:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
Total	0	0	1	0	1	0	0	0	1	0	0	0	2	0	2	0	7
05:00 PM	0	0	1	0	2	0	1	0	1	0	0	0	0	0	0	0	5
05:15 PM	0	0	0	0	1	0	0	0	1	0	0	0	1	0	0	0	3
05:30 PM	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	2
05:45 PM	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Total	1	0	2	0	4	0	1	0	3	0	0	0	1	0	0	0	12
Grand Total	3	0	4	0	16	0	4	0	14	0	2	0	10	0	4	0	57
Apprch %	42.9	0	57.1	0	80	0	20	0	87.5	0	12.5	0	71.4	0	28.6	0	
Total %	5.3	0	7	0	28.1	0	7	0	24.6	0	3.5	0	17.5	0	7	0	

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PEMBROKE ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : pembroke & 9th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	S 27TH AVENUE From North				PEMBROKE ROAD From East				NW 9TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	0	0	17	0	0	249	1	0	0	0	1	0	0	244	7	519
07:15 AM	0	0	0	24	0	0	208	1	0	0	0	6	0	0	214	12	465
07:30 AM	0	0	0	27	0	0	265	1	0	0	0	4	0	0	300	7	604
07:45 AM	0	0	0	13	0	0	224	2	0	0	0	2	0	0	403	6	650
Total	0	0	0	81	0	0	946	5	0	0	0	13	0	0	1161	32	2238
08:00 AM	0	0	0	9	0	0	251	2	0	0	0	1	0	0	384	9	656
08:15 AM	0	0	0	6	0	0	321	1	0	0	0	0	0	0	402	16	746
08:30 AM	0	0	0	2	0	0	300	1	0	0	0	5	0	0	415	11	734
08:45 AM	0	0	0	4	0	0	287	2	0	0	0	0	0	0	367	11	671
Total	0	0	0	21	0	0	1159	6	0	0	0	6	0	0	1568	47	2807
04:00 PM	0	0	0	6	0	0	307	1	0	0	0	5	0	0	289	4	612
04:15 PM	0	0	0	3	0	0	350	0	0	0	0	4	0	0	321	4	682
04:30 PM	0	0	0	7	0	0	256	3	0	0	0	7	0	0	295	8	576
04:45 PM	0	0	0	5	0	0	302	1	0	0	0	6	0	0	326	5	645
Total	0	0	0	21	0	0	1215	5	0	0	0	22	0	0	1231	21	2515
05:00 PM	0	0	0	9	0	0	267	3	0	0	0	7	0	0	335	8	629
05:15 PM	0	0	0	12	0	0	223	3	0	0	0	9	0	0	342	12	601
05:30 PM	0	0	0	25	0	0	228	1	0	0	0	7	0	0	310	2	573
05:45 PM	0	0	0	25	0	0	197	0	0	0	0	12	0	0	354	9	597
Total	0	0	0	71	0	0	915	7	0	0	0	35	0	0	1341	31	2400
Grand Total	0	0	0	194	0	0	4235	23	0	0	0	76	0	0	5301	131	9960
Apprch %	0	0	0	100	0	0	99.5	0.5	0	0	0	100	0	0	97.6	2.4	
Total %	0	0	0	1.9	0	0	42.5	0.2	0	0	0	0.8	0	0	53.2	1.3	

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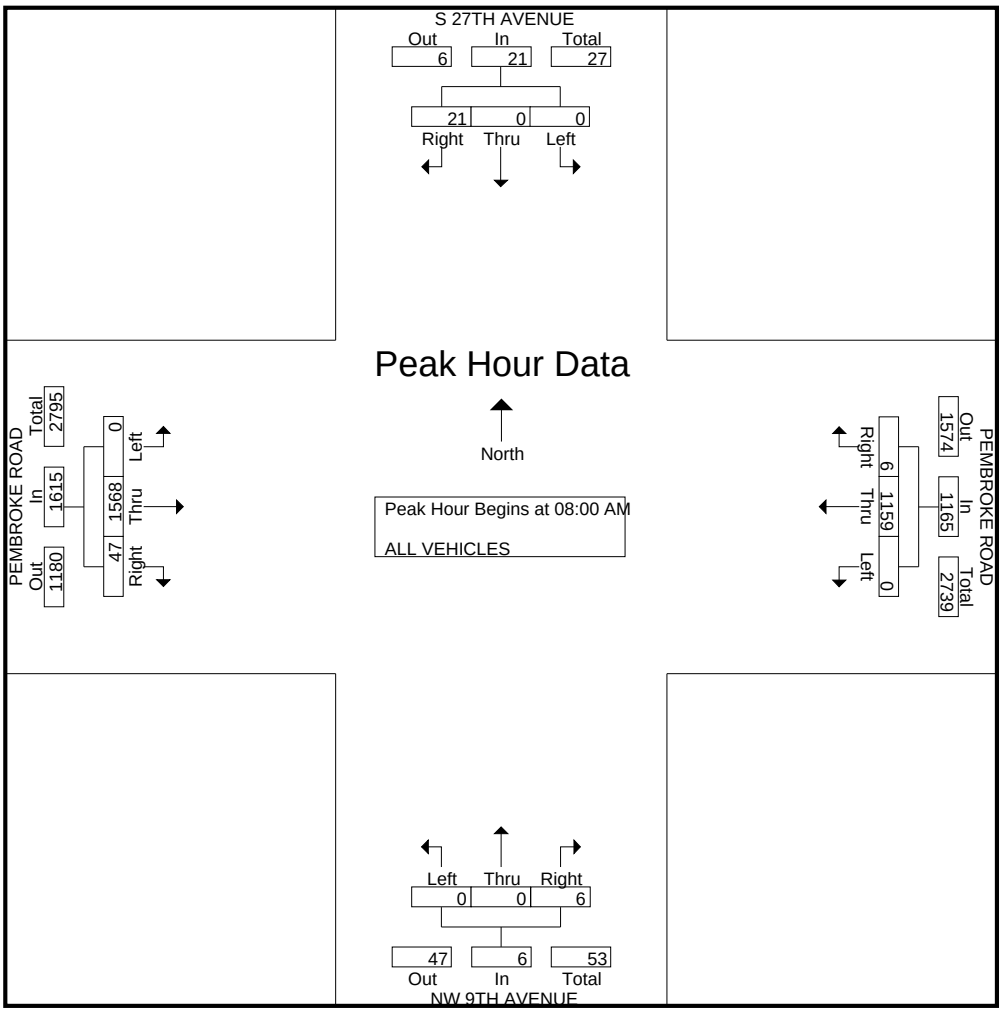
PEMBROKE ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : pembroke & 9th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	S 27TH AVENUE From North					PEMBROKE ROAD From East					NW 9TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 08:00 AM																					
08:00 AM	0	0	0	**9**	**9**	0	0	251	**2**	253	0	0	0	1	1	0	0	384	9	393	656
08:15 AM	0	0	0	6	6	0	0	**321**	1	**322**	0	0	0	0	0	0	0	402	**16**	418	**746**
08:30 AM	0	0	0	2	2	0	0	300	1	301	0	0	0	**5**	**5**	0	0	**415**	11	**426**	734
08:45 AM	0	0	0	4	4	0	0	287	2	289	0	0	0	0	0	0	0	367	11	378	671
Total Volume	0	0	0	21	21	0	0	1159	6	1165	0	0	0	6	6	0	0	1568	47	1615	2807
% App. Total	0	0	0	100		0	0	99.5	0.5		0	0	0	100		0	0	97.1	2.9		
PHF	.000	.000	.000	.583	.583	.000	.000	.903	.750	.905	.000	.000	.000	.300	.300	.000	.000	.945	.734	.948	.941



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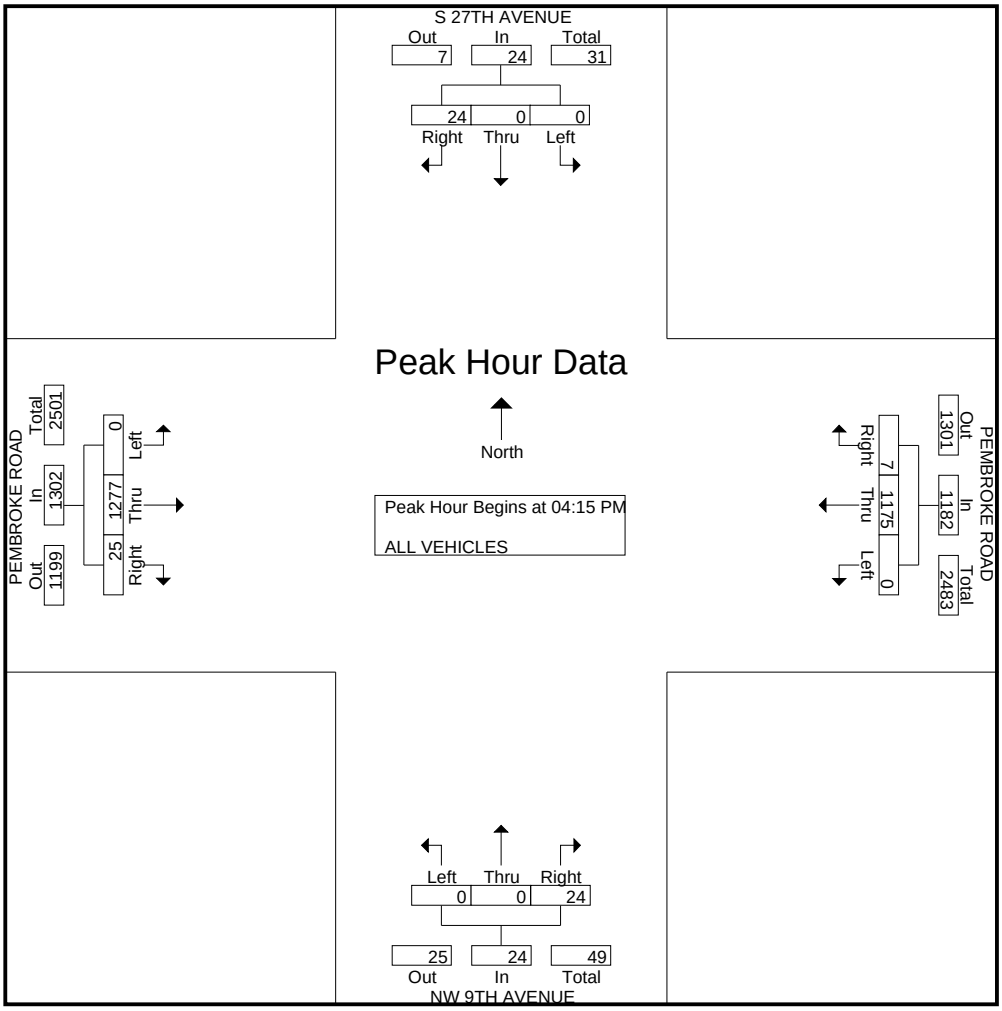
PEMBROKE ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : pembroke & 9th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	S 27TH AVENUE From North					PEMBROKE ROAD From East					NW 9TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:15 PM																					
04:15 PM	0	0	0	3	3	0	0	**350**	0	**350**	0	0	0	4	4	0	0	321	4	325	**682**
04:30 PM	0	0	0	7	7	0	0	256	**3**	259	0	0	0	**7**	**7**	0	0	295	**8**	303	576
04:45 PM	0	0	0	5	5	0	0	302	1	303	0	0	0	6	6	0	0	326	5	331	645
05:00 PM	0	0	0	**9**	**9**	0	0	267	3	270	0	0	0	7	7	0	0	**335**	8	**343**	629
Total Volume	0	0	0	24	24	0	0	1175	7	1182	0	0	0	24	24	0	0	1277	25	1302	2532
% App. Total	0	0	0	100		0	0	99.4	0.6		0	0	0	100		0	0	98.1	1.9		
PHF	.000	.000	.000	.667	.667	.000	.000	.839	.583	.844	.000	.000	.000	.857	.857	.000	.000	.953	.781	.949	.928



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PEMBROKE ROAD & NW 9TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: MARISA CRUZ (V)
NOT SIGNALIZE

File Name : pembroke & 9th
Site Code : 00190192
Start Date : 11/13/2019
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Groups Printed- PEDESTRIANS & BIKES

	S 27TH AVENUE From North				PEMBROKE ROAD From East				NW 9TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	1	0	1	0	10	0	1	0	1	0	0	0	0	0	0	0	14
07:15 AM	0	0	0	0	11	0	0	0	1	0	1	0	0	0	0	0	13
07:30 AM	0	0	0	0	11	0	1	0	2	0	0	0	0	0	0	0	14
07:45 AM	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	2
Total	1	0	1	0	32	0	2	0	6	0	1	0	0	0	0	0	43
08:00 AM	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	3
08:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
08:45 AM	2	0	0	0	1	0	1	0	1	0	1	0	2	0	0	0	8
Total	3	0	0	0	4	0	1	0	1	0	1	0	2	0	0	0	12
04:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
04:15 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
04:30 PM	1	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	2
Total	1	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	4
05:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
05:30 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
05:45 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
Total	0	0	1	0	3	0	0	0	1	0	0	0	0	0	0	0	5
Grand Total	5	0	3	0	39	0	3	0	8	0	3	0	3	0	0	0	64
Apprch %	62.5	0	37.5	0	92.9	0	7.1	0	72.7	0	27.3	0	100	0	0	0	
Total %	7.8	0	4.7	0	60.9	0	4.7	0	12.5	0	4.7	0	4.7	0	0	0	

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PEMBROKE ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO (V)
NOT SIGNALIZE

File Name : pembroke & 10th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- ALL VEHICLES

	S 28TH AVENUE From North				PEMBROKE ROAD From East				NW 10TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	UTurn	Left	Thru	Right	Int. Total
07:00 AM	0	3	10	47	0	1	244	1	0	61	21	0	0	51	235	70	744
07:15 AM	0	7	12	63	0	0	254	6	0	62	24	0	0	53	235	81	797
07:30 AM	0	7	10	80	0	2	249	1	0	65	12	1	0	45	284	81	837
07:45 AM	0	10	8	55	0	3	283	3	0	49	8	1	0	50	391	100	961
Total	0	27	40	245	0	6	1030	11	0	237	65	2	0	199	1145	332	3339
08:00 AM	0	9	8	44	0	0	266	4	0	43	7	2	0	52	406	87	928
08:15 AM	0	17	6	48	0	5	287	8	0	49	3	1	0	43	397	104	968
08:30 AM	0	8	6	28	0	3	318	3	0	28	0	1	0	31	406	91	923
08:45 AM	0	11	8	28	0	7	297	4	0	45	5	2	0	31	379	98	915
Total	0	45	28	148	0	15	1168	19	0	165	15	6	0	157	1588	380	3734
04:00 PM	0	10	7	41	0	3	297	4	0	71	10	0	0	26	274	56	799
04:15 PM	0	5	4	27	0	1	351	5	0	76	5	2	0	39	313	52	880
04:30 PM	0	12	6	36	0	5	214	4	0	72	12	1	1	49	290	71	773
04:45 PM	0	10	11	39	0	5	318	2	0	73	11	1	0	30	311	63	874
Total	0	37	28	143	0	14	1180	15	0	292	38	4	1	144	1188	242	3326
05:00 PM	0	12	4	54	0	2	233	11	0	67	17	1	0	46	342	66	855
05:15 PM	0	13	6	60	0	2	234	7	0	70	13	1	0	48	320	63	837
05:30 PM	0	13	6	59	0	1	259	4	0	70	13	0	0	54	324	58	861
05:45 PM	0	9	11	54	0	3	203	3	0	63	13	2	0	38	329	77	805
Total	0	47	27	227	0	8	929	25	0	270	56	4	0	186	1315	264	3358
Grand Total	0	156	123	763	0	43	4307	70	0	964	174	16	1	686	5236	1218	13757
Apprch %	0	15	11.8	73.2	0	1	97.4	1.6	0	83.5	15.1	1.4	0	9.6	73.3	17.1	
Total %	0	1.1	0.9	5.5	0	0.3	31.3	0.5	0	7	1.3	0.1	0	5	38.1	8.9	

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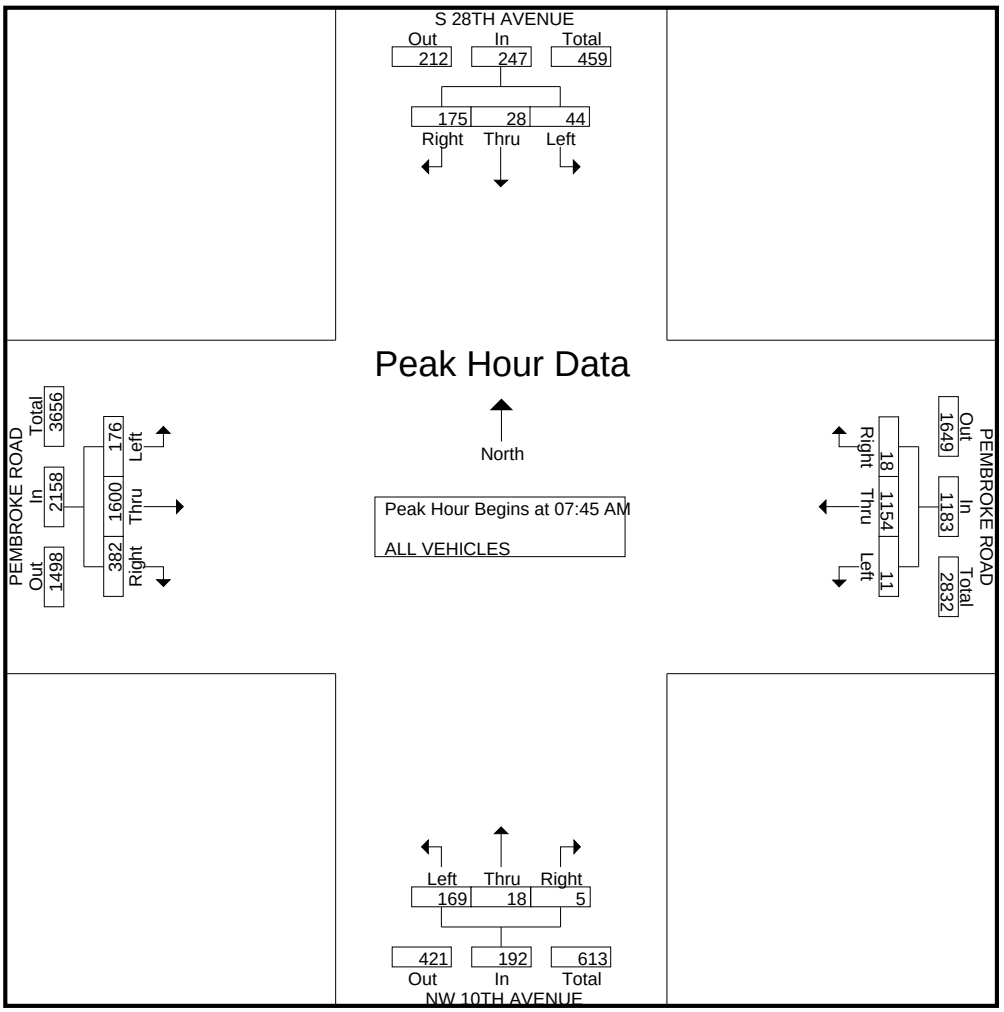
PEMBROKE ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO (V)
NOT SIGNALIZE

File Name : pembroke & 10th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 2

	S 28TH AVENUE From North					PEMBROKE ROAD From East					NW 10TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 07:00 AM to 08:45 AM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 07:45 AM																					
07:45 AM	0	10	**8**	**55**	**73**	0	3	283	3	289	0	**49**	**8**	1	**58**	0	50	391	100	541	961
08:00 AM	0	9	8	44	61	0	0	266	4	270	0	43	7	**2**	52	0	**52**	**406**	87	**545**	928
08:15 AM	0	**17**	6	48	71	0	**5**	287	**8**	300	0	49	3	1	53	0	43	397	**104**	544	**968**
08:30 AM	0	8	6	28	42	0	3	**318**	3	**324**	0	28	0	1	29	0	31	406	91	528	923
Total Volume	0	44	28	175	247	0	11	1154	18	1183	0	169	18	5	192	0	176	1600	382	2158	3780
% App. Total	0	17.8	11.3	70.9		0	0.9	97.5	1.5		0	88	9.4	2.6		0	8.2	74.1	17.7		
PHF	.000	.647	.875	.795	.846	.000	.550	.907	.563	.913	.000	.862	.563	.625	.828	.000	.846	.985	.918	.990	.976

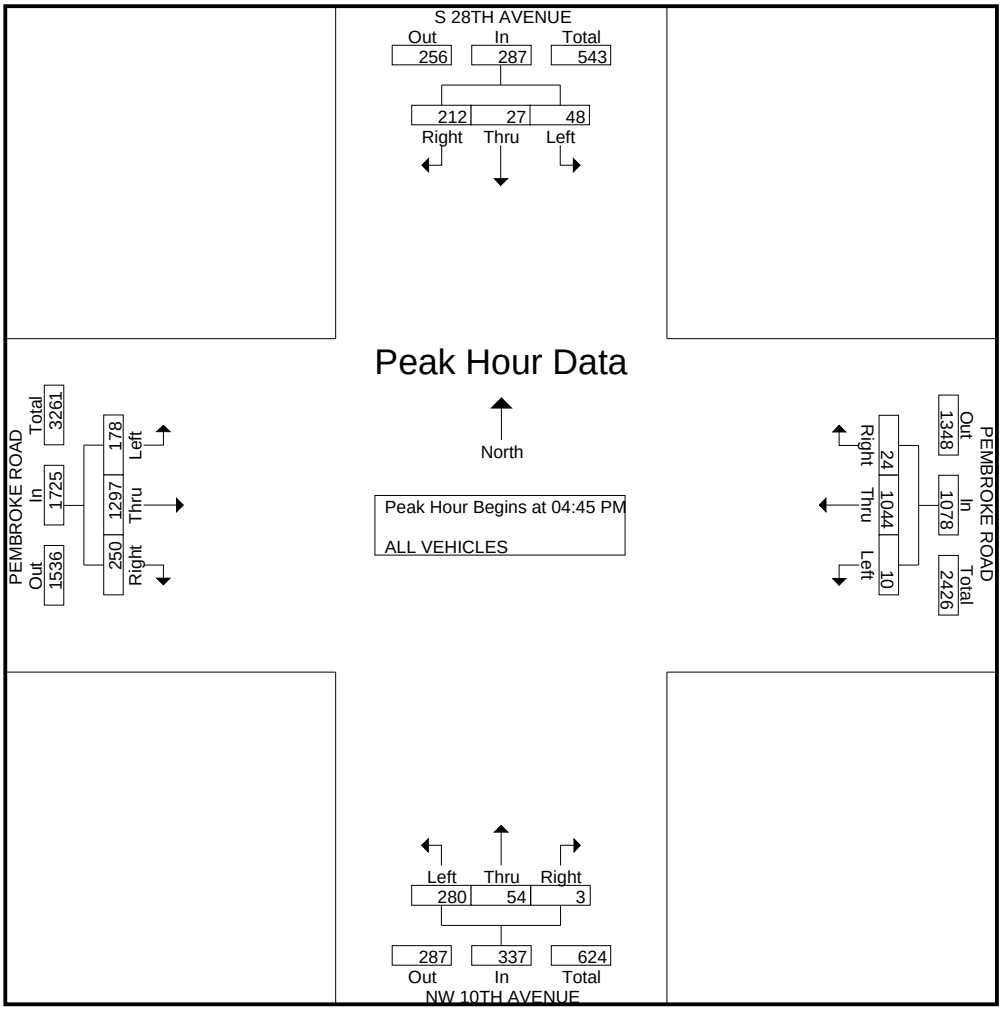


Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

PEMBROKE ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO (V)
NOT SIGNALIZE

File Name : pembroke & 10th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 3

	S 28TH AVENUE From North					PEMBROKE ROAD From East					NW 10TH AVENUE From South					PEMBROKE ROAD From West					
Start Time	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	UTurn	Left	Thru	Right	App. Total	Int. Total
Peak Hour Analysis From 04:00 PM to 05:45 PM - Peak 1 of 1																					
Peak Hour for Entire Intersection Begins at 04:45 PM																					
04:45 PM	0	10	**11**	39	60	0	**5**	**318**	2	**325**	0	**73**	11	**1**	**85**	0	30	311	63	404	**874**
05:00 PM	0	12	4	54	70	0	2	233	**11**	246	0	67	**17**	1	85	0	46	**342**	**66**	**454**	855
05:15 PM	0	**13**	6	**60**	**79**	0	2	234	7	243	0	70	13	1	84	0	48	320	63	431	837
05:30 PM	0	13	6	59	78	0	1	259	4	264	0	70	13	0	83	0	**54**	324	58	436	861
Total Volume	0	48	27	212	287	0	10	1044	24	1078	0	280	54	3	337	0	178	1297	250	1725	3427
% App. Total	0	16.7	9.4	73.9		0	0.9	96.8	2.2		0	83.1	16	0.9		0	10.3	75.2	14.5		
PHF	.000	.923	.614	.883	.908	.000	.500	.821	.545	.829	.000	.959	.794	.750	.991	.000	.824	.948	.947	.950	.980



Traffic Survey Specialists, Inc.
85 SE 4th Avenue, Unit 109, Delray Beach, Florida 33483
Phone (561) 272-3255

PEMBROKE ROAD & NW 10TH AVENUE
HALLANDALE BEACH, FLORIDA
COUNTED BY: SEBASTIAN SALVO (V)
NOT SIGNALIZE

File Name : pembroke & 10th
Site Code : 00190192
Start Date : 11/13/2019
Page No : 1

Groups Printed- PEDESTRIANS & BIKES

	S 28TH AVENUE From North				PEMBROKE ROAD From East				NW 10TH AVENUE From South				PEMBROKE ROAD From West				
Start Time	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Peds	Left	BIKES	Right	Int. Total
07:00 AM	1	0	1	0	7	0	1	0	1	0	0	0	0	0	0	0	11
07:15 AM	0	0	1	0	3	0	1	0	2	0	1	0	0	0	0	0	8
07:30 AM	0	0	0	0	2	0	0	0	2	0	1	0	0	0	0	0	5
07:45 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
Total	1	0	2	0	12	0	3	0	5	0	2	0	0	0	0	0	25
08:15 AM	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	2
08:30 AM	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	3
08:45 AM	0	0	1	0	0	0	0	0	0	0	1	0	1	0	0	0	3
Total	2	0	1	0	1	0	0	0	0	0	2	0	2	0	0	0	8
04:00 PM	0	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	4
04:15 PM	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0	3
04:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
04:45 PM	0	0	0	0	3	0	1	0	0	0	0	0	0	0	1	0	5
Total	0	0	2	0	5	0	2	0	2	0	1	0	0	0	1	0	13
05:00 PM	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	2
05:30 PM	0	0	1	0	0	0	0	0	1	0	0	0	1	0	0	0	3
05:45 PM	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
Total	2	0	2	0	1	0	0	0	1	0	0	0	1	0	0	0	7
Grand Total	5	0	7	0	19	0	5	0	8	0	5	0	3	0	1	0	53
Apprch %	41.7	0	58.3	0	79.2	0	20.8	0	61.5	0	38.5	0	75	0	25	0	
Total %	9.4	0	13.2	0	35.8	0	9.4	0	15.1	0	9.4	0	5.7	0	1.9	0	

APPENDIX D

ITE Trip Generation Data

Land Use: 110
General Light Industrial

Description

A light industrial facility is a free-standing facility devoted to a single use. The facility has an emphasis on activities other than manufacturing and typically has minimal office space. Typical light industrial activities include printing, material testing, and assembly of data processing equipment. Industrial park (Land Use 130) and manufacturing (Land Use 140) are related uses.

Additional Data

Time-of-day distribution data for this land use are presented in Appendix A. For the 30 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 7:30 and 8:30 a.m. and 4:30 and 5:30 p.m., respectively.

The sites were surveyed in the 1980s, the 2000s, and the 2010s in Colorado, Connecticut, Indiana, New Jersey, New York, Oregon, Pennsylvania, and Texas.

Source Numbers

106, 157, 174, 177, 179, 184, 191, 251, 253, 286, 300, 611, 874, 875, 912

General Light Industrial
(110)

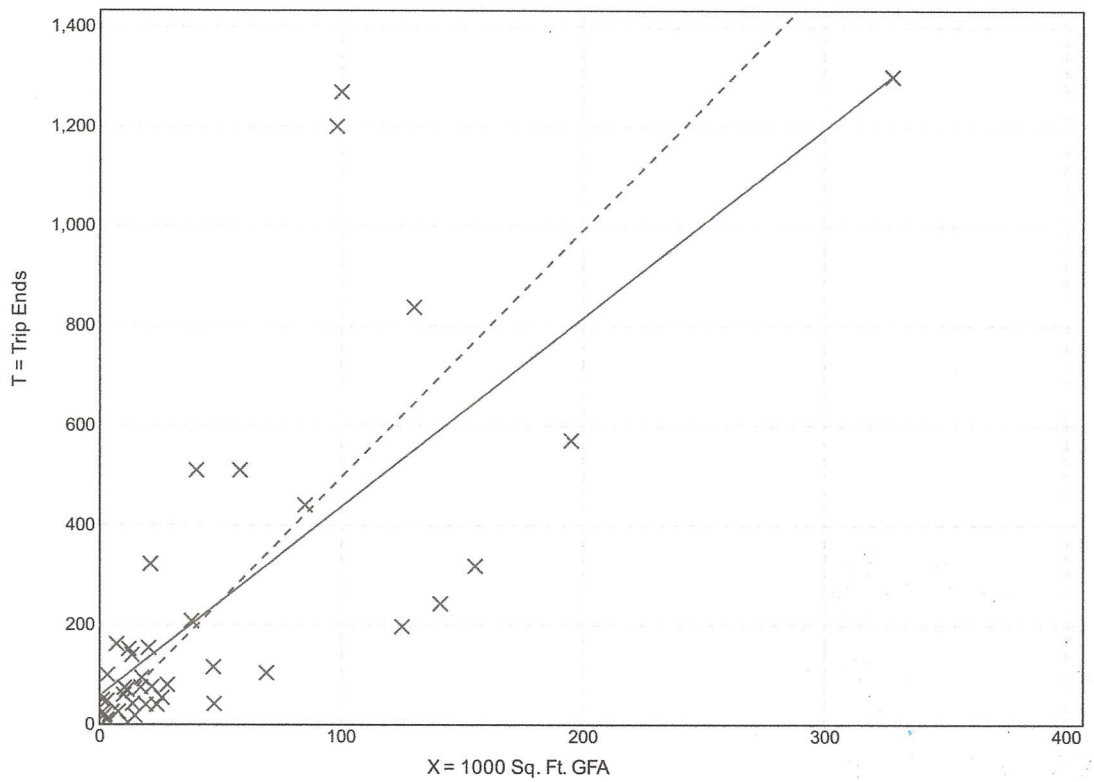
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 40
1000 Sq. Ft. GFA: 49
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
4.96	0.34 - 43.86	4.20

Data Plot and Equation



× **Study Site** **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 3.79(X) + 57.96 **R^2= 0.54**

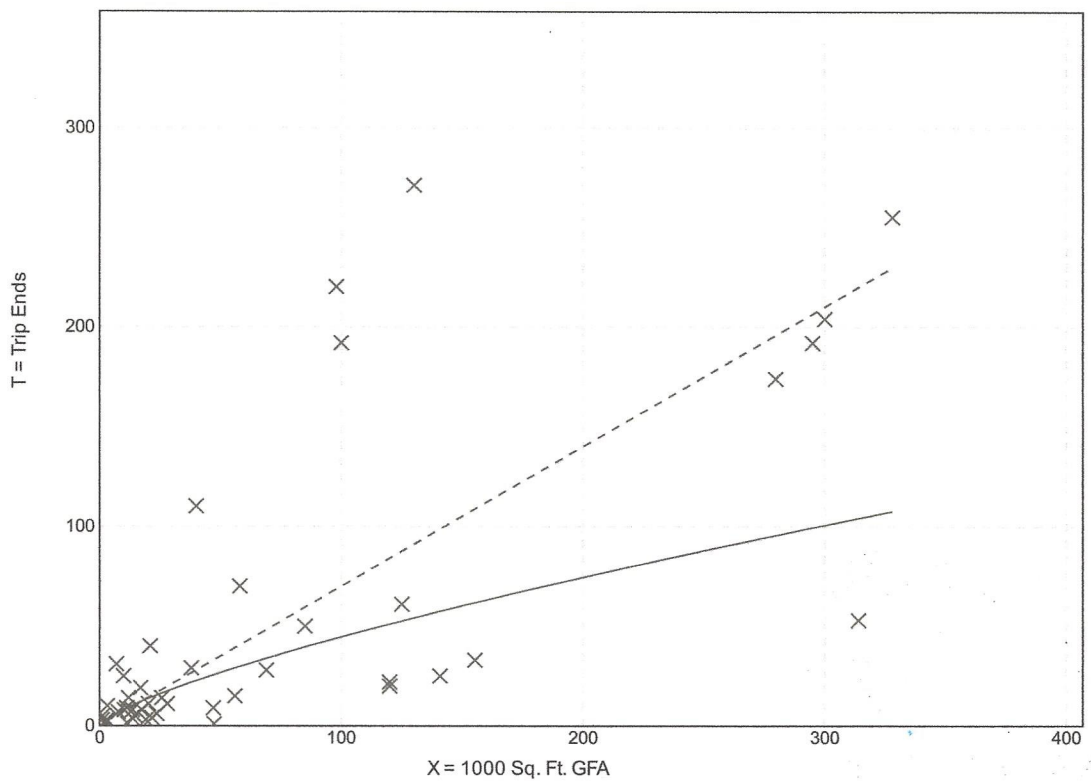
General Light Industrial
(110)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	45
1000 Sq. Ft. GFA:	73
Directional Distribution:	88% entering, 12% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.70	0.02 - 4.46	0.65

Data Plot and Equation



× **Study Site** **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: Ln(T) = 0.74 Ln(X) + 0.39 **R^2= 0.52**

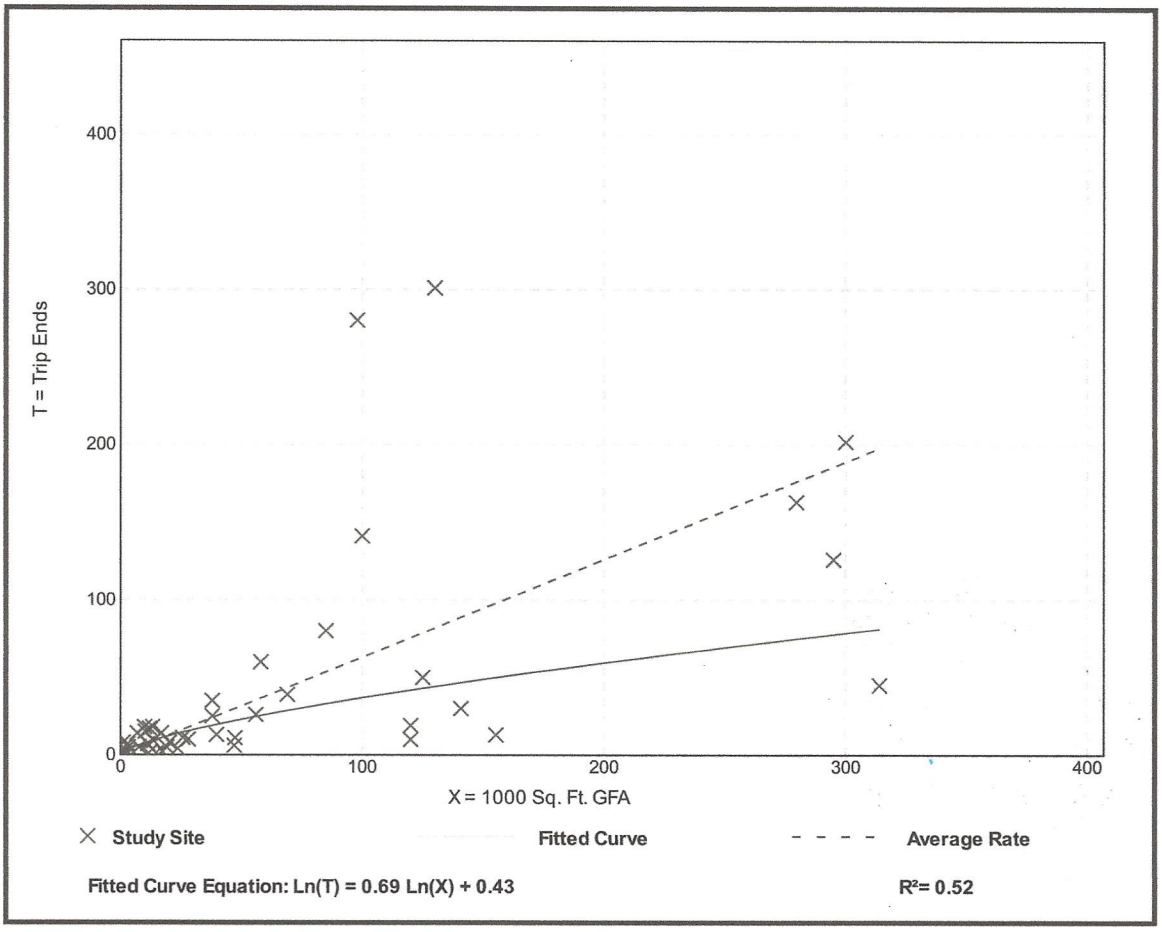
General Light Industrial
(110)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GFA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	44
1000 Sq. Ft. GFA:	67
Directional Distribution:	13% entering, 87% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
0.63	0.07 - 7.02	0.68

Data Plot and Equation



Land Use: 820
Shopping Center

Description

A shopping center is an integrated group of commercial establishments that is planned, developed, owned, and managed as a unit. A shopping center's composition is related to its market area in terms of size, location, and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Factory outlet center (Land Use 823) is a related use.

Additional Data

Shopping centers, including neighborhood centers, community centers, regional centers, and super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, health clubs, and recreational facilities (for example, ice skating rinks or indoor miniature golf courses).

Many shopping centers, in addition to the integrated unit of shops in one building or enclosed around a mall, include outparcels (peripheral buildings or pads located on the perimeter of the center adjacent to the streets and major access points). These buildings are typically drive-in banks, retail stores, restaurants, or small offices. Although the data herein do not indicate which of the centers studied included peripheral buildings, it can be assumed that some of the data show their effect.

The vehicle trips generated at a shopping center are based upon the total GLA of the center. In cases of smaller centers without an enclosed mall or peripheral buildings, the GLA could be the same as the gross floor area of the building.

Time-of-day distribution data for this land use are presented in Appendix A. For the 10 general urban/suburban sites with data, the overall highest vehicle volumes during the AM and PM on a weekday were counted between 11:45 a.m. and 12:45 p.m. and 12:15 and 1:15 p.m., respectively.

The average numbers of person trips per vehicle trip at the 27 general urban/suburban sites at which both person trip and vehicle trip data were collected were as follows:

- 1.31 during Weekday, AM Peak Hour of Generator
- 1.43 during Weekday, Peak Hour of Adjacent Street Traffic, one hour between 4 and 6 p.m.
- 1.46 during Weekday, PM Peak Hour of Generator

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in Alberta (CAN), British Columbia (CAN), California, Colorado, Connecticut, Delaware, District of Columbia, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Massachusetts, Michigan, Minnesota, Nevada, New Jersey, New York, North Carolina, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Virginia, Washington, West Virginia, and Wisconsin.

Source Numbers

105, 110, 154, 156, 159, 186, 190, 198, 199, 202, 204, 211, 213, 239, 251, 259, 260, 269, 294, 295, 299, 300, 301, 304, 305, 307, 308, 309, 310, 311, 314, 315, 316, 317, 319, 358, 365, 376, 385, 390, 400, 404, 414, 420, 423, 428, 437, 440, 442, 444, 446, 507, 562, 580, 598, 629, 658, 702, 715, 728, 868, 870, 871, 880, 899, 908, 912, 915, 926, 936, 944, 946, 960, 961, 962, 973, 974, 978

Shopping Center
(820)

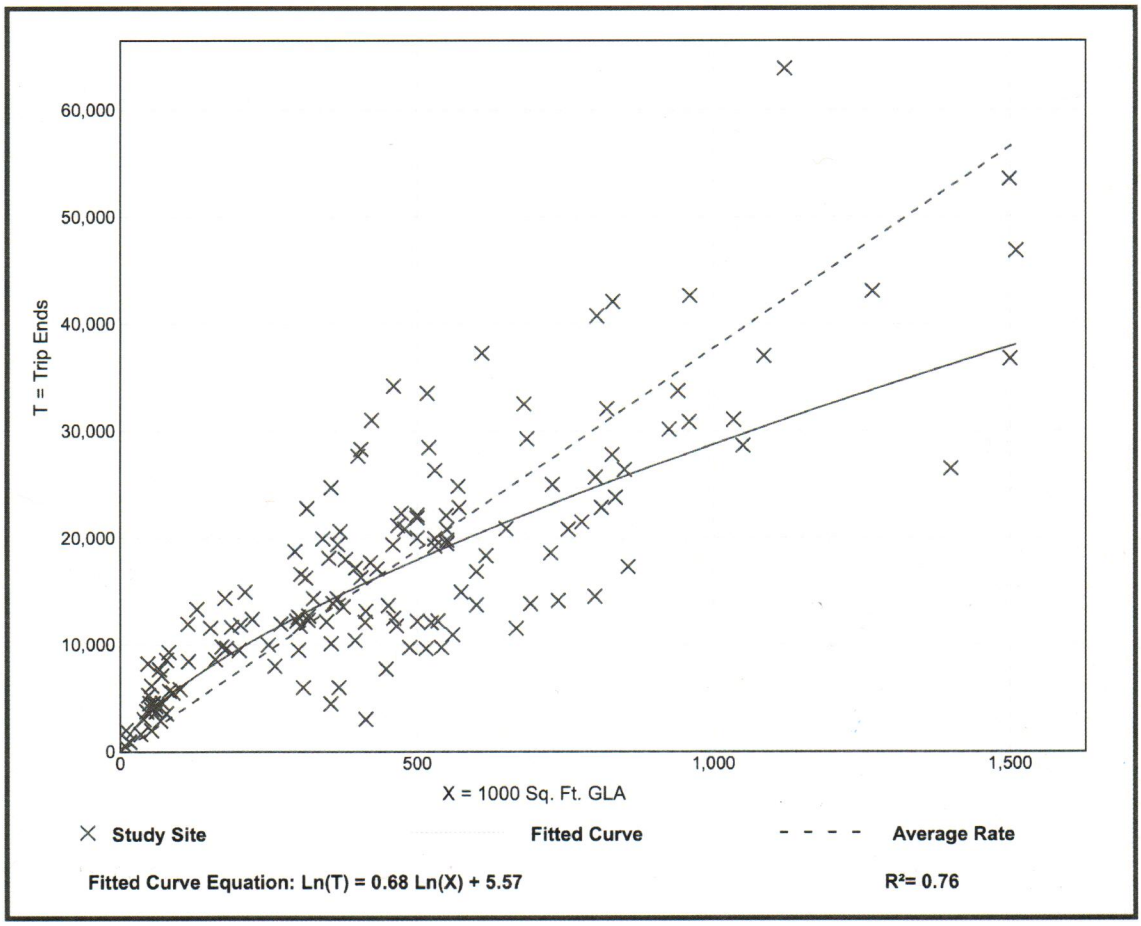
Vehicle Trip Ends vs: 1000 Sq. Ft. GLA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 147
1000 Sq. Ft. GLA: 453
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
37.75	7.42 - 207.98	16.41

Data Plot and Equation



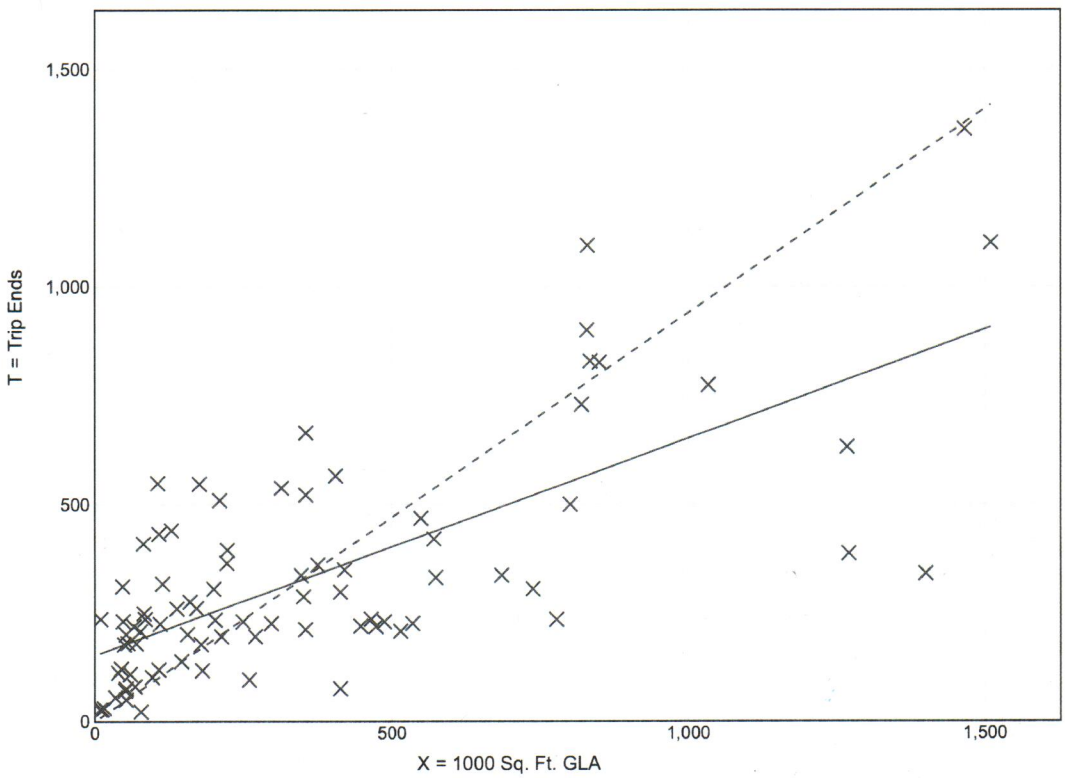
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 7 and 9 a.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	84
1000 Sq. Ft. GLA:	351
Directional Distribution:	62% entering, 38% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
0.94	0.18 - 23.74	0.87

Data Plot and Equation



× **Study Site** **Fitted Curve** - - - - **Average Rate**

Fitted Curve Equation: T = 0.50(X) + 151.78 **R^2= 0.50**

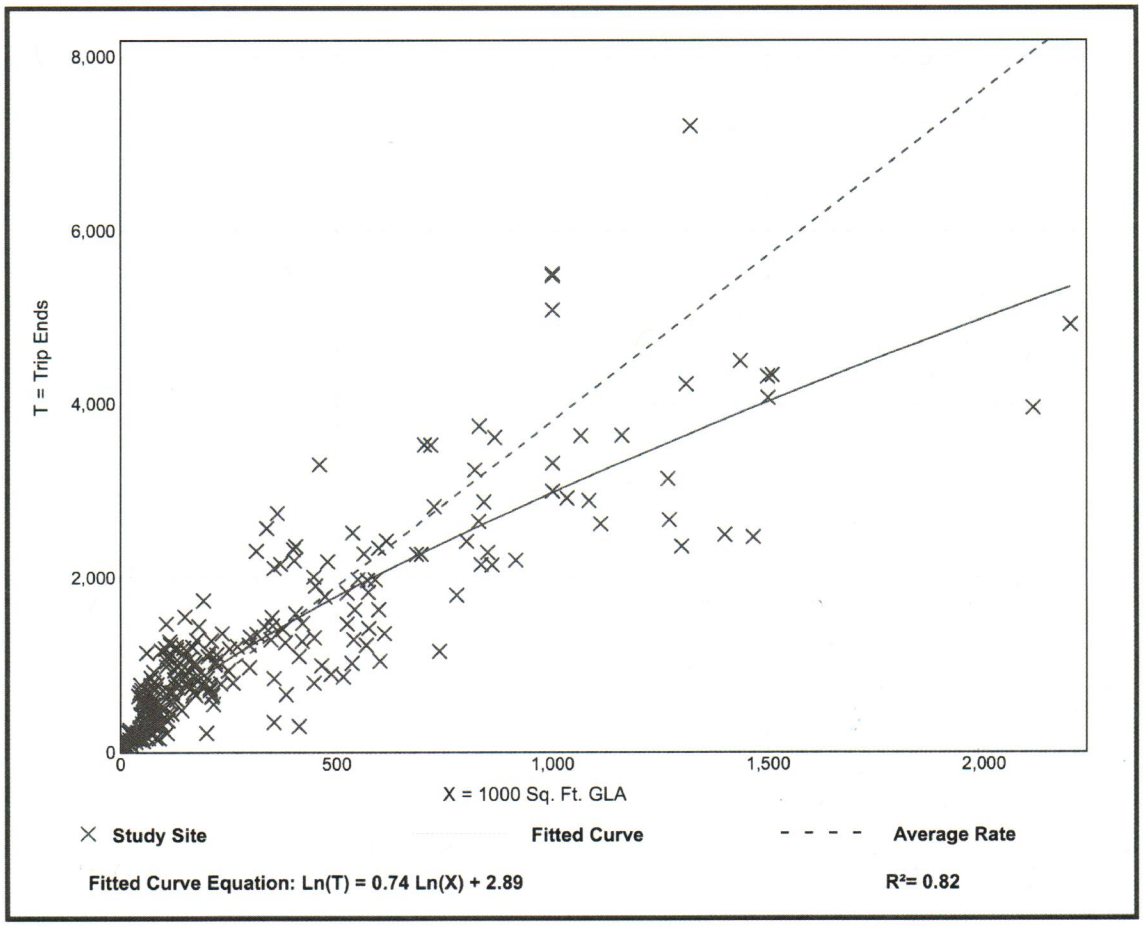
Shopping Center
(820)

Vehicle Trip Ends vs:	**1000 Sq. Ft. GLA**
On a:	**Weekday,**
	Peak Hour of Adjacent Street Traffic,
	One Hour Between 4 and 6 p.m.
Setting/Location:	**General Urban/Suburban**
Number of Studies:	261
1000 Sq. Ft. GLA:	327
Directional Distribution:	48% entering, 52% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GLA

Average Rate	Range of Rates	Standard Deviation
3.81	0.74 - 18.69	2.04

Data Plot and Equation



Land Use: 960
Super Convenience Market/Gas Station

Description

This land use includes gasoline/service stations with convenience markets where there is significant business related to the sale of convenience items and the fueling of motor vehicles. Some commonly sold convenience items include newspapers, freshly brewed coffee, daily-made donuts, bakery items, hot and cold beverages, breakfast items, dairy items, fresh fruits, soups, light meals, ready-to-go and freshly made sandwiches and wraps, and ready-to-go salads. Stores typically also had automated teller machines (ATMs), and public restrooms. The sites included in this land use category have the following two specific characteristics:

- The gross floor area of the convenience market is at least 3,000 gross square feet
- The number of vehicle fueling positions is at least 10

Convenience market with gasoline pumps (Land Use 853) and gasoline/service station with convenience market (Land Use 945) are related uses.

Additional Data

To reflect changing characteristics of the convenience market component of this land use, only data from the past two decades have been included in this land use.

The independent variable, vehicle fueling positions, is defined as the maximum number of vehicles that can be fueled simultaneously. Gasoline/service stations in this land use include "pay-at-the-pump" and traditional fueling stations.

A multi-variable regression analysis based on both the convenience market gross floor area (GFA) and the number of vehicle fueling positions (VFP) produced a series of fitted curve equations. The equations are in the form of:

Vehicle Trips = [(VFP Factor) x (Number of VFP)] + [(GFA Factor) x (GFA)] + (Constant)

The values for the VFP factor, GFA factor, and constant are presented in the following table for each time period for which a fitted curve equation could produce an R^2 value of at least 0.50.

Time Period	VFP Factor	GFA Factor	Constant	R^2
Weekday, AM Peak Hour of Generator	10.3	105	-290	0.62
Weekday, PM Peak Hour of Generator	6.91	76.0	-133	0.68
Weekday, AM Peak Hour of Adjacent Street	16.1	135	-483	0.66
Weekday, PM Peak Hour of Adjacent Street	11.5	82.9	-226	0.51

The sites were surveyed in the late 1990's, 2000s and the 2010s in Florida, Iowa, Maryland, Minnesota, New Hampshire, New Jersey, Pennsylvania, Texas, Utah, and Wisconsin.

Source Numbers

617, 813, 844, 850, 864, 865, 867, 869, 882, 888, 904, 938, 954, 960, 962

Super Convenience Market/Gas Station
(960)

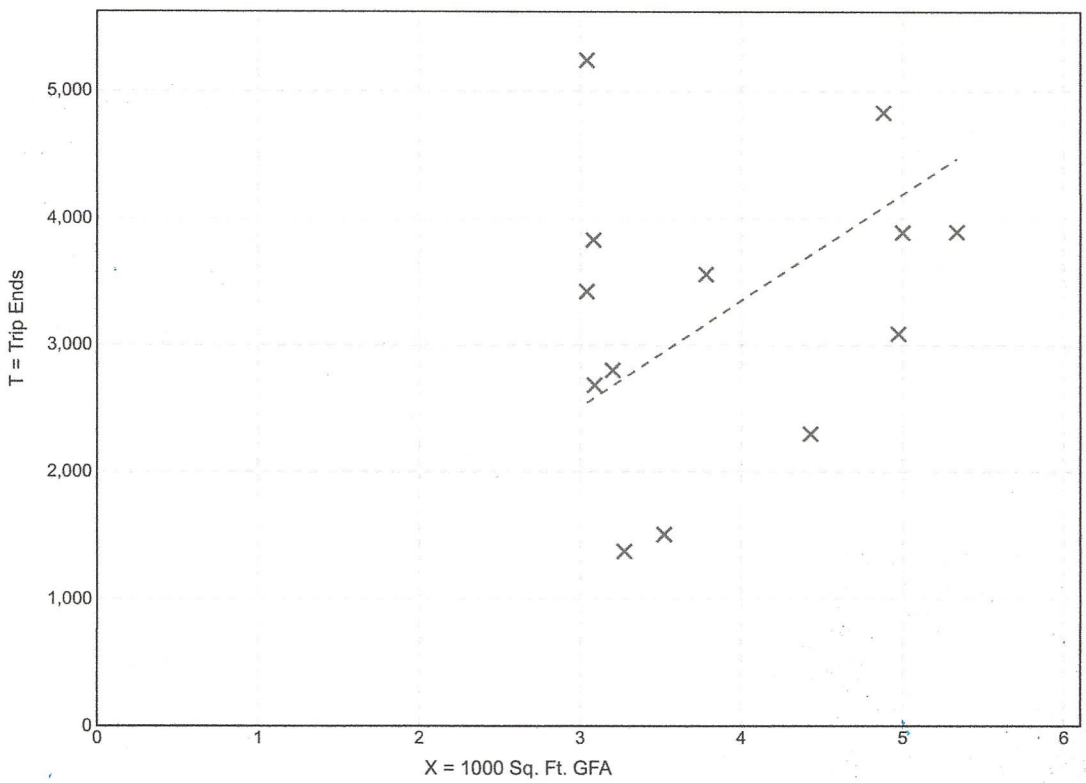
Vehicle Trip Ends vs: 1000 Sq. Ft. GFA
On a: Weekday

Setting/Location: General Urban/Suburban
Number of Studies: 13
1000 Sq. Ft. GFA: 4
Directional Distribution: 50% entering, 50% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

Average Rate	Range of Rates	Standard Deviation
837.58	419.93 - 1725.33	334.67

Data Plot and Equation



× **Study Site** - - - - **Average Rate**

Fitted Curve Equation: Not Given **R^2= ******

Trip Generation

Characteristics of Large Gas Stations/Convenience Stores and Student Apartments

Florida Department of Transportation
Systems Planning Office/Systems Management
605 Suwannee Street #19
Tallahassee, Florida 32399
www.dot.state.fl.us
Questions/Comments: gary.sokolow@dot.state.fl.us

The range of pass-by trip rates was 65-84 percent with an average of 78 percent. This is significantly higher than the average of 66 percent found in the ITE Handbook for the Convenience Market with Gas Pumps land use. However, the average of only Florida sites from 2001 ITE Trip Generation Handbook is 76 percent, and our results were quite similar. The consistency of this data suggests that future developments could reasonably assume about a 77 percent pass-by rate for sites of this type. See Figure 20 for details.

Figure 19: Pass-By Rates for Convenience Market with Gas Pumps

Site Location (FL)	1,000 ft^2	Total Number of Interviews*	Percent Pass-By Trips
Pensacola	4	699	84%
Pensacola	3	709	65%
Panama City Beach	4	448	71%
Tallahassee	5	694	82%
Jacksonville	3	133	83%
Apopka	3	231	77%
Clearwater	3	216	74%
Tampa	3	166	75%
Cape Coral	5	133	83%
Fort Myers	5	182	79%
Fort Lauderdale	3	236	81%
Homestead	3	216	79%
Average	4	339	78%

*Combination of customer surveys and observation

Figure 20: Comparison of Pass-By Rates

		Number of Sites	Percent Pass-By Trips
ITE LU 853	2012 FDOT Statewide Study	12	78%
	2001 ITE Handbook	15	66%
	2001 ITE Handbook (FL only)	6	76%

APPENDIX E

FDOT Peak Season Conversion Factor Report

2018 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
CATEGORY: 8601 CEN.-W OF US1 TO SR7

MOCF: 0.98

WEEK	DATES	SF	PSCF
1	01/01/2018 - 01/06/2018	1.00	1.02
2	01/07/2018 - 01/13/2018	1.01	1.03
3	01/14/2018 - 01/20/2018	1.01	1.03
4	01/21/2018 - 01/27/2018	1.00	1.02
* 5	01/28/2018 - 02/03/2018	0.99	1.01
* 6	02/04/2018 - 02/10/2018	0.97	0.99
* 7	02/11/2018 - 02/17/2018	0.96	0.98
* 8	02/18/2018 - 02/24/2018	0.96	0.98
* 9	02/25/2018 - 03/03/2018	0.96	0.98
*10	03/04/2018 - 03/10/2018	0.97	0.99
*11	03/11/2018 - 03/17/2018	0.97	0.99
*12	03/18/2018 - 03/24/2018	0.97	0.99
*13	03/25/2018 - 03/31/2018	0.98	1.00
*14	04/01/2018 - 04/07/2018	0.98	1.00
*15	04/08/2018 - 04/14/2018	0.98	1.00
*16	04/15/2018 - 04/21/2018	0.99	1.01
*17	04/22/2018 - 04/28/2018	1.00	1.02
18	04/29/2018 - 05/05/2018	1.01	1.03
19	05/06/2018 - 05/12/2018	1.02	1.04
20	05/13/2018 - 05/19/2018	1.03	1.05
21	05/20/2018 - 05/26/2018	1.03	1.05
22	05/27/2018 - 06/02/2018	1.03	1.05
23	06/03/2018 - 06/09/2018	1.02	1.04
24	06/10/2018 - 06/16/2018	1.02	1.04
25	06/17/2018 - 06/23/2018	1.02	1.04
26	06/24/2018 - 06/30/2018	1.02	1.04
27	07/01/2018 - 07/07/2018	1.02	1.04
28	07/08/2018 - 07/14/2018	1.03	1.05
29	07/15/2018 - 07/21/2018	1.03	1.05
30	07/22/2018 - 07/28/2018	1.02	1.04
31	07/29/2018 - 08/04/2018	1.02	1.04
32	08/05/2018 - 08/11/2018	1.01	1.03
33	08/12/2018 - 08/18/2018	1.01	1.03
34	08/19/2018 - 08/25/2018	1.01	1.03
35	08/26/2018 - 09/01/2018	1.02	1.04
36	09/02/2018 - 09/08/2018	1.02	1.04
37	09/09/2018 - 09/15/2018	1.03	1.05
38	09/16/2018 - 09/22/2018	1.02	1.04
39	09/23/2018 - 09/29/2018	1.01	1.03
40	09/30/2018 - 10/06/2018	1.01	1.03
41	10/07/2018 - 10/13/2018	1.00	1.02
42	10/14/2018 - 10/20/2018	1.00	1.02
43	10/21/2018 - 10/27/2018	1.00	1.02
44	10/28/2018 - 11/03/2018	1.00	1.02
45	11/04/2018 - 11/10/2018	1.01	1.03
46	11/11/2018 - 11/17/2018	1.01	1.03
47	11/18/2018 - 11/24/2018	1.01	1.03
48	11/25/2018 - 12/01/2018	1.01	1.03
49	12/02/2018 - 12/08/2018	1.00	1.02
50	12/09/2018 - 12/15/2018	1.00	1.02
51	12/16/2018 - 12/22/2018	1.01	1.03
52	12/23/2018 - 12/29/2018	1.01	1.03
53	12/30/2018 - 12/31/2018	1.01	1.03

* PEAK SEASON

APPENDIX F

FDOT Historic Traffic Counts

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 0078 - SR 824 / PEMBROKE RD - W OF SR 9/I-95

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	48500 C	E 24000	W 24500	9.00	54.50	3.10
2017	51000 C	E 25500	W 25500	9.00	51.90	3.10
2016	51000 C	E 25500	W 25500	9.00	54.10	4.60
2015	44500 C	E 22000	W 22500	9.00	54.00	4.60
2014	51000 C	E 25500	W 25500	9.00	54.20	4.60
2013	50500 C	E 24000	W 26500	9.00	53.60	6.30
2012	48000 C	E 24000	W 24000	9.00	52.20	5.80
2011	51500 C	E 25000	W 26500	9.00	52.50	4.20
2010	49000 C	E 24500	W 24500	8.35	52.69	4.00
2009	44500 C	E 21500	W 23000	8.53	53.89	4.70
2008	46000 C	E 22500	W 23500	8.81	54.16	5.40
2007	44500 C	E 21500	W 23000	8.63	55.75	5.40
2006	44000 C	E 21500	W 22500	8.40	55.34	5.40
2005	45500 C	E 22000	W 23500	8.20	51.70	4.60
2004	49000 C	E 24500	W 24500	9.10	55.30	4.60
2003	47500 C	E 24000	W 23500	8.60	57.50	4.80

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 5181 - SR 824 / PEMBROKE RD - E OF I-95

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	36000 C	E 18500	W 17500	9.00	54.50	4.30
2017	39500 C	E 24000	W 15500	9.00	51.90	3.90
2016	36000 C	E 18500	W 17500	9.00	54.10	3.90
2015	36000 C	E 18500	W 17500	9.00	54.00	3.90
2014	33500 C	E 17000	W 16500	9.00	54.20	6.50
2013	37000 C	E 18500	W 18500	9.00	53.60	6.50
2012	30500 C	E 15500	W 15000	9.00	52.20	6.50
2011	34500 C	E 17500	W 17000	9.00	52.50	9.10
2010	35500 C	E 18500	W 17000	8.35	52.69	9.10
2009	34500 C	E 17000	W 17500	8.53	53.89	9.10
2008	37000 C	E 18500	W 18500	8.81	54.16	3.20
2007	38000 C	E 19000	W 19000	8.63	55.75	3.20
2006	42000 C	E 21000	W 21000	8.40	55.34	2.70
2005	40000 C	E 20000	W 20000	8.20	51.70	2.70
2004	44500 C	E 22500	W 22000	9.10	55.30	2.70
2003	42000 C	E 21000	W 21000	8.60	57.50	1.90

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 7312 - NW 8 AVE, N OF HALLANDALE BEACH BLVD

YEAR	AADT	DIRECTION 1		DIRECTION 2		*K FACTOR	D FACTOR	T FACTOR
2018	9600 T	N	4000	S	5600	9.00	54.50	6.00
2017	9600 S	N	4000	S	5600	9.00	51.90	6.20
2016	9600 F	N	4000	S	5600	9.00	54.10	2.90
2015	9500 C	N	4000	S	5500	9.00	54.00	3.40
2014	7000 X					9.00	54.20	7.40
2013	6900 X		0		0	9.00	53.60	7.60
2012	6900 T		0		0	9.00	52.20	5.90
2011	6900 S		0		0	9.00	52.50	6.30
2010	6900 F		0		0	8.35	52.69	9.30
2009	6900 C	N	0	S	0	8.53	53.89	5.30
2008	6800 C	N	0	S	0	8.81	54.16	6.50
2007	7900 C	N	0	S	0	8.63	55.75	4.80
2006	7600 C	N	0	S	0	8.40	55.34	2.90
2005	7400 C	N		S		8.20	51.70	0.00

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

7-Eleven - 900 Pembroke Road

Hallandale Beach

Growth Rate Analysis

Site #860078 - SR 824 / Pembroke Road - West of SR 9 / I-95

Year	Volume	Growth Rate
2013	50500	
2018	48500	-0.80%

Site #865181 - SR 824 / Pembroke Road - East of I-95

Year	Volume	Growth Rate
2013	37000	
2018	36000	-0.55%

Site #867312 - NW 8th Avenue, North of Hallandale Beach Boulevard

Year	Volume	Growth Rate
2013	6900	
2018	9600	6.83%

Total - All Count Stations

Year	Volume	Growth Rate
2013	94400	
2018	94100	-0.06%

Supplemental Historical Traffic Count Data

Source: Florida Department of Transportation

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4004 - I-95 NB OFF RAMP TO SR-824/PEMBROKE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	12000 F	0	0	9.00	99.90	4.20
2017	12000 C	N 12000	0	9.00	99.90	2.90
2016	11500 E	0	0	9.00	99.90	3.90
2015	11000 E	N 11000	0	9.00	99.90	6.00
2014	10500 F			9.00	99.90	
2013	10500 C	N 10500	0	9.00	99.90	
2012	9200 F	0	0	9.00	99.90	
2011	9200 C	N 9200	0	9.00	99.90	4.20
2010	10000 F	0	0	7.47	99.99	4.00
2009	10000 C	N 10000	0	7.63	99.99	4.70
2003	11000 C	N 11000		7.80	99.90	4.90

Annual Growth Rate (2013-2018) for link analysis = 2.7%

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4005 - I-95 NB ON RAMP FROM SR-824/PEMBROKE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	18500 F	0	0	9.00	99.90	4.20
2017	18000 C	N 18000	0	9.00	99.90	2.90
2016	18000 F	0	0	9.00	99.90	3.90
2015	17500 C	N 17500	0	9.00	99.90	6.00
2014	17500 F			9.00	99.90	
2013	17500 C	N 17500	0	9.00	99.90	
2012	17000 F	0	0	9.00	99.90	
2011	17000 C	N 17000	0	9.00	99.90	4.20
2010	16500 F	0	0	7.47	99.99	4.00
2009	16500 C	N 16500	0	7.63	99.99	4.70
2003	18000 C	N 18000		7.80	99.90	4.90

Annual Growth Rate (2013-2018) for link analysis = 1.1%

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4006 - I-95 SB OFF RAMP TO SR-824/PEMBROKE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	19500 F	0	0	9.00	99.90	4.20
2017	19000 C	S 19000	0	9.00	99.90	2.90
2016	21500 F	0	0	9.00	99.90	3.90
2015	21000 C	S 21000	0	9.00	99.90	6.00
2014	21500 F			9.00	99.90	
2013	21500 C	S 21500	0	9.00	99.90	
2012	19500 F	0	0	9.00	99.90	
2011	19500 C	S 19500	0	9.00	99.90	4.20
2010	18000 F	0	0	7.47	99.99	4.00
2009	18000 C	S 18000	0	7.63	99.99	4.70
2003	18500 C	S 18500	0	7.80	99.90	4.90

Annual Growth Rate (2013-2018) for link analysis = -1.9% (or 0 for this analysis)

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2018 HISTORICAL AADT REPORT

COUNTY: 86 - BROWARD

SITE: 4007 - I-95 SB ON RAMP FM SR-824/PEMBROKE RD

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2018	10500 F	0	0	9.00	99.90	4.20
2017	10500 C	S 10500	0	9.00	99.90	2.90
2016	12000 F	0	0	9.00	99.90	3.90
2015	11500 C	S 11500	0	9.00	99.90	6.00
2014	9900 F			9.00	99.90	
2013	9800 C	S 9800	0	9.00	99.90	
2012	9800 F	0	0	9.00	99.90	
2011	9800 C	S 9800	0	9.00	99.90	4.20
2010	10000 F	0	0	7.47	99.99	4.00
2009	10000 C	S 10000	0	7.63	99.99	4.70
2003	12000 C	S 12000	0	7.80	99.90	4.90

Annual Growth Rate (2013-2018) for link analysis = 1.4%

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

APPENDIX G

Future Traffic Volumes Spreadsheets

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 10th Avenue
AM Peak Hour

	NW 10th Avenue Northbound			S. 28th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	169	18	5	44	28	175	176	1,600	382	11	1,154	18
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	174	19	5	45	29	180	181	1,648	393	11	1,189	19
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	176	19	5	46	29	182	183	1,665	397	11	1,201	19
7-Eleven - Primary Trips	6	3		2	1			5	1	3		
7-Eleven - Pass-By Trips	28							-20	20	28	-28	
2021 Total Traffic	**210**	**22**	**5**	**48**	**30**	**182**	**183**	**1,650**	**418**	**42**	**1,173**	**19**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 10th Avenue
PM Peak Hour

	NW 10th Avenue Northbound			S. 28th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	280	54	3	48	27	212	178	1,297	250	10	1,044	24
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	288	56	3	49	28	218	183	1,336	258	10	1,075	25
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	291	56	3	50	28	221	185	1,349	260	10	1,086	25
7-Eleven - Primary Trips	7	2		2	1			5	1	3		
7-Eleven - Pass-By Trips	28							-20	20	28	-28	
2021 Total Traffic	**326**	**58**	**3**	**52**	**29**	**221**	**185**	**1,334**	**281**	**41**	**1,058**	**25**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 9th Avenue
AM Peak Hour

Description	NW 9th Avenue Northbound			S. 27th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	0	6	0	0	21	0	1,568	47	0	1,159	6
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	0	6	0	0	22	0	1,615	48	0	1,194	6
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	0	6	0	0	22	0	1,631	49	0	1,206	6
7-Eleven - Primary Trips			3			1		7			2	
7-Eleven - Pass-By Trips			19									
2021 Total Traffic	**0**	**0**	**28**	**0**	**0**	**23**	**0**	**1,638**	**49**	**0**	**1,208**	**6**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 9th Avenue
PM Peak Hour

Description	NW 9th Avenue Northbound			S. 27th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	0	24	0	0	24	0	1,277	25	0	1,175	7
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	0	25	0	0	25	0	1,315	26	0	1,210	7
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	0	25	0	0	25	0	1,328	26	0	1,222	7
7-Eleven - Primary Trips			3			1		7			2	
7-Eleven - Pass-By Trips			19									
2021 Total Traffic	**0**	**0**	**47**	**0**	**0**	**26**	**0**	**1,335**	**26**	**0**	**1,224**	**7**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 8th Avenue
AM Peak Hour

	NW 8th Avenue Northbound			S. 26th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	76	62	37	28	53	86	121	1,378	101	42	1,001	5
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	78	64	38	29	55	89	125	1,419	104	43	1,031	5
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	79	65	38	29	55	89	126	1,434	105	44	1,041	5
7-Eleven - Primary Trips		1			2	1	3	7		5	1	
7-Eleven - Pass-By Trips												
2021 Total Traffic	**79**	**66**	**38**	**29**	**57**	**90**	**129**	**1,441**	**105**	**49**	**1,042**	**5**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

Pembroke Road and NW 8th Avenue
PM Peak Hour

	NW 8th Avenue Northbound			S. 26th Avenue Southbound			Pembroke Road Eastbound			Pembroke Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	91	111	42	28	75	63	160	1,068	69	49	1,017	14
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	94	114	43	29	77	65	165	1,100	71	50	1,048	14
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	95	115	44	29	78	66	166	1,111	72	51	1,058	15
7-Eleven - Primary Trips		2			2	1	3	6		6	1	
7-Eleven - Pass-By Trips												
2021 Total Traffic	**95**	**117**	**44**	**29**	**80**	**67**	**169**	**1,117**	**72**	**57**	**1,059**	**15**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 10th Avenue and NW 10th Street
AM Peak Hour

	NW 10th Avenue Northbound			NW 10th Avenue Southbound			Eastbound			NW 10th Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	246	2	73	309	0	0	0	0	1	0	55
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	253	2	75	318	0	0	0	0	1	0	57
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	256	2	76	321	0	0	0	0	1	0	57
7-Eleven - Primary Trips				5								9
7-Eleven - Pass-By Trips				48								28
2021 Total Traffic	**0**	**256**	**2**	**129**	**321**	**0**	**0**	**0**	**0**	**1**	**0**	**94**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 10th Avenue and NW 10th Street
PM Peak Hour

	NW 10th Avenue Northbound			NW 10th Avenue Southbound			Eastbound			NW 10th Street Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	250	2	25	264	0	0	0	0	6	0	100
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	258	2	26	272	0	0	0	0	6	0	103
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	260	2	26	275	0	0	0	0	6	0	104
7-Eleven - Primary Trips				5								9
7-Eleven - Pass-By Trips				48								28
2021 Total Traffic	**0**	**260**	**2**	**79**	**275**	**0**	**0**	**0**	**0**	**6**	**0**	**141**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 10th Avenue and Foster Road
AM Peak Hour

	Northbound			**NW 10th Avenue Southbound**			**Foster Road Eastbound**			**Foster Road Westbound**		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	0	0	248	0	54	46	151	0	0	35	203
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	0	0	255	0	56	47	156	0	0	36	209
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	0	0	258	0	56	48	157	0	0	36	211
7-Eleven - Primary Trips												
7-Eleven - Pass-By Trips												
2021 Total Traffic	**0**	**0**	**0**	**258**	**0**	**56**	**48**	**157**	**0**	**0**	**36**	**211**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 10th Avenue and Foster Road
PM Peak Hour

	Northbound			NW 10th Avenue Southbound			Foster Road Eastbound			Foster Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	0	0	0	209	0	61	97	60	0	0	38	224
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	0	0	0	215	0	63	100	62	0	0	39	231
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	0	0	0	217	0	63	101	62	0	0	40	233
7-Eleven - Primary Trips												
7-Eleven - Pass-By Trips												
2021 Total Traffic	**0**	**0**	**0**	**217**	**0**	**63**	**101**	**62**	**0**	**0**	**40**	**233**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 9th Avenue and NW 10th Street
AM Peak Hour

Description	NW 9th Avenue Northbound			NW 9th Avenue Southbound			NW 10th Street Eastbound			NW 10th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	39	11	13	6	26	1	3	40	29	12	17	0
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	40	11	13	6	27	1	3	41	30	12	18	0
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	41	11	14	6	27	1	3	42	30	12	18	0
7-Eleven - Primary Trips	2	3		2	2			1	3		6	3
7-Eleven - Pass-By Trips												
2021 Total Traffic	**43**	**14**	**14**	**8**	**29**	**1**	**3**	**43**	**33**	**12**	**24**	**3**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 9th Avenue and NW 10th Street
PM Peak Hour

Description	NW 9th Avenue Northbound			NW 9th Avenue Southbound			NW 10th Street Eastbound			NW 10th Street Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	87	42	8	9	15	13	3	22	10	13	18	7
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	90	43	8	9	15	13	3	23	10	13	19	7
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	91	44	8	9	16	14	3	23	10	14	19	7
7-Eleven - Primary Trips	2	2		2	2			1	3		6	4
7-Eleven - Pass-By Trips												
2021 Total Traffic	**93**	**46**	**8**	**11**	**18**	**14**	**3**	**24**	**13**	**14**	**25**	**11**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 9th Avenue and Foster Road
AM Peak Hour

Description	NW 9th Avenue Northbound			NW 9th Avenue Southbound			Foster Road Eastbound			Foster Road Westbound		
	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	75	32	43	32	20	15	10	290	120	37	135	21
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	77	33	44	33	21	15	10	299	124	38	139	22
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	78	33	45	33	21	16	10	302	125	38	140	22
7-Eleven - Primary Trips		1		4	1							4
7-Eleven - Pass-By Trips												
2021 Total Traffic	**78**	**34**	**45**	**37**	**22**	**16**	**10**	**302**	**125**	**38**	**140**	**26**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 9th Avenue and Foster Road
PM Peak Hour

	NW 9th Avenue Northbound			NW 9th Avenue Southbound			Foster Road Eastbound			Foster Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	13	15	10	19	5	13	26	259	24	15	254	93
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	13	15	10	20	5	13	27	267	25	15	262	96
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	14	16	10	20	5	14	27	269	25	16	264	97
7-Eleven - Primary Trips		1		4	1							3
7-Eleven - Pass-By Trips												
2021 Total Traffic	**14**	**17**	**10**	**24**	**6**	**14**	**27**	**269**	**25**	**16**	**264**	**100**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 8th Avenue and Foster Road
AM Peak Hour

	NW 8th Avenue Northbound			NW 8th Avenue Southbound			Foster Road Eastbound			Foster Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	55	178	31	53	175	26	25	268	119	21	120	31
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	57	183	32	55	180	27	26	276	123	22	124	32
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	57	185	32	55	182	27	26	279	124	22	125	32
7-Eleven - Primary Trips	1	1		2				2	2		3	1
7-Eleven - Pass-By Trips												
2021 Total Traffic	**58**	**186**	**32**	**57**	**182**	**27**	**26**	**281**	**126**	**22**	**128**	**33**

FUTURE TURNING MOVEMENT VOLUME ANALYSIS

NW 8th Avenue and Foster Road
PM Peak Hour

	NW 8th Avenue Northbound			NW 8th Avenue Southbound			Foster Road Eastbound			Foster Road Westbound		
Description	Left	Through	Right	Left	Through	Right	Left	Through	Right	Left	Through	Right
Existing Traffic (11/13/2019)	114	275	31	48	202	25	40	156	81	52	214	81
Season Adjustment Factor	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03	1.03
2019 Peak Season Traffic	117	283	32	49	208	26	41	161	83	54	220	83
Annual Growth Rate	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%	0.5%
2021 Background Traffic	119	286	32	50	210	26	42	162	84	54	223	84
7-Eleven - Primary Trips	1	1		1				2	2		3	1
7-Eleven - Pass-By Trips												
2021 Total Traffic	**120**	**287**	**32**	**51**	**210**	**26**	**42**	**164**	**86**	**54**	**226**	**85**

APPENDIX H

Signal Timing Data

BROWARD COUNTY TRAFFIC ENGINEERING

ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3279	**Initial Operation Date**	10/2/79
Controller Type	2070 LN (BIU)	**System Number**	
Modification Number	14	**Modification Date**	02/13/2017
Drawing/Project No	DSN.GRP. 3	**FPL Grid Number**	87470929305
Intersection	PEMBROKE ROAD (SR 824) and NW 10 AVENUE/S 28 AVENUE		
Municipality	HOLLYWOOD		

Controller Phase	1	2	3	4	5	6	7	8
Face Number	1	2	3	4		6	7	8
Direction	EBL	WB	SBL	NB		EB	NBL	SB
Initial Green(MIN)	4	12	4	6		12	4	6
Vehicle Ext.(GAP)	1.5	3.0	1.5	2.0		3.0	1.5	2.0
Maximum Green I	12	50	15	20		50	12	20
Maximum Green II								
Yellow Clearance	4.0	4.0	4.0	4.0		4.0	4.0	4.0
All Red Clearance	2.0	2.0	2.0	2.0		2.0	2.0	2.0
Phase Recall	OFF	MIN		OFF		MIN		OFF
Detector Delay								
Walk		7		7		7		7
Pedestrian Clearance		14		24		14		23
Permissive	5 SECT		5 SECT				5 SECT	
Flash Operation		YELLOW		RED		YELLOW		RED

Attachment

NOTES:

1. ANTI-BACKDOWN EASTBOUND: PHASE 2 ON--->OMIT PHASE 1.
2. FLASH OPERATION: 2300-0600, 7 DAYS.
3. MOD. 14 UPDATES PEDESTRIAN CLEARANCES ON PHASES 4 & 8 PER CURRENT STANDARDS.

Submitted By _____ **Approved By** _____

Broward County Timing Sheet 1/9/2020 2:54:27 PM

Station : 3279 - Pembroke Rd & NW 10 Ave / S 28 Ave (Standard File)

Phase	1 (EL)	2 (WT)	3 (SL)	4 (NT)	5	6 (ET)	7 (NL)	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		14		24		14		23								
Min Green	4	12	4	6		12	4	6								
Gap Ext	1.5	3	1.5	2	1	3	1.5	2								
Max1	12	50	15	20		50	12	20								
Max2																
Yellow Clr	4	4	4	4	3.5	4	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	2	2	1.5	2	2	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON	ON	ON		ON	ON	ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Dwell Cyc Ped8						
Exit 1						
Exit 2						
Exit 3						
Exit 4						

Prepared By	Date Implemented
Reviewed By	Traffic Engineer

Station : 3279 - Pembroke Rd & NW 10 Ave / S 28 Ave (Standard File)

Coordination

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 1											**Easy**															
		25	255																							
6		2	2	160	105	2	1	10	50		18	84	16	42		102	16	42								
9		3	3	160	19	3	1	10	50		20	78	20	42		98	20	42								
15		4	4	160	34	4	1	10	50		18	78	22	42		96	22	42								
20		3	3	160	19	3	1	10	50		20	78	20	42		98	20	42								
23		25	255																							
Day Plan 2											**Easy**															
		25	255																							
6		100	254																							
6	30	3	3	160	19	3	1	10	50		20	78	20	42		98	20	42								
23		25	255																							
Day Plan 3											**Easy**															
		25	255																							
6		100	254																							
6	30	3	3	160	19	3	1	10	50		20	78	20	42		98	20	42								
23		25	255																							

Station : 3279 - Pembroke Rd & NW 10 Ave / S 28 Ave (Standard File)

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 4											Easy															

Scheduler

	Month											Day of Week						Day of Month																																			
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1													1	1	1	1	1		1																																		2
5	1													1							1																																	2
6					1									1																														1	1	1	1	1	1	1	1	2
7							1											1				1																															2
8							1							1	1	1	1	1					1																															2
9							1							1										1																														2
10									1					1						1	1	1	1	1	1	1																												2
11											1						1																								1	1	1	1	1	1	1						2
12											1							1																									1	1	1	1	1	1	1					2
13												1		1				1																											1									2
14												1		1	1	1	1	1																												1								2
15												1		1																																1								2
16												1		1				1																																			1	2
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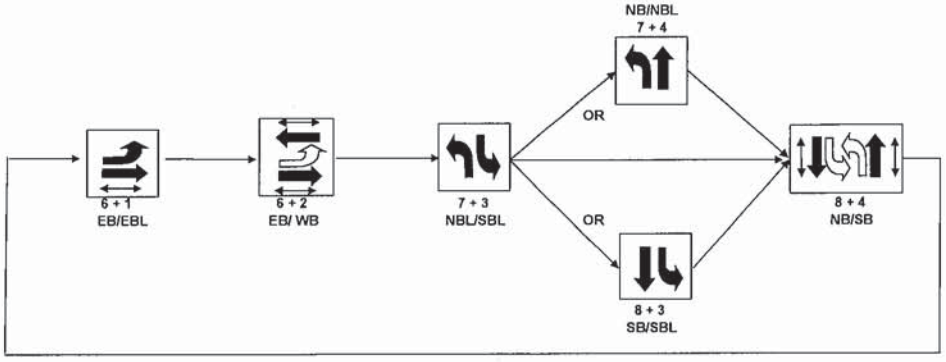
30																																																						1
31																																																						1
32																																																						1

User Comments:

Sequence of Operation for (3279) Pembroke Road (SR 824) and NW 10 Avenue/ S 28 Avenue Hollywood



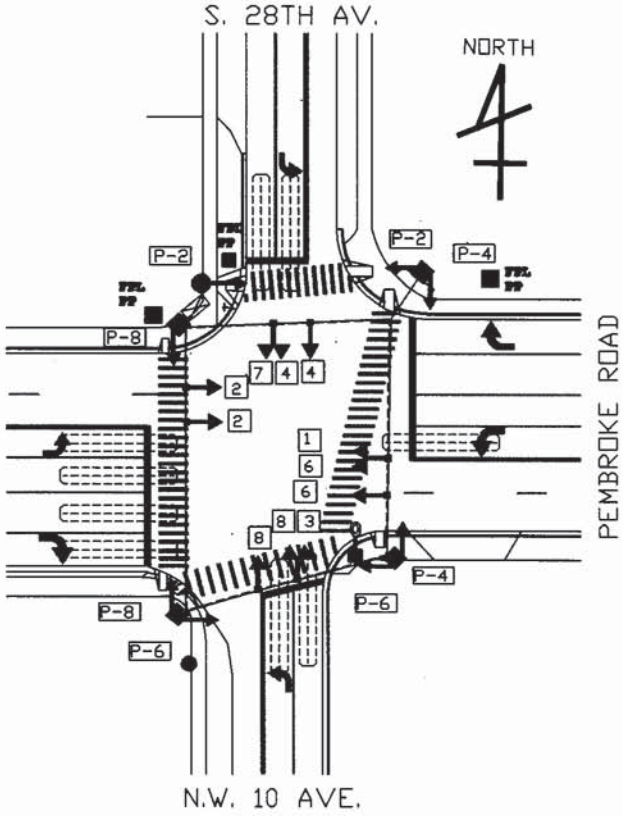
BROWARD COUNTY TRAFFIC ENGINEERING DIVISION

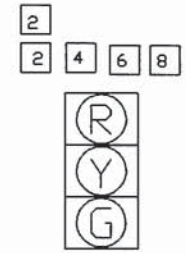
TRAFFIC SIGNAL INSTALLATION ORDER

LOCATION **PEMBROKE RD (SR 824) & S 28 AV/ NW 10 AV**

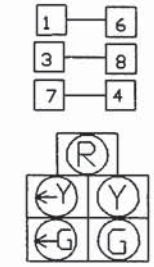
ORDER NO **FDOT** ISSUE DATE **---** REVISION NO. 3 COMPLETION DATE **8/19/98**

DWG. NO. **98-12-03-01** FILE NO. **C-279** CITY **HOLLYWOOD** SCALE: 1" = 50'

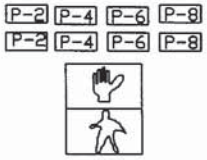




3-SECT
1-WAY
5-REQ'D



5-SECT
1-WAY
3-REQ'D



2-SECT
1-WAY
8-REQ'D

REMARKS

BROWARD COUNTY TRAFFIC ENGINEERING

ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3127	**Initial Operation Date**	01/06/2006
Controller Type	2070 LN2	**System Number**	
Modification Number	3	**Modification Date**	02/13/2017
Drawing/Project No	0	**FPL Grid Number**	87570199400
Intersection	PEMBROKE ROAD (SR 824) and S 26 AVENUE/NW 8 AVE		
Municipality	HOLLYWOOD		

Controller Phase	1	2	4	5	6	8
Face Number	1	2	4	5	6	8
Direction	EBL	WB	NB	WBL	EB	SB
Initial Green(MIN)	4	15	6	4	15	6
Vehicle Ext.(GAP)	1.5	3.0	2.0	1.5	3.0	2.0
Maximum Green I	12	50	25	12	50	25
Maximum Green II						
Yellow Clearance	4.0	4.0	4.0	4.0	4.0	4.0
All Red Clearance	2.0	2.0	2.0	2.0	2.0	2.0
Phase Recall	OFF	MIN	OFF	OFF	MIN	OFF
Detector Delay						20-RT
Walk		7	7		7	7
Pedestrian Clearance		20	20		20	21
Permissive	5-SECT			5-SECT		
Flash Operation		YELLOW	RED		YELLOW	RED

Attachment

NOTES:

1. DUAL ENTRY HARDWIRED NORTH/SOUTH.
2. ANTI-BACKDOWN EAST/WEST: PHASES 2+6 ON--->OMIT PHASES 1+5.
3. MOD, 3 UPDATES PEDESTRIAN CLEARANCE ON PHASE 8 PER CURRENT STANDARDS.

Submitted By _____ **Approved By** _____

Broward County Timing Sheet 1/9/2020 2:54:50 PM

Station : 3127 - Pembroke Rd & S 26 Ave / NW 8 Ave (Standard File)

Phase	1 (EL)	2 (WT)	3	4 (NT)	5 (WL)	6 (ET)	7	8 (ST)	9	10	11	12	13	14	15	16
Walk		7		7		7		7								
Ped Clearance		20		20		20		21								
Min Green	4	15		6	4	15		6								
Gap Ext	1.5	3		2	1.5	3		2								
Max1	12	50		25	12	50		25								
Max2																
Yellow Clr	4	4	4	4	4	4	4	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr	2	2	1.5	2	2	2	1.5	2	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable	ON	ON		ON	ON	ON		ON								
Auto Flash Entry				ON				ON								
Auto Flash Exit		ON				ON										
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON				ON										
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry				ON				ON								
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON				ON										
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Dwell Cyc Ped8						
Exit 1						
Exit 2						
Exit 3						
Exit 4						

Prepared By	Date Implemented
Reviewed By	Traffic Engineer

Station : 3127 - Pembroke Rd & S 26 Ave / NW 8 Ave (Standard File)

Coordination

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 1											**Easy**															
		100	254																							
6		2	2	160	26	2	1	10	50		20	96		44	20	96		44								
9		3	3	160	86	3	1	10	50		20	96		44	20	96		44								
15		4	4	160	116	4	1	10	50		20	96		44	20	96		44								
20		3	3	160	86	3	1	10	50		20	96		44	20	96		44								
Day Plan 2											**Easy**															
		3	3	160	86	3	1	10	50		20	96		44	20	96		44								
1		100	254																							
6	30	3	3	160	86	3	1	10	50		20	96		44	20	96		44								
Day Plan 3											**Easy**															
		3	3	160	86	3	1	10	50		20	96		44	20	96		44								
1		100	254																							
6	30	3	3	160	86	3	1	10	50		20	96		44	20	96		44								
23		100	254																							

Station : 3127 - Pembroke Rd & S 26 Ave / NW 8 Ave (Standard File)

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 4											Easy															
		10	10	160		10	1	10	50		26	90		44	20	96		44								

Scheduler

	Month											Day of Week						Day of Month								1									2									3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1													1	1	1	1	1		1																															2
5	1													1							1																															2
6					1									1																														1	1	1	1	1	1	1	2
7							1											1				1																													2
8							1							1	1	1	1	1					1																												2
9							1							1										1																											2
10									1					1						1	1	1	1	1	1	1																									2
11											1						1																								1	1	1	1	1	1	1				2
12											1							1																									1	1	1	1	1	1	1			2
13												1		1				1																										1								2
14												1		1	1	1	1	1																											1							2
15												1		1																																1						2
16												1		1				1																																	1	2
17		1											1	1	1	1	1																							1	1	1	1	1								4
18																																																				1
19																																																				1
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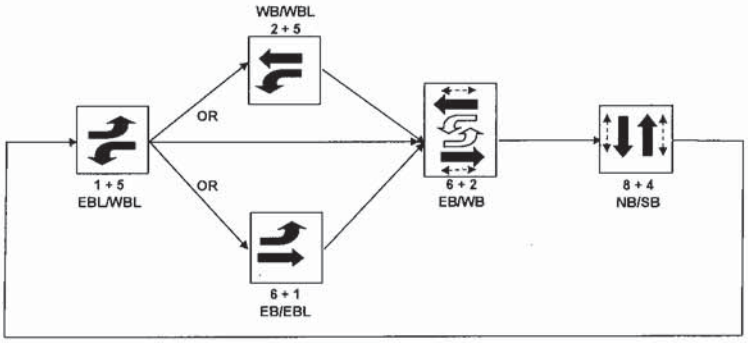
User Comments:

Sequence of Operation for (3127) Pembroke Road (SR 824) and S 26 Avenue/NW 8 Ave Hollywood



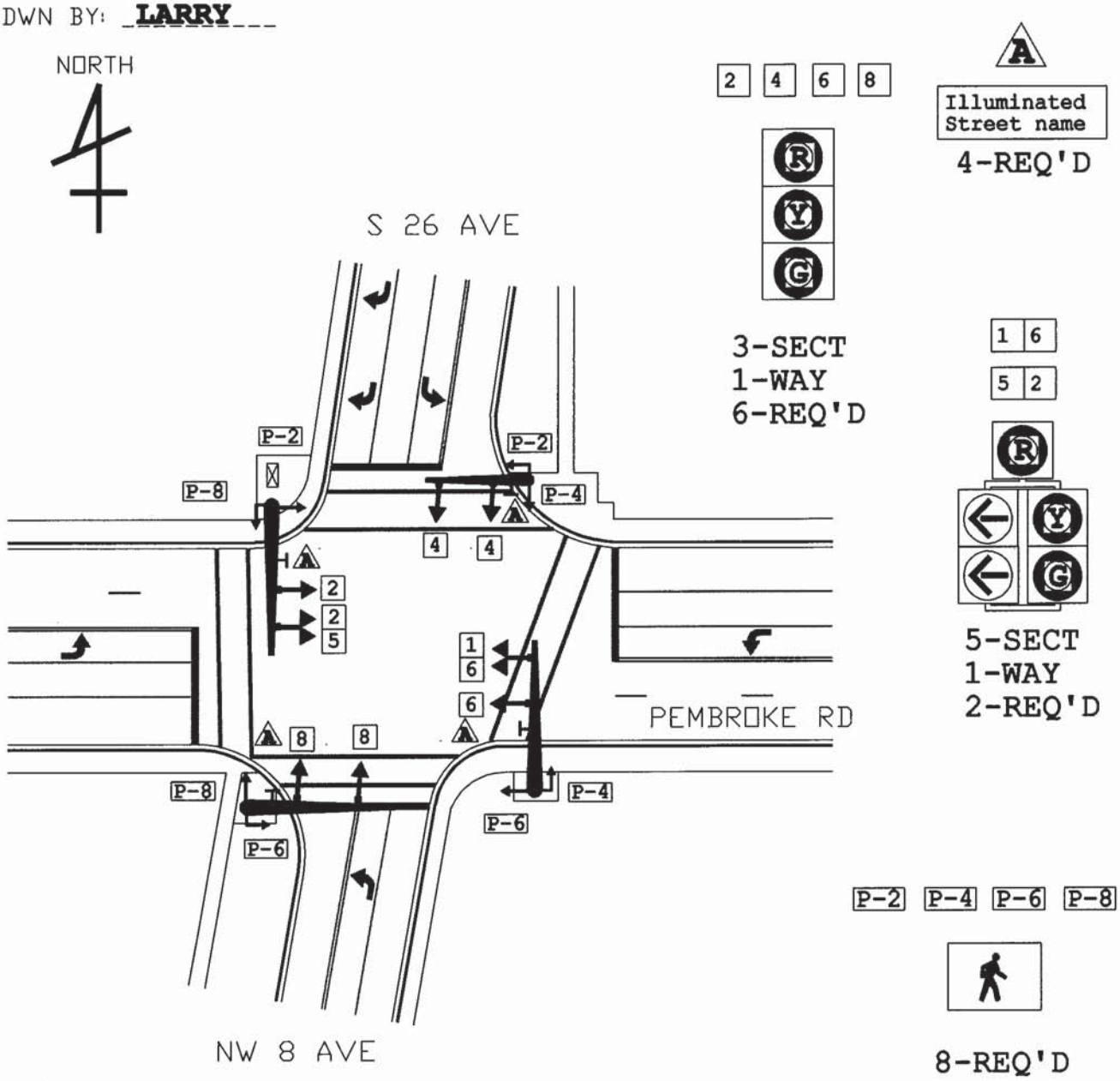
TRAFFIC ENGINEERING DIVISION
SIGNALIZED INTERSECTION

LOCATION **PEMBROKE RD & S 26 AVE/NW 8 AVE**

ORDER NO **CITY** ISSUE DATE **----** REV NO. **0** COMPLETION DATE **1/6/06**

DWG. NO. **06-03-20-01** FILE NO. **C-127** CITY **HOLLYWOOD** SCALE: **1" = 50'**

DWN BY: **LARRY**



1. INSTALLED BY CITY OF HOLLYWOOD
2. VIDEO DETECTION

BROWARD COUNTY TRAFFIC ENGINEERING

ACTUATED TRAFFIC SIGNAL TIMING SHEET

Intersection Number	3106	**Initial Operation Date**	UNKNOWN
Controller Type	2070 LN	**System Number**	3106
Modification Number	7	**Modification Date**	01/29/2013
Drawing/Project No	GRP 4	**FPL Grid Number**	87570227309
Intersection	FOSTER ROAD and NW 8 AVENUE		
Municipality	HALLANDALE BEACH		

Controller Phase	1	2	3	4	5	6	7	8
Face Number		2,6		4,8				
Direction		E/W		N/S				
Initial Green(MIN)		12		6				
Vehicle Ext.(GAP)		3.0		2.0				
Maximum Green I		25		25				
Maximum Green II								
Yellow Clearance		4.0		4.0				
All Red Clearance		1.0		1.0				
Phase Recall		MIN		OFF				
Detector Delay								
Walk		7		7				
Pedestrian Clearance		7		7				
Permissive								
Flash Operation		YELLOW		RED				

Attachment

NOTES:

1. FLASH OPERATION: 0000-0600, 7 DAYS.
2. MOD. 7 DEPLOYS SIGNAL ONTO ATMS.NOW.

Submitted By _____ **Approved By** _____

Broward County Timing Sheet 1/9/2020 2:55:06 PM

Station : 3106 - Foster Rd & NW 8 Ave (Standard File)

Phase	1	2 (ET)	3	4 (ST)	5	6	7	8	9	10	11	12	13	14	15	16
Walk		7		7												
Ped Clearance		7		7												
Min Green		12		6												
Gap Ext		3		2												
Max1		25		25												
Max2																
Yellow Clr	3.5	4	3.5	4	3.5	3.5	3.5	4	3.5	3.5	3.5	3.5	3.5	3.5	3.5	3.5
Red Clr		1		1					1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
Red Revert																
Added Initial																
Max Initial																
Time Before Reduce																
Cars Before Reduce																
Time To Reduce																
Reduce By																
Min Gap																
Dynamic Max Limit																
Dynamic Max Step																
Enable		ON		ON												
Auto Flash Entry				ON												
Auto Flash Exit		ON														
Non-Actuated 1																
Non-Actuated 2																
Lock Call									ON	ON	ON	ON	ON	ON	ON	ON
Min Recall		ON														
Max Recall																
Ped Recall																
Soft Recall																
Dual Entry																
Sim Gap Enable									ON	ON	ON	ON	ON	ON	ON	ON
Guar Passage																
Rest In Walk		ON														
Cond Service																
Add Init Calc																

Preemption

Channel	1	2	3	4	5	6
Lock Input	ON	ON	ON	ON	ON	ON
Override Auto Flash	ON	ON	ON	ON	ON	ON
Override Higher Preempt	ON	ON	ON	ON	ON	ON
Flash in Dwell						
Link to Preempt						
Delay						
Min Duration						
Min Green						
Min Walk						
Ped Clear						
Track Green						
Min Dwell						
Max Presence						
Track Veh 1						
Track Veh 2						
Track Veh 3						
Track Veh 4						
Dwell Cyc Veh 1						
Dwell Cyc Veh 2						
Dwell Cyc Veh 3						
Dwell Cyc Veh 4						
Dwell Cyc Veh 5						
Dwell Cyc Veh 6						
Dwell Cyc Veh 7						
Dwell Cyc Veh 8						
Dwell Cyc Veh 9						
Dwell Cyc Veh 10						
Dwell Cyc Veh 11						
Dwell Cyc Veh 12						
Dwell Cyc Ped1						
Dwell Cyc Ped2						
Dwell Cyc Ped3						
Dwell Cyc Ped4						
Dwell Cyc Ped5						
Dwell Cyc Ped6						
Dwell vPed7						

Preempt LP

Channel	1	2	3	4
Min				
Max				
Enable				
Lock Mode	MAX	MAX	MAX	MAX
Coord in Preempt				
No Skip				
Priority P1				
Priority P2				
Priority P3				
Priority P4				
Lock				
Headway				
Group Lock				
Queue Jump				
Free Mode				
Alt Table				

Dwell Cyc Ped8						
Exit 1						
Exit 2						
Exit 3						
Exit 4						

Prepared By	Date Implemented
Reviewed By	Traffic Engineer

Station : 3106 - Foster Rd & NW 8 Ave (Standard File)

Coordination

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 1											**Easy**															
		25	255																							
6		100	254																							
Day Plan 2											**Easy**															
		25	255																							
6		100	254																							
Day Plan 3											**Easy**															
		25	255																							
6		100	254																							

Station : 3106 - Foster Rd & NW 8 Ave (Standard File)

Hour	Minute	Action	Pattern	Cycle	Offset	Split	Seqnc	Short	Long	Dwell	Split 1	Split 2	Split 3	Split 4	Split 5	Split 6	Split 7	Split 8	Split 9	Split 10	Split 11	Split 12	Split 13	Split 14	Split 15	Split 16
Day Plan 4											Easy															

Scheduler

	Month											Day of Week							Day of Month									1									2									3		
Plan	J	F	M	A	M	J	J	A	S	O	N	D	S	M	T	W	T	F	S	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	2	3	4	5	6	7	8	9	0	1	Day Plan
1	1	1	1	1	1	1	1	1	1	1	1	1		1	1	1	1	1		1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1	1	1	1	1	1	1							1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	3
4	1													1	1	1	1	1		1																																2
5	1													1							1																																2
6					1									1																															1	1	1	1	1	1	1	2
7							1											1				1																														2
8							1							1	1	1	1	1					1																													2
9							1							1										1																												2
10									1					1						1	1	1	1	1	1	1																										2
11											1						1																								1	1	1	1	1	1	1				2
12											1							1																								1	1	1	1	1	1	1				2
13												1		1				1																										1								2
14												1		1	1	1	1	1																											1							2
15												1		1																																1						2
16												1		1				1																																	1		2
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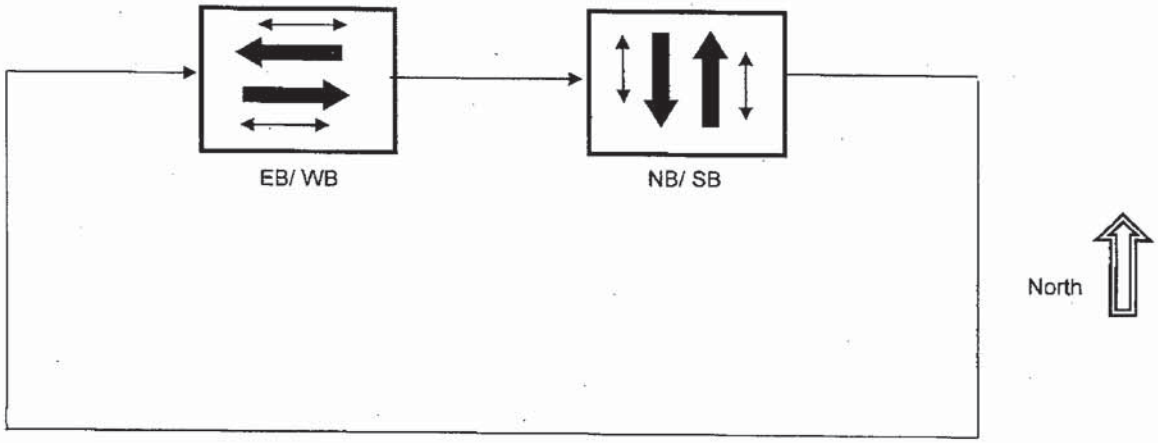
User Comments:

Sequence of Operation

Foster Road and NW 8 Avenue

Intersection Number (3106), Hallandale Beach



BROWARD COUNTY TRAFFIC ENGINEERING DIVISION
TRAFFIC SIGNAL LOCATION SKETCH

LOCATION **FOSTER ROAD & NW 8 AVENUE**

ORDER NO -- ISSUE DATE --- REVISION NO. -- COMPLETION DATE ----

DWG. NO. **13-10-09-01** FILE NO. **3106** CITY **HALLANDALE BEACH** SCALE: 1' = 50'

DWN BY: LARRY

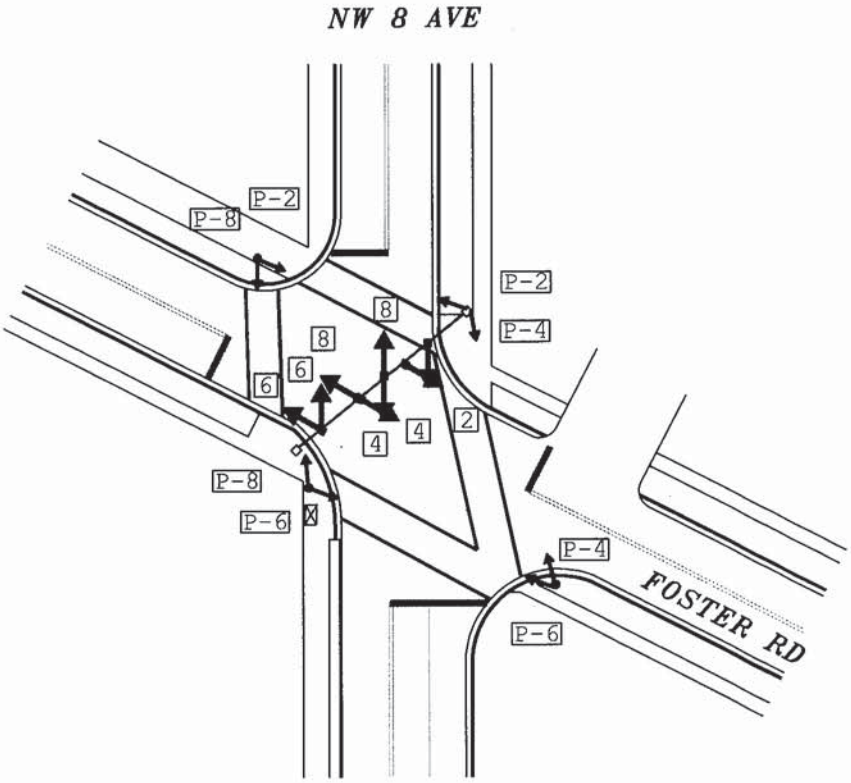
NORTH

P-2 P-4 P-6 P-8

8-REQ'D

2 4 6 8

3-SECT
8-REQ'D



VIDEO DETECTION

APPENDIX I

SYNCHRO Output

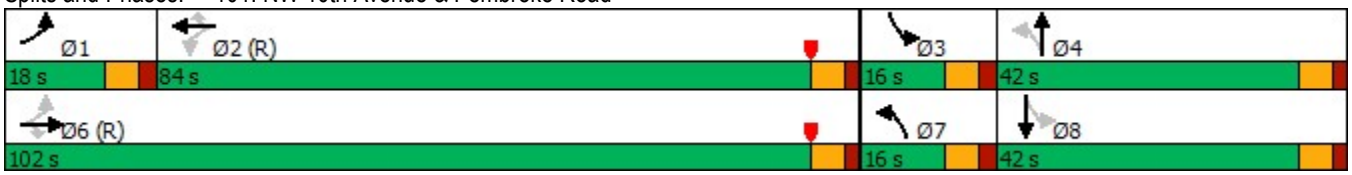
Existing (2019) SYNCHRO Output

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	181	1648	393	11	1189	19	174	19	45	29
Future Volume (vph)	181	1648	393	11	1189	19	174	19	45	29
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	102.0	102.0	84.0	84.0	84.0	16.0	42.0	16.0	42.0
Total Split (%)	11.3%	63.8%	63.8%	52.5%	52.5%	52.5%	10.0%	26.3%	10.0%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	121.7	121.7	121.7	104.2	104.2	104.2	21.0	14.2	19.7	10.3
Actuated g/C Ratio	0.76	0.76	0.76	0.65	0.65	0.65	0.13	0.09	0.12	0.06
v/c Ratio	0.56	0.63	0.32	0.08	0.53	0.02	1.19	0.15	0.24	0.80
Control Delay	12.5	10.7	1.9	21.0	20.0	0.1	188.5	58.8	58.6	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	10.7	1.9	21.0	20.0	0.1	188.5	58.8	58.6	37.4
LOS	B	B	A	C	C	A	F	E	E	D
Approach Delay		9.3			19.7			172.6		41.2
Approach LOS		A			B			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 105 (66%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.19	
Intersection Signal Delay: 22.9	Intersection LOS: C
Intersection Capacity Utilization 98.8%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road



Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	1699	405	11	1226	20	179	25	46	216
v/c Ratio	0.56	0.63	0.32	0.08	0.53	0.02	1.19	0.15	0.24	0.80
Control Delay	12.5	10.7	1.9	21.0	20.0	0.1	188.5	58.8	58.6	37.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.5	10.7	1.9	21.0	20.0	0.1	188.5	58.8	58.6	37.4
Queue Length 50th (ft)	44	364	14	4	296	0	~183	20	42	39
Queue Length 95th (ft)	88	554	52	m18	586	1	#288	51	78	130
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	350	2691	1260	143	2304	1037	150	409	215	498
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.63	0.32	0.08	0.53	0.02	1.19	0.06	0.21	0.43

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	181	1648	393	11	1189	19	174	19	5	45	29	180
Future Volume (veh/h)	181	1648	393	11	1189	19	174	19	5	45	29	180
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	187	1699	405	11	1226	20	179	20	5	46	30	186
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	302	2389	1044	118	2065	903	177	262	65	304	34	208
Arrive On Green	0.05	0.67	0.67	0.58	0.58	0.58	0.06	0.18	0.18	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1548	194	3539	1548	1774	1434	358	1774	224	1388
Grp Volume(v), veh/h	187	1699	405	11	1226	20	179	0	25	46	0	216
Grp Sat Flow(s),veh/h/ln	1774	1770	1548	194	1770	1548	1774	0	1792	1774	0	1611
Q Serve(g_s), s	6.6	48.0	18.4	6.0	35.3	0.9	10.0	0.0	1.8	3.5	0.0	21.1
Cycle Q Clear(g_c), s	6.6	48.0	18.4	39.4	35.3	0.9	10.0	0.0	1.8	3.5	0.0	21.1
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.86
Lane Grp Cap(c), veh/h	302	2389	1044	118	2065	903	177	0	327	304	0	242
V/C Ratio(X)	0.62	0.71	0.39	0.09	0.59	0.02	1.01	0.00	0.08	0.15	0.00	0.89
Avail Cap(c_a), veh/h	339	2389	1044	118	2065	903	177	0	403	362	0	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.5	16.3	11.5	33.2	21.3	14.1	60.9	0.0	54.2	55.2	0.0	66.7
Incr Delay (d2), s/veh	1.7	1.8	1.1	1.6	1.3	0.0	70.0	0.0	0.0	0.1	0.0	12.6
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	24.0	8.2	0.4	17.6	0.4	6.4	0.0	0.9	1.7	0.0	10.2
LnGrp Delay(d),s/veh	20.2	18.1	12.5	34.7	22.5	14.1	131.0	0.0	54.2	55.3	0.0	79.3
LnGrp LOS	C	B	B	C	C	B	F		D	E		E
Approach Vol, veh/h		2291			1257			204			262	
Approach Delay, s/veh		17.3			22.5			121.6			75.1	
Approach LOS		B			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.6	99.3	10.8	35.2		114.0	16.0	30.0
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	78.0	10.0	36.0		96.0	10.0	36.0
Max Q Clear Time (g_c+I1), s	8.6	41.4	5.5	3.8		50.0	12.0	23.1
Green Ext Time (p_c), s	0.1	11.6	0.0	0.1		23.2	0.0	0.7

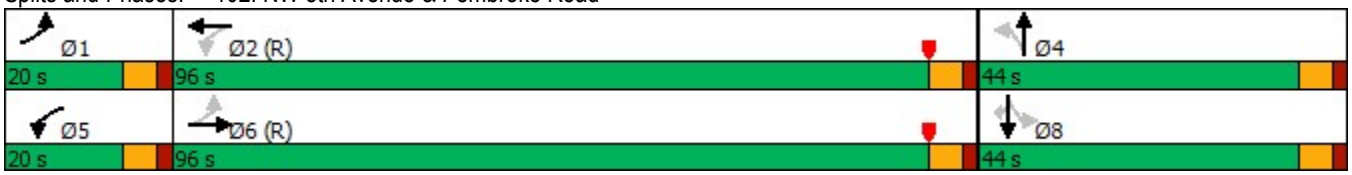
Intersection Summary	
HCM 2010 Ctrl Delay	28.0
HCM 2010 LOS	C

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	125	1419	43	1031	78	64	29	55	89
Future Volume (vph)	125	1419	43	1031	78	64	29	55	89
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	130.5	125.3	126.5	121.8	14.0	14.0	14.0	14.0	14.0
Actuated g/C Ratio	0.82	0.78	0.79	0.76	0.09	0.09	0.09	0.09	0.09
v/c Ratio	0.31	0.57	0.18	0.40	0.68	0.62	0.34	0.35	0.42
Control Delay	6.5	15.7	4.7	7.5	97.9	74.0	77.3	72.9	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	15.7	4.7	7.5	97.9	74.0	77.3	72.9	17.1
LOS	A	B	A	A	F	E	E	E	B
Approach Delay		15.0		7.4		84.4		45.0	
Approach LOS		B		A		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 26 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.68	
Intersection Signal Delay: 18.1	Intersection LOS: B
Intersection Capacity Utilization 73.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	129	1570	44	1068	80	105	30	57	92
v/c Ratio	0.31	0.57	0.18	0.40	0.68	0.62	0.34	0.35	0.42
Control Delay	6.5	15.7	4.7	7.5	97.9	74.0	77.3	72.9	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.5	15.7	4.7	7.5	97.9	74.0	77.3	72.9	17.1
Queue Length 50th (ft)	31	428	6	178	83	90	30	57	0
Queue Length 95th (ft)	79	829	17	266	139	153	66	102	56
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	488	2740	339	2691	317	427	237	442	440
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.26	0.57	0.13	0.40	0.25	0.25	0.13	0.13	0.21

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	1419	104	43	1031	5	78	64	38	29	55	89
Future Volume (veh/h)	125	1419	104	43	1031	5	78	64	38	29	55	89
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	129	1463	107	44	1063	5	80	66	39	30	57	92
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	431	2505	182	263	2671	13	154	128	75	122	218	184
Arrive On Green	0.03	0.75	0.75	0.02	0.74	0.74	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	3345	244	1774	3612	17	1224	1088	643	1275	1863	1567
Grp Volume(v), veh/h	129	771	799	44	521	547	80	0	105	30	57	92
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1859	1224	0	1731	1275	1863	1567
Q Serve(g_s), s	2.9	31.0	31.5	1.0	17.4	17.4	10.2	0.0	9.1	3.6	4.5	8.8
Cycle Q Clear(g_c), s	2.9	31.0	31.5	1.0	17.4	17.4	14.6	0.0	9.1	12.7	4.5	8.8
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	431	1325	1362	263	1308	1375	154	0	203	122	218	184
V/C Ratio(X)	0.30	0.58	0.59	0.17	0.40	0.40	0.52	0.00	0.52	0.25	0.26	0.50
Avail Cap(c_a), veh/h	532	1325	1362	380	1308	1375	302	0	411	275	442	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.00	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.8	8.9	9.0	7.9	7.7	7.7	71.0	0.0	66.4	72.3	64.3	66.2
Incr Delay (d2), s/veh	0.1	1.9	1.9	0.1	0.9	0.9	0.8	0.0	0.6	0.4	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	15.7	16.2	0.5	8.7	9.1	3.5	0.0	4.4	1.3	2.3	3.9
LnGrp Delay(d),s/veh	5.9	10.8	10.9	8.1	8.6	8.6	71.7	0.0	66.9	72.7	64.5	67.0
LnGrp LOS	A	B	B	A	A	A	E		E	E	E	E
Approach Vol, veh/h		1699			1112			185			179	
Approach Delay, s/veh		10.5			8.6			69.0			67.2	
Approach LOS		B			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	10.9	124.3		24.8	9.4	125.8		24.8
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	4.9	19.4		16.6	3.0	33.5		14.7
Green Ext Time (p_c), s	0.1	8.2		0.5	0.0	16.6		0.4

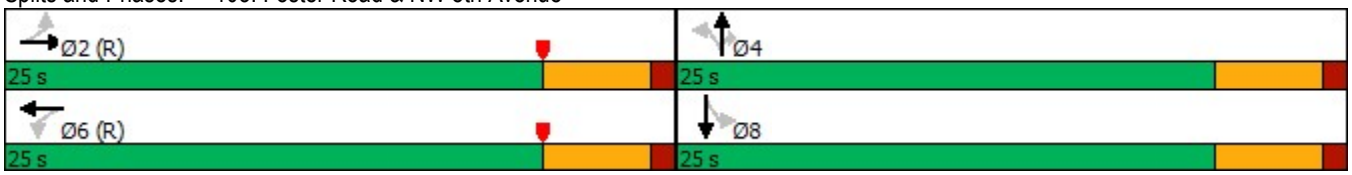
Intersection Summary	
HCM 2010 Ctrl Delay	16.4
HCM 2010 LOS	B

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	276	22	124	57	183	32	55	180
Future Volume (vph)	26	276	22	124	57	183	32	55	180
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		26.3		26.3		13.7	13.7		13.7
Actuated g/C Ratio		0.53		0.53		0.27	0.27		0.27
v/c Ratio		0.49		0.22		0.60	0.08		0.64
Control Delay		10.3		7.6		20.9	3.9		21.2
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		10.3		7.6		20.9	3.9		21.2
LOS		B		A		C	A		C
Approach Delay		10.3		7.6		18.9			21.2
Approach LOS		B		A		B			C

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.4	Intersection LOS: B
Intersection Capacity Utilization 66.6%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	462	194	261	35	285
v/c Ratio	0.49	0.22	0.60	0.08	0.64
Control Delay	10.3	7.6	20.9	3.9	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.3	7.6	20.9	3.9	21.2
Queue Length 50th (ft)	67	23	66	0	69
Queue Length 95th (ft)	169	65	103	11	109
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	935	894	636	644	645
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.49	0.22	0.41	0.05	0.44

Intersection Summary

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	276	123	22	124	32	57	183	32	55	180	27
Future Volume (veh/h)	26	276	123	22	124	32	57	183	32	55	180	27
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	28	300	134	24	135	35	62	199	35	60	196	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	636	270	141	685	164	160	374	404	133	283	37
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	47	1181	502	112	1272	305	272	1431	1543	175	1083	142
Grp Volume(v), veh/h	462	0	0	194	0	0	261	0	35	285	0	0
Grp Sat Flow(s),veh/h/ln	1730	0	0	1689	0	0	1703	0	1543	1400	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.7	0.0	0.0
Cycle Q Clear(g_c), s	8.3	0.0	0.0	2.8	0.0	0.0	6.4	0.0	0.9	10.0	0.0	0.0
Prop In Lane	0.06		0.29	0.12		0.18	0.24		1.00	0.21		0.10
Lane Grp Cap(c), veh/h	1008	0	0	990	0	0	534	0	404	453	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.20	0.00	0.00	0.49	0.00	0.09	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1008	0	0	990	0	0	759	0	617	677	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	7.2	0.0	0.0	6.0	0.0	0.0	15.9	0.0	14.0	17.1	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.1	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	1.5	0.0	0.0	3.2	0.0	0.4	3.8	0.0	0.0
LnGrp Delay(d),s/veh	8.7	0.0	0.0	6.4	0.0	0.0	16.6	0.0	14.0	18.5	0.0	0.0
LnGrp LOS	A			A			B		B	B		
Approach Vol, veh/h		462			194			296			285	
Approach Delay, s/veh		8.7			6.4			16.3			18.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.9		18.1		31.9		18.1
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		10.3		8.4		4.8		12.0
Green Ext Time (p_c), s		2.1		1.3		0.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.4
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1615	48	0	1194	6	0	0	6	0	0	22
Future Volume (Veh/h)	0	1615	48	0	1194	6	0	0	6	0	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1718	51	0	1270	6	0	0	6	0	0	23
Pedestrians		2			4			1			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.89			0.75			0.80	0.80	0.75	0.80	0.80	0.89
vC, conflicting volume	1279			1770			2404	3024	890	2145	3046	643
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1076			1350			1659	2434	169	1334	2463	365
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	96
cM capacity (veh/h)	574			377			49	25	627	88	24	563

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1145	624	847	429	6	23
Volume Left	0	0	0	0	0	0
Volume Right	0	51	0	6	6	23
cSH	1700	1700	1700	1700	627	563
Volume to Capacity	0.67	0.37	0.50	0.25	0.01	0.04
Queue Length 95th (ft)	0	0	0	0	1	3
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	11.7
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.8	11.7
Approach LOS					B	B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	57.4%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	41	30	12	18	0	40	11	13	6	27	1
Future Volume (Veh/h)	3	41	30	12	18	0	40	11	13	6	27	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	5	63	46	18	28	0	62	17	20	9	42	2
Pedestrians		5			23			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			2			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	232	250	49	314	241	51	49			60		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	232	250	49	314	241	51	49			60		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	90	95	97	95	100	96			99		
cM capacity (veh/h)	656	606	1014	519	614	994	1550			1510		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	114	46	99	53
Volume Left	5	18	62	9
Volume Right	46	0	20	2
cSH	727	573	1550	1510
Volume to Capacity	0.16	0.08	0.04	0.01
Queue Length 95th (ft)	14	7	3	0
Control Delay (s)	10.9	11.8	4.8	1.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	11.8	4.8	1.3
Approach LOS	B	B		

Intersection Summary			
Average Delay	7.4		
Intersection Capacity Utilization	25.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	299	124	38	139	22	77	33	44	33	21	15
Future Volume (Veh/h)	10	299	124	38	139	22	77	33	44	33	21	15
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	348	144	44	162	26	90	38	51	38	24	17
Pedestrians		22			14			3			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	193			495			761	728	437	796	787	202
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	193			495			761	728	437	796	787	202
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			67	88	92	84	92	98
cM capacity (veh/h)	1374			1066			277	330	609	240	305	817

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	504	232	179	79
Volume Left	12	44	90	38
Volume Right	144	26	51	17
cSH	1374	1066	342	306
Volume to Capacity	0.01	0.04	0.52	0.26
Queue Length 95th (ft)	1	3	72	25
Control Delay (s)	0.3	1.9	26.6	20.8
Lane LOS	A	A	D	C
Approach Delay (s)	0.3	1.9	26.6	20.8
Approach LOS			D	C

Intersection Summary			
Average Delay	7.0		
Intersection Capacity Utilization	48.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	57	253	2	75	318
Future Volume (Veh/h)	1	57	253	2	75	318
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	63	281	2	83	353
Pedestrians	8		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked						
vC, conflicting volume	812	290			291	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	812	290			291	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	92			93	
cM capacity (veh/h)	322	743			1261	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	64	283	436
Volume Left	1	0	83
Volume Right	63	2	0
cSH	729	1700	1261
Volume to Capacity	0.09	0.17	0.07
Queue Length 95th (ft)	7	0	5
Control Delay (s)	10.4	0.0	2.1
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	2.1
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	47	156	36	209	255	56
Future Volume (Veh/h)	47	156	36	209	255	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	51	170	39	227	277	61
Pedestrians		1			1	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	267				426	154
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	267				426	154
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				51	93
cM capacity (veh/h)	1296				562	890

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	221	266	338
Volume Left	51	0	277
Volume Right	0	227	61
cSH	1296	1700	602
Volume to Capacity	0.04	0.16	0.56
Queue Length 95th (ft)	3	0	87
Control Delay (s)	2.1	0.0	18.4
Lane LOS	A		C
Approach Delay (s)	2.1	0.0	18.4
Approach LOS			C

Intersection Summary			
Average Delay	8.1		
Intersection Capacity Utilization	53.3%	ICU Level of Service	A
Analysis Period (min)	15		

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	1336	258	10	1075	25	288	56	49	28
Future Volume (vph)	183	1336	258	10	1075	25	288	56	49	28
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	96.0	96.0	78.0	78.0	78.0	22.0	42.0	22.0	42.0
Total Split (%)	11.3%	60.0%	60.0%	48.8%	48.8%	48.8%	13.8%	26.3%	13.8%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	112.8	112.8	112.8	95.8	95.8	95.8	35.1	23.7	20.7	13.2
Actuated g/C Ratio	0.70	0.70	0.70	0.60	0.60	0.60	0.22	0.15	0.13	0.08
v/c Ratio	0.56	0.55	0.23	0.05	0.52	0.03	1.34	0.22	0.26	0.87
Control Delay	15.3	13.1	1.7	32.1	31.6	1.1	221.5	59.9	51.6	50.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	13.1	1.7	32.1	31.6	1.1	221.5	59.9	51.6	50.9
LOS	B	B	A	C	C	A	F	E	D	D
Approach Delay		11.6			30.9			194.1		51.1
Approach LOS		B			C			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 34 (21%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.34	
Intersection Signal Delay: 38.9	Intersection LOS: D
Intersection Capacity Utilization 98.2%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road

Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	187	1363	263	10	1097	26	294	60	50	251
v/c Ratio	0.56	0.55	0.23	0.05	0.52	0.03	1.34	0.22	0.26	0.87
Control Delay	15.3	13.1	1.7	32.1	31.6	1.1	221.5	59.9	51.6	50.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.3	13.1	1.7	32.1	31.6	1.1	221.5	59.9	51.6	50.9
Queue Length 50th (ft)	58	326	3	5	384	0	~354	56	43	84
Queue Length 95th (ft)	111	478	37	m21	682	m6	#503	98	76	182
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	353	2496	1164	200	2118	960	220	416	286	491
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.55	0.23	0.05	0.52	0.03	1.34	0.14	0.17	0.51

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1336	258	10	1075	25	288	56	3	49	28	218
Future Volume (veh/h)	183	1336	258	10	1075	25	288	56	3	49	28	218
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	187	1363	263	10	1097	26	294	57	3	50	29	222
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	268	2172	970	160	1822	796	243	424	22	332	32	243
Arrive On Green	0.06	0.61	0.61	0.17	0.17	0.17	0.10	0.24	0.24	0.03	0.17	0.17
Sat Flow, veh/h	1774	3539	1581	309	3539	1546	1774	1752	92	1774	183	1399
Grp Volume(v), veh/h	187	1363	263	10	1097	26	294	0	60	50	0	251
Grp Sat Flow(s),veh/h/ln	1774	1770	1581	309	1770	1546	1774	0	1845	1774	0	1582
Q Serve(g_s), s	7.8	38.7	12.3	4.6	45.9	2.2	16.0	0.0	4.1	3.7	0.0	24.9
Cycle Q Clear(g_c), s	7.8	38.7	12.3	27.5	45.9	2.2	16.0	0.0	4.1	3.7	0.0	24.9
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.88
Lane Grp Cap(c), veh/h	268	2172	970	160	1822	796	243	0	447	332	0	275
V/C Ratio(X)	0.70	0.63	0.27	0.06	0.60	0.03	1.21	0.00	0.13	0.15	0.00	0.91
Avail Cap(c_a), veh/h	292	2172	970	160	1822	796	243	0	447	453	0	356
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.6	19.4	14.3	53.8	51.2	33.1	52.2	0.0	47.5	51.9	0.0	64.9
Incr Delay (d2), s/veh	5.1	1.4	0.7	0.8	1.5	0.1	126.8	0.0	0.1	0.1	0.0	20.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	19.3	5.6	0.4	22.9	1.0	17.3	0.0	2.1	1.8	0.0	12.4
LnGrp Delay(d),s/veh	31.7	20.8	15.0	54.6	52.7	33.2	179.1	0.0	47.5	52.0	0.0	85.4
LnGrp LOS	C	C	B	D	D	C	F		D	D		F
Approach Vol, veh/h		1813			1133			354			301	
Approach Delay, s/veh		21.1			52.3			156.8			79.8	
Approach LOS		C			D			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	15.8	88.4	11.1	44.7		104.2	22.0	33.8
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	72.0	16.0	36.0		90.0	16.0	36.0
Max Q Clear Time (g_c+I1), s	9.8	47.9	5.7	6.1		40.7	18.0	26.9
Green Ext Time (p_c), s	0.0	8.5	0.0	0.2		15.6	0.0	0.7

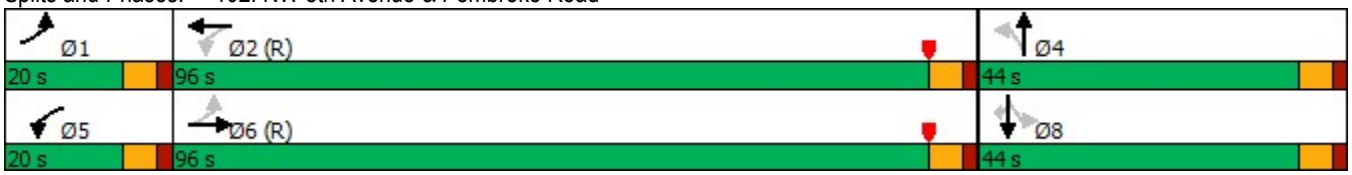
Intersection Summary	
HCM 2010 Ctrl Delay	49.2
HCM 2010 LOS	D

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	165	1100	50	1048	94	114	29	77	65
Future Volume (vph)	165	1100	50	1048	94	114	29	77	65
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	127.0	120.4	120.7	115.8	18.6	18.6	18.6	18.6	18.6
Actuated g/C Ratio	0.79	0.75	0.75	0.72	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.47	0.47	0.17	0.44	0.69	0.77	0.41	0.38	0.29
Control Delay	13.7	19.9	5.1	10.4	90.3	86.4	79.4	68.9	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	19.9	5.1	10.4	90.3	86.4	79.4	68.9	15.2
LOS	B	B	A	B	F	F	E	E	B
Approach Delay		19.1		10.1		87.9		50.4	
Approach LOS		B		B		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 116 (73%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.77	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 73.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	176	1246	53	1130	100	167	31	82	69
v/c Ratio	0.47	0.47	0.17	0.44	0.69	0.77	0.41	0.38	0.29
Control Delay	13.7	19.9	5.1	10.4	90.3	86.4	79.4	68.9	15.2
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	13.7	19.9	5.1	10.4	90.3	86.4	79.4	68.9	15.2
Queue Length 50th (ft)	67	397	9	230	102	161	31	81	0
Queue Length 95th (ft)	165	735	23	344	163	236	66	133	48
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	438	2637	418	2555	297	430	156	442	422
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.40	0.47	0.13	0.44	0.34	0.39	0.20	0.19	0.16

Intersection Summary

HCM 2010 Signalized Intersection Summary
102: NW 8th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	165	1100	71	50	1048	14	94	114	43	29	77	65
Future Volume (veh/h)	165	1100	71	50	1048	14	94	114	43	29	77	65
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	176	1170	76	53	1115	15	100	121	46	31	82	69
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	401	2444	159	304	2526	34	169	180	68	106	262	218
Arrive On Green	0.03	0.49	0.49	0.02	0.71	0.71	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1774	3374	219	1774	3574	48	1226	1279	486	1209	1863	1552
Grp Volume(v), veh/h	176	613	633	53	552	578	100	0	167	31	82	69
Grp Sat Flow(s),veh/h/ln	1774	1770	1824	1774	1770	1853	1226	0	1765	1209	1863	1552
Q Serve(g_s), s	4.4	37.2	37.2	1.3	21.3	21.3	12.8	0.0	14.4	4.0	6.3	6.4
Cycle Q Clear(g_c), s	4.4	37.2	37.2	1.3	21.3	21.3	19.1	0.0	14.4	18.4	6.3	6.4
Prop In Lane	1.00		0.12	1.00		0.03	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	401	1282	1321	304	1251	1310	169	0	248	106	262	218
V/C Ratio(X)	0.44	0.48	0.48	0.17	0.44	0.44	0.59	0.00	0.67	0.29	0.31	0.32
Avail Cap(c_a), veh/h	485	1282	1321	419	1251	1310	288	0	419	224	442	369
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.44	0.00	0.44	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.0	20.9	20.9	10.2	10.0	10.0	70.4	0.0	65.3	74.0	61.8	61.8
Incr Delay (d2), s/veh	0.3	1.3	1.2	0.1	1.1	1.1	0.5	0.0	0.5	0.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.1	18.7	19.3	0.6	10.7	11.2	4.4	0.0	7.0	1.4	3.3	2.8
LnGrp Delay(d),s/veh	8.3	22.2	22.2	10.3	11.1	11.1	70.9	0.0	65.8	74.5	62.1	62.2
LnGrp LOS	A	C	C	B	B	B	E		E	E	E	E
Approach Vol, veh/h		1422			1183			267			182	
Approach Delay, s/veh		20.5			11.1			67.7			64.2	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.4	119.1		28.5	9.6	121.9		28.5
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	6.4	23.3		21.1	3.3	39.2		20.4
Green Ext Time (p_c), s	0.1	9.0		0.7	0.0	10.6		0.4

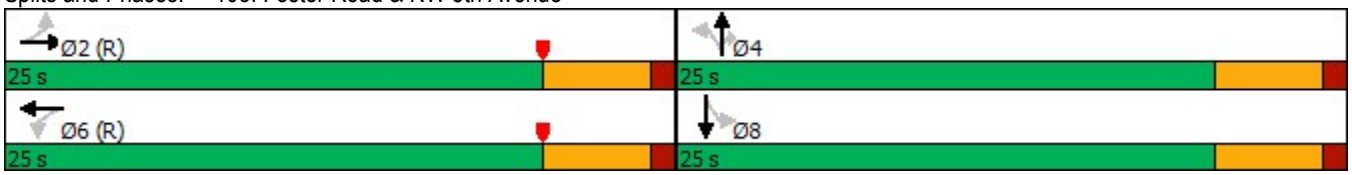
Intersection Summary	
HCM 2010 Ctrl Delay	23.6
HCM 2010 LOS	C

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	41	161	54	220	117	283	32	49	208
Future Volume (vph)	41	161	54	220	117	283	32	49	208
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		22.0		22.0		18.0	18.0		18.0
Actuated g/C Ratio		0.44		0.44		0.36	0.36		0.36
v/c Ratio		0.43		0.54		0.84	0.06		0.59
Control Delay		11.2		13.6		30.6	3.6		17.1
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		11.2		13.6		30.6	3.6		17.1
LOS		B		B		C	A		B
Approach Delay		11.2		13.6		28.5			17.1
Approach LOS		B		B		C			B

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.84	
Intersection Signal Delay: 18.6	Intersection LOS: B
Intersection Capacity Utilization 76.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	317	396	444	36	314
v/c Ratio	0.43	0.54	0.84	0.06	0.59
Control Delay	11.2	13.6	30.6	3.6	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.2	13.6	30.6	3.6	17.1
Queue Length 50th (ft)	54	78	106	0	64
Queue Length 95th (ft)	109	150	#236	11	125
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	734	732	589	641	587
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.43	0.54	0.75	0.06	0.53

Intersection Summary

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

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	41	161	83	54	220	83	117	283	32	49	208	26
Future Volume (veh/h)	41	161	83	54	220	83	117	283	32	49	208	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	46	179	92	60	244	92	130	314	36	54	231	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	423	195	145	455	157	210	400	623	107	350	38
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	133	1048	483	155	1126	388	296	1011	1573	56	883	96
Grp Volume(v), veh/h	317	0	0	396	0	0	444	0	36	314	0	0
Grp Sat Flow(s),veh/h/ln	1665	0	0	1668	0	0	1306	0	1573	1035	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.4	0.0	0.0	0.0	0.0	0.7	2.0	0.0	0.0
Cycle Q Clear(g_c), s	6.5	0.0	0.0	8.7	0.0	0.0	15.8	0.0	0.7	17.8	0.0	0.0
Prop In Lane	0.15		0.29	0.15		0.23	0.29		1.00	0.17		0.09
Lane Grp Cap(c), veh/h	755	0	0	757	0	0	610	0	623	494	0	0
V/C Ratio(X)	0.42	0.00	0.00	0.52	0.00	0.00	0.73	0.00	0.06	0.64	0.00	0.00
Avail Cap(c_a), veh/h	755	0	0	757	0	0	617	0	629	501	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	10.8	0.0	0.0	11.4	0.0	0.0	13.2	0.0	9.3	11.8	0.0	0.0
Incr Delay (d2), s/veh	1.7	0.0	0.0	2.6	0.0	0.0	4.3	0.0	0.0	2.5	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.5	0.0	0.0	4.7	0.0	0.0	6.3	0.0	0.3	3.5	0.0	0.0
LnGrp Delay(d),s/veh	12.5	0.0	0.0	14.0	0.0	0.0	17.5	0.0	9.4	14.3	0.0	0.0
LnGrp LOS	B			B			B		A	B		
Approach Vol, veh/h		317			396			480			314	
Approach Delay, s/veh		12.5			14.0			16.9			14.3	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.2		24.8		25.2		24.8
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		8.5		17.8		10.7		19.8
Green Ext Time (p_c), s		1.5		0.7		1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	14.7
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1315	26	0	1210	7	0	0	25	0	0	25
Future Volume (Veh/h)	0	1315	26	0	1210	7	0	0	25	0	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1429	28	0	1315	8	0	0	27	0	0	27
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.87			0.80			0.87	0.87	0.80	0.87	0.87	0.87
vC, conflicting volume	1324			1457			2128	2767	730	2062	2777	664
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1067			1077			1309	2044	171	1233	2055	305
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	96	100	100	95
cM capacity (veh/h)	562			516			97	48	676	111	47	598

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	953	504	877	446	27	27
Volume Left	0	0	0	0	0	0
Volume Right	0	28	0	8	27	27
cSH	1700	1700	1700	1700	676	598
Volume to Capacity	0.56	0.30	0.52	0.26	0.04	0.05
Queue Length 95th (ft)	0	0	0	0	3	4
Control Delay (s)	0.0	0.0	0.0	0.0	10.5	11.3
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.5	11.3
Approach LOS					B	B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	47.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	23	10	13	19	7	90	43	8	9	15	13
Future Volume (Veh/h)	3	23	10	13	19	7	90	43	8	9	15	13
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	4	28	12	16	23	9	111	53	10	11	19	16
Pedestrians					2			1				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					3.5			3.5				
Percent Blockage					0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	350	336	28	358	339	60	35			65		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	350	336	28	358	339	60	35			65		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	95	99	97	96	99	93			99		
cM capacity (veh/h)	545	539	1046	532	536	1004	1576			1534		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	48	174	46
Volume Left	4	16	111	11
Volume Right	12	9	10	16
cSH	622	586	1576	1534
Volume to Capacity	0.07	0.08	0.07	0.01
Queue Length 95th (ft)	6	7	6	1
Control Delay (s)	11.2	11.7	5.0	1.8
Lane LOS	B	B	A	A
Approach Delay (s)	11.2	11.7	5.0	1.8
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	26.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	267	25	15	262	96	13	15	10	20	5	13
Future Volume (Veh/h)	27	267	25	15	262	96	13	15	10	20	5	13
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	28	281	26	16	276	101	14	16	11	21	5	14
Pedestrians		1			1			2			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	387			309			728	771	297	738	734	338
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	387			309			728	771	297	738	734	338
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			96	95	99	93	98	98
cM capacity (veh/h)	1160			1249			315	315	740	301	331	697

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	335	393	41	40
Volume Left	28	16	14	21
Volume Right	26	101	11	14
cSH	1160	1249	373	381
Volume to Capacity	0.02	0.01	0.11	0.10
Queue Length 95th (ft)	2	1	9	9
Control Delay (s)	0.9	0.4	15.9	15.5
Lane LOS	A	A	C	C
Approach Delay (s)	0.9	0.4	15.9	15.5
Approach LOS			C	C

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	36.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	103	258	2	26	272
Future Volume (Veh/h)	6	103	258	2	26	272
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	114	287	2	29	302
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked						
vC, conflicting volume	651	291			292	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	651	291			292	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	85			98	
cM capacity (veh/h)	422	746			1266	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	121	289	331
Volume Left	7	0	29
Volume Right	114	2	0
cSH	714	1700	1266
Volume to Capacity	0.17	0.17	0.02
Queue Length 95th (ft)	15	0	2
Control Delay (s)	11.1	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	46.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	100	62	39	231	215	63
Future Volume (Veh/h)	100	62	39	231	215	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	111	69	43	257	239	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	300				462	172
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	300				462	172
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				53	92
cM capacity (veh/h)	1261				508	872

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	180	300	309
Volume Left	111	0	239
Volume Right	0	257	70
cSH	1261	1700	561
Volume to Capacity	0.09	0.18	0.55
Queue Length 95th (ft)	7	0	83
Control Delay (s)	5.3	0.0	19.0
Lane LOS	A		C
Approach Delay (s)	5.3	0.0	19.0
Approach LOS			C

Intersection Summary			
Average Delay	8.6		
Intersection Capacity Utilization	50.9%	ICU Level of Service	A
Analysis Period (min)	15		

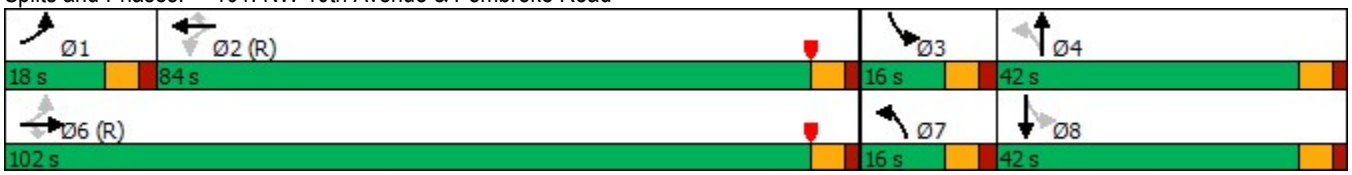
Future (2021) Background SYNCHRO Output

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	1665	397	11	1201	19	176	19	46	29
Future Volume (vph)	183	1665	397	11	1201	19	176	19	46	29
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	102.0	102.0	84.0	84.0	84.0	16.0	42.0	16.0	42.0
Total Split (%)	11.3%	63.8%	63.8%	52.5%	52.5%	52.5%	10.0%	26.3%	10.0%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	121.6	121.6	121.6	103.6	103.6	103.6	21.0	14.2	19.7	10.4
Actuated g/C Ratio	0.76	0.76	0.76	0.65	0.65	0.65	0.13	0.09	0.12	0.06
v/c Ratio	0.57	0.64	0.32	0.08	0.54	0.02	1.21	0.15	0.24	0.81
Control Delay	12.7	10.8	1.9	21.7	20.8	0.1	192.2	58.8	58.6	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	10.8	1.9	21.7	20.8	0.1	192.2	58.8	58.6	39.1
LOS	B	B	A	C	C	A	F	E	E	D
Approach Delay		9.4			20.5			176.0		42.6
Approach LOS		A			C			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 105 (66%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.21	
Intersection Signal Delay: 23.5	Intersection LOS: C
Intersection Capacity Utilization 99.5%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road



Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	1716	409	11	1238	20	181	25	47	218
v/c Ratio	0.57	0.64	0.32	0.08	0.54	0.02	1.21	0.15	0.24	0.81
Control Delay	12.7	10.8	1.9	21.7	20.8	0.1	192.2	58.8	58.6	39.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	10.8	1.9	21.7	20.8	0.1	192.2	58.8	58.6	39.1
Queue Length 50th (ft)	45	371	15	4	304	0	~188	20	43	43
Queue Length 95th (ft)	88	565	53	m18	612	m1	#291	51	79	133
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	348	2690	1260	139	2291	1032	150	409	216	497
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.64	0.32	0.08	0.54	0.02	1.21	0.06	0.22	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1665	397	11	1201	19	176	19	5	46	29	182
Future Volume (veh/h)	183	1665	397	11	1201	19	176	19	5	46	29	182
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1716	409	11	1238	20	181	20	5	47	30	188
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	299	2384	1043	115	2058	900	177	263	66	307	34	210
Arrive On Green	0.05	0.67	0.67	0.58	0.58	0.58	0.06	0.18	0.18	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1548	190	3539	1548	1774	1434	358	1774	222	1389
Grp Volume(v), veh/h	189	1716	409	11	1238	20	181	0	25	47	0	218
Grp Sat Flow(s),veh/h/ln	1774	1770	1548	190	1770	1548	1774	0	1792	1774	0	1611
Q Serve(g_s), s	6.7	49.1	18.8	6.2	36.0	0.9	10.0	0.0	1.8	3.6	0.0	21.2
Cycle Q Clear(g_c), s	6.7	49.1	18.8	40.6	36.0	0.9	10.0	0.0	1.8	3.6	0.0	21.2
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.20	1.00		0.86
Lane Grp Cap(c), veh/h	299	2384	1043	115	2058	900	177	0	329	307	0	244
V/C Ratio(X)	0.63	0.72	0.39	0.10	0.60	0.02	1.02	0.00	0.08	0.15	0.00	0.89
Avail Cap(c_a), veh/h	335	2384	1043	115	2058	900	177	0	403	364	0	362
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	19.0	16.5	11.6	34.1	21.6	14.2	60.9	0.0	54.1	55.0	0.0	66.6
Incr Delay (d2), s/veh	2.0	1.9	1.1	1.7	1.3	0.0	73.2	0.0	0.0	0.1	0.0	13.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.2	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	24.5	8.3	0.4	17.9	0.4	10.2	0.0	0.9	1.7	0.0	10.3
LnGrp Delay(d),s/veh	21.0	18.4	12.7	35.7	22.9	14.2	134.2	0.0	54.1	55.1	0.0	79.7
LnGrp LOS	C	B	B	D	C	B	F		D	E		E
Approach Vol, veh/h		2314			1269			206			265	
Approach Delay, s/veh		17.6			22.8			124.5			75.3	
Approach LOS		B			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.8	99.0	10.9	35.3		113.8	16.0	30.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	78.0	10.0	36.0		96.0	10.0	36.0
Max Q Clear Time (g_c+I1), s	8.7	42.6	5.6	3.8		51.1	12.0	23.2
Green Ext Time (p_c), s	0.1	11.7	0.0	0.1		23.3	0.0	0.7

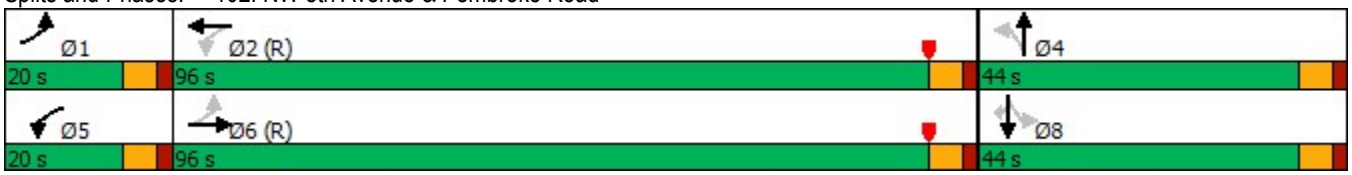
Intersection Summary	
HCM 2010 Ctrl Delay	28.5
HCM 2010 LOS	C

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	126	1434	44	1041	79	65	29	55	89
Future Volume (vph)	126	1434	44	1041	79	65	29	55	89
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	130.4	125.2	126.4	121.7	14.1	14.1	14.1	14.1	14.1
Actuated g/C Ratio	0.82	0.78	0.79	0.76	0.09	0.09	0.09	0.09	0.09
v/c Ratio	0.32	0.58	0.19	0.40	0.69	0.63	0.34	0.35	0.42
Control Delay	6.6	16.0	4.8	7.6	97.9	74.0	77.1	72.6	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	16.0	4.8	7.6	97.9	74.0	77.1	72.6	17.0
LOS	A	B	A	A	F	E	E	E	B
Approach Delay		15.3		7.5		84.4		44.8	
Approach LOS		B		A		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 26 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.3	Intersection LOS: B
Intersection Capacity Utilization 73.8%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	130	1586	45	1078	81	106	30	57	92
v/c Ratio	0.32	0.58	0.19	0.40	0.69	0.63	0.34	0.35	0.42
Control Delay	6.6	16.0	4.8	7.6	97.9	74.0	77.1	72.6	17.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.6	16.0	4.8	7.6	97.9	74.0	77.1	72.6	17.0
Queue Length 50th (ft)	31	441	6	182	84	91	30	57	0
Queue Length 95th (ft)	79	840	17	272	140	153	65	102	56
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	482	2737	334	2688	317	427	235	442	440
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.27	0.58	0.13	0.40	0.26	0.25	0.13	0.13	0.21

Intersection Summary

HCM 2010 Signalized Intersection Summary
102: NW 8th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	126	1434	105	44	1041	5	79	65	38	29	55	89
Future Volume (veh/h)	126	1434	105	44	1041	5	79	65	38	29	55	89
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	130	1478	108	45	1073	5	81	67	39	30	57	92
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	2502	182	259	2668	12	155	129	75	122	220	185
Arrive On Green	0.03	0.75	0.75	0.02	0.74	0.74	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	3346	243	1774	3612	17	1225	1095	637	1274	1863	1567
Grp Volume(v), veh/h	130	778	808	45	526	552	81	0	106	30	57	92
Grp Sat Flow(s),veh/h/ln	1774	1770	1819	1774	1770	1859	1225	0	1732	1274	1863	1567
Q Serve(g_s), s	2.9	31.7	32.2	1.0	17.7	17.7	10.3	0.0	9.2	3.6	4.5	8.8
Cycle Q Clear(g_c), s	2.9	31.7	32.2	1.0	17.7	17.7	14.8	0.0	9.2	12.8	4.5	8.8
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.37	1.00		1.00
Lane Grp Cap(c), veh/h	427	1324	1361	259	1307	1373	155	0	204	122	220	185
V/C Ratio(X)	0.30	0.59	0.59	0.17	0.40	0.40	0.52	0.00	0.52	0.25	0.26	0.50
Avail Cap(c_a), veh/h	528	1324	1361	376	1307	1373	302	0	411	274	442	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.00	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	5.9	9.1	9.1	8.1	7.8	7.8	70.9	0.0	66.3	72.3	64.2	66.1
Incr Delay (d2), s/veh	0.1	1.9	1.9	0.1	0.9	0.9	0.8	0.0	0.6	0.4	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	16.1	16.7	0.5	9.0	9.4	3.5	0.0	4.4	1.3	2.3	3.8
LnGrp Delay(d),s/veh	6.0	11.0	11.1	8.3	8.7	8.7	71.7	0.0	66.9	72.7	64.4	66.9
LnGrp LOS	A	B	B	A	A	A	E		E	E	E	E
Approach Vol, veh/h		1716			1123			187			179	
Approach Delay, s/veh		10.6			8.7			69.0			67.1	
Approach LOS		B			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	124.2		24.9	9.5	125.7		24.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	4.9	19.7		16.8	3.0	34.2		14.8
Green Ext Time (p_c), s	0.1	8.3		0.5	0.0	17.0		0.4

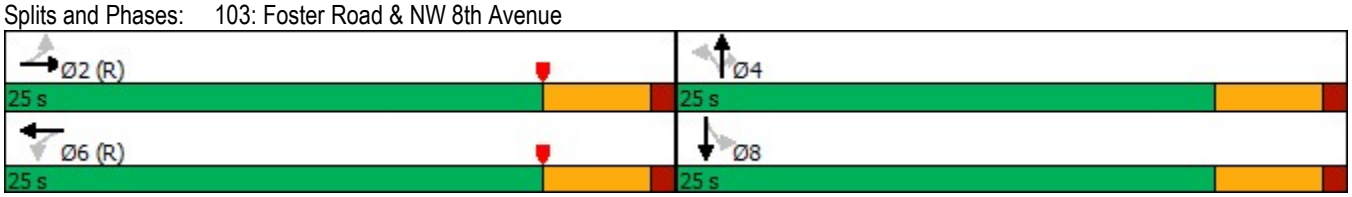
Intersection Summary	
HCM 2010 Ctrl Delay	16.5
HCM 2010 LOS	B

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	279	22	125	57	185	32	55	182
Future Volume (vph)	26	279	22	125	57	185	32	55	182
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		26.2		26.2		13.8	13.8		13.8
Actuated g/C Ratio		0.52		0.52		0.28	0.28		0.28
v/c Ratio		0.50		0.22		0.60	0.08		0.64
Control Delay		10.5		7.7		20.8	3.9		21.2
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		10.5		7.7		20.8	3.9		21.2
LOS		B		A		C	A		C
Approach Delay		10.5		7.7		18.8			21.2
Approach LOS		B		A		B			C

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.64	
Intersection Signal Delay: 14.5	Intersection LOS: B
Intersection Capacity Utilization 67.0%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	466	195	263	35	287
v/c Ratio	0.50	0.22	0.60	0.08	0.64
Control Delay	10.5	7.7	20.8	3.9	21.2
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.5	7.7	20.8	3.9	21.2
Queue Length 50th (ft)	68	23	66	0	70
Queue Length 95th (ft)	172	66	103	11	109
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	932	891	636	644	645
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.50	0.22	0.41	0.05	0.44

Intersection Summary

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	279	124	22	125	32	57	185	32	55	182	27
Future Volume (veh/h)	26	279	124	22	125	32	57	185	32	55	182	27
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	28	303	135	24	136	35	62	201	35	60	198	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	635	269	140	685	163	160	377	406	133	285	37
Arrive On Green	0.54	0.54	0.54	0.54	0.54	0.54	0.26	0.26	0.26	0.26	0.26	0.26
Sat Flow, veh/h	46	1182	501	111	1275	303	269	1433	1544	173	1086	142
Grp Volume(v), veh/h	466	0	0	195	0	0	263	0	35	287	0	0
Grp Sat Flow(s),veh/h/ln	1730	0	0	1689	0	0	1703	0	1544	1400	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.7	0.0	0.0
Cycle Q Clear(g_c), s	8.4	0.0	0.0	2.8	0.0	0.0	6.4	0.0	0.9	10.1	0.0	0.0
Prop In Lane	0.06		0.29	0.12		0.18	0.24		1.00	0.21		0.10
Lane Grp Cap(c), veh/h	1006	0	0	988	0	0	536	0	406	455	0	0
V/C Ratio(X)	0.46	0.00	0.00	0.20	0.00	0.00	0.49	0.00	0.09	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1006	0	0	988	0	0	759	0	617	677	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	7.3	0.0	0.0	6.0	0.0	0.0	15.9	0.0	13.9	17.1	0.0	0.0
Incr Delay (d2), s/veh	1.5	0.0	0.0	0.4	0.0	0.0	0.7	0.0	0.1	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.4	0.0	0.0	1.5	0.0	0.0	3.2	0.0	0.4	3.8	0.0	0.0
LnGrp Delay(d),s/veh	8.8	0.0	0.0	6.5	0.0	0.0	16.6	0.0	14.0	18.5	0.0	0.0
LnGrp LOS	A			A			B		B	B		
Approach Vol, veh/h		466			195			298			287	
Approach Delay, s/veh		8.8			6.5			16.3			18.5	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.9		18.1		31.9		18.1
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		10.4		8.4		4.8		12.1
Green Ext Time (p_c), s		2.1		1.3		0.9		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1631	49	0	1206	6	0	0	6	0	0	22
Future Volume (Veh/h)	0	1631	49	0	1206	6	0	0	6	0	0	22
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1735	52	0	1283	6	0	0	6	0	0	23
Pedestrians		2			4			1			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.89			0.74			0.79	0.79	0.74	0.79	0.79	0.89
vC, conflicting volume	1292			1788			2428	3054	898	2166	3077	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1086			1362			1670	2458	160	1340	2487	366
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	99	100	100	96
cM capacity (veh/h)	568			370			48	24	631	86	23	560

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1157	630	855	434	6	23
Volume Left	0	0	0	0	0	0
Volume Right	0	52	0	6	6	23
cSH	1700	1700	1700	1700	631	560
Volume to Capacity	0.68	0.37	0.50	0.26	0.01	0.04
Queue Length 95th (ft)	0	0	0	0	1	3
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	11.7
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.8	11.7
Approach LOS					B	B

Intersection Summary			
Average Delay	0.1		
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	42	30	12	18	0	41	11	14	6	27	1
Future Volume (Veh/h)	3	42	30	12	18	0	41	11	14	6	27	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	5	65	46	18	28	0	63	17	22	9	42	2
Pedestrians		5			23			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			2			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	235	254	49	318	244	52	49			62		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	235	254	49	318	244	52	49			62		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	89	95	97	95	100	96			99		
cM capacity (veh/h)	653	603	1014	514	611	993	1550			1507		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	116	46	102	53
Volume Left	5	18	63	9
Volume Right	46	0	22	2
cSH	721	569	1550	1507
Volume to Capacity	0.16	0.08	0.04	0.01
Queue Length 95th (ft)	14	7	3	0
Control Delay (s)	10.9	11.9	4.7	1.3
Lane LOS	B	B	A	A
Approach Delay (s)	10.9	11.9	4.7	1.3
Approach LOS	B	B		

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	25.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	302	125	38	140	22	78	33	45	33	21	16
Future Volume (Veh/h)	10	302	125	38	140	22	78	33	45	33	21	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	351	145	44	163	26	91	38	52	38	24	19
Pedestrians		22			14			3			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	194			499			768	732	440	802	792	203
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	194			499			768	732	440	802	792	203
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			67	88	91	84	92	98
cM capacity (veh/h)	1373			1062			273	328	607	237	303	816

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	508	233	181	81
Volume Left	12	44	91	38
Volume Right	145	26	52	19
cSH	1373	1062	339	308
Volume to Capacity	0.01	0.04	0.53	0.26
Queue Length 95th (ft)	1	3	75	26
Control Delay (s)	0.3	1.9	27.2	20.8
Lane LOS	A	A	D	C
Approach Delay (s)	0.3	1.9	27.2	20.8
Approach LOS			D	C

Intersection Summary			
Average Delay	7.2		
Intersection Capacity Utilization	48.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	57	256	2	76	321
Future Volume (Veh/h)	1	57	256	2	76	321
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	63	284	2	84	357
Pedestrians	8		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked						
vC, conflicting volume	821	293			294	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	821	293			294	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	91			93	
cM capacity (veh/h)	318	741			1258	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	64	286	441
Volume Left	1	0	84
Volume Right	63	2	0
cSH	725	1700	1258
Volume to Capacity	0.09	0.17	0.07
Queue Length 95th (ft)	7	0	5
Control Delay (s)	10.4	0.0	2.1
Lane LOS	B		A
Approach Delay (s)	10.4	0.0	2.1
Approach LOS	B		

Intersection Summary			
Average Delay	2.0		
Intersection Capacity Utilization	48.3%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	157	36	211	258	56
Future Volume (Veh/h)	48	157	36	211	258	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	171	39	229	280	61
Pedestrians		1			1	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	269				430	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269				430	156
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				50	93
cM capacity (veh/h)	1293				559	889

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	223	268	341
Volume Left	52	0	280
Volume Right	0	229	61
cSH	1293	1700	598
Volume to Capacity	0.04	0.16	0.57
Queue Length 95th (ft)	3	0	89
Control Delay (s)	2.1	0.0	18.7
Lane LOS	A		C
Approach Delay (s)	2.1	0.0	18.7
Approach LOS			C

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	185	1349	260	10	1086	25	291	56	50	28
Future Volume (vph)	185	1349	260	10	1086	25	291	56	50	28
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	96.0	96.0	78.0	78.0	78.0	22.0	42.0	22.0	42.0
Total Split (%)	11.3%	60.0%	60.0%	48.8%	48.8%	48.8%	13.8%	26.3%	13.8%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	112.3	112.3	112.3	94.7	94.7	94.7	35.6	24.2	21.3	13.7
Actuated g/C Ratio	0.70	0.70	0.70	0.59	0.59	0.59	0.22	0.15	0.13	0.09
v/c Ratio	0.57	0.55	0.23	0.05	0.53	0.03	1.35	0.21	0.26	0.87
Control Delay	15.8	13.5	1.8	33.8	33.1	1.1	226.4	59.2	51.0	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	13.5	1.8	33.8	33.1	1.1	226.4	59.2	51.0	52.3
LOS	B	B	A	C	C	A	F	E	D	D
Approach Delay		12.1			32.4			198.3		52.1
Approach LOS		B			C			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 34 (21%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.35	
Intersection Signal Delay: 40.1	Intersection LOS: D
Intersection Capacity Utilization 98.9%	ICU Level of Service F
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road

Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	1377	265	10	1108	26	297	60	51	255
v/c Ratio	0.57	0.55	0.23	0.05	0.53	0.03	1.35	0.21	0.26	0.87
Control Delay	15.8	13.5	1.8	33.8	33.1	1.1	226.4	59.2	51.0	52.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.8	13.5	1.8	33.8	33.1	1.1	226.4	59.2	51.0	52.3
Queue Length 50th (ft)	60	336	4	5	402	0	~360	55	43	91
Queue Length 95th (ft)	113	494	39	m20	704	m6	#510	97	76	189
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	349	2483	1159	195	2095	951	220	416	291	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.55	0.23	0.05	0.53	0.03	1.35	0.14	0.18	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1349	260	10	1086	25	291	56	3	50	28	221
Future Volume (veh/h)	185	1349	260	10	1086	25	291	56	3	50	28	221
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1377	265	10	1108	26	297	57	3	51	29	226
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	265	2163	966	156	1811	791	242	427	22	336	32	247
Arrive On Green	0.06	0.61	0.61	0.17	0.17	0.17	0.10	0.24	0.24	0.03	0.18	0.18
Sat Flow, veh/h	1774	3539	1581	304	3539	1546	1774	1752	92	1774	180	1402
Grp Volume(v), veh/h	189	1377	265	10	1108	26	297	0	60	51	0	255
Grp Sat Flow(s),veh/h/ln	1774	1770	1581	304	1770	1546	1774	0	1845	1774	0	1582
Q Serve(g_s), s	7.9	39.6	12.5	4.7	46.4	2.2	16.0	0.0	4.1	3.7	0.0	25.3
Cycle Q Clear(g_c), s	7.9	39.6	12.5	28.4	46.4	2.2	16.0	0.0	4.1	3.7	0.0	25.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.89
Lane Grp Cap(c), veh/h	265	2163	966	156	1811	791	242	0	450	336	0	279
V/C Ratio(X)	0.71	0.64	0.27	0.06	0.61	0.03	1.23	0.00	0.13	0.15	0.00	0.91
Avail Cap(c_a), veh/h	288	2163	966	156	1811	791	242	0	450	457	0	356
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	27.2	19.8	14.5	54.8	51.8	33.4	51.9	0.0	47.3	51.6	0.0	64.7
Incr Delay (d2), s/veh	6.0	1.4	0.7	0.8	1.6	0.1	132.3	0.0	0.0	0.1	0.0	21.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	19.8	5.7	0.4	23.2	1.0	8.9	0.0	2.1	1.8	0.0	12.8
LnGrp Delay(d),s/veh	33.2	21.2	15.2	55.6	53.3	33.5	184.2	0.0	47.3	51.7	0.0	86.0
LnGrp LOS	C	C	B	E	D	C	F		D	D		F
Approach Vol, veh/h		1831			1144			357			306	
Approach Delay, s/veh		21.6			52.9			161.2			80.3	
Approach LOS		C			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	15.9	87.9	11.2	45.0		103.8	22.0	34.2
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	72.0	16.0	36.0		90.0	16.0	36.0
Max Q Clear Time (g_c+I1), s	9.9	48.4	5.7	6.1		41.6	18.0	27.3
Green Ext Time (p_c), s	0.0	8.6	0.0	0.2		15.8	0.0	0.7

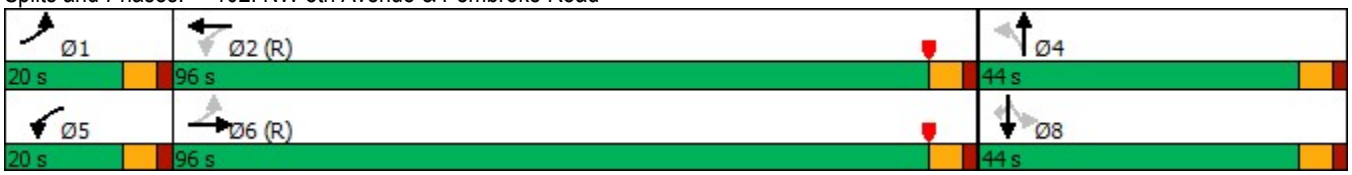
Intersection Summary	
HCM 2010 Ctrl Delay	50.1
HCM 2010 LOS	D

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	166	1111	51	1058	95	115	29	78	66
Future Volume (vph)	166	1111	51	1058	95	115	29	78	66
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	126.9	120.2	120.5	115.4	18.8	18.8	18.8	18.8	18.8
Actuated g/C Ratio	0.79	0.75	0.75	0.72	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.47	0.48	0.17	0.45	0.69	0.78	0.41	0.38	0.29
Control Delay	14.0	20.8	5.3	10.6	90.4	86.4	79.2	68.7	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	20.8	5.3	10.6	90.4	86.4	79.2	68.7	15.0
LOS	B	C	A	B	F	F	E	E	B
Approach Delay		19.9		10.3		87.9		50.1	
Approach LOS		B		B		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 116 (73%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.0	Intersection LOS: C
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	177	1259	54	1142	101	169	31	83	70
v/c Ratio	0.47	0.48	0.17	0.45	0.69	0.78	0.41	0.38	0.29
Control Delay	14.0	20.8	5.3	10.6	90.4	86.4	79.2	68.7	15.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.0	20.8	5.3	10.6	90.4	86.4	79.2	68.7	15.0
Queue Length 50th (ft)	71	418	10	235	103	163	31	82	0
Queue Length 95th (ft)	169	751	24	354	164	238	66	134	48
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	432	2632	413	2547	296	430	155	442	423
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.41	0.48	0.13	0.45	0.34	0.39	0.20	0.19	0.17

Intersection Summary

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	166	1111	72	51	1058	15	95	115	44	29	78	66
Future Volume (veh/h)	166	1111	72	51	1058	15	95	115	44	29	78	66
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	177	1182	77	54	1126	16	101	122	47	31	83	70
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	2439	159	299	2518	36	170	181	70	106	264	220
Arrive On Green	0.03	0.48	0.48	0.02	0.71	0.71	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1774	3374	220	1774	3571	51	1224	1274	491	1207	1863	1552
Grp Volume(v), veh/h	177	619	640	54	558	584	101	0	169	31	83	70
Grp Sat Flow(s),veh/h/ln	1774	1770	1824	1774	1770	1852	1224	0	1765	1207	1863	1552
Q Serve(g_s), s	4.4	37.7	37.8	1.4	21.7	21.7	12.9	0.0	14.5	4.0	6.4	6.5
Cycle Q Clear(g_c), s	4.4	37.7	37.8	1.4	21.7	21.7	19.3	0.0	14.5	18.5	6.4	6.5
Prop In Lane	1.00		0.12	1.00		0.03	1.00		0.28	1.00		1.00
Lane Grp Cap(c), veh/h	396	1279	1318	299	1248	1306	170	0	250	106	264	220
V/C Ratio(X)	0.45	0.48	0.49	0.18	0.45	0.45	0.60	0.00	0.68	0.29	0.31	0.32
Avail Cap(c_a), veh/h	480	1279	1318	414	1248	1306	287	0	419	222	442	369
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.42	0.00	0.42	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.2	21.2	21.2	10.5	10.2	10.2	70.4	0.0	65.2	74.0	61.7	61.7
Incr Delay (d2), s/veh	0.3	1.3	1.3	0.1	1.2	1.1	0.5	0.0	0.5	0.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	18.9	19.5	0.7	10.9	11.4	4.4	0.0	7.1	1.4	3.3	2.8
LnGrp Delay(d),s/veh	8.5	22.5	22.5	10.6	11.3	11.3	70.9	0.0	65.7	74.5	61.9	62.0
LnGrp LOS	A	C	C	B	B	B	E		E	E	E	E
Approach Vol, veh/h		1436			1196			270			184	
Approach Delay, s/veh		20.7			11.3			67.6			64.1	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.5	118.8		28.7	9.6	121.7		28.7
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	6.4	23.7		21.3	3.4	39.8		20.5
Green Ext Time (p_c), s	0.1	9.2		0.7	0.0	10.7		0.4

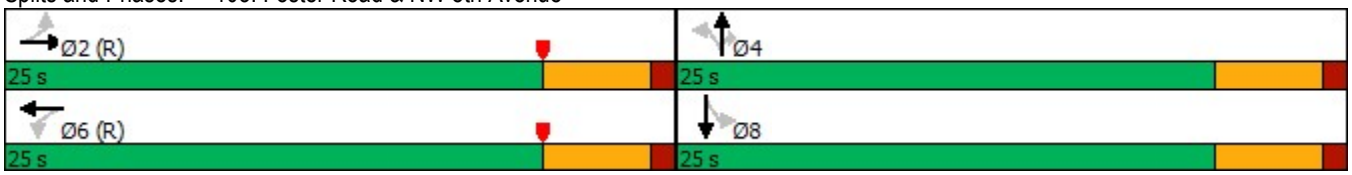
Intersection Summary	
HCM 2010 Ctrl Delay	23.7
HCM 2010 LOS	C

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	42	162	54	223	119	286	32	50	210
Future Volume (vph)	42	162	54	223	119	286	32	50	210
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		21.9		21.9		18.1	18.1		18.1
Actuated g/C Ratio		0.44		0.44		0.36	0.36		0.36
v/c Ratio		0.44		0.55		0.85	0.06		0.61
Control Delay		11.4		13.8		31.4	3.6		17.6
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		11.4		13.8		31.4	3.6		17.6
LOS		B		B		C	A		B
Approach Delay		11.4		13.8		29.3			17.6
Approach LOS		B		B		C			B

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 19.0	Intersection LOS: B
Intersection Capacity Utilization 76.6%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	320	401	450	36	318
v/c Ratio	0.44	0.55	0.85	0.06	0.61
Control Delay	11.4	13.8	31.4	3.6	17.6
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	13.8	31.4	3.6	17.6
Queue Length 50th (ft)	54	79	108	0	65
Queue Length 95th (ft)	111	152	#241	11	129
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	728	729	587	641	576
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.44	0.55	0.77	0.06	0.55

Intersection Summary

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

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	162	84	54	223	84	119	286	32	50	210	26
Future Volume (veh/h)	42	162	84	54	223	84	119	286	32	50	210	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	47	180	93	60	248	93	132	318	36	56	233	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	137	418	194	144	451	155	207	391	629	104	332	35
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	137	1046	484	153	1129	387	285	977	1573	47	830	88
Grp Volume(v), veh/h	320	0	0	401	0	0	450	0	36	318	0	0
Grp Sat Flow(s),veh/h/ln	1667	0	0	1669	0	0	1262	0	1573	965	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.7	0.0	0.0	0.0	0.0	0.7	2.2	0.0	0.0
Cycle Q Clear(g_c), s	6.7	0.0	0.0	9.0	0.0	0.0	16.6	0.0	0.7	18.9	0.0	0.0
Prop In Lane	0.15		0.29	0.15		0.23	0.29		1.00	0.18		0.09
Lane Grp Cap(c), veh/h	749	0	0	750	0	0	598	0	629	471	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.53	0.00	0.00	0.75	0.00	0.06	0.68	0.00	0.00
Avail Cap(c_a), veh/h	749	0	0	750	0	0	598	0	629	471	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.96	0.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	11.6	0.0	0.0	13.3	0.0	9.2	11.9	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	2.7	0.0	0.0	5.3	0.0	0.0	3.7	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	4.8	0.0	0.0	6.5	0.0	0.3	3.7	0.0	0.0
LnGrp Delay(d),s/veh	12.8	0.0	0.0	14.4	0.0	0.0	18.6	0.0	9.2	15.6	0.0	0.0
LnGrp LOS	B			B			B		A	B		
Approach Vol, veh/h		320			401			486			318	
Approach Delay, s/veh		12.8			14.4			17.9			15.6	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.0		25.0		25.0		25.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		8.7		18.6		11.0		20.9
Green Ext Time (p_c), s		1.5		0.4		1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	15.4
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1328	26	0	1222	7	0	0	25	0	0	25
Future Volume (Veh/h)	0	1328	26	0	1222	7	0	0	25	0	0	25
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1443	28	0	1328	8	0	0	27	0	0	27
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.86			0.80			0.87	0.87	0.80	0.87	0.87	0.86
vC, conflicting volume	1337			1471			2149	2794	736	2082	2804	670
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1075			1082			1308	2053	160	1231	2065	302
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	96	100	100	95
cM capacity (veh/h)	556			511			97	47	682	111	47	598

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	962	509	885	451	27	27
Volume Left	0	0	0	0	0	0
Volume Right	0	28	0	8	27	27
cSH	1700	1700	1700	1700	682	598
Volume to Capacity	0.57	0.30	0.52	0.27	0.04	0.05
Queue Length 95th (ft)	0	0	0	0	3	4
Control Delay (s)	0.0	0.0	0.0	0.0	10.5	11.3
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.5	11.3
Approach LOS					B	B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	47.9%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	23	10	14	19	7	91	44	8	9	16	14
Future Volume (Veh/h)	3	23	10	14	19	7	91	44	8	9	16	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	4	28	12	17	23	9	112	54	10	11	20	17
Pedestrians					2			1				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					3.5			3.5				
Percent Blockage					0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	354	340	30	362	344	61	37			66		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	354	340	30	362	344	61	37			66		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	95	99	97	96	99	93			99		
cM capacity (veh/h)	541	535	1044	528	533	1002	1574			1533		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	44	49	176	48
Volume Left	4	17	112	11
Volume Right	12	9	10	17
cSH	618	581	1574	1533
Volume to Capacity	0.07	0.08	0.07	0.01
Queue Length 95th (ft)	6	7	6	1
Control Delay (s)	11.3	11.8	4.9	1.7
Lane LOS	B	B	A	A
Approach Delay (s)	11.3	11.8	4.9	1.7
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.4		
Intersection Capacity Utilization	27.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	269	25	16	264	97	14	16	10	20	5	14
Future Volume (Veh/h)	27	269	25	16	264	97	14	16	10	20	5	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	28	283	26	17	278	102	15	17	11	21	5	15
Pedestrians		1			1			2			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	390			311			736	778	299	746	740	340
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	390			311			736	778	299	746	740	340
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	95	99	93	98	98
cM capacity (veh/h)	1157			1247			311	312	738	297	328	695

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	337	397	43	41
Volume Left	28	17	15	21
Volume Right	26	102	11	15
cSH	1157	1247	365	381
Volume to Capacity	0.02	0.01	0.12	0.11
Queue Length 95th (ft)	2	1	10	9
Control Delay (s)	0.9	0.5	16.2	15.6
Lane LOS	A	A	C	C
Approach Delay (s)	0.9	0.5	16.2	15.6
Approach LOS			C	C

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	36.6%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	104	260	2	26	275
Future Volume (Veh/h)	6	104	260	2	26	275
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	116	289	2	29	306
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked						
vC, conflicting volume	657	293			294	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	657	293			294	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	84			98	
cM capacity (veh/h)	419	744			1264	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	123	291	335
Volume Left	7	0	29
Volume Right	116	2	0
cSH	713	1700	1264
Volume to Capacity	0.17	0.17	0.02
Queue Length 95th (ft)	16	0	2
Control Delay (s)	11.1	0.0	0.9
Lane LOS	B		A
Approach Delay (s)	11.1	0.0	0.9
Approach LOS	B		

Intersection Summary			
Average Delay	2.2		
Intersection Capacity Utilization	46.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	62	40	233	217	63
Future Volume (Veh/h)	101	62	40	233	217	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	112	69	44	259	241	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	303				466	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				466	174
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				52	92
cM capacity (veh/h)	1258				505	870

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	181	303	311
Volume Left	112	0	241
Volume Right	0	259	70
cSH	1258	1700	558
Volume to Capacity	0.09	0.18	0.56
Queue Length 95th (ft)	7	0	85
Control Delay (s)	5.3	0.0	19.3
Lane LOS	A		C
Approach Delay (s)	5.3	0.0	19.3
Approach LOS			C

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

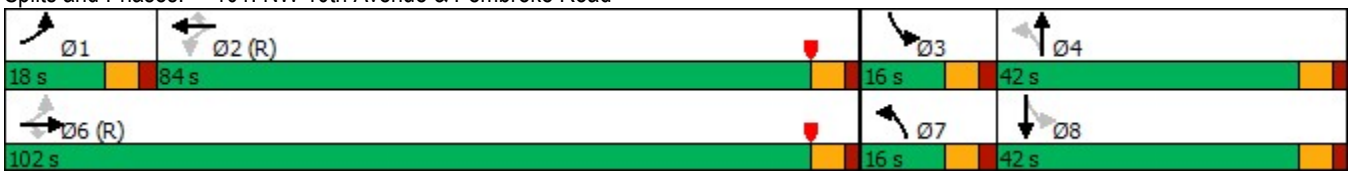
Future (2021) Total SYNCHRO Output

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	183	1650	418	42	1173	19	210	22	48	30
Future Volume (vph)	183	1650	418	42	1173	19	210	22	48	30
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	102.0	102.0	84.0	84.0	84.0	16.0	42.0	16.0	42.0
Total Split (%)	11.3%	63.8%	63.8%	52.5%	52.5%	52.5%	10.0%	26.3%	10.0%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	121.2	121.2	121.2	103.8	103.8	103.8	21.4	14.6	20.3	10.8
Actuated g/C Ratio	0.76	0.76	0.76	0.65	0.65	0.65	0.13	0.09	0.13	0.07
v/c Ratio	0.57	0.63	0.34	0.30	0.53	0.02	1.44	0.17	0.24	0.81
Control Delay	12.7	11.0	2.0	28.7	20.5	0.1	274.8	59.7	58.2	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	11.0	2.0	28.7	20.5	0.1	274.8	59.7	58.2	40.6
LOS	B	B	A	C	C	A	F	E	E	D
Approach Delay		9.5			20.5			250.1		43.8
Approach LOS		A			C			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 105 (66%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 95	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.44	
Intersection Signal Delay: 29.4	Intersection LOS: C
Intersection Capacity Utilization 101.0%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road



Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	1701	431	43	1209	20	216	28	49	219
v/c Ratio	0.57	0.63	0.34	0.30	0.53	0.02	1.44	0.17	0.24	0.81
Control Delay	12.7	11.0	2.0	28.7	20.5	0.1	274.8	59.7	58.2	40.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.7	11.0	2.0	28.7	20.5	0.1	274.8	59.7	58.2	40.6
Queue Length 50th (ft)	46	374	15	16	293	0	~262	23	45	48
Queue Length 95th (ft)	90	567	55	73	587	m1	#378	55	82	138
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	353	2680	1262	141	2296	1034	150	410	219	494
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.54	0.63	0.34	0.30	0.53	0.02	1.44	0.07	0.22	0.44

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	183	1650	418	42	1173	19	210	22	5	48	30	182
Future Volume (veh/h)	183	1650	418	42	1173	19	210	22	5	48	30	182
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	1.00		0.98	1.00		0.98	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1701	431	43	1209	20	216	23	5	49	31	188
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	306	2382	1042	115	2056	899	177	270	59	309	35	210
Arrive On Green	0.05	0.67	0.67	0.58	0.58	0.58	0.06	0.18	0.18	0.03	0.15	0.15
Sat Flow, veh/h	1774	3539	1548	188	3539	1548	1774	1478	321	1774	228	1384
Grp Volume(v), veh/h	189	1701	431	43	1209	20	216	0	28	49	0	219
Grp Sat Flow(s),veh/h/ln	1774	1770	1548	188	1770	1548	1774	0	1800	1774	0	1612
Q Serve(g_s), s	6.7	48.4	20.2	29.8	34.8	0.9	10.0	0.0	2.1	3.7	0.0	21.3
Cycle Q Clear(g_c), s	6.7	48.4	20.2	63.4	34.8	0.9	10.0	0.0	2.1	3.7	0.0	21.3
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.18	1.00		0.86
Lane Grp Cap(c), veh/h	306	2382	1042	115	2056	899	177	0	329	309	0	245
V/C Ratio(X)	0.62	0.71	0.41	0.37	0.59	0.02	1.22	0.00	0.09	0.16	0.00	0.89
Avail Cap(c_a), veh/h	342	2382	1042	115	2056	899	177	0	405	364	0	363
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	18.4	16.5	11.8	41.1	21.3	14.2	60.9	0.0	54.3	54.8	0.0	66.6
Incr Delay (d2), s/veh	1.7	1.9	1.2	9.1	1.2	0.0	138.6	0.0	0.0	0.1	0.0	13.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.4	24.0	9.0	1.8	17.3	0.4	13.4	0.0	1.0	1.8	0.0	10.4
LnGrp Delay(d),s/veh	20.0	18.3	13.1	50.1	22.6	14.3	199.5	0.0	54.3	54.9	0.0	79.8
LnGrp LOS	C	B	B	D	C	B	F		D	D		E
Approach Vol, veh/h		2321			1272			244			268	
Approach Delay, s/veh		17.5			23.4			182.8			75.3	
Approach LOS		B			C			F			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	14.8	98.9	11.1	35.2		113.7	16.0	30.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	78.0	10.0	36.0		96.0	10.0	36.0
Max Q Clear Time (g_c+I1), s	8.7	65.4	5.7	4.1		50.4	12.0	23.3
Green Ext Time (p_c), s	0.1	7.5	0.0	0.1		23.4	0.0	0.7

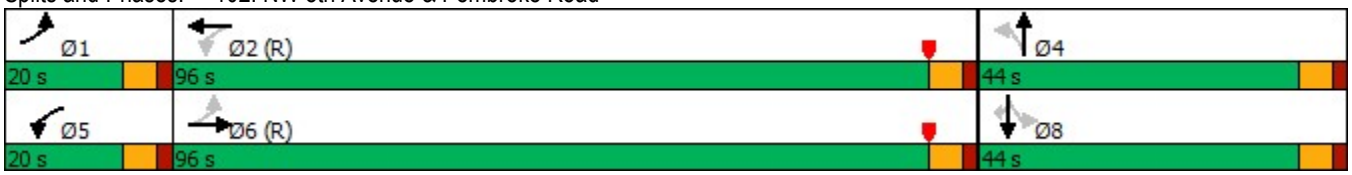
Intersection Summary	
HCM 2010 Ctrl Delay	32.9
HCM 2010 LOS	C

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	129	1441	49	1042	79	66	29	57	90
Future Volume (vph)	129	1441	49	1042	79	66	29	57	90
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	130.4	125.1	126.4	121.6	14.1	14.1	14.1	14.1	14.1
Actuated g/C Ratio	0.82	0.78	0.79	0.76	0.09	0.09	0.09	0.09	0.09
v/c Ratio	0.33	0.58	0.22	0.40	0.69	0.63	0.35	0.36	0.42
Control Delay	6.7	16.3	5.2	7.7	98.1	74.5	77.4	73.0	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	16.3	5.2	7.7	98.1	74.5	77.4	73.0	17.1
LOS	A	B	A	A	F	E	E	E	B
Approach Delay		15.5		7.5		84.6		45.2	
Approach LOS		B		A		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 26 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 90	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.69	
Intersection Signal Delay: 18.4	Intersection LOS: B
Intersection Capacity Utilization 74.0%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	133	1594	51	1079	81	107	30	59	93
v/c Ratio	0.33	0.58	0.22	0.40	0.69	0.63	0.35	0.36	0.42
Control Delay	6.7	16.3	5.2	7.7	98.1	74.5	77.4	73.0	17.1
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	6.7	16.3	5.2	7.7	98.1	74.5	77.4	73.0	17.1
Queue Length 50th (ft)	33	452	7	182	84	92	30	59	0
Queue Length 95th (ft)	80	845	19	273	140	155	66	105	56
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	482	2735	332	2686	317	428	233	442	441
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.58	0.15	0.40	0.26	0.25	0.13	0.13	0.21

Intersection Summary

HCM 2010 Signalized Intersection Summary
102: NW 8th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	129	1441	105	49	1042	5	79	66	38	29	57	90
Future Volume (veh/h)	129	1441	105	49	1042	5	79	66	38	29	57	90
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	0.99		0.98	0.99		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	133	1486	108	51	1074	5	81	68	39	30	59	93
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	427	2498	181	257	2662	12	155	131	75	123	222	186
Arrive On Green	0.03	0.75	0.75	0.02	0.74	0.74	0.12	0.12	0.12	0.12	0.12	0.12
Sat Flow, veh/h	1774	3347	242	1774	3612	17	1221	1101	632	1273	1863	1567
Grp Volume(v), veh/h	133	782	812	51	526	553	81	0	107	30	59	93
Grp Sat Flow(s),veh/h/ln	1774	1770	1820	1774	1770	1859	1221	0	1733	1273	1863	1567
Q Serve(g_s), s	3.0	32.2	32.7	1.1	17.8	17.8	10.3	0.0	9.3	3.6	4.6	8.9
Cycle Q Clear(g_c), s	3.0	32.2	32.7	1.1	17.8	17.8	15.0	0.0	9.3	12.9	4.6	8.9
Prop In Lane	1.00		0.13	1.00		0.01	1.00		0.36	1.00		1.00
Lane Grp Cap(c), veh/h	427	1320	1358	257	1304	1370	155	0	206	123	222	186
V/C Ratio(X)	0.31	0.59	0.60	0.20	0.40	0.40	0.52	0.00	0.52	0.24	0.27	0.50
Avail Cap(c_a), veh/h	526	1320	1358	373	1304	1370	300	0	412	274	442	372
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.77	0.00	0.77	1.00	1.00	1.00
Uniform Delay (d), s/veh	6.0	9.2	9.3	8.4	7.9	7.9	70.9	0.0	66.2	72.2	64.1	66.0
Incr Delay (d2), s/veh	0.2	2.0	2.0	0.1	0.9	0.9	0.8	0.0	0.6	0.4	0.2	0.8
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	1.4	16.4	17.0	0.5	9.0	9.4	3.5	0.0	4.5	1.3	2.4	3.9
LnGrp Delay(d),s/veh	6.1	11.2	11.3	8.5	8.8	8.8	71.7	0.0	66.8	72.6	64.4	66.8
LnGrp LOS	A	B	B	A	A	A	E		E	E	E	E
Approach Vol, veh/h		1727			1130			188			182	
Approach Delay, s/veh		10.8			8.8			68.9			67.0	
Approach LOS		B			A			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	11.0	123.9		25.0	9.6	125.4		25.0
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	5.0	19.8		17.0	3.1	34.7		14.9
Green Ext Time (p_c), s	0.1	8.4		0.5	0.0	17.1		0.4

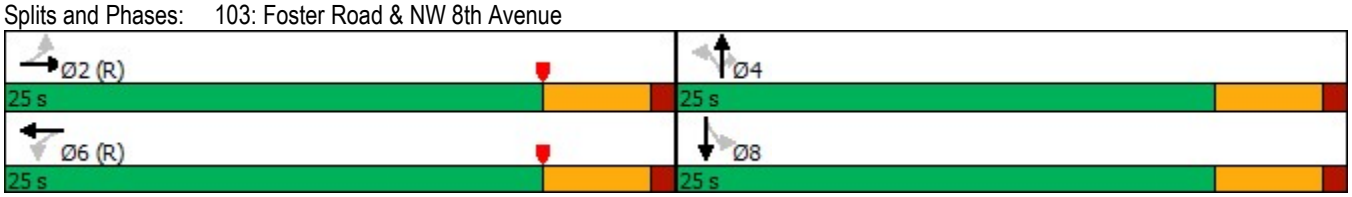
Intersection Summary	
HCM 2010 Ctrl Delay	16.7
HCM 2010 LOS	B

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	26	281	22	128	58	186	32	57	182
Future Volume (vph)	26	281	22	128	58	186	32	57	182
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		26.1		26.1		13.9	13.9		13.9
Actuated g/C Ratio		0.52		0.52		0.28	0.28		0.28
v/c Ratio		0.51		0.22		0.60	0.08		0.65
Control Delay		10.6		7.7		20.8	3.8		21.3
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		10.6		7.7		20.8	3.8		21.3
LOS		B		A		C	A		C
Approach Delay		10.6		7.7		18.8			21.3
Approach LOS		B		A		B			C

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 45	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.65	
Intersection Signal Delay: 14.6	Intersection LOS: B
Intersection Capacity Utilization 67.5%	ICU Level of Service C
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	470	199	265	35	289
v/c Ratio	0.51	0.22	0.60	0.08	0.65
Control Delay	10.6	7.7	20.8	3.8	21.3
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.6	7.7	20.8	3.8	21.3
Queue Length 50th (ft)	69	24	67	0	70
Queue Length 95th (ft)	175	67	104	11	110
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	928	889	635	644	642
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.51	0.22	0.42	0.05	0.45

Intersection Summary

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	26	281	126	22	128	33	58	186	32	57	182	27
Future Volume (veh/h)	26	281	126	22	128	33	58	186	32	57	182	27
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.97	1.00		0.97	1.00		0.97	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	28	305	137	24	139	36	63	202	35	62	198	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	101	630	269	138	683	163	161	379	410	135	285	37
Arrive On Green	0.53	0.53	0.53	0.53	0.53	0.53	0.27	0.27	0.27	0.27	0.27	0.27
Sat Flow, veh/h	46	1179	504	107	1278	306	271	1425	1544	178	1073	139
Grp Volume(v), veh/h	470	0	0	199	0	0	265	0	35	289	0	0
Grp Sat Flow(s),veh/h/ln	1729	0	0	1692	0	0	1697	0	1544	1390	0	0
Q Serve(g_s), s	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.9	3.8	0.0	0.0
Cycle Q Clear(g_c), s	8.5	0.0	0.0	2.9	0.0	0.0	6.5	0.0	0.9	10.2	0.0	0.0
Prop In Lane	0.06		0.29	0.12		0.18	0.24		1.00	0.21		0.10
Lane Grp Cap(c), veh/h	1000	0	0	984	0	0	540	0	410	457	0	0
V/C Ratio(X)	0.47	0.00	0.00	0.20	0.00	0.00	0.49	0.00	0.09	0.63	0.00	0.00
Avail Cap(c_a), veh/h	1000	0	0	984	0	0	758	0	617	673	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.97	0.00	0.00
Uniform Delay (d), s/veh	7.4	0.0	0.0	6.1	0.0	0.0	15.8	0.0	13.8	17.0	0.0	0.0
Incr Delay (d2), s/veh	1.6	0.0	0.0	0.5	0.0	0.0	0.7	0.0	0.1	1.4	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.5	0.0	0.0	1.6	0.0	0.0	3.3	0.0	0.4	3.9	0.0	0.0
LnGrp Delay(d),s/veh	9.0	0.0	0.0	6.6	0.0	0.0	16.5	0.0	13.9	18.4	0.0	0.0
LnGrp LOS	A			A			B		B	B		
Approach Vol, veh/h		470			199			300			289	
Approach Delay, s/veh		9.0			6.6			16.2			18.4	
Approach LOS		A			A			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		31.7		18.3		31.7		18.3
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		10.5		8.5		4.9		12.2
Green Ext Time (p_c), s		2.1		1.3		1.0		1.0

Intersection Summary	
HCM 2010 Ctrl Delay	12.5
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1638	49	0	1208	6	0	0	28	0	0	23
Future Volume (Veh/h)	0	1638	49	0	1208	6	0	0	28	0	0	23
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Hourly flow rate (vph)	0	1743	52	0	1285	6	0	0	30	0	0	24
Pedestrians		2			4			1			3	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.89			0.74			0.80	0.80	0.74	0.80	0.80	0.89
vC, conflicting volume	1294			1796			2438	3064	902	2196	3087	650
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1087			1377			1683	2469	173	1379	2498	366
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	95	100	100	96
cM capacity (veh/h)	567			366			46	24	621	78	23	560

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	1162	633	857	434	30	24
Volume Left	0	0	0	0	0	0
Volume Right	0	52	0	6	30	24
cSH	1700	1700	1700	1700	621	560
Volume to Capacity	0.68	0.37	0.50	0.26	0.05	0.04
Queue Length 95th (ft)	0	0	0	0	4	3
Control Delay (s)	0.0	0.0	0.0	0.0	11.1	11.7
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		11.1	11.7
Approach LOS					B	B

Intersection Summary			
Average Delay	0.2		
Intersection Capacity Utilization	58.1%	ICU Level of Service	B
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	43	33	12	24	3	43	14	14	8	29	1
Future Volume (Veh/h)	3	43	33	12	24	3	43	14	14	8	29	1
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65	0.65
Hourly flow rate (vph)	5	66	51	18	37	5	66	22	22	12	45	2
Pedestrians		5			23			1			1	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			2			0			0	
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	264	274	52	343	264	57	52			67		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	264	274	52	343	264	57	52			67		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	89	95	96	94	99	96			99		
cM capacity (veh/h)	611	585	1010	489	593	986	1547			1501		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	122	60	110	59
Volume Left	5	18	66	12
Volume Right	51	5	22	2
cSH	712	575	1547	1501
Volume to Capacity	0.17	0.10	0.04	0.01
Queue Length 95th (ft)	15	9	3	1
Control Delay (s)	11.1	12.0	4.6	1.6
Lane LOS	B	B	A	A
Approach Delay (s)	11.1	12.0	4.6	1.6
Approach LOS	B	B		

Intersection Summary			
Average Delay	7.6		
Intersection Capacity Utilization	25.8%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	302	125	38	140	26	78	34	45	37	22	16
Future Volume (Veh/h)	10	302	125	38	140	26	78	34	45	37	22	16
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86	0.86
Hourly flow rate (vph)	12	351	145	44	163	30	91	40	52	43	26	19
Pedestrians		22			14			3			5	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		2			1			0			0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	198			499			770	736	440	804	794	205
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	198			499			770	736	440	804	794	205
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	99			96			66	88	91	82	91	98
cM capacity (veh/h)	1368			1062			270	326	607	234	302	814

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	508	237	183	88
Volume Left	12	44	91	43
Volume Right	145	30	52	19
cSH	1368	1062	336	301
Volume to Capacity	0.01	0.04	0.54	0.29
Queue Length 95th (ft)	1	3	77	30
Control Delay (s)	0.3	1.9	27.8	21.9
Lane LOS	A	A	D	C
Approach Delay (s)	0.3	1.9	27.8	21.9
Approach LOS			D	C

Intersection Summary			
Average Delay	7.5		
Intersection Capacity Utilization	49.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	1	94	256	2	129	321
Future Volume (Veh/h)	1	94	256	2	129	321
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	1	104	284	2	143	357
Pedestrians	8		3			
Lane Width (ft)	12.0		12.0			
Walking Speed (ft/s)	3.5		3.5			
Percent Blockage	1		0			
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked	1.00					
vC, conflicting volume	939	293			294	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	937	293			294	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	100	86			89	
cM capacity (veh/h)	257	741			1258	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	105	286	500
Volume Left	1	0	143
Volume Right	104	2	0
cSH	728	1700	1258
Volume to Capacity	0.14	0.17	0.11
Queue Length 95th (ft)	13	0	10
Control Delay (s)	10.8	0.0	3.2
Lane LOS	B		A
Approach Delay (s)	10.8	0.0	3.2
Approach LOS	B		

Intersection Summary			
Average Delay	3.1		
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	48	157	36	211	258	56
Future Volume (Veh/h)	48	157	36	211	258	56
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	52	171	39	229	280	61
Pedestrians		1			1	
Lane Width (ft)		12.0			12.0	
Walking Speed (ft/s)		3.5			3.5	
Percent Blockage		0			0	
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	269				430	156
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	269				430	156
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	96				50	93
cM capacity (veh/h)	1293				559	889

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	223	268	341
Volume Left	52	0	280
Volume Right	0	229	61
cSH	1293	1700	598
Volume to Capacity	0.04	0.16	0.57
Queue Length 95th (ft)	3	0	89
Control Delay (s)	2.1	0.0	18.7
Lane LOS	A		C
Approach Delay (s)	2.1	0.0	18.7
Approach LOS			C

Intersection Summary			
Average Delay	8.2		
Intersection Capacity Utilization	53.6%	ICU Level of Service	A
Analysis Period (min)	15		

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	185	1334	281	41	1058	25	326	58	52	29
Future Volume (vph)	185	1334	281	41	1058	25	326	58	52	29
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	18.0	96.0	96.0	78.0	78.0	78.0	22.0	42.0	22.0	42.0
Total Split (%)	11.3%	60.0%	60.0%	48.8%	48.8%	48.8%	13.8%	26.3%	13.8%	26.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	112.0	112.0	112.0	95.0	95.0	95.0	35.8	24.3	21.7	14.0
Actuated g/C Ratio	0.70	0.70	0.70	0.59	0.59	0.59	0.22	0.15	0.14	0.09
v/c Ratio	0.56	0.55	0.25	0.21	0.51	0.03	1.51	0.22	0.26	0.87
Control Delay	15.6	13.5	1.8	36.5	32.7	1.1	289.6	60.3	50.9	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	13.5	1.8	36.5	32.7	1.1	289.6	60.3	50.9	51.6
LOS	B	B	A	D	C	A	F	E	D	D
Approach Delay		11.9			32.1			253.6		51.5
Approach LOS		B			C			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 34 (21%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 1.51	
Intersection Signal Delay: 47.4	Intersection LOS: D
Intersection Capacity Utilization 100.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road

Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	1361	287	42	1080	26	333	62	53	256
v/c Ratio	0.56	0.55	0.25	0.21	0.51	0.03	1.51	0.22	0.26	0.87
Control Delay	15.6	13.5	1.8	36.5	32.7	1.1	289.6	60.3	50.9	51.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	13.5	1.8	36.5	32.7	1.1	289.6	60.3	50.9	51.6
Queue Length 50th (ft)	61	333	3	24	392	0	~436	58	45	92
Queue Length 95th (ft)	114	487	39	82	681	m6	#598	101	79	190
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	356	2477	1165	197	2101	954	220	416	292	490
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.53	0.55	0.25	0.21	0.51	0.03	1.51	0.15	0.18	0.52

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.
Queue shown is maximum after two cycles.

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1334	281	41	1058	25	326	58	3	52	29	221
Future Volume (veh/h)	185	1334	281	41	1058	25	326	58	3	52	29	221
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1361	287	42	1080	26	333	59	3	53	30	226
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	271	2162	966	156	1809	791	242	427	22	339	33	247
Arrive On Green	0.06	0.61	0.61	0.17	0.17	0.17	0.10	0.24	0.24	0.03	0.18	0.18
Sat Flow, veh/h	1774	3539	1581	302	3539	1546	1774	1756	89	1774	185	1397
Grp Volume(v), veh/h	189	1361	287	42	1080	26	333	0	62	53	0	256
Grp Sat Flow(s),veh/h/ln	1774	1770	1581	302	1770	1546	1774	0	1845	1774	0	1583
Q Serve(g_s), s	7.9	38.9	13.8	20.5	45.1	2.2	16.0	0.0	4.2	3.9	0.0	25.4
Cycle Q Clear(g_c), s	7.9	38.9	13.8	43.5	45.1	2.2	16.0	0.0	4.2	3.9	0.0	25.4
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.88
Lane Grp Cap(c), veh/h	271	2162	966	156	1809	791	242	0	449	339	0	280
V/C Ratio(X)	0.70	0.63	0.30	0.27	0.60	0.03	1.37	0.00	0.14	0.16	0.00	0.92
Avail Cap(c_a), veh/h	294	2162	966	156	1809	791	242	0	449	457	0	356
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	26.4	19.7	14.8	61.1	51.3	33.4	51.9	0.0	47.4	51.4	0.0	64.7
Incr Delay (d2), s/veh	5.0	1.4	0.8	4.2	1.5	0.1	192.3	0.0	0.1	0.1	0.0	21.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.3	19.3	6.2	1.9	22.6	1.0	21.6	0.0	2.2	1.9	0.0	12.8
LnGrp Delay(d),s/veh	31.4	21.1	15.6	65.3	52.7	33.5	244.1	0.0	47.5	51.5	0.0	86.2
LnGrp LOS	C	C	B	E	D	C	F		D	D		F
Approach Vol, veh/h		1837			1148			395			309	
Approach Delay, s/veh		21.3			52.8			213.3			80.2	
Approach LOS		C			D			F			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	15.9	87.8	11.3	44.9		103.7	22.0	34.3
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	12.0	72.0	16.0	36.0		90.0	16.0	36.0
Max Q Clear Time (g_c+I1), s	9.9	47.1	5.9	6.2		40.9	18.0	27.4
Green Ext Time (p_c), s	0.0	9.3	0.0	0.2		15.8	0.0	0.7

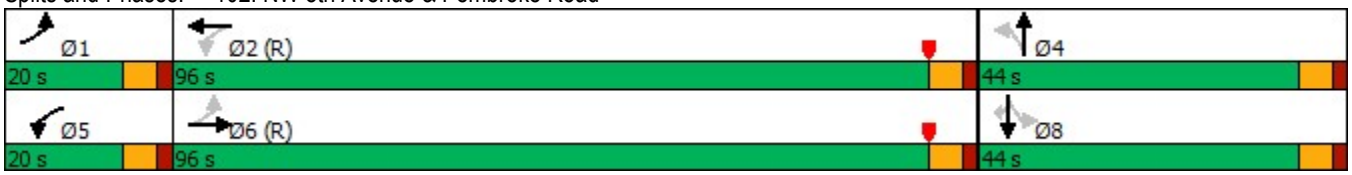
Intersection Summary	
HCM 2010 Ctrl Delay	56.6
HCM 2010 LOS	E

Timings
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Configurations									
Traffic Volume (vph)	169	1117	57	1059	95	117	29	80	67
Future Volume (vph)	169	1117	57	1059	95	117	29	80	67
Turn Type	pm+pt	NA	pm+pt	NA	Perm	NA	Perm	NA	Perm
Protected Phases	1	6	5	2		4		8	
Permitted Phases	6		2		4		8		8
Detector Phase	1	6	5	2	4	4	8	8	8
Switch Phase									
Minimum Initial (s)	4.0	15.0	4.0	15.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	10.0	33.0	10.0	33.0	33.0	33.0	34.0	34.0	34.0
Total Split (s)	20.0	96.0	20.0	96.0	44.0	44.0	44.0	44.0	44.0
Total Split (%)	12.5%	60.0%	12.5%	60.0%	27.5%	27.5%	27.5%	27.5%	27.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead	Lag	Lead	Lag					
Lead-Lag Optimize?	Yes	Yes	Yes	Yes					
Recall Mode	None	C-Max	None	C-Max	None	None	None	None	None
Act Effct Green (s)	126.7	119.9	120.3	115.1	19.0	19.0	19.0	19.0	19.0
Actuated g/C Ratio	0.79	0.75	0.75	0.72	0.12	0.12	0.12	0.12	0.12
v/c Ratio	0.48	0.48	0.19	0.45	0.69	0.78	0.41	0.38	0.29
Control Delay	14.1	20.8	5.5	10.7	90.5	86.4	79.2	68.7	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	20.8	5.5	10.7	90.5	86.4	79.2	68.7	14.8
LOS	B	C	A	B	F	F	E	E	B
Approach Delay		20.0		10.5		87.9		50.0	
Approach LOS		B		B		F		D	

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 116 (73%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 80	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.78	
Intersection Signal Delay: 24.1	Intersection LOS: C
Intersection Capacity Utilization 74.3%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 102: NW 8th Avenue & Pembroke Road



Queues
102: NW 8th Avenue & Pembroke Road

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	SBL	SBT	SBR
Lane Group Flow (vph)	180	1265	61	1143	101	171	31	85	71
v/c Ratio	0.48	0.48	0.19	0.45	0.69	0.78	0.41	0.38	0.29
Control Delay	14.1	20.8	5.5	10.7	90.5	86.4	79.2	68.7	14.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	14.1	20.8	5.5	10.7	90.5	86.4	79.2	68.7	14.8
Queue Length 50th (ft)	72	421	11	237	103	166	31	84	0
Queue Length 95th (ft)	171	750	26	358	164	242	66	135	48
Internal Link Dist (ft)		630		887		920		225	
Turn Bay Length (ft)	90		180		190		70		70
Base Capacity (vph)	430	2626	410	2541	293	430	153	442	424
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.42	0.48	0.15	0.45	0.34	0.40	0.20	0.19	0.17

Intersection Summary

HCM 2010 Signalized Intersection Summary
102: NW 8th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	169	1117	72	57	1059	15	95	117	44	29	80	67
Future Volume (veh/h)	169	1117	72	57	1059	15	95	117	44	29	80	67
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1900	1863	1863	1900	1863	1863	1900	1863	1863	1863
Adj Flow Rate, veh/h	180	1188	77	61	1127	16	101	124	47	31	85	71
Adj No. of Lanes	1	2	0	1	2	0	1	1	0	1	1	1
Peak Hour Factor	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94	0.94
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	396	2434	158	297	2512	36	169	183	69	106	266	222
Arrive On Green	0.03	0.48	0.48	0.02	0.70	0.70	0.14	0.14	0.14	0.14	0.14	0.14
Sat Flow, veh/h	1774	3375	219	1774	3571	51	1220	1280	485	1205	1863	1552
Grp Volume(v), veh/h	180	622	643	61	558	585	101	0	171	31	85	71
Grp Sat Flow(s),veh/h/ln	1774	1770	1824	1774	1770	1852	1220	0	1766	1205	1863	1552
Q Serve(g_s), s	4.5	38.0	38.1	1.6	21.9	21.9	13.0	0.0	14.7	4.0	6.6	6.6
Cycle Q Clear(g_c), s	4.5	38.0	38.1	1.6	21.9	21.9	19.5	0.0	14.7	18.7	6.6	6.6
Prop In Lane	1.00		0.12	1.00		0.03	1.00		0.27	1.00		1.00
Lane Grp Cap(c), veh/h	396	1276	1316	297	1245	1303	169	0	252	106	266	222
V/C Ratio(X)	0.45	0.49	0.49	0.21	0.45	0.45	0.60	0.00	0.68	0.29	0.32	0.32
Avail Cap(c_a), veh/h	478	1276	1316	411	1245	1303	285	0	419	220	442	369
HCM Platoon Ratio	0.67	0.67	0.67	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	0.41	0.00	0.41	1.00	1.00	1.00
Uniform Delay (d), s/veh	8.3	21.3	21.4	10.7	10.3	10.3	70.4	0.0	65.1	74.0	61.6	61.6
Incr Delay (d2), s/veh	0.3	1.3	1.3	0.1	1.2	1.1	0.5	0.0	0.5	0.6	0.3	0.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	2.2	19.1	19.7	0.8	11.0	11.4	4.4	0.0	7.2	1.4	3.4	2.8
LnGrp Delay(d),s/veh	8.6	22.7	22.7	10.8	11.5	11.4	70.9	0.0	65.6	74.5	61.8	61.9
LnGrp LOS	A	C	C	B	B	B	E		E	E	E	E
Approach Vol, veh/h		1445			1204			272			187	
Approach Delay, s/veh		20.9			11.4			67.5			64.0	
Approach LOS		C			B			E			E	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2		4	5	6		8
Phs Duration (G+Y+Rc), s	12.6	118.6		28.9	9.7	121.4		28.9
Change Period (Y+Rc), s	6.0	6.0		6.0	6.0	6.0		6.0
Max Green Setting (Gmax), s	14.0	90.0		38.0	14.0	90.0		38.0
Max Q Clear Time (g_c+I1), s	6.5	23.9		21.5	3.6	40.1		20.7
Green Ext Time (p_c), s	0.1	9.2		0.7	0.0	10.8		0.4

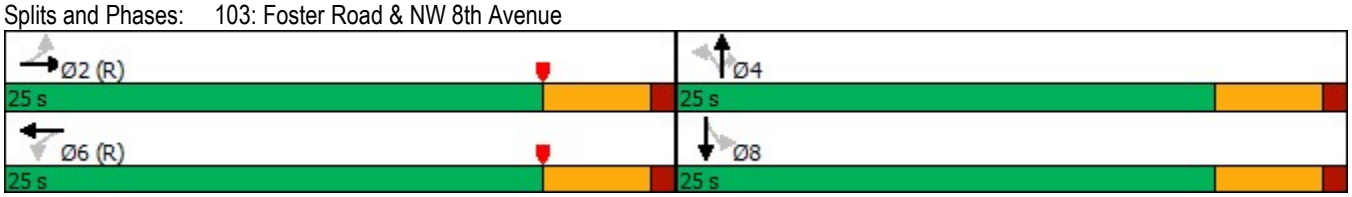
Intersection Summary	
HCM 2010 Ctrl Delay	23.9
HCM 2010 LOS	C

Timings
103: Foster Road & NW 8th Avenue

Lane Group	EBL	EBT	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations									
Traffic Volume (vph)	42	164	54	226	120	287	32	51	210
Future Volume (vph)	42	164	54	226	120	287	32	51	210
Turn Type	Perm	NA	Perm	NA	Perm	NA	Perm	Perm	NA
Protected Phases		2		6		4			8
Permitted Phases	2		6		4		4	8	
Detector Phase	2	2	6	6	4	4	4	8	8
Switch Phase									
Minimum Initial (s)	12.0	12.0	12.0	12.0	6.0	6.0	6.0	6.0	6.0
Minimum Split (s)	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5	22.5
Total Split (s)	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0	25.0
Total Split (%)	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%	50.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
Lost Time Adjust (s)		0.0		0.0		0.0	0.0		0.0
Total Lost Time (s)		5.0		5.0		5.0	5.0		5.0
Lead/Lag									
Lead-Lag Optimize?									
Recall Mode	C-Max	C-Max	C-Max	C-Max	None	None	None	None	None
Act Effct Green (s)		21.8		21.8		18.2	18.2		18.2
Actuated g/C Ratio		0.44		0.44		0.36	0.36		0.36
v/c Ratio		0.45		0.56		0.85	0.06		0.61
Control Delay		11.4		14.0		31.7	3.6		17.7
Queue Delay		0.0		0.0		0.0	0.0		0.0
Total Delay		11.4		14.0		31.7	3.6		17.7
LOS		B		B		C	A		B
Approach Delay		11.4		14.0		29.6			17.7
Approach LOS		B		B		C			B

Intersection Summary	
Cycle Length: 50	
Actuated Cycle Length: 50	
Offset: 0 (0%), Referenced to phase 2:EBTL and 6:WBTL, Start of Yellow	
Natural Cycle: 50	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.85	
Intersection Signal Delay: 19.2	Intersection LOS: B
Intersection Capacity Utilization 77.1%	ICU Level of Service D
Analysis Period (min) 15	

Splits and Phases: 103: Foster Road & NW 8th Avenue



Queues
103: Foster Road & NW 8th Avenue

Lane Group	EBT	WBT	NBT	NBR	SBT
Lane Group Flow (vph)	325	405	452	36	319
v/c Ratio	0.45	0.56	0.85	0.06	0.61
Control Delay	11.4	14.0	31.7	3.6	17.7
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	11.4	14.0	31.7	3.6	17.7
Queue Length 50th (ft)	55	80	109	0	66
Queue Length 95th (ft)	113	154	#244	11	130
Internal Link Dist (ft)	255	404	317		920
Turn Bay Length (ft)				60	
Base Capacity (vph)	727	727	586	641	572
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.45	0.56	0.77	0.06	0.56

Intersection Summary

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

HCM 2010 Signalized Intersection Summary
103: Foster Road & NW 8th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	42	164	86	54	226	85	120	287	32	51	210	26
Future Volume (veh/h)	42	164	86	54	226	85	120	287	32	51	210	26
Number	5	2	12	1	6	16	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		0.98	0.99		0.96	1.00		0.99	1.00		0.99
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1900	1863	1900	1900	1863	1863	1900	1863	1900
Adj Flow Rate, veh/h	47	182	96	60	251	94	133	319	36	57	233	29
Adj No. of Lanes	0	1	0	0	1	0	0	1	1	0	1	0
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	136	416	197	143	452	155	205	382	629	101	317	33
Arrive On Green	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40	0.40
Sat Flow, veh/h	135	1041	493	152	1130	387	278	955	1573	41	793	83
Grp Volume(v), veh/h	325	0	0	405	0	0	452	0	36	319	0	0
Grp Sat Flow(s),veh/h/ln	1668	0	0	1669	0	0	1233	0	1573	917	0	0
Q Serve(g_s), s	0.0	0.0	0.0	1.8	0.0	0.0	0.0	0.0	0.7	2.4	0.0	0.0
Cycle Q Clear(g_c), s	6.8	0.0	0.0	9.1	0.0	0.0	17.1	0.0	0.7	19.5	0.0	0.0
Prop In Lane	0.14		0.30	0.15		0.23	0.29		1.00	0.18		0.09
Lane Grp Cap(c), veh/h	750	0	0	750	0	0	587	0	629	452	0	0
V/C Ratio(X)	0.43	0.00	0.00	0.54	0.00	0.00	0.77	0.00	0.06	0.71	0.00	0.00
Avail Cap(c_a), veh/h	750	0	0	750	0	0	587	0	629	452	0	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	0.00	1.00	0.00	1.00	0.96	0.00	0.00
Uniform Delay (d), s/veh	11.0	0.0	0.0	11.7	0.0	0.0	13.4	0.0	9.2	12.1	0.0	0.0
Incr Delay (d2), s/veh	1.8	0.0	0.0	2.8	0.0	0.0	6.2	0.0	0.0	4.8	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	3.6	0.0	0.0	4.9	0.0	0.0	6.8	0.0	0.3	3.8	0.0	0.0
LnGrp Delay(d),s/veh	12.9	0.0	0.0	14.5	0.0	0.0	19.6	0.0	9.2	16.9	0.0	0.0
LnGrp LOS	B			B			B		A	B		
Approach Vol, veh/h		325			405			488			319	
Approach Delay, s/veh		12.9			14.5			18.9			16.9	
Approach LOS		B			B			B			B	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		25.0		25.0		25.0		25.0
Change Period (Y+Rc), s		5.0		5.0		5.0		5.0
Max Green Setting (Gmax), s		20.0		20.0		20.0		20.0
Max Q Clear Time (g_c+I1), s		8.8		19.1		11.1		21.5
Green Ext Time (p_c), s		1.5		0.3		1.7		0.0

Intersection Summary	
HCM 2010 Ctrl Delay	16.0
HCM 2010 LOS	B

HCM Unsignalized Intersection Capacity Analysis
201: NW 9th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	1335	26	0	1224	7	0	0	47	0	0	26
Future Volume (Veh/h)	0	1335	26	0	1224	7	0	0	47	0	0	26
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Hourly flow rate (vph)	0	1451	28	0	1330	8	0	0	51	0	0	28
Pedestrians		1			1						1	
Lane Width (ft)		12.0			12.0						12.0	
Walking Speed (ft/s)		3.5			3.5						3.5	
Percent Blockage		0			0						0	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)		620			710							
pX, platoon unblocked	0.86			0.80			0.87	0.87	0.80	0.87	0.87	0.86
vC, conflicting volume	1339			1479			2159	2804	740	2112	2814	671
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	1075			1100			1321	2063	177	1267	2075	300
tC, single (s)	4.1			4.1			7.5	6.5	6.9	7.5	6.5	6.9
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	100			100			100	100	92	100	100	95
cM capacity (veh/h)	555			505			95	47	668	100	46	599

Direction, Lane #	EB 1	EB 2	WB 1	WB 2	NB 1	SB 1
Volume Total	967	512	887	451	51	28
Volume Left	0	0	0	0	0	0
Volume Right	0	28	0	8	51	28
cSH	1700	1700	1700	1700	668	599
Volume to Capacity	0.57	0.30	0.52	0.27	0.08	0.05
Queue Length 95th (ft)	0	0	0	0	6	4
Control Delay (s)	0.0	0.0	0.0	0.0	10.8	11.3
Lane LOS					B	B
Approach Delay (s)	0.0		0.0		10.8	11.3
Approach LOS					B	B

Intersection Summary			
Average Delay	0.3		
Intersection Capacity Utilization	48.1%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
202: NW 10th Street & NW 9th Avenue

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	3	24	13	14	25	11	93	46	8	11	18	14
Future Volume (Veh/h)	3	24	13	14	25	11	93	46	8	11	18	14
Sign Control		Stop			Stop			Free			Free	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81	0.81
Hourly flow rate (vph)	4	30	16	17	31	14	115	57	10	14	22	17
Pedestrians					2			1				
Lane Width (ft)					12.0			12.0				
Walking Speed (ft/s)					3.5			3.5				
Percent Blockage					0			0				
Right turn flare (veh)												
Median type								None			None	
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	380	358	32	384	361	64	39			69		
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	380	358	32	384	361	64	39			69		
tC, single (s)	7.1	6.5	6.2	7.1	6.5	6.2	4.1			4.1		
tC, 2 stage (s)												
tF (s)	3.5	4.0	3.3	3.5	4.0	3.3	2.2			2.2		
p0 queue free %	99	94	98	97	94	99	93			99		
cM capacity (veh/h)	509	521	1042	505	519	998	1571			1529		

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	50	62	182	53
Volume Left	4	17	115	14
Volume Right	16	14	10	17
cSH	619	577	1571	1529
Volume to Capacity	0.08	0.11	0.07	0.01
Queue Length 95th (ft)	7	9	6	1
Control Delay (s)	11.3	12.0	4.9	2.0
Lane LOS	B	B	A	A
Approach Delay (s)	11.3	12.0	4.9	2.0
Approach LOS	B	B		

Intersection Summary			
Average Delay	6.7		
Intersection Capacity Utilization	28.0%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
203: NW 9th Avenue & Foster Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	27	269	25	16	264	100	14	17	10	24	6	14
Future Volume (Veh/h)	27	269	25	16	264	100	14	17	10	24	6	14
Sign Control		Free			Free			Stop			Stop	
Grade		0%			0%			0%			0%	
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Hourly flow rate (vph)	28	283	26	17	278	105	15	18	11	25	6	15
Pedestrians		1			1			2			10	
Lane Width (ft)		12.0			12.0			12.0			12.0	
Walking Speed (ft/s)		3.5			3.5			3.5			3.5	
Percent Blockage		0			0			0			1	
Right turn flare (veh)												
Median type		None			None							
Median storage veh)												
Upstream signal (ft)												
pX, platoon unblocked												
vC, conflicting volume	393			311			738	781	299	748	742	342
vC1, stage 1 conf vol												
vC2, stage 2 conf vol												
vCu, unblocked vol	393			311			738	781	299	748	742	342
tC, single (s)	4.1			4.1			7.1	6.5	6.2	7.1	6.5	6.2
tC, 2 stage (s)												
tF (s)	2.2			2.2			3.5	4.0	3.3	3.5	4.0	3.3
p0 queue free %	98			99			95	94	99	92	98	98
cM capacity (veh/h)	1154			1247			309	310	738	295	327	694

Direction, Lane #	EB 1	WB 1	NB 1	SB 1
Volume Total	337	400	44	46
Volume Left	28	17	15	25
Volume Right	26	105	11	15
cSH	1154	1247	363	369
Volume to Capacity	0.02	0.01	0.12	0.12
Queue Length 95th (ft)	2	1	10	11
Control Delay (s)	0.9	0.5	16.3	16.1
Lane LOS	A	A	C	C
Approach Delay (s)	0.9	0.5	16.3	16.1
Approach LOS			C	C

Intersection Summary			
Average Delay	2.4		
Intersection Capacity Utilization	37.2%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
204: NW 10th Avenue & NW 10th Street

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Volume (veh/h)	6	141	260	2	79	275
Future Volume (Veh/h)	6	141	260	2	79	275
Sign Control	Stop		Free			Free
Grade	0%		0%			0%
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	7	157	289	2	88	306
Pedestrians	3					
Lane Width (ft)	12.0					
Walking Speed (ft/s)	3.5					
Percent Blockage	0					
Right turn flare (veh)						
Median type			None			None
Median storage veh)						
Upstream signal (ft)						150
pX, platoon unblocked	1.00					
vC, conflicting volume	775	293			294	
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	772	293			294	
tC, single (s)	6.4	6.2			4.1	
tC, 2 stage (s)						
tF (s)	3.5	3.3			2.2	
p0 queue free %	98	79			93	
cM capacity (veh/h)	340	744			1264	

Direction, Lane #	WB 1	NB 1	SB 1
Volume Total	164	291	394
Volume Left	7	0	88
Volume Right	157	2	0
cSH	708	1700	1264
Volume to Capacity	0.23	0.17	0.07
Queue Length 95th (ft)	22	0	6
Control Delay (s)	11.6	0.0	2.3
Lane LOS	B		A
Approach Delay (s)	11.6	0.0	2.3
Approach LOS	B		

Intersection Summary			
Average Delay	3.3		
Intersection Capacity Utilization	51.7%	ICU Level of Service	A
Analysis Period (min)	15		

HCM Unsignalized Intersection Capacity Analysis
205: Foster Road & NW 10th Avenue

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	101	62	40	233	217	63
Future Volume (Veh/h)	101	62	40	233	217	63
Sign Control		Free	Free		Stop	
Grade		0%	0%		0%	
Peak Hour Factor	0.90	0.90	0.90	0.90	0.90	0.90
Hourly flow rate (vph)	112	69	44	259	241	70
Pedestrians						
Lane Width (ft)						
Walking Speed (ft/s)						
Percent Blockage						
Right turn flare (veh)						
Median type		None	None			
Median storage veh)						
Upstream signal (ft)						
pX, platoon unblocked						
vC, conflicting volume	303				466	174
vC1, stage 1 conf vol						
vC2, stage 2 conf vol						
vCu, unblocked vol	303				466	174
tC, single (s)	4.1				6.4	6.2
tC, 2 stage (s)						
tF (s)	2.2				3.5	3.3
p0 queue free %	91				52	92
cM capacity (veh/h)	1258				505	870

Direction, Lane #	EB 1	WB 1	SB 1
Volume Total	181	303	311
Volume Left	112	0	241
Volume Right	0	259	70
cSH	1258	1700	558
Volume to Capacity	0.09	0.18	0.56
Queue Length 95th (ft)	7	0	85
Control Delay (s)	5.3	0.0	19.3
Lane LOS	A		C
Approach Delay (s)	5.3	0.0	19.3
Approach LOS			C

Intersection Summary			
Average Delay	8.8		
Intersection Capacity Utilization	51.2%	ICU Level of Service	A
Analysis Period (min)	15		

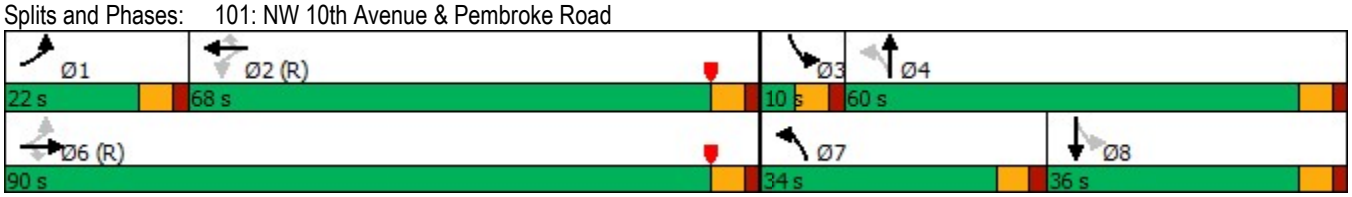
Future (2021) Total SYNCHRO Output – Optimized

Timings
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Configurations										
Traffic Volume (vph)	185	1334	281	41	1058	25	326	58	52	29
Future Volume (vph)	185	1334	281	41	1058	25	326	58	52	29
Turn Type	pm+pt	NA	Perm	Perm	NA	Perm	pm+pt	NA	pm+pt	NA
Protected Phases	1	6			2		7	4	3	8
Permitted Phases	6		6	2		2	4		8	
Detector Phase	1	6	6	2	2	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	4.0	12.0	12.0	12.0	12.0	12.0	4.0	6.0	4.0	6.0
Minimum Split (s)	10.0	27.0	27.0	27.0	27.0	27.0	10.0	37.0	10.0	36.0
Total Split (s)	22.0	90.0	90.0	68.0	68.0	68.0	34.0	60.0	10.0	36.0
Total Split (%)	13.8%	56.3%	56.3%	42.5%	42.5%	42.5%	21.3%	37.5%	6.3%	22.5%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
All-Red Time (s)	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Lost Time (s)	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0	6.0
Lead/Lag	Lead			Lag	Lag	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes			Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	C-Max	C-Max	C-Max	C-Max	C-Max	None	None	None	None
Act Effct Green (s)	103.1	103.1	103.1	83.1	83.1	83.1	44.9	36.9	15.4	11.4
Actuated g/C Ratio	0.64	0.64	0.64	0.52	0.52	0.52	0.28	0.23	0.10	0.07
v/c Ratio	0.60	0.60	0.26	0.26	0.59	0.03	0.96	0.14	0.38	0.83
Control Delay	20.6	18.7	2.9	48.2	42.1	0.0	89.3	47.2	54.8	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	18.7	2.9	48.2	42.1	0.0	89.3	47.2	54.8	37.8
LOS	C	B	A	D	D	A	F	D	D	D
Approach Delay		16.4			41.4			82.7		40.7
Approach LOS		B			D			F		D

Intersection Summary	
Cycle Length: 160	
Actuated Cycle Length: 160	
Offset: 34 (21%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow	
Natural Cycle: 85	
Control Type: Actuated-Coordinated	
Maximum v/c Ratio: 0.96	
Intersection Signal Delay: 33.3	Intersection LOS: C
Intersection Capacity Utilization 100.5%	ICU Level of Service G
Analysis Period (min) 15	

Splits and Phases: 101: NW 10th Avenue & Pembroke Road



Queues
101: NW 10th Avenue & Pembroke Road

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	189	1361	287	42	1080	26	333	62	53	256
v/c Ratio	0.60	0.60	0.26	0.26	0.59	0.03	0.96	0.14	0.38	0.83
Control Delay	20.6	18.7	2.9	48.2	42.1	0.0	89.3	47.2	54.8	37.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	20.6	18.7	2.9	48.2	42.1	0.0	89.3	47.2	54.8	37.8
Queue Length 50th (ft)	73	402	12	27	453	0	314	52	42	49
Queue Length 95th (ft)	133	570	57	91	697	m0	#445	88	72	147
Internal Link Dist (ft)		251			540			70		242
Turn Bay Length (ft)	220		310	230		190	100		60	
Base Capacity (vph)	346	2279	1086	163	1837	866	352	625	139	469
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.55	0.60	0.26	0.26	0.59	0.03	0.95	0.10	0.38	0.55

Intersection Summary

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

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

HCM 2010 Signalized Intersection Summary
101: NW 10th Avenue & Pembroke Road

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	185	1334	281	41	1058	25	326	58	3	52	29	221
Future Volume (veh/h)	185	1334	281	41	1058	25	326	58	3	52	29	221
Number	1	6	16	5	2	12	7	4	14	3	8	18
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		0.98	1.00		0.98	0.99		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1863	1863	1863	1863	1863	1863	1863	1863	1900	1863	1863	1900
Adj Flow Rate, veh/h	189	1361	287	42	1080	26	333	59	3	53	30	226
Adj No. of Lanes	1	2	1	1	2	1	1	1	0	1	1	0
Peak Hour Factor	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	2	2
Cap, veh/h	246	1945	869	126	1566	684	352	549	28	321	32	244
Arrive On Green	0.07	0.55	0.55	0.15	0.15	0.15	0.16	0.31	0.31	0.03	0.17	0.17
Sat Flow, veh/h	1774	3539	1580	302	3539	1546	1774	1756	89	1774	185	1397
Grp Volume(v), veh/h	189	1361	287	42	1080	26	333	0	62	53	0	256
Grp Sat Flow(s),veh/h/ln	1774	1770	1580	302	1770	1546	1774	0	1845	1774	0	1583
Q Serve(g_s), s	9.1	45.0	16.0	21.2	46.4	2.3	24.0	0.0	3.8	3.9	0.0	25.5
Cycle Q Clear(g_c), s	9.1	45.0	16.0	49.1	46.4	2.3	24.0	0.0	3.8	3.9	0.0	25.5
Prop In Lane	1.00		1.00	1.00		1.00	1.00		0.05	1.00		0.88
Lane Grp Cap(c), veh/h	246	1945	869	126	1566	684	352	0	577	321	0	276
V/C Ratio(X)	0.77	0.70	0.33	0.33	0.69	0.04	0.95	0.00	0.11	0.17	0.00	0.93
Avail Cap(c_a), veh/h	300	1945	869	126	1566	684	373	0	623	321	0	297
HCM Platoon Ratio	1.00	1.00	1.00	0.33	0.33	0.33	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	31.8	26.4	19.8	72.4	57.9	39.1	44.4	0.0	39.1	52.8	0.0	65.0
Incr Delay (d2), s/veh	7.2	2.1	1.0	7.0	2.5	0.1	31.6	0.0	0.0	0.1	0.0	31.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	4.9	22.5	7.2	2.0	23.3	1.0	14.7	0.0	2.0	1.9	0.0	13.6
LnGrp Delay(d),s/veh	39.0	28.5	20.8	79.4	60.4	39.2	75.9	0.0	39.1	52.9	0.0	96.4
LnGrp LOS	D	C	C	E	E	D	E		D	D		F
Approach Vol, veh/h		1837			1148			395			309	
Approach Delay, s/veh		28.4			60.6			70.1			89.0	
Approach LOS		C			E			E			F	

Timer	1	2	3	4	5	6	7	8
Assigned Phs	1	2	3	4		6	7	8
Phs Duration (G+Y+Rc), s	17.1	76.8	10.0	56.1		93.9	32.1	33.9
Change Period (Y+Rc), s	6.0	6.0	6.0	6.0		6.0	6.0	6.0
Max Green Setting (Gmax), s	16.0	62.0	4.0	54.0		84.0	28.0	30.0
Max Q Clear Time (g_c+I1), s	11.1	51.1	5.9	5.8		47.0	26.0	27.5
Green Ext Time (p_c), s	0.1	5.8	0.0	0.2		14.5	0.1	0.3

Intersection Summary	
HCM 2010 Ctrl Delay	48.0
HCM 2010 LOS	D