

An aerial photograph of a city street grid, likely in Miami, showing various buildings, parking lots, and green spaces. A white rectangular box is centered over the image, containing the title text.

SKYGARDEN MIAMI

Traffic Study

Responses to the Corradino Group
Review Comments (November 19, 2020) / (February 2, 2021)
Re: SKYGarden Traffic Study Dated November 6, 2020 / January 2021

1. Please update the traffic report to identify that the project site is within the City of North Miami Beach CRA boundaries. The traffic study should include a narrative regarding meeting the traffic concurrency exemption requirements as outlined in the City Code of Ordinances.

Response: The traffic report has been revised.

TCG 2/02/21 Response: Addressed.

2. Please provide any comments from FDOT and Miami Dade County Public Works and Waste Management Traffic Engineering Division.

Response: The project is currently going through the site plan approval process with the City. Once approved, the study will be submitted to the County and FDOT for review. If review comments are received, they will be provided at that time.

TCG 2/02/21 Response: This item is still pending. A copy of Miami Dade County and FDOT approval of the submitted traffic study needs to be approved.

DPA 2/10/21 Response: Comment noted. As discussed, this will be a condition of approval.

3. Please include the Miami-Dade County LRTP Directional TIP Distribution Report for TAZ 098 in the Appendix. Please provide interpolation calculation between 2015 and 2045 to the buildout year of 2022 for the data included in Exhibit 8.

Response: Exhibit 8 has been updated and the LRTP Directional TIP Distribution Report for TAZ 098 has been added to Appendix C of the report.

TCG 2/02/21 Response: Addressed.

- 4. Please provide the 95th percentile vehicle queue stacking and the existing turn lane storage lengths for each intersection for each of the scenarios in Exhibit's 4, 5, 12 and 13. Please provide a separate new table/exhibit as necessary. Please address any required turn lane extensions based on the 95th percentile vehicle queue stacking in the narrative of the traffic impact study.**

Response: The Study has been revised to include exhibits displaying the expected 95th percentile Back of Queue (BOQ) for each scenario.

TCG 2/02/21 Response: This item is still pending. Please update the existing storage lengths to match the storage lengths currently built in the field. For example, the EBL turn lane storage at the NE 163rd Street and NE 19th Avenue intersection is 220 LF and not 60 LF as depicted in Exhibit 14. For the same intersection, the Exhibit has a footnote for the SBL and SBR turn lanes being the full lane even though it lists 95 LF as the storage. The full block length is measured as 285 LF.

DPA 2/10/21 Response: Exhibit 14 has been revised to correctly show the existing storage lengths.

- 5. Exhibit 13 identifies new optimized traffic signal timings at three intersections. Please provide documentation of approval by Miami Dade County DTPW of these optimized traffic signal timings.**

Response: The proposed signal timing is a recommendation. Once the project is complete and operational we will request that the County send a signal timing engineer to assess the necessary signal timing changes to optimize the signal.

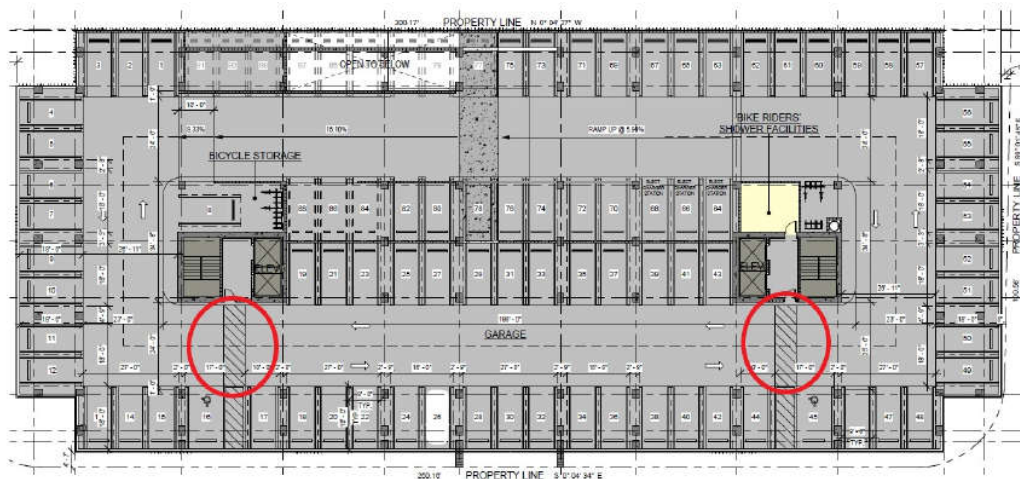
TCG 2/02/21 Response: Addressed.

6. Please provide a shared parking analysis prepared and signed and sealed by a professional engineer.

Response: Shared parking is no longer part of this application.

TCG 2/02/21 Response: Addressed.

7. Please provide pedestrian crossing signs for the two marked crossings on the second floor of the parking garage per MUTCD criteria. Please ensure sufficient visibility is provided.



8. Please provide a separate pavement marking and signage plan signed and sealed by a professional engineer. Please ensure that the appropriate signage per MUTCD is provided for movement restrictions at the proposed ingress and egress locations. Please include typical handicap and regular parking stall details per City of North Miami Beach criteria.

DPA 2/10/21 Response: Comment addressed by others.

9. Please label the proposed garage ramp slopes and vertical clearances. Please ensure that the slopes and vertical clearances meet the City of North Miami Beach criteria.

DPA 2/10/21 Response: Comment addressed by others.

10. Please provide sight visibility triangles on the site plan at each of the driveway connections to NE 19th Avenue and related Alleyways. The sight triangles should also be depicted on the landscape plans and the pavement marking and signage plans.

Response: The proposed sight visibility triangles have been added into the plans.

TCG 2/02/21 Response: This item is still pending. Sight Visibility Triangles are show at the connection to the existing alley but are not dimensioned or labeled. Please add appropriate sight triangles to the alley and NE 163rd Street intersection as well. These sight triangles should be depicted on the signed and sealed pavement marking and signage Civil plan sheet.

DPA 2/10/21 Response: Sight triangles have been added to the pavement marking and signage civil plan sheet (see Attached sheets C-1 and C-2).

11. Please ensure that the proposed alleyway connecting the proposed parcel to NE 18th Avenue and NE 164th Street meet the requirements of the Street Network Connectivity Regulating Plan and Street Standards per the Fulford MU/TC District.

Response: Noted. See Sheet A-1.00, Ground Floor Plan.

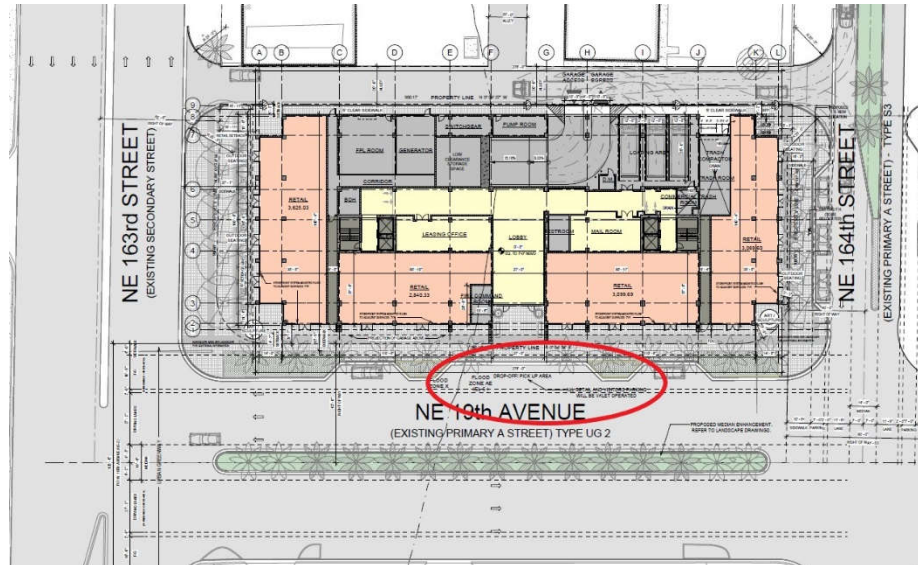
TCG 2/02/21 Response: Addressed.

12. Please ensure that the proposed frontage to NE 19th Avenue meets the requirements of the Designated Publicly Accessible Open Spaces and Urban Greenway Systems Regulating Plan per the Fulford MU/TC District. This includes the Urban Greenway Type 2 design standards along NE 19th Avenue.

Response: Noted. See revised Sheet A-1.00.

TCG 2/02/21 Response: Addressed.

13. Please clarify that the valet drop-off and pickup area is optional as mentioned on page 5 of section 1.4 of the traffic impact study. Site plan sheet A-100 mentions that all retail and visitors parking will be valet operated. Please clarify this discrepancy in project documents.



DPA 2/10/21 Response: The retail component and visitors will have the option to either self-park or valet.

14. Please provide intersection volume worksheets in the Appendix that shows the progression from the raw traffic counts, seasonal adjustment factors, COVID-19 adjustment factor, growth rate, committed trips, project trips, etc.

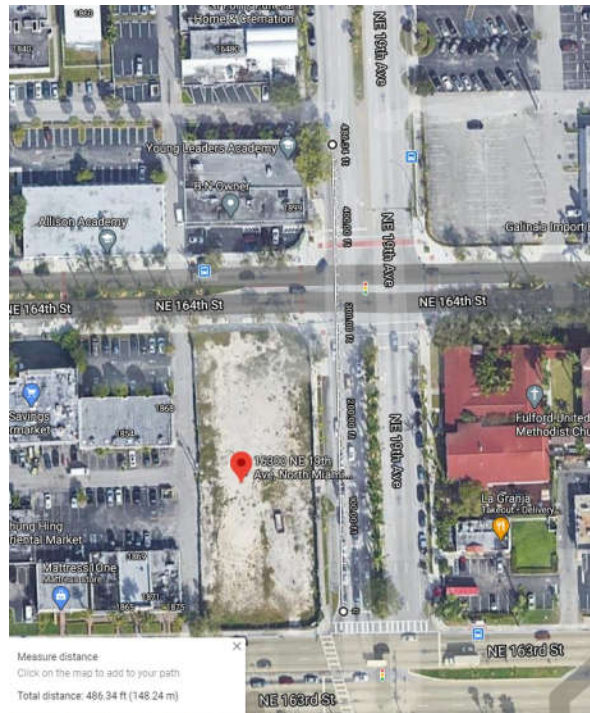
DPA 2/10/21 Response: Intersection volume worksheets have been included in Appendix D.

15. Exhibit 14 references the 95th percentile vehicular queue in the existing turn lanes on the approaches to the intersections analyzed as part of this traffic analysis. For the NE 19th Avenue and NE 163rd Street intersection, the southbound queue for the SBR turn lanes are projected to be 416 LF and 486 LF in the AM and PM peak hours. The current turn lane storage length which is the full block length which is 285 LF. How will the valet parking drop off and pick up operate with vehicle queues that

extend beyond the property frontage and into the next northern traffic signal at NE 19th Avenue and NE 164th Street?

Exhibit 14: Projected 95th Percentile Back of Queues and Existing Storage Length

Intersection	Direction	Existing		Future without Project		Future with Project		Future with Project with Sig Imp		Existing Storage
		AM	PM	AM	AM	AM	PM	AM	PM	
NE 19 th Avenue / NE 163 rd Street	SBL*	228.8	209	283.8	222.2	286	226.6			95
	SBR*	314.6	404.8	402.6	444.4	415.8	486.2			95
	EBL	107.8	360.8	204.6	387.2	204.6	387.2			60

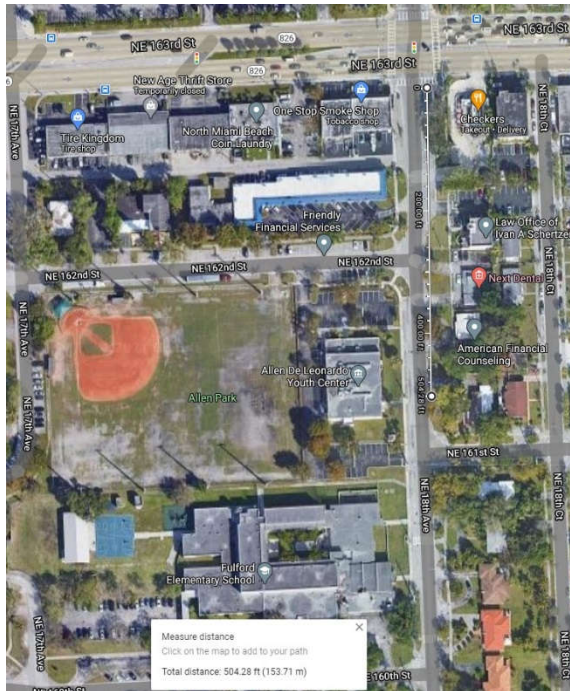


DPA 2/10/21 Response: *As noted, the estimated queue on the southbound approach of the NE 163rd Street / NE 19th Avenue intersection is expected to block the drop-off area. It should be noted that the synchro software tend to overestimate intersection delays and queues. However, a possible solution may be to restrict the valet operations during the PM peak hour (5 – 6 pm) in order to reduce any conflict and additional circulation by the valet attendants when queues on the south bound approach are expected. If after the project is open/operational, the southbound queue interferes with the drop-off operations, the project will restrict valet operations during the weekdays PM peak hour.*

16. The future Synchro capacity analysis with project yields a 95th percentile vehicle queue of 184 LF in AM peak hour and 171 LF in the PM peak hour. The distance from the edge of pavement of NE 163rd Street to the east west alley is approximately 140 LF. The vehicles attempting to make a westbound left out will encounter additional delay due to the vehicular stacking on NE 18th Avenue. Please provide suggested improvements to the traffic circulation to ensure that there are no vehicular stacking issues at this stop-controlled intersection at the Alley and NE 18th Avenue.

DPA 2/10/21 Response: As noted, the estimated queue on the southbound approach of the NE 163rd Street / NE 18th Avenue intersection is expected to block the alley. It should be noted that the synchro software tend to overestimate intersection delays and queues. If after the project is open/operational, the southbound queue interferes with the entrance/exit of the alley, the project will install “Do Not Block Intersection” pavement markings and/or signs.

17. Exhibit 14 references the 95th percentile vehicular queue in the existing turn lanes on the approaches to the intersections analyzed as part of this traffic analysis. For the NE 18th Avenue and NE 163rd Street intersection, the northbound queue for the NBL turn lane is projected to be 504 LF PM peak hour. The current full turn lane storage length for the left-hand turn lane (before it drops to one northbound lane) is 210 LF. Please consider improvements to NE 18th Avenue along this approach to improve storage capacity for the northbound vehicles. The 504 LF vehicle queue extends to just north of the NE 161st Street intersection which is within the existing school zone for Fulford Elementary School.



DPA 2/10/21 Response: As noted, the estimated queue on the northbound left turn of the NE 163rd Street / NE 18th Avenue is extending into the School Zone. However, this is an existing condition. Furthermore, there is no project traffic making the northbound left turn.

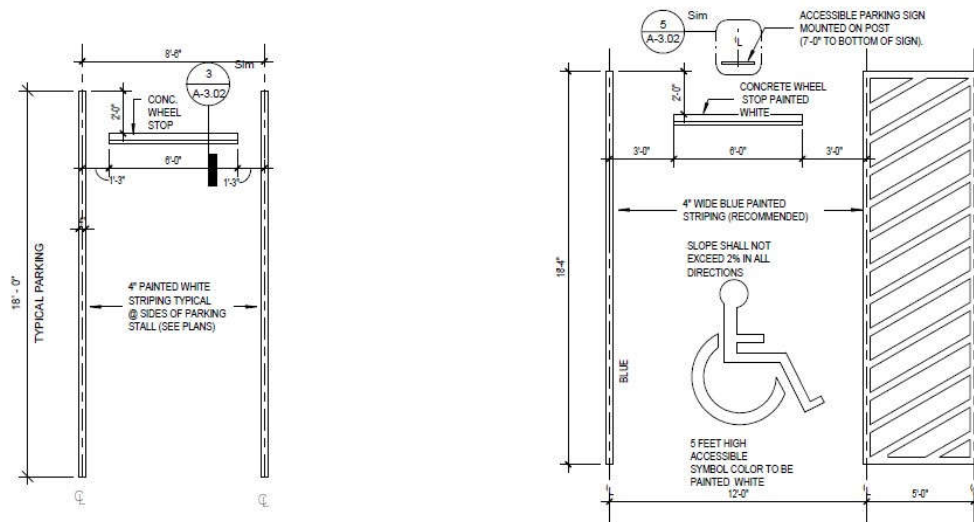
18. For the valet queueing analysis, please confirm that the proposed driving time used in the queue calculation includes the time to circle the block and the additional delay time encountered for the congestion that occurs during peak times for the southbound approach to the NE 163rd Street and NE 19th Avenue intersection (reference comment number 15). Please update the calculation to include additional driving time for the additional delays anticipated. Appendix J does not include extensive information related to each variable for the queue calculation.

DPA 2/10/21 Response: The driving time used for calculating the valet processing time does account for the distance of driving around the block. In order to estimate the driving time for the valet attendant a driving speed of 10 mph was assumed. This speed is relatively slow compared to the actual speed a valet attendant can potentially achieve on adjacent roadways. This assumption is meant to account for any delays. Queuing calculations have been revised and text has been added to clarify 'driving time'.

19. Please update the site plan data table and parking schedule to differentiate between the number of regular, ADA and lift parking stalls per floor. Please provide a more descriptive parking schedule.

DPA 2/10/21 Response: Comment addressed by others.

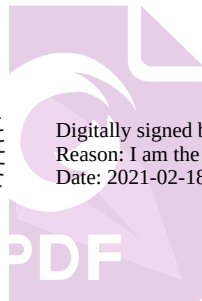
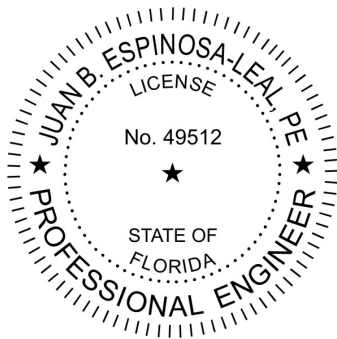
20. Please provide parking spaces dimensioned per the minimum design standards as outlined in the City of North Miami Beach Code of Ordinances. Code Section 24-93 provides for a minimum dimension of 18' x 9' for regular parking stalls and 20' x 12' for ADA parking stalls. Plan Sheets A-101, A-102 and A-103 do not have those dimensions labeled for the proposed parking stalls. In addition, pavement marking and signage detail plan sheet A-302 also does not depict these minimum dimensions. Please clarify if a variance for parking space design dimensions is being requested.



DPA 2/10/21 Response: Comment addressed by others.

w:\20\20146\0_response to comments feb 2021\skygarden response to city comments_feb 2021.docx

SKYGARDEN MIAMI



Digitally signed by Juan Espinosa
Reason: I am the author of this document
Date: 2021-02-18 17:07:19

Prepared By:
David Plummer & Associates

Prepared For:
Bercow Radell Fernandez Larkin & Tapanes

Prepared In:
February 2021

DPA Job #:
20146

Table of Contents

1.0	INTRODUCTION	1
1.1	Project Background	1
1.2	Study Objective	1
1.3	Study Area and Methodology	3
1.4	Project Site Information	5
2.0	DATA COLLECTION	6
2.1	Roadway Characteristics	6
2.2	Traffic Counts	7
2.3	Intersection Data	8
2.4	Intersection Capacity Analysis.....	11
3.0	PLANNED AND PROGRAMED ROADWAY IMPROVEMENTS.....	13
4.0	FUTURE TRAFFIC CONDITIONS	14
4.1	Background Traffic	14
4.2	Future without Project Intersection Capacity Analysis.....	14
4.3	Project Trip Generation.....	17
4.4	Project Trip Assignment.....	18
4.5	Future with Project Intersection Capacity Analysis.....	22
5.0	EVALUATION OF POLICY 1.1.2 AND 1.1.3	28
6.0	CIRCULATION PLAN	33
7.0	QUEUEING ANALYSIS.....	36
7.1	AM Peak Hour Queueing Analysis.....	38
7.2	PM Peak Hour Queueing Analysis	39
8.0	CONCLUSIONS.....	41

LIST OF EXHIBITS

Exhibit 1: Location Map	2
Exhibit 2: Existing Lane Configuration.....	9
Exhibit 3: Existing AM and PM Peak hour Traffic Volumes.....	10
Exhibit 4: Existing Intersection Capacity Analysis	12
Exhibit 5: Future without Project Intersection Capacity Analysis.....	15
Exhibit 6: Future without Project AM and PM Peak Hour Traffic Volumes	16
Exhibit 7: Project Trip Generation Summary	17
Exhibit 8: Cardinal Distribution (TAZ 098).....	18
Exhibit 9: Project Trip Distribution	19
Exhibit 10: Project Trip Assignment	20
Exhibit 11: Future with Project AM and PM Peak Hour Traffic Volumes	21
Exhibit 12: Future with Project Intersection Capacity Analysis.....	23
Exhibit 13: Future with Project with Improvements Intersection Capacity Analysis	24
Exhibit 14: Projected 95 th Percentile Back of Queues and Existing Storage Length	27
Exhibit 15: Roadway Capacity Analysis	29
Exhibit 16: Existing Available Transit (within ¼ mile)	30
Exhibit 17: Calculations for Policy 1.1.3 Part A	32
Exhibit 18: Mobility Plan - Pedestrian.....	34
Exhibit 19: Mobility Plan - Transit.....	35
Exhibit 20: AM and PM Peak Hour Trip Generation Summary	36
Exhibit 21: AM Peak Hour Inbound / Outbound Valet Processing Rate	38
Exhibit 22: AM Peak Hour Valet Drop-off / Pick-up Queuing Calculations	39
Exhibit 23: PM Peak Hour Inbound / Outbound Valet Processing Rate	39
Exhibit 24: PM Peak Hour Valet Drop-off / Pick-up Queuing Calculations.....	40

Appendix A:	Site Plan
Appendix B:	Methodology
Appendix C:	Data Collection
Appendix D:	Intersection Capacity Analysis Worksheets
Appendix E:	Committed Development Information
Appendix F:	Project Trip Generation
Appendix G:	Policy 1.1.2 and 1.1.3 Information
Appendix H:	Transit Documentation
Appendix I:	AutoTURN Analysis
Appendix J:	Queuing Analysis Documentation

EXECUTIVE SUMMARY

The SKYGarden Miami project will be located at 16300 NE 19th Avenue in North Miami Beach, Florida. The proposed residential development will consist of 341 dwelling units and 12,635 SF of retail space. Main access to the site will be provided via a proposed driveway located on an existing alley located west of the project site. The project site is located within the boundaries of the North Miami Beach CRA boundary which is a Traffic Concurrency Exemption Area. For the purpose of this traffic analysis, project build-out is anticipated by 2022.

An assessment of the traffic impacts associated with the SKYGarden Miami project was performed in accordance with the requirements of the City of North Miami Beach. The results of the roadway capacity analysis shows that the NE 163rd Street roadway segment currently operates and will continue to operate within the FDOT established capacity and the City of North Miami Beach adopted level of service (LOS) standards. The results of the intersection analysis indicates that the following studied intersections are projected to continue to operate within the overall City's LOS standards during the AM and PM peak hours:

- NE 163rd Street / NE 19th Avenue
- NE 163rd Street / NE 18th Avenue
- NE 164th Street / NE 19th Avenue
- NE 164th Street / NE 18th Avenue
- NE 163rd Street / Alley
- NE 163rd Street / US-1 / Biscayne Boulevard
- NE 18th Avenue / Alley

For future without project and future with project conditions, the NE 22nd Avenue / NE 163rd Street intersection experiences delays in the AM peak hour and meets the overall LOS standards during the PM peak hour. Signal timing improvements are recommended to improve approach delays at the NE 18th Avenue / NE 163rd Street, Biscayne Boulevard / NE 163rd Street, and NE 22nd Avenue / NE 163rd Street intersections and to improve the overall delay of the NE 22nd Avenue / NE 163rd Street intersection during the AM peak hour.

The roadway segment of NE 163rd Street between NE 19th Avenue and Biscayne Boulevard was evaluated based on Policy 1.1.2 and Policy 1.1.3 of the Transportation Element of the North Miami Beach Comprehensive Plan. The analysis shows that this segment of NE 163rd Street meets the LOS and capacity standards established in Policy 1.1.2 at existing, future without project, and future with project conditions. The project also meets the transit proximity requirements and the LOS standard for SIS facilities established in Policy 1.1.3. Therefore, the project qualifies for a transportation concurrency exception.

The project area is currently served by the City of North Miami Beach shuttle and Miami-Dade Transit bus routes 3, 75, 93, 105, 210, and 108. The project is located in an area that is conducive for pedestrian activities providing ample sidewalks and pedestrian crosswalks. Pedestrian mobility, within and around the site, is also encouraged by providing on-site bicycle storage. The availability of transit and the existing pedestrian / bicyclist infrastructure will encourage the use of other modes of transportation and will reduce the project's vehicular impacts on the roadway network. An AutoTURN analysis was completed as part of the study. The AutoTURN analysis shows that the site will accommodate SU-30 commercial vehicles.

A queuing analysis was performed to ensure that the drop-off / pick-up demand at the proposed valet station would not extend past the provided storage space at the valet station during the AM and PM peak hours. The results of the queuing analysis shows that (with two valet attendants) the queue will not extend past the valet station storage area during the AM and PM peak hours of the adjacent street.

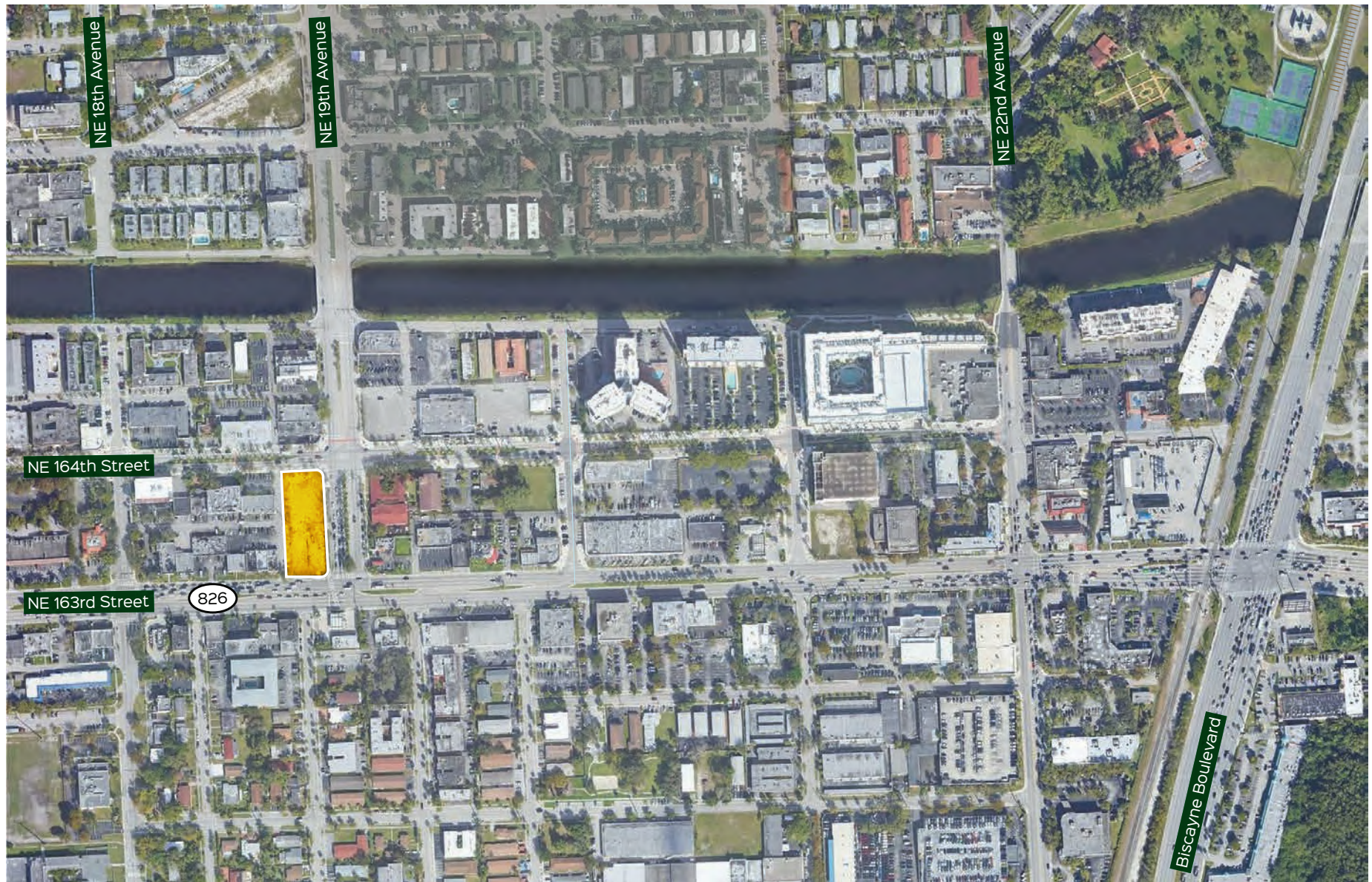
1.0 INTRODUCTION

1.1 Project Background

The SKYGarden Miami project will be located at 16300 NE 19th Avenue in North Miami Beach, Florida (see Exhibit 1). The proposed residential development will consist of 341 dwelling units and 12,635 SF of retail space. Main access to the site will be provided via a proposed driveway located on an existing alley located west of the project site. The project site is located within the boundaries of the North Miami Beach CRA boundary which is a Traffic Concurrency Exemption Area. For the purpose of this traffic analysis, project build-out is anticipated by 2022. The proposed site plan is included in Appendix A.

1.2 Study Objective

A traffic study was conducted in order to assess the impacts of this project on the external roadway network. The study is based on the methodology submitted and approved by the City of North Miami Beach and consistent with City of North Miami Beach comprehensive plan. The study addresses trip generation, access to the site, and the traffic impacts on the nearby transportation network.



 Project Location

Exhibit 1

Location Map

1.3 Study Area and Methodology

The analysis undertaken is consistent with the City of North Miami Beach comprehensive plan. The following is a brief description of the study methodology (see Appendix B for the approved methodology):

Study Area

The study area for the project includes the following intersections:

- NE 163rd Street / NE 19th Avenue
- NE 163rd Street / NE 18th Avenue
- NE 164th Street / NE 19th Avenue
- NE 164th Street / NE 18th Avenue
- NE 163rd Street / Alley
- NE 163rd Street / US-1 / Biscayne Boulevard
- NE 163rd Street / NE 22nd Avenue
- NE 18th Avenue / Alley

The study area for the project includes the following roadway segment:

- NE 163rd Street Between NE 19th Avenue and Biscayne Boulevard

Analysis Scenarios

The analysis scenarios for this study are as follows:

- Existing year
- Project build-out year (2022) without project trips (background traffic)
- Project build-out year (2022) with project trips (total traffic)

Data Collection

- Vehicle turning movement counts (TMCs) were collected during the AM (7 - 9) and PM (4 - 6) peak hour conditions. The vehicle turning counts for the NE 163rd Street / US-1 / Biscayne Boulevard and NE 163rd Street / NE 22nd Avenue intersections were previously collected on May 14, 2019 and April 10, 2019, respectively. All other TMCs were collected on October 7, 2020.

- 72 hour tube counts were collected on NE 163rd Street just east of NE 20th Avenue near the existing FDOT permanent count station 875225 on October 6, 2020.
- Collected counts were adjusted to reflect AM and PM peak hour peak season conditions for the intersection analysis. Traffic volumes were adjusted by applying the corresponding peak season conversion factors obtained from the latest *Florida Department of Transportation (FDOT) Peak Season Factor Category Report*.
- Collected counts will be modified for COVID-19 traffic patterns. This volume adjustment will be made comparing historical traffic data for NE 163rd Street. Existing FDOT traffic count station 875225 data will be compared against a newly collected 72 hour tube count at same location.
- Counts previously collected in 2019 at the NE 163rd Street / US-1 / Biscayne Boulevard and NE 163rd Street / NE 22nd Avenue intersections will be grown to 2020 conditions using a historic growth factor.
- Field reviews were performed to obtain existing physical and operating characteristics of the roadway network within the study area. Data acquired includes the number and type of traffic lanes, intersection geometrics, signal timings, speed limit information, and other appropriate physical and operating characteristics.
- Future Transportation Projects – The 2020 TIP and the 2045 LRTP were reviewed and considered in the analysis at project build-out.

Existing Conditions Intersection Capacity Analysis

- Intersection capacity analyses were evaluated for the study area intersections using the Synchro software. All input files will be provided for review purposes.

Background Traffic

- Future background traffic volumes were determined by applying a compound growth rate to existing volumes and adding committed development traffic. The growth rate was calculated based on a review of historical volumes obtained from FDOT and Miami-Dade County.

Project Trip Generation and trip distribution

Using information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual*, 10th Edition, trips associated with the proposed development were estimated. Pass-by capture rates and internal capture rates were established based on the ITE, *Trip Generation Manual, Users Guide and Handbook*, 3rd Edition. Net new external project traffic was assigned to the adjacent street network using the cardinal distribution from the *Miami-Dade Long Range Transportation Plan Update*, published by the *Transportation Planning Organization (TPO)*. Normal traffic patterns were also considered when assigning project trips.

Future Conditions Intersection Analysis – Total Traffic Conditions

- Future total traffic volumes were determined by summing project trips and background traffic volumes.
- Intersection capacity analyses were evaluated using the Synchro software. Access driveways were included as part of the LOS analysis.

Roadway Capacity Analysis

Using data collected, AM and PM peak hour LOS analyses were conducted for existing, future without project (2022), and future with project (2022) traffic conditions. Roadway segment volumes were compared to the Florida Department of Transportation (FDOT) published service volumes.

1.4 Project Site Information

The SKYGarden Miami project will be located at 16300 NE 19th Avenue in North Miami Beach, Florida which is within the boundaries of the North Miami Beach CRA boundary. The proposed residential development will consist of 341 dwelling units and 12,635 SF of retail space. Main access to the site will be provided via a proposed driveway located on an existing alley located west of the project site. The driveway will provide access to the site's parking garage. An optional valet pick-up / drop-off area will be provided along NE 19th Avenue. Bicycle storage will be provided on the second through fourth levels of the parking garage. The loading area for the site is located at the northwest corner of the site directly north of the project driveway. Access to the loading area is also provided by the existing alleyway located west to the site.

2.0 DATA COLLECTION

Data collection for this study included roadway characteristics, intersection traffic counts, signal timing, and seasonal adjustment factors. The data collection effort is described in the following sections.

2.1 Roadway Characteristics

NE 163rd Street (SR-826)

NE 163rd Street is a principle arterial roadway that provides east / west access within the project area. NE 163rd Street is a two-way, six-lane divided roadway. The speed limit is 35 mph within the study limits. FDOT has jurisdiction over NE 163rd Street.

NE 164th Street

NE 164th Street is a two-way, two lane, divided, local roadway that provides east / west access within the project area. On street parking is permitted within designated areas along the roadway. The posted speed limit is 25 mph within the study limits. The City of North Miami Beach has jurisdiction over NE 164th Street.

NE 18th Avenue

NE 18th Avenue is a two-way, two-lane, undivided, local roadway that provides north / south access within the project area. The posted speed limit is 30 mph within the study limits. The City of North Miami Beach has jurisdiction over NE 18th Avenue.

NE 19th Avenue

NE 19th Avenue is a two-way, six-lane, divided, collector roadway that provides north / south access between NE 163rd Street and northern N Miami Beach. The posted speed limit is 30 mph within the study limits. The City of North Miami Beach has jurisdiction over NE 19th Avenue.

NE 22nd Avenue (West Dixie Highway, SR-909)

NE 22nd Avenue is a minor arterial roadway that provides north / south access within the project area. NE 22nd Avenue is a two-way, four-lane, undivided roadway south of NE 164th Street and a two-way, two-lane, undivided roadway north of NE 164th Street. On-street parking is available along portions of the roadway. The speed limit is 30 mph within the study limits. FDOT has jurisdiction over NE 22nd Avenue.

Biscayne Boulevard (US-1)

Biscayne Boulevard is a two-way, eight-lane, divided, principle arterial roadway that provides north / south access within the project area. The speed limit is 45 mph within the study limits. FDOT has jurisdiction over Biscayne Boulevard.

2.2 Traffic Counts

72-hour tube counts were collected on NE 163rd Street just east of NE 20th Avenue near the existing FDOT permanent count station 875225 on October 6, 2020. A weekly volume peak season conversion factor of 1.06 (Miami-Dade County north) was used, corresponding to the dates of the counts, to adjust the raw traffic counts to peak season conditions. The counts were then compared to the existing 72-hour tube count data for FDOT traffic count station 875225 to obtain a Covid-19 traffic adjustment factor for the area during the AM and PM peak hours. (A weekly volume peak season conversion factor of 1.03 corresponding to the dates of the FDOT counts was also applied to adjust the raw traffic counts to peak season conditions before calculating the Covid-19 factor). The calculations resulted in a Covid-19 factor of 1.06 in the AM peak hour and 1.01 in the PM peak hour. Collected and FDOT 72- hour counts and the Covid-19 factor calculations are available in Appendix C.

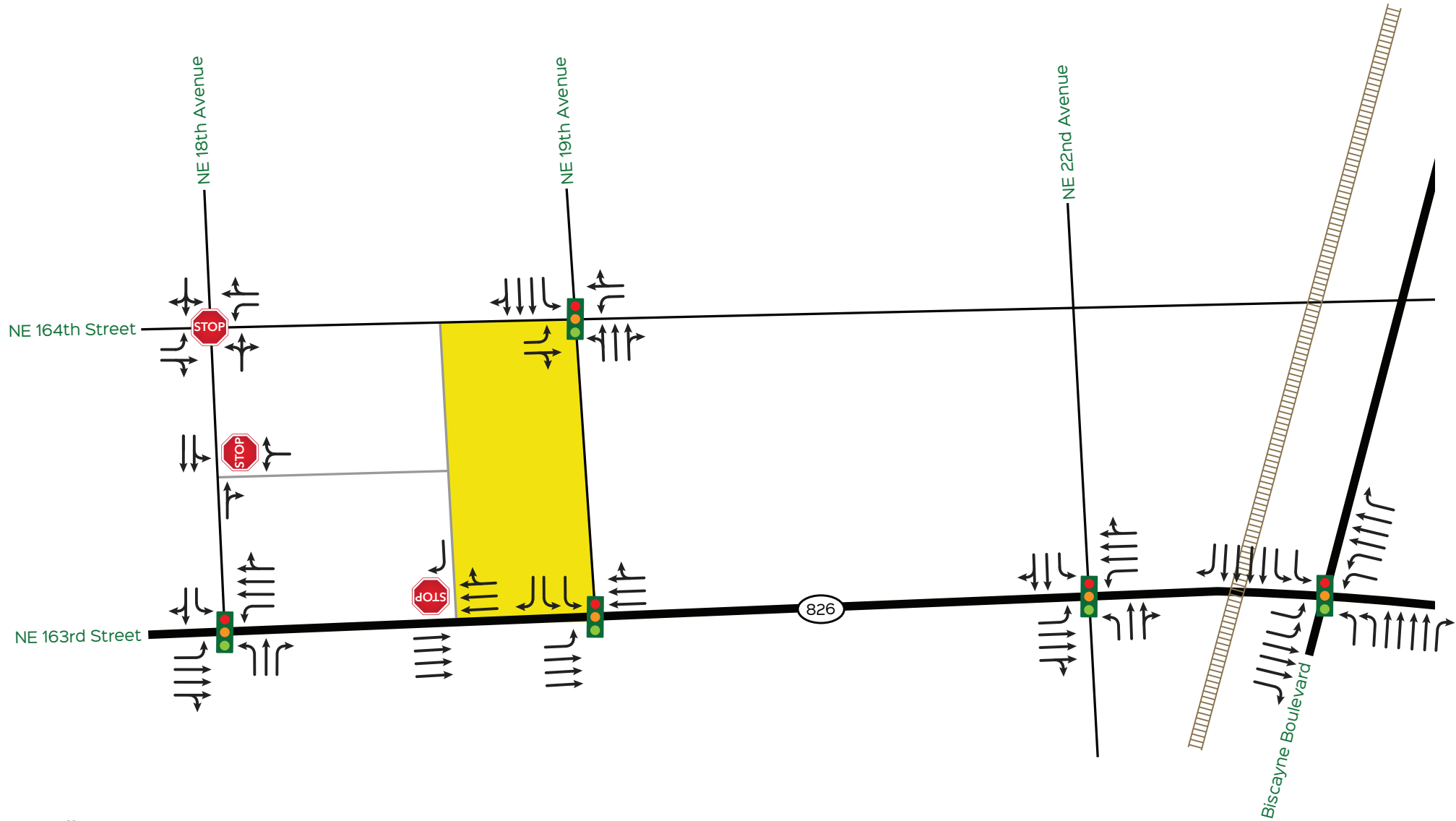
Vehicle turning movement counts (TMCs) for the NE 163rd Street / US-1 / Biscayne Boulevard and NE 163rd Street / NE 22nd Avenue intersections were previously collected on May 14, 2019 and April 10, 2019 for the AM and PM peak hours. A weekly volume peak season conversion factor of 1.02 and 1.01, respectively (Miami-Dade County north) was used, corresponding to the dates of the counts, to adjust the raw traffic counts to peak season conditions. Then, a 0.5% growth

rate was applied to grow the counts to existing (2020) traffic conditions. A weekly volume peak season conversion factor of 0.99 (Miami-Dade County north) was used, corresponding to the dates of the counts, to adjust the raw traffic counts to peak season conditions. Traffic counts are provided in Appendix C.

All other TMCs were collected on October 7, 2020 during the AM and PM peak hour conditions. The counts were then modified from the Covid-19 traffic patterns using the Covid-19 factor calculated during the AM (1.06) and PM (1.01) peak hours.

2.3 Intersection Data

Signal timing data was obtained from Miami-Dade County for the signalized intersections analyzed in this study. This information was used for the signal phasing and timing required for the intersection capacity analysis. A field survey was also conducted to obtain the intersection lane configurations to be used in the intersection analysis. Exhibit 2 shows the existing lane configurations at the analyzed intersections. Existing volumes for the morning and afternoon peak hours at the intersections analyzed are presented in Exhibit 3. Signal timings are provided in Appendix C.



Alley

Project Location

Exhibit 2

Existing Lane Configurations

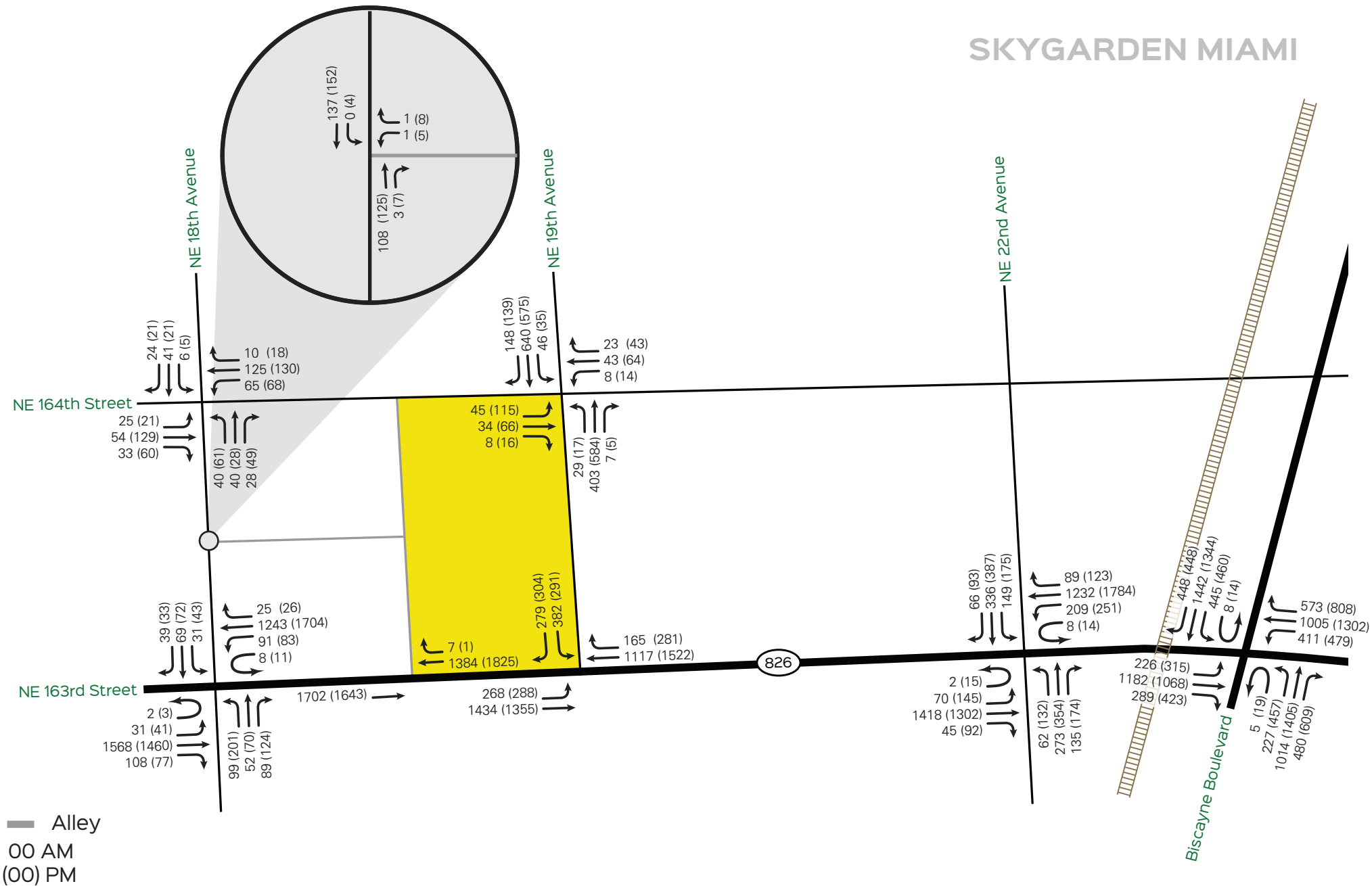


Exhibit 3

Existing AM & PM Peak Hour Traffic Volumes

2.4 Intersection Capacity Analysis

The Synchro software was used to perform intersection capacity analysis at the analyzed intersections. Synchro is a macroscopic analysis and optimization software application that implements the Intersection Capacity Utilization method for determining intersection capacity. Synchro also supports the Highway Capacity Manual's methodology for signalized / un-signalized intersections. Exhibit 4 shows the resulting LOS for the existing weekday AM and PM peak hour conditions. The analysis indicates that all of the studied intersections currently operate within the City's overall LOS standards. The NE 18th Avenue / NE 163rd Street intersection shows delay at the northbound / southbound approaches during the PM peak hour. Intersection capacity analysis worksheets are included in Appendix D.

**Exhibit 4: Existing Intersection Capacity Analysis
Weekday AM and PM Peak Hour Conditions**

Intersection	Signalized/ Unsignalized	Direction	AM Peak		PM Peak		LOS Std
			LOS	Delay (sec)	LOS	Delay (sec)	
NE 19 th Avenue / NE 163 rd Street	S	SB EB WB <i>Overall</i>	D A B B	52.2 2.5 17.1 16.6	E A B C	64.7 7.8 18.5 21.0	E+50 E+20 E+20 E+
NE 18 th Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	D D C B B	45.6 54.5 20.3 11.5 19.9	F E B B C	103.2 66.1 14.3 13.8 24.9	D D E+20 E+20 E
NE 19 th Avenue / NE 164 th Street	S	NB SB EB WB <i>Overall</i>	C D D E D	34.7 39.3 49.0 62.1 39.7	D D D E D	36.2 38.3 47.6 60.9 40.3	E+50 E+20 E+20 E+20 E
NE 18 th Avenue / NE 164 th Street	U	NB SB EB WB <i>Overall</i>	A A A A A	8.7 8.3 8.5 9.2 8.8	A A A A A	9.2 8.4 9.7 9.4 9.4	D D E+20 E+20 E
Alley / NE 163 rd Street	U	SB	A	0	C	21.1	D
Biscayne Boulevard / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	E E D D D	56.8 59.9 46.3 54.0 54.7	E E D E+8 E	73.3 64.1 47.3 86.2 69.5	E+50 E+50 E+20 E+20 E+
NE 22 nd Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	E E C C D	73.6 62.9 31.3 24.6 38.0	E+5 E D C D	93.6 78.2 35.2 27.1 44.9	E+50 E+50 E+20 E+20 E+
Alley / NE 18 th Avenue	U	WB	A	9.6	A	9.9	D

Source: David Plummer & Associates

3.0 PLANNED AND PROGRAMED ROADWAY IMPROVEMENTS

The 2021 Miami-Dade County Transportation Improvement Program (TIP) and the 2045 Long Range Transportation Program (LRTP) were reviewed to identify any programmed projects within the limits of the established study area. These documents show the following projects within the study area:

TIP Improvements

DT4402811– NE 163rd Street (SR-826) from NW 2nd Avenue to NE 35th Avenue, signalized intersection lighting.

DT4442991– Snake Creek Trail Extension to Greynolds Park, Bike path/trail extension.

PW000764– West Dixie Highway from NE 163rd Street to NE 175th Street, Widen from 2 to 4 lanes.

LRTP Improvements

North Miami Beach Station – Biscayne Boulevard (US-1 / SR-5) and NE 163rd Street (SR-826), construct a park-and-ride terminal with 100 parking spaces.

SR 5 (US 1/Dixie Hwy)/ FEC railroad – East / west grade separated Overpass over the FEC rail line

NE 19th Avenue - from NE 163rd Street to Snake Creek Canal, dedicated on-road bicycle facility improvement.

NE 18th Avenue - from NE 163rd Street to West Dixie Highway, dedicated on-road bicycle facility improvement.

Smart Trails NE 164th Street - from Snake Creek Greenway to NE 23rd Avenue, dedicated on-road bicycle and pedestrian facility improvement.

As the section of West Dixie Highway from NE 163rd Street to the bridge north of NE 164th Street and south of NE 163rd Street within the project area has already been widened, there are no capacity improvements identified in this area. Therefore, it was not reflected in the future conditions. Roadway project documentation is included in Appendix E.

4.0 FUTURE TRAFFIC CONDITIONS

4.1 Background Traffic

Average Daily Traffic counts published by the Miami-Dade Public Works Department and the FDOT were reviewed to determine historic growth in the area. This analysis indicated that the annual growth rate in the area is -0.6% however, a 0.5% growth rate was used to for a more conservative analysis. Historic growth rate documentation is included in Appendix C.

4.2 Future without Project Intersection Capacity Analysis

Future without project conditions were obtained by adding background traffic to existing trips. Exhibit 5 shows the resulting LOS for the morning and afternoon peak hours for future without project conditions. The analysis indicates that all of the studied intersections continue to operate within the City's overall LOS standards. The NE 18th Avenue / NE 163rd Street intersection continues to show delay at the northbound / southbound approaches during the PM peak hour. This may be due to the fact that the County gives priority to vehicles traveling east / west along NE 163rd Street, therefore accepting delays on minor cross streets. The Biscayne Boulevard / NE 163rd Street intersection experiences delay at the westbound approach during the PM peak hour. Exhibit 6 shows the projected turning movements for future without project traffic. Intersection capacity analysis worksheets are included in Appendix D.

**Exhibit 5: Future without Project Intersection Capacity Analysis
Weekday AM and PM Peak Hour Conditions**

Intersection	Signalized/ Unsignalized	Direction	AM Peak		PM Peak		LOS Std
			LOS	Delay (sec)	LOS	Delay (sec)	
NE 19 th Avenue / NE 163 rd Street	S	SB EB WB <i>Overall</i>	E A B C	57.4 5.0 19.7 20.7	E A C C	63.3 9.9 23.0 23.7	E+50 E+20 E+20 E+
NE 18 th Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	D D C B C	54.6 54.7 34.2 15.0 29.6	F E B A C	168.3 66.3 15.2 8.4 31.0	D D E+20 E+20 E
NE 19 th Avenue / NE 164 th Street	S	NB SB EB WB <i>Overall</i>	C D D E D	34.8 42.2 49.0 62.1 41.3	D D D E D	36.5 39.2 47.7 60.9 40.6	E+50 E+20 E+20 E+20 E
NE 18 th Avenue / NE 164 th Street	U	NB SB EB WB <i>Overall</i>	A A A A A	9.0 8.5 8.7 9.3 9.0	A A A A A	9.4 8.5 9.8 9.5 9.5	D D E+20 E+20 E
Alley / NE 163 rd Street	U	SB	A	0	C	23.0	D
Biscayne Boulevard / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	E E D D D	58.2 69.1 55.9 62.5 62.0	E+1 E D F E+8	80.8 73.3 53.8 127.3 86.7	E+50 E+50 E+20 E+20 E+
NE 22 nd Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	F E+17 C F F	178.3 93.5 34.0 182.1 120.6	F E+40 D D E+3	227.8 112.0 53.3 36.0 82.7	E+50 E+50 E+20 E+20 E+
Alley / NE 18 th Avenue	U	WB	A	9.9	B	10.0	D

Source: David Plummer & Associates

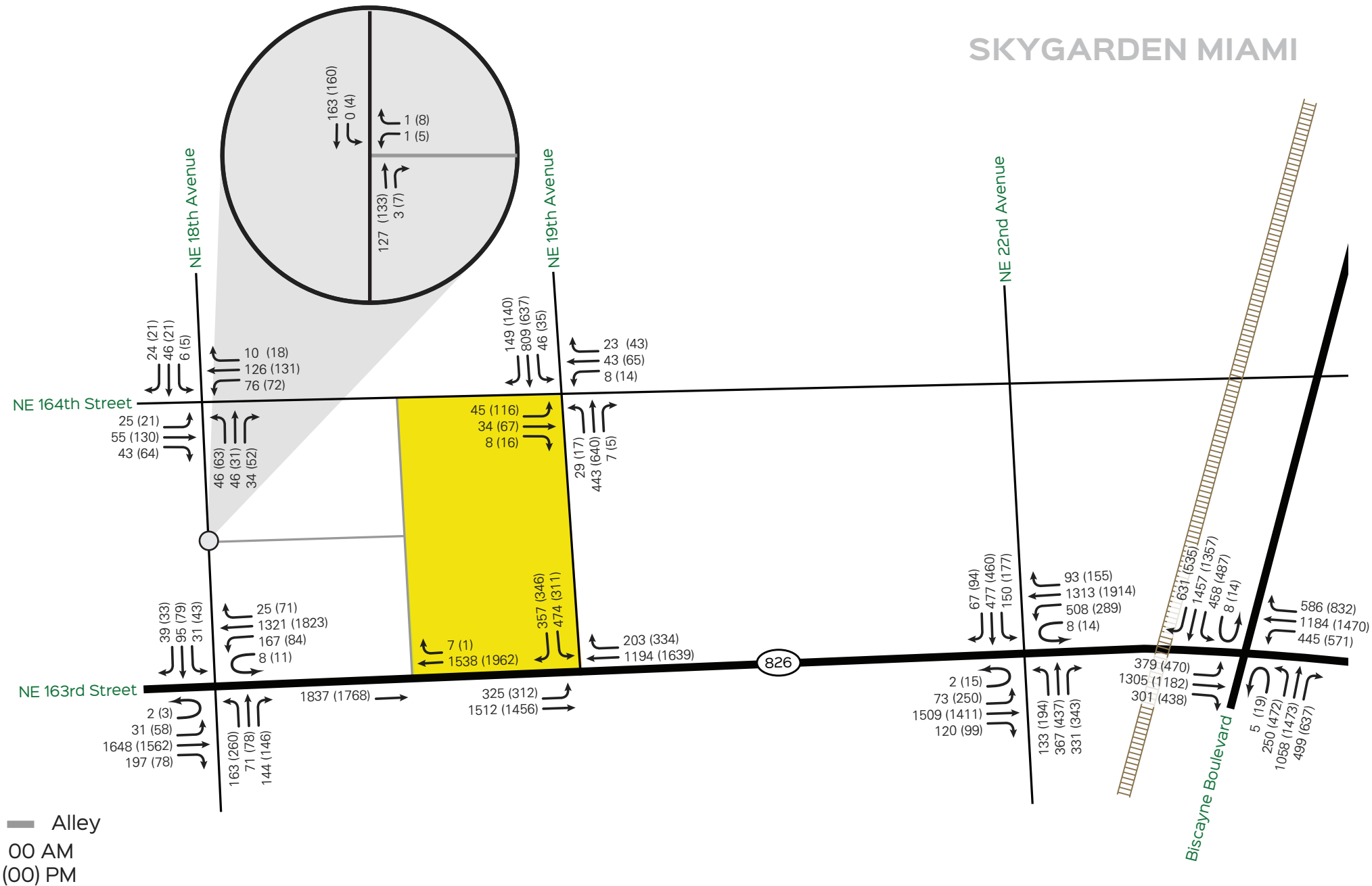


Exhibit 6

Future Without Project AM & PM Peak Hour Traffic Volumes

4.3 Project Trip Generation

Trip generation for the proposed project was estimated using the Institute of Transportation Engineers (ITE) *Trip Generation*, 10th Edition. This manual provides gross trip generation rates and/or equations by land use type. These rates and equations estimate vehicle trip ends at a free-standing site's driveways. The proposed development plan incorporates residential and retail land uses, which can satisfy the work trip and retail needs for some residents, employees, and visitors without making a trip off-site. An internalization matrix was developed to establish the appropriate number of internal project trips. Internal capture rates used are also included in Appendix F. ITE research also shows that a certain percent of retail trips are “*pass-by*” trips. These are described as trips “attracted from the traffic passing the site on an adjacent street.” These are not new trips, but trips already using the existing roadway network that stop at the proposed use and go back to their original path. Pass-by trips for this use were established based on guidelines provided in Institute of Transportation Engineers (ITE) *Trip Generation Handbook*, 3rd Edition.

Mass transit, prevalent sidewalks, and crosswalks make the study area pedestrian friendly. Data from the United States Census Bureau shows that 22.7% of the public within the area use other modes of transportation. However, at the request of the City only a 10% reduction factor was taken for other modes of transportation. The project trip generation summary is provided in Exhibit 7. ITE trip generation worksheets are provided in Appendix F.

Exhibit 7: Project Trip Generation Summary

Proposed ITE Land Use Designation ¹	Number of Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
(High-Rise) <i>Land Use Code: 222</i>	341 DU	1,556	26	82	108	76	49	125
Retail ² <i>Land Use Code: 820</i>	12,635 SF	1,474	7	5	12	56	61	117
Total Gross Trips		3,030	33	87	120	132	110	242
Internalization	AM	3.3%	-2	-2	-4	-22	-22	-44
	PM	18.2%						
Other Modes of Transportation ³		10.0%	-4	-8	-12	-11	-9	-20
Retail Passby ⁴ (PM)			0	0	0	-14	-14	-28
Net Proposed Trips			27	77	104	85	65	150

¹Based on ITE *Trip Generation*, 10th Edition.

²Rate was used for the AM peak hour to better reflect the size of the use.

³Capped at 10% per City, based on US Census Data, 22.7% reduction.

⁴Based on ITE *Trip Generation Handbook*, 3rd Edition.

4.4 Project Trip Assignment

Project traffic was distributed and assigned to the study area using the cardinal distribution for TAZ 098 shown in Exhibit 8. The cardinal distribution gives a generalized distribution of trips from a TAZ to other parts of Miami-Dade County. The distribution can be summarized as follows: 31% to the north, 30% to the south, 10% to the east, and 29% to the west. For estimating trip distribution for the project traffic, consideration was given to conditions such as the roadway network accessed by the project traffic, roadways available to travel in the desired direction, and attractiveness of traveling on a specific roadway. The project trip distribution and trip assignments are graphically portrayed in Exhibits 9 and 10.

Exhibit 8: Cardinal Distribution (TAZ 098)

DIRECTION	2015	2045	2022
NNE	16.5%	18.9%	17.06%
ENE	8.6%	6.6%	8.13%
ESE	2.2%	1.7%	2.08%
SSE	9.1%	10.1%	9.33%
SSW	20.2%	21.3%	20.46%
WSW	14.3%	14.4%	14.32%
WNW	14.6%	14.4%	14.55%
NNW	14.6%	12.7%	14.16%

Source: Miami-Dade Long Range Transportation Plan

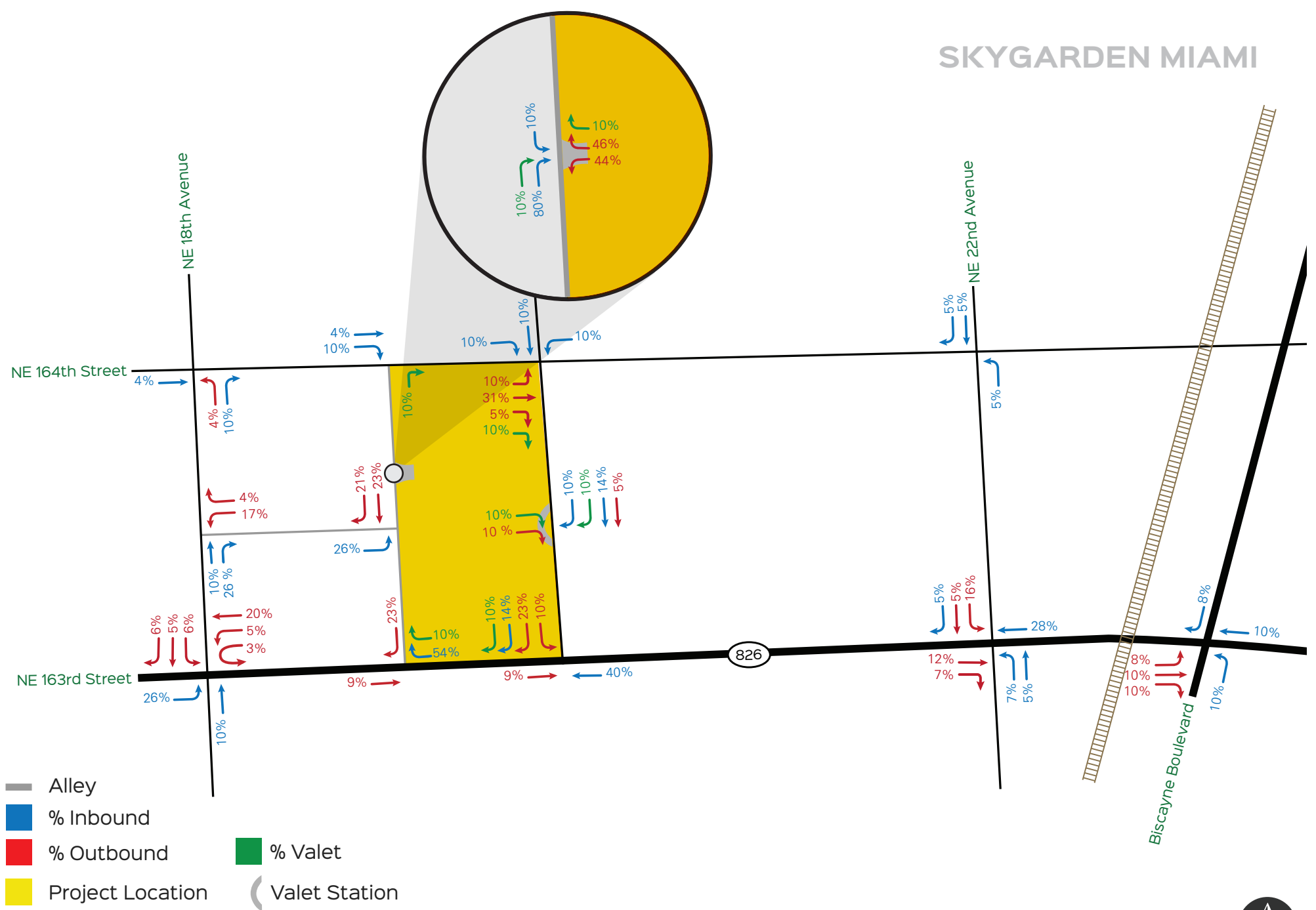


Exhibit 9

Project Trip Distribution

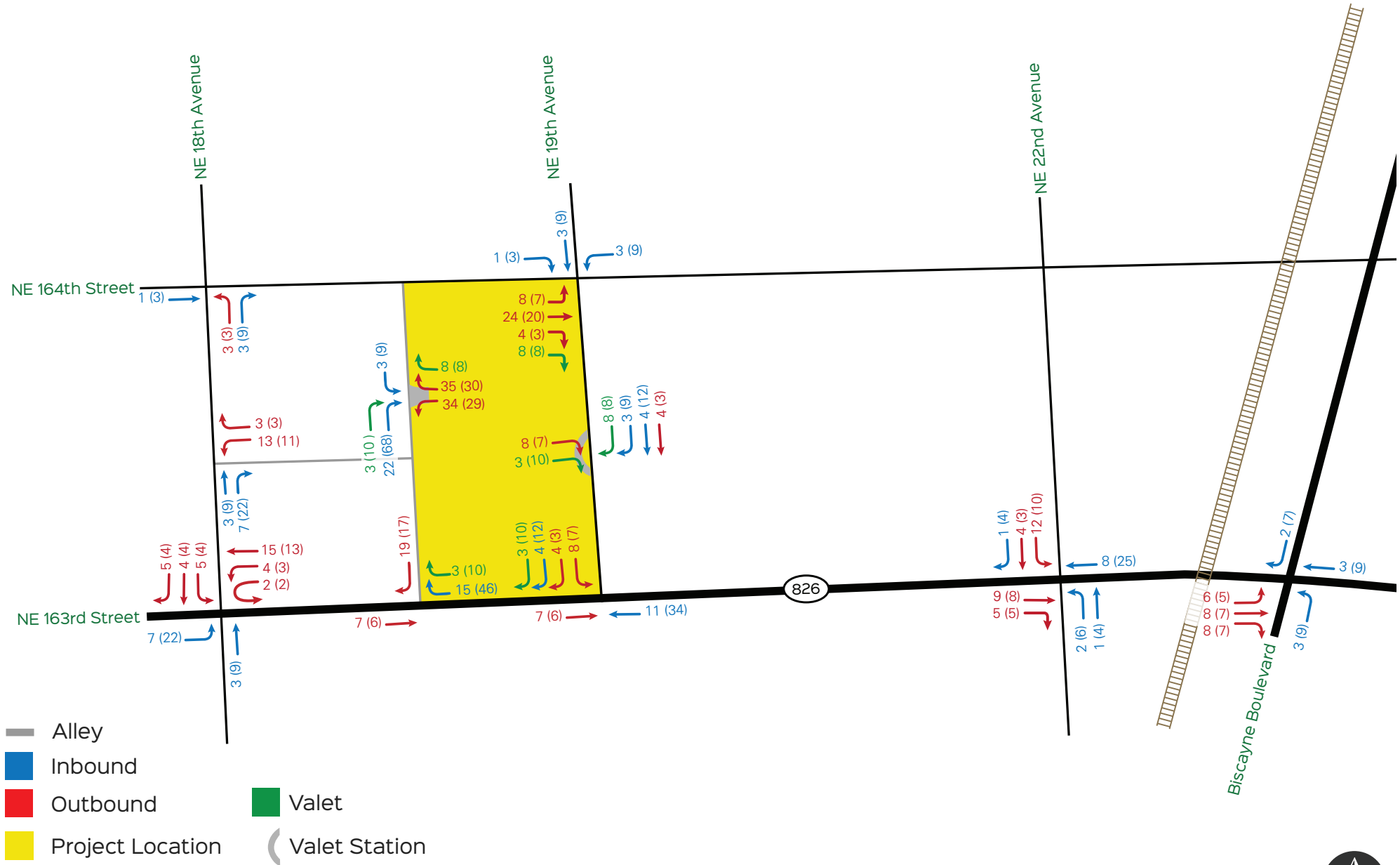


Exhibit 10

Project Trip Assignment

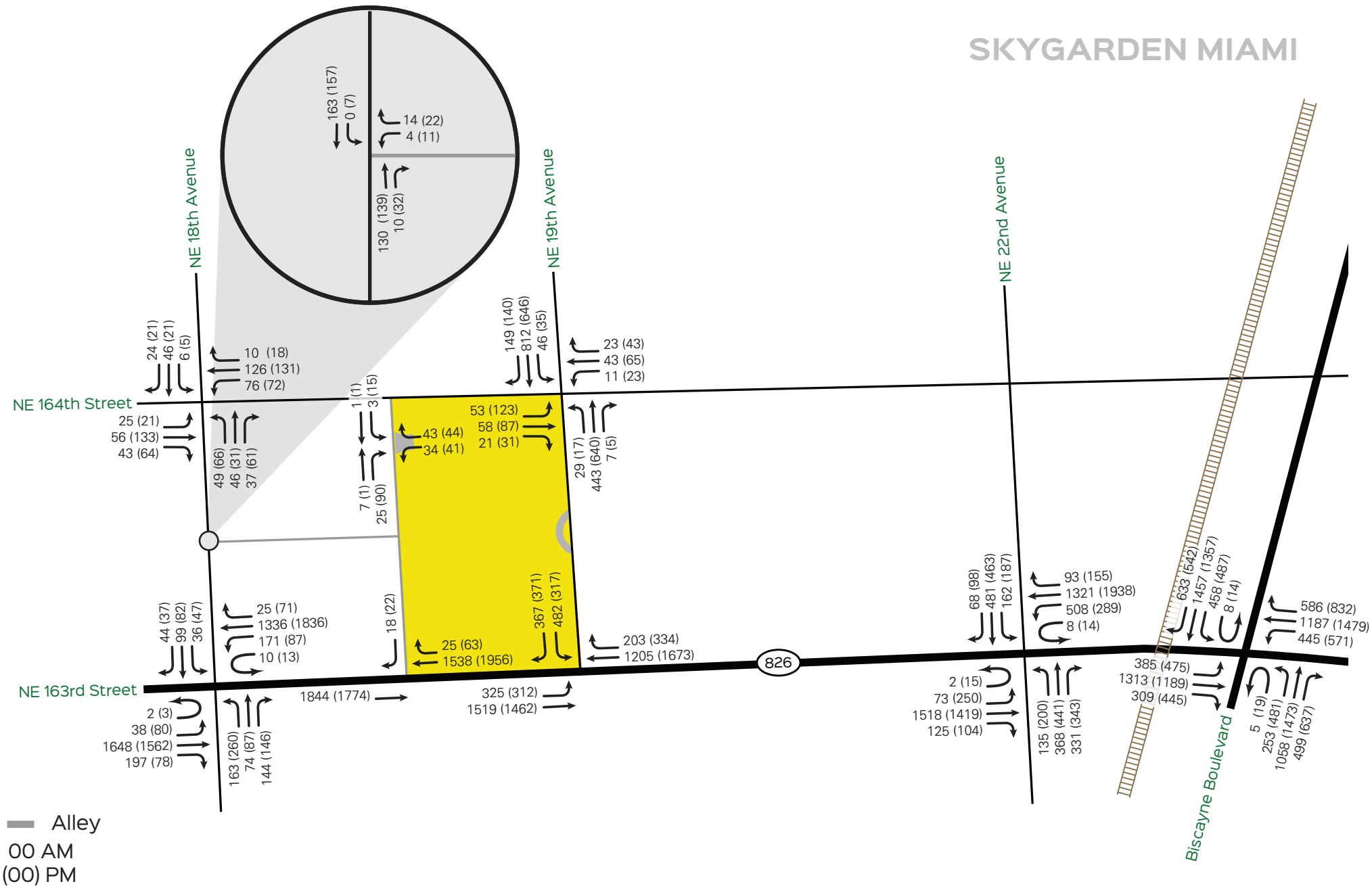


Exhibit 11

Future With Project AM & PM Peak Hour Traffic Volumes

4.5 Future with Project Intersection Capacity Analysis

Future background traffic and traffic projections for the project were combined to obtain future with project traffic at the analyzed intersections. Exhibit 11 shows the projected turning movements for future with project conditions. Exhibit 12 shows the resulting LOS for the weekday AM and PM peak hours for future with project conditions. The analysis indicates that the following studied intersections are projected to continue to operate within the overall City's LOS standards during the AM and PM peak hours:

- NE 163rd Street / NE 19th Avenue
- NE 163rd Street / NE 18th Avenue
- NE 164th Street / NE 19th Avenue
- NE 164th Street / NE 18th Avenue
- NE 163rd Street / Alley
- NE 163rd Street / US-1 / Biscayne Boulevard
- NE 18th Avenue / Alley

The analysis shows that the NE 18th Avenue / NE 163rd Street intersection continues to show delay at the northbound / southbound approaches during the AM and PM peak hours. It should be noted that these are existing delays. The project is projected to only add approximately six seconds of delay to the northbound approach and two seconds during the AM peak hour and less than one second to the northbound / southbound approaches during the PM peak hour. This may be due to the fact that the County gives priority to vehicles traveling east / west along NE 163rd Street, therefore accepting delays on minor cross streets. As with future without project conditions, the Biscayne Boulevard / NE 163rd Street intersection continues to experience delay at the westbound approach during the PM peak hour. It should be noted that the project adds less than two seconds to this approach. As with future without project conditions, the NE 22nd Avenue / NE 163rd Street intersection experiences delays at the northbound / southbound approaches during the AM and PM peak hours and at the westbound approach during the AM peak hour. The un-signalized intersection capacity analysis results show adequate operations at the project driveway. Intersection capacity analysis worksheets are included in Appendix D.

**Exhibit 12: Future with Project Intersection Capacity Analysis
Weekday AM and PM Peak Hour Conditions**

Intersection	Signalized/ Unsignalized	Direction	AM Peak		PM Peak		LOS Std
			LOS	Delay (sec)	LOS	Delay (sec)	
NE 19 th Avenue / NE 163 rd Street	S	SB EB WB <i>Overall</i>	E A B C	58.3 5.1 19.8 21.1	E B C C	65.8 10.1 23.5 24.7	E+50 E+20 E+20 E+
NE 18 th Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	E E C B C	60.4 56.8 33.2 15.6 30.0	F E B A C	167.6 66.5 15.8 9.2 31.8	D D E+20 E+20 E
NE 19 th Avenue / NE 164 th Street	S	NB SB EB WB <i>Overall</i>	C D D E D	34.8 42.2 52.9 61.3 41.8	D D D E D	36.5 39.4 50.8 59.8 41.2	E+50 E+20 E+20 E+20 E
NE 18 th Avenue / NE 164 th Street	U	NB SB EB WB <i>Overall</i>	A A A A A	9.1 8.5 8.7 9.4 9.0	A A A A A	9.5 8.5 10.0 9.6 9.6	D D E+20 E+20 E
Alley / NE 163 rd Street	U	SB	C	20.4	D	26.3	D
Biscayne Boulevard / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	E E E E E	58.3 70.0 56.1 62.6 62.4	E+2 E D F E+9	81.8 73.5 54.4 128.5 87.5	E+50 E+50 E+20 E+20 E+
NE 22 nd Avenue / NE 163 rd Street	S	NB SB EB WB <i>Overall</i>	F E+21 C F F	188.7 96.4 34.2 183.7 123.1	F F C A E	301.6 132.5 33.7 4.1 79.1	E+50 E+50 E+20 E+20 E+
Alley / NE 18 th Avenue	U	WB	A	9.6	B	10.2	D
Project Driveway / Alley	U	WB	A	8.8	A	9.1	N/A

Source: David Plummer & Associate

Signal timing improvements are recommended to improve approach delays at the NE 18th Avenue / NE 163rd Street, Biscayne Boulevard / NE 163rd Street, and NE 22nd Avenue / NE 163rd Street intersections. Exhibit 13 shows the resulting LOS for the weekday AM and PM peak hours for future with project conditions after signal timing improvements. Adding one second to the northbound left / southbound left turning movements and four seconds to the northbound / southbound through movements of the NE 18th Avenue / NE 163rd Street intersection improves approach delays during the AM peak hour. Adding three seconds to the northbound left / southbound left turning movements and one second to the northbound / southbound through movements improves the northbound / southbound approach delays and the overall delay during the PM peak hour. At the NE 22nd Avenue / NE 163rd Street intersection, adding four seconds to the eastbound / westbound left turning movements and three seconds to the northbound / southbound through movements improves approach delays and the overall delay of the intersection during the AM peak hour. Adding two seconds to the eastbound / westbound left turning movements and three seconds to the northbound / southbound through movements improves approach delays and the overall delay of the intersection during the PM peak hour. Adding three seconds to the eastbound / westbound left turning movements will improve the westbound approach delays at the Biscayne Boulevard / NE 163rd Street intersection during the PM peak hour.

**Exhibit 13: Future with Project with Improvements Intersection Capacity Analysis
Weekday AM and PM Peak Hour Conditions**

Intersection	Signalized/ Unsignalized	Direction	AM Peak		PM Peak		LOS Std
			LOS	Delay (sec)	LOS	Delay (sec)	
NE 18 th Avenue / NE 163 rd Street	S	NB	D	53.6	F	117.0	D
		SB	E	56.6	E	65.8	D
		EB	D	36.8	B	17.8	E+20
		WB	B	17.0	B	11.2	E+20
		<i>Overall</i>	C	31.6	C	27.8	E
Biscayne Boulevard / NE 163 rd Street	S	NB			E+10	88.3	E+50
		SB			E	75.9	E+50
		EB	N/A	N/A	E	55.0	E+20
		WB			E+48	118.3	E+20
		<i>Overall</i>			E+9	87.0	E+
NE 22 nd Avenue / NE 163 rd Street	S	NB	F	213.2	F	234.1	E+50
		SB	E+12	89.8	E+32	105.7	E+50
		EB	D	38.8	D	36.1	E+20
		WB	E+14	90.9	D	4.7	E+20
		<i>Overall</i>	E+35	107.8	E	65.3	E+

The approximate existing storage length and the projected 95th percentile back of queue (BOQ) at the exclusive turn lanes for the studied intersections during the AM and PM peak hour conditions are displayed in Exhibit 14. The results show that the existing storage for the southbound right, and eastbound left turn lanes at the NE 19th Avenue / NE 163rd Street intersection cannot accommodate the expected BOQ's during the AM and PM peak hours for existing, future without project, and future with project conditions. As the NE 19th Avenue / NE 163rd Street intersection is a T-intersection, the existing storage capacity noted as the storage for the southbound left and southbound right turn lanes is the length of NE 19th Avenue between NE 163rd Street and NE 164th Street. This is an existing condition, the project adds only 2.2 feet and 13.2 feet (less than one vehicle) to the southbound left and southbound right turn lane queues during the AM peak hour and adds 4.4 feet (less than one vehicle) and 41.8 feet (approximately 2 vehicles) to the southbound left and right turn lanes during the PM peak hour. It should also be noted that the project is projected to add no queue to the eastbound left turn lane.

The results show that the existing storage for the northbound left and westbound left turn lanes at the NE 18th Avenue / NE 163rd Street intersection cannot accommodate the expected BOQ's during the AM peak hours for future without project and future with project conditions. The northbound left, northbound right, and eastbound left turn lanes at the NE 18th Avenue / NE 163rd Street intersection cannot accommodate the expected BOQ's during the PM peak hours for future without project and future with project conditions. The expected BOQ for the eastbound left turn lane is projected to only exceed the existing storage by seven feet. It should be noted that the project adds no trips to the northbound left and northbound right turning movements and only adds 28 feet (less than two vehicles) to the westbound left turn lane during the AM peak hour. The signal timing adjustments recommended for the NE 18th Avenue / NE 163rd Street intersection are also projected to reduce the expected BOQs during the AM and PM peak hours.

During the AM and PM peak hours, the existing capacity of the eastbound left turn lane for the NE 19th Avenue / NE 164th Street intersection is not sufficient to accommodate the expected BOQ for future without and future with project conditions. The project is expected to increase the eastbound left BOQ by 6.6 and 8.8 feet (less than one car) during the AM and PM peak hours. The NE 163rd Street / Biscayne Boulevard intersection currently does not have the capacity to

accommodate the expected BOQs at the northbound right, southbound right, eastbound left, and westbound right turn lanes during the AM and PM peak hours or the expected BOQs for the westbound left turn lane during the PM peak hour. It should be noted, that the project adds no trips to the northbound right, westbound left, or westbound right turning movements. During the AM peak hour, the project increases the BOQ to the southbound right turn lane by five (5) feet and increases the eastbound left BOQ by three (3) feet. During the PM peak hour, the project increases the BOQ to the southbound right turn lane by 12 feet (less than one car length) and increases the eastbound left BOQ by three (3) feet. The existing capacity of the turn lanes for the NE 163rd Street / NE 22nd Avenue intersection is not sufficient to accommodate the expected BOQ for future without and future with project conditions. During the AM and PM peak hours, the project adds less than one vehicle to the expected northbound left BOQ and less than two vehicles to the projected BOQ for the southbound left turn lane. The project adds no trips to the eastbound left and westbound left turning movements. The NE 18th Avenue / NE 163rd Street and the Alley / NE 163rd Street intersections currently have enough capacity to accommodate the expected BOQs during the AM and PM peak hours.

Exhibit 14: Projected 95th Percentile Back of Queues and Existing Storage Length

Intersection	Direction	Existing		Future without Project		Future with Project		Future with Project with Sig Imp		Existing Storage
		AM	PM	AM	AM	AM	PM	AM	PM	
NE 19 th Avenue / NE 163 rd Street	SBL*	228.8	209	283.8	222.2	286	226.6			285
	SBR*	314.6	404.8	402.6	444.4	415.8	486.2	—	—	285
	EBL	107.8	360.8	204.6	387.2	204.6	387.2			220
NE 18 th Avenue / NE 163 rd Street	NBL	128	347	240	504	234	504	223	482	100
	NBR	43	88	94	119	97	119	77	94	100
	SBL	50	70	49	70	55	75	54	73	125
	EBL	22	25	24	33	28	60	29	68	60
	WBL	112	47	259	46	287	47	230	55	190
NE 19 th Avenue / NE 164 th Street	SBL	44	33	44	33	44	33			80
	EBL	50.6	129.8	50.6	132	57.2	140.8	—	—	50
	WBL	8.8	15.4	8.8	15.4	11	26.4			60
NE 18 th Avenue / NE 164 th Street	EBL	2.2	2.2	2.2	2.2	2.2	2.2			75
	WBL	8.8	8.8	11	8.8	11	8.8	—	—	75
Alley / NE 163 rd Street	SBR*	-	0	-	0	6.6	8.8	—	—	150
Biscayne Boulevard / NE 163 rd Street	NBL	173	402	192	421	194	430		421	435
	NBR	489	859	520	929	520	929		928	420
	SBL	400	395	418	430	418	430		418	430
	SBR	459	458	875	603	880	615		615	405
	EBL	183	244	274	340	277	343	—	338	250
	EBR	74	150	94	169	99	172		167	240
	WBL	297	390	343	509	343	509		473	360
	WBR*	600	1,030	651	1,091	651	1,091		1,079	500
NE 22 nd Avenue / NE 163 rd Street	NBL	96	180	187	325	189	337	204.6	310.2	150
	SBL	208	285	232	279	266	304	264	290.4	115
	EBL	12	218	55	502	55	502	66	235.4	275
	WBL	304	273	1,145	305	1,148	302	1,038	149.6	270

* Entire lane is a turn lane

5.0 EVALUATION OF POLICY 1.1.2 AND 1.1.3

The roadway segment of NE 163rd Street from NE 19th Avenue and Biscayne Boulevard was evaluated based on Policy 1.1.2 and Policy 1.1.3 as stated in the Transportation Element of the North Miami Beach Comprehensive Plan. The complete text detailing these policies are included in Appendix G. Below is an overview of both policies:

- Policy 1.1.2 states that the project must meet the City's adopted level of service standards by roadway classification.
- Policy 1.1.3 states the following *"No development shall be approved if the projected impacts of the development (including redevelopment) would reduce service levels of any roadway on the traffic circulation system below the standards in Policy 1.1.2, unless the development qualifies for a transportation concurrency exception."*

In the vicinity of the project, NE 163rd Street is a principle arterial roadway. Based on the North Miami Beach Comprehensive Plan, arterial roadways within the Urban Infill Area that are within a ½ mile distance from public mass transit service having headways of 20 minutes or less, shall operate at no greater than a LOS E+20 (20% above capacity).

The FDOTs generalized service volume tables (Appendix G) provide the maximum volume for a specific Level of Service (LOS). LOS is a qualitative assessment of a road's operating conditions and is represented by the letters A through F, where A is free flow (best condition) and F is the most congested condition.

Exhibit 15 shows roadway link analysis based on the FDOT 2013 Quality / Level of Service Handbook generalized peak hour directional service volume tables. The roadway capacity was evaluated for the following scenarios: existing, future without project, and future with project conditions.

Exhibit 15: Roadway Capacity Analysis Weekday AM and PM Peak Conditions

Existing Conditions

Roadway	Direction	# of Lanes	AM Peak Volume	PM Peak Volume	LOS Std	SV ¹	Meet LOS Std?
NE 163 rd Street Between NE 19 th Avenue and Biscayne Boulevard	EB	3LD	1,676	1,600	E+20	3,072	Yes
	WB	3LD	1,322	1,914	E+20	3,072	Yes

¹ NE 163rd Street (EB, WB) : Class II, 3 Lanes, Divided, LOS E+20, None State Roadway (2,560*1.2 = 3,072 vph)

Future without Project

Roadway	Direction	# of Lanes	AM Peak Volume	PM Peak Volume	LOS Std	SV ¹	Meet LOS Std?
NE 163 rd Street Between NE 19 th Avenue and Biscayne Boulevard	EB	3LD	1,846	1,770	E+20	3,072	Yes
	WB	3LD	1,456	2,095	E+20	3,072	Yes

¹ NE 163rd Street (EB, WB) : Class II, 3 Lanes, Divided, LOS E+20, None State Roadway (2,560*1.2 = 3,072 vph)

Future with Project

Roadway	Direction	# of Lanes	AM Peak Volume	PM Peak Volume	LOS Std	SV ¹	Meet LOS Std?
NE 163 rd Street Between NE 19 th Avenue and Biscayne Boulevard	EB	3LD	1,862	1,784	E+20	3,072	Yes
	WB	3LD	1,472	2,142	E+20	3,072	Yes

¹ NE 163rd Street (EB, WB) : Class II, 3 Lanes, Divided, LOS E+20, None State Roadway (2,560*1.2 = 3,072 vph)

Results show that the segment of NE 163rd Street between NE 19th Avenue and Biscayne Boulevard meets the LOS standards adopted by the City of North Miami Beach for all scenarios evaluated. Thus, Policy 1.1.2 is met.

Policy 1.1.3 states that “In order to qualify for a transportation concurrency exception, the development must be located within ¼ mile of either an MDTA transit center, or an MDTA or City circulator bus stop with existing, or planned and funded, peak hour headway service of 20 minutes or less, or express bus service.” Exhibit 16 provides a summary of the existing available transit within a ¼ mile vicinity of the project. Transit routes and schedule documentation are included in Appendix H.

Exhibit 16: Existing Available Transit (within ¼ mile)

Bus Stop Location		Direction	Routes	Peak Hour Headways
1	NE 163 rd Street west of NE 22 nd Avenue	WB	MDT Route 3 MDT Route 75 MDT Route 108	18 minutes 30 minutes 30 minutes
2	NE 163 rd Street west of NE 21 st Avenue	WB		
3	NE 163 rd Street west of NE 20 th Avenue	WB		
4	NE 163 rd Street east of NE 19 th Avenue	WB		
5	NE 163 rd Street east of NE 20 th Avenue	EB		
6	NE 163 rd Street east of NE 18 th Avenue	WB	MDT Route 3 MDT Route 75 MDT Route 108 MDT Route 210	18 minutes 30 minutes 30 minutes 30 minutes
7	NE 163 rd Street east of NE 18 th Court	EB		
8	NE 163 rd Street east of NE 22 nd Avenue	EB	MDT Route 3 MDT Route 75 MDT Route 105 MDT Route 108	18 minutes 30 minutes 40 minutes 30 minutes
9	NE 163 rd Street west of Biscayne Boulevard	WB		
10	NE 163 rd Street east of Biscayne Boulevard	EB	MDT Route 105 MDT Route 108	40 minutes 30 minutes
11	NE 163 rd Street east of Biscayne Boulevard	WB		
12	Biscayne Boulevard south of NE 163 rd Street	SB	MDT Route 3 MDT Route 75 MDT Route 93	18 minutes 30 minutes 30 minutes
13	Biscayne Boulevard north of NE 163 rd Street	NB	MDT Route 93	30 minutes
14	NE 22 nd Avenue north of NE 163 rd Street	NB	NMB Line Shuttle	60 minutes
15	NE 22 nd Avenue north of NE 163 rd Street	SB	NMB Line Shuttle	60 minutes
16	NE 164 th Street west of NE 22 nd Avenue	EB	MDT Route 105	40 minutes
17	NE 164 th Street west of NE 22 nd Avenue	WB	MDT Route 105	40 minutes
18	NE 164 th Street west of NE 21 st Avenue	EB	MDT Route 105 NMB Line Shuttle	40 minutes 60 minutes
19	NE 164 th Street west of NE 21 st Avenue	WB		
20	NE 164 th Street west of NE 21 st Avenue	EB	MDT Route 105	40 minutes
21	NE 164 th Street west of NE 21 st Avenue	WB		

As shown in Exhibit 16, Miami Dade Transit (MDT) provides bus stops within ¼ mile of the development with headways of 20 minutes or less. It should be noted that MDT Route 93 is the Biscayne Max and provides an express service with limited stops. In addition, the project area is also served by the North Miami Beach Shuttle route with stops less than 0.5 miles from the project.

Policy 1.1.3 also states that the development “shall also comply with one of the following alternative requirements:

- a) *The additional peak travel hour trips generated by the development do not exceed one-quarter of one percent (0.25 percent) of the peak travel hour capacity of any SIS facility, adjacent to the City, at the adopted LOS standard.*
- b) *The development shall incorporate, on or off-site, a premium transit shelter; or the development shall accommodate and provide for alternative modes of transportation, or transportation demand management, as follows, provided that the City shall determine the acceptability of alternatives proposed for any given development.”*

I-95, the FL Turnpike, and SR-826 are Strategic Intermodal System (SIS) facilities adjacent to the City and within the vicinity of the project. Based on the Miami-Dade County Comprehensive Plan the minimum LOS standard for Florida Strategic Intermodal System (SIS) limited access state highways with exclusive through lanes, is LOS E.

The FDOT’s generalized service volume tables were used to calculate the two-way peak hour service volumes for I-95, the Turnpike, and SR-826. Trip generation calculations (included in section 4.3 of this report) were used to determine additional peak hour trips generated by the proposed development. Net external trips for the PM peak hour were distributed based on the cardinal distribution. Consideration was given to conditions such as the roadway network accessed by the project traffic, roadways available to travel in the desired direction, and attractiveness of traveling on a specific roadway. Exhibit 17 provides calculations used to evaluate part *a* of the statement above.

Exhibit 17: Calculations for Policy 1.1.3 Part A

SIS Facility	Direction	# of Lanes	LOS Std	SV ¹	PM Peak Two-way Project Trips	Trips Assignment	% of peak hour capacity	Meets Criteria ?
I-95	Two-way	8 L	E	16,810	113	5	0.03%	Yes
FL Turnpike	Two-way	4 L	E	8,990	113	5	0.06%	Yes
SR-826	Two-way	6 L	E	12,900	113	20	0.16%	Yes

¹ **Interstate 95:** Freeway 8 Lane, +1,800 Auxiliary Ln present in both directions (15,010 vph + 1,800 = 16,810 vph)
Interstate FL Turnpike: Freeway 4 Lane, +1,800 Auxiliary Ln present in both directions (7,190 vph + 1,800 = 8,990 vph)
SR - 826: Freeway 6 Lane, +1,800 Auxiliary Ln present in both directions (11,100 vph + 1,800 = 12,900 vph)

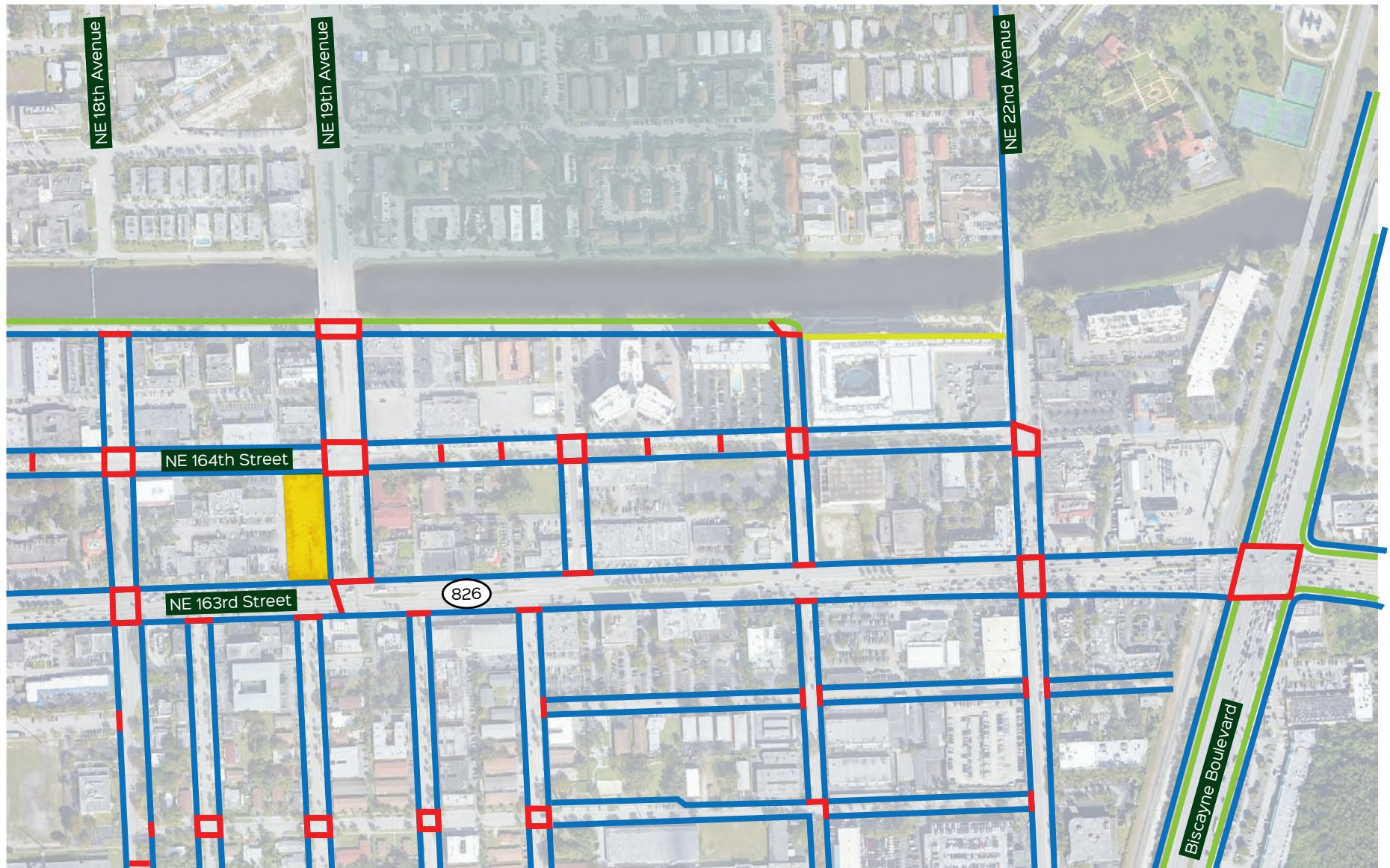
As shown in Exhibit 17, part *a* of Policy 1.1.3 is satisfied. Part *b* of the policy can be met if the development provides a Transportation Demand Management (TDM) plan to accommodate alternative modes of transportation. It should be noted that only one part is required to be satisfied by the development. Since both the transit proximity requirement and one alternative requirement (part *a*) are met, the development qualifies as a transportation concurrency exception based on Policy 1.1.3.

6.0 CIRCULATION PLAN

The SKYGarden project will be located at 16300 NE 19th Avenue in North Miami Beach, Florida. The proposed residential development will consist of 341 dwelling units and 12,635 SF of retail space. Main access to the site will be provided via a proposed driveway leading to the ramp to the development's parking garage located on an existing alley west of the project site. The valet drop-off / Pick-up area will be located on NE 19th Avenue. The loading area for the site is located at the northwest corner of the site directly north of the project driveway. Access to the loading area is also provided by the existing alleyway located west of the site. An AutoTURN analysis was performed on the loading area. The analysis shows that the site will accommodate SU-30 commercial vehicles entering / exiting the alleyway and loading area. See Appendix I for the AutoTURN analysis.

The project is located in an area that is conducive for pedestrian activities. All intersections adjacent to the site have sidewalks and clearly marked crosswalks. The signalized intersections provide pedestrian signals. The project is also providing bicycle parking within the parking garage to encourage pedestrian activity. A mobility plan was prepared for the site (Exhibit 18). The plan shows the project driveway, sidewalk connections, and pedestrian crosswalks.

The area surrounding the project is served by transit. Miami-Dade transit bus routes 210, 108H, 105E, 75, 3, and 93 traverse this area of North Miami Beach. The closest bus stops to the project are the NE 163rd Street / NE 19th Avenue bus stop (located on NE 163rd Street, just east of the project) and the NE 164th Street / NE 19th Avenue bus stop (located just north of the project). Bus routes 3, 75, 105, and 108 are served by these bus stops. (See Exhibit 16 in Section 5.0 for additional bus stop locations). The North Miami Beach (NMB) line shuttle (route A) also traverses the project area. The closest NMB shuttle stops to the project are the Inland Tower stops located on NE 164th Street, approximately 75 feet west of NE 21st Avenue. Exhibit 19 shows the available bus routes and bus stops near the project. See Appendix H for transit information.



 Project Location

Exhibit 18

Mobility - Pedestrian

-  Bikelane
-  Pedestrian/Bike Path
-  Sidewalks
-  Crosswalks



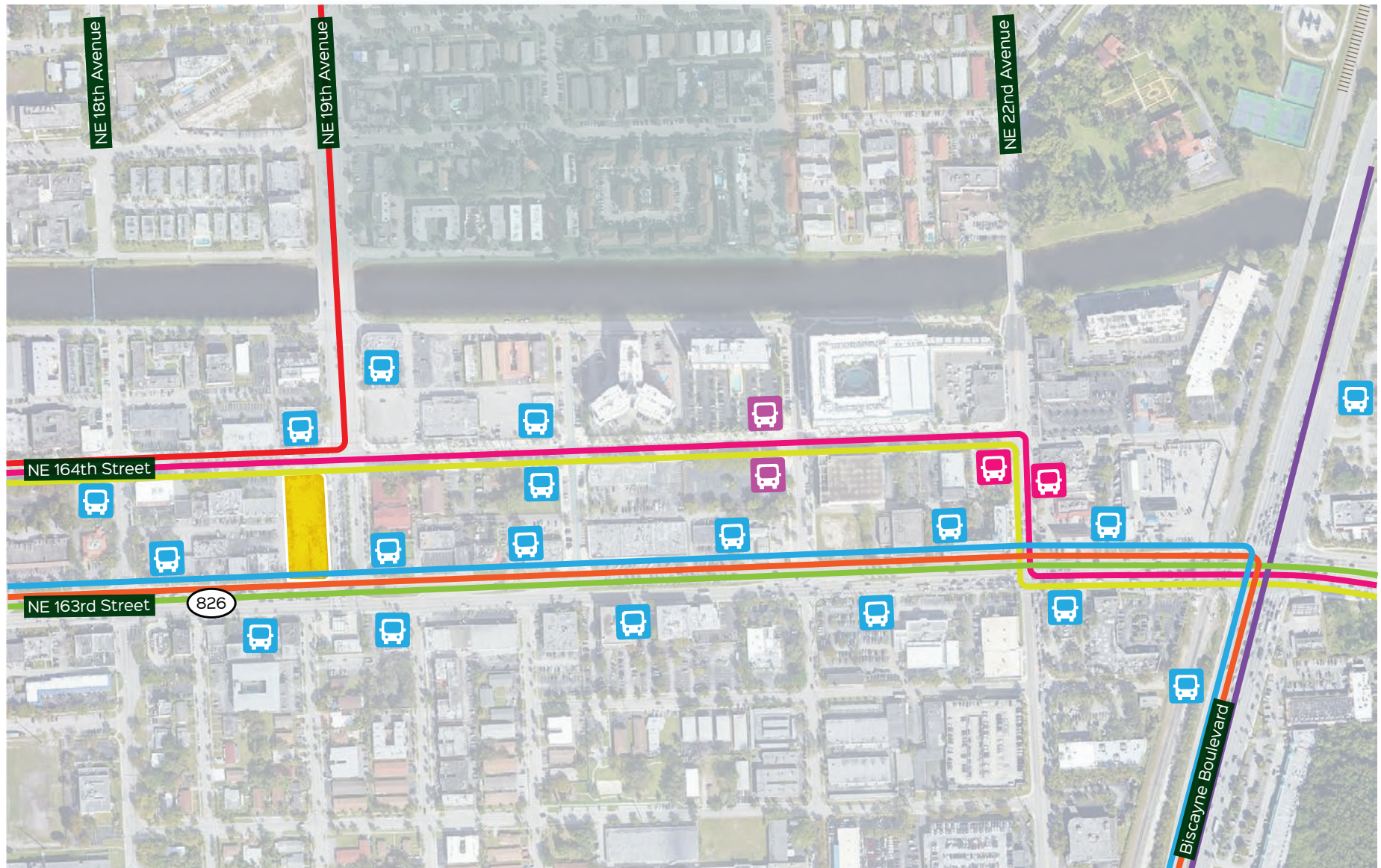


Exhibit 19

Mobility - Transit

Project Location

-  Miami-Dade Transit Bus Stops
-  Bus/Shuttle Stops
-  Shuttle Stops

North Miami Beach Line Shuttle

Route A

Miami-Dade Bus Routes

-  3 (20 min Headways)
-  105E (40 min Headways)
-  75 (30 min Headways)
-  93 Biscayne Max (30 min)
-  108H (30 min Headways)
-  210 Skylake Circular (30 min Headways)



NORTH
MAP NOT TO SCALE

7.0 QUEUING ANALYSIS

The queuing analysis was performed based on the methodology outlined in the *Institute of Transportation Engineers (ITE) Transportation and Land Development*, to determine the number of valet parking attendants required during the AM and PM peak hours of a regular weekday so that the queue does not extend past the valet storage area (95% confidence level analysis). The potential queues were calculated based on the AM and PM peak hours of the adjacent street published by the *Institute of Transportation Engineers (ITE)* trip generation rates and/or equations for the proposed development plan. The project is proposing optional valet parking for all land uses. The pick-up / drop-off area will be located on the east side of the property along NE 19th Street. As valet parking is optional, it was assumed that a conservative 10% of the AM and PM peak hour trips would choose to use valet parking. Exhibit 20 provides the trip generation for the pick-up / drop-off area during the AM and PM peak hours of the adjacent street for the project at the valet station.

Exhibit 20: AM and PM Peak Hour Trip Generation Summary

Proposed ITE Land Use Designation ¹	Number of Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
(High-Rise) <i>Land Use Code: 222</i>	341 DU	1,556	26	82	108	76	49	125
Retail ² <i>Land Use Code: 820</i>	12,635 SF	1,474	7	5	12	56	61	117
Total Gross Trips		3,030	33	87	120	132	110	242
Internalization	AM	3.3%	-2	-2	-4	-22	-22	-44
	PM	18.2%						
Other Modes of Transportation ³		10.0%	-4	-8	-12	-11	-9	-20
Net Proposed Trips			27	77	104	99	79	178
Proposed Trips at Valet Station 10%		10%	3	8	11	10	8	18

¹Based on ITE *Trip Generation*, 10th Edition.

²Rate was used for the AM peak hour to better reflect the size of the use.

³Capped at 10% per City, based on US Census Data, 22.7% reduction.

⁴Based on ITE *Trip Generation Handbook*, 3rd Edition.

The valet queuing analyses used the single-channel waiting line model with Poisson arrivals and exponential service times. The analysis is based on the coefficient of utilization (ρ) which is the ratio of the average arrival rate of vehicles to the average service rate.

$$\rho = \frac{\text{Average Demand Rate}}{\text{Average Service Rate}}$$

The average service rate corresponds to the time it will take a valet parking attendant to park or retrieve a vehicle. If the coefficient of utilization is greater than 1, then the calculation will yield an infinite queue length.

The required queue storage (M) is determined using the following equation:

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

In this equation, $P(x > M)$ is set at 5% to yield a 95% confidence that the queue will not back-up onto the adjacent street.

The processing rate was calculated by adding the time it will take a valet attendant to process the vehicles (**processing time**), the time it will take him to circulate to / from the parking space (**driving time**), the time it will take him to park or retrieve a vehicle (**park processing time**), and the time it will take him to walk to/from the parking area (**walking time**). A processing time of 51 seconds per vehicle was used in the analysis. This information is based on data collected from a hotel on Miami Beach (see Appendix J). The driving time for the valet attendant was calculated on a speed of 10 mph. This speed is relatively slow compared to the actual speed a valet attendant can potentially achieve on adjacent roadways. This assumption is meant to account for any delays, since valet attendants will need to circulate around the property. The walking time for the valet attendant was calculated on a jogging speed of 8 ft/sec.

7.1 AM Peak Hour Queuing Analysis

Since the distance from the valet drop-off / pick-up area differs for inbound / outbound, a weighted average was taken of the inbound / outbound valet processing times. The weighted average was based on the inbound / outbound valet trip distribution, which is 27% inbound and 73% outbound during the AM peak hour. The valet processing times can be seen in Exhibit 21.

Exhibit 21: AM Peak Hour Inbound / Outbound Valet Processing Rate

Inbound Valet Processing Time

<i>Processing time:</i>	51 sec / 60 sec / 1 min = 0.85 min
<i>Driving time:</i>	1,048 ft * 1 mile / 5280 ft * 1 hr / 10 miles * 60 min / hr = 1.19 min
<i>Park Processing time:</i>	0.25 min
<i>Walking time:</i>	389 ft / 8 ft / sec / 60 sec / min = 0.83 min
Total	= <u>3.12 min</u>

Outbound Valet Processing Time

<i>Processing time:</i>	51 sec / 60 sec / 1 min = 0.85 min
<i>Driving time:</i>	1,131 ft * 1 mile / 5280 ft * 1 hr / 10 miles * 60 min / hr = 1.29 min
<i>Park Processing time:</i>	0.25 min
<i>Walking time:</i>	389 ft / 8 ft / sec / 60 sec / min = 0.83 min
Total	= <u>3.22 min</u>

Weighted Inbound / Outbound Valet Time

<i>27% Inbound:</i>	0.27 * 3.12 min = 0.84 min
<i>73% Outbound:</i>	0.73 * 3.22 min = 2.35 min
Total	= <u>3.19 min</u>

Exhibit 22 shows the queuing calculations for the valet drop-off / pick-up area during the AM peak hour of the adjacent street.

Exhibit 22: AM Peak Hour Valet Drop-off / Pick-up Queuing Calculations

$$Q = \text{Processing rate} = \frac{60 \text{ min/hr}}{3.19 \text{ min/process}} = 18.80 \text{ process/hr}$$

$$q = \text{Demand Rate} = 11 \frac{\text{veh}}{\text{hr}}$$

$$N = \text{Service Positions} = 2 \text{ attendants}$$

$$\rho = \text{Utilization factor} = \frac{q}{(NQ)} = \frac{11 \text{ veh/hr}}{2 \times 18.80 \text{ process/hr}} = 0.2925$$

$$Q_m = \text{Table Value} = 0.1331$$

$$M = \text{queue length which is exceeded 5\% of the time } [P(x > M)]$$

$$M = \frac{\ln P(x > M) - \ln(Q_m)}{\ln(\rho)} - 1 = \frac{\ln(0.05) - \ln(0.1331)}{\ln(0.2925)} - 1 = -0.20, \text{ say No Vehicles on queue}$$

The results of the analysis show that a total of two valet attendants would be able to handle the inbound / outbound demand at the drop-off / pick-up area with no queue during the AM peak hour.

7.2 PM Peak Hour Queuing Analysis

Since the distance from the valet drop-off / pick-up area differs for inbound / outbound, a weighted average was taken of the inbound / outbound valet processing times. The weighted average was based on the inbound / outbound valet trip distribution for the PM peak hour, which is 56% inbound and 44% outbound. The valet processing times can be seen in Exhibit 23.

Exhibit 23: PM Peak Hour Inbound / Outbound Valet Processing Rate

Inbound Valet Processing Time

Processing time:	51 sec / 60 sec / 1 min = 0.85 min
Driving time:	1,048 ft * 1 mile / 5280 ft * 1 hr / 10 miles * 60 min / hr = 1.19 min
Park Processing time:	0.25 min
Walking time:	389 ft / 8 ft / sec / 60 sec / min = 0.83 min
Total	= 3.12 min

Outbound Valet Processing Time

Processing time:	51 sec / 60 sec / 1 min = 0.85 min
Driving time:	1,131 ft * 1 mile / 5280 ft * 1hr / 10 miles * 60 min / hr = 1.29 min
Park Processing time:	0.25 min
Walking time:	389 ft / 8 ft / sec / 60 sec / min = 0.83 min
Total	= <u>3.22 min</u>

Weighted Inbound / Outbound Valet Time

56% Inbound:	0.56 * 3.12 min = 1.74 min
44% Outbound:	0.44 * 3.22 min = 1.42 min
Total	= <u>3.16 min</u>

Exhibit 24 shows the queuing calculations for the valet drop-off / pick-up area during the PM peak hour of the adjacent street.

Exhibit 24: PM Peak Hour Valet Drop-off / Pick-up Queuing Calculations

$$Q = \text{Processing rate} = \frac{60 \text{ min/hr}}{3.16 \text{ min/process}} = 18.96 \text{ process/hr}$$

$$q = \text{Demand Rate} = 18 \frac{\text{veh}}{\text{hr}}$$

$$N = \text{Service Positions} = 2 \text{ attendants}$$

$$\rho = \text{Utilization factor} = \frac{q}{(NQ)} = \frac{18 \text{ veh/hr}}{2 \times 18.96 \text{ process/hr}} = 0.4745$$

$$Q_m = \text{Table Value} = 0.3067$$

$$M = \text{queue length which is exceeded 5\% of the time } [P(x>M)]$$

$$M = \frac{\ln P(x>M) - \ln(Q_m)}{\ln(\rho)} - 1 = \frac{\ln(0.05) - \ln(0.3067)}{\ln(0.4745)} - 1 = 1.43, \text{ say } 2 \text{ Vehicles on queue}$$

The results of the analysis show that a total of two valet attendants would be able to handle the inbound / outbound demand at the drop-off / pick-up area with approximately two vehicles in the queue during the PM peak hour. As the project is providing 70 feet of storage (approximately three vehicles) for the valet station, the queue will not extend past the drop-off / pick-up area. It should be noted that the queuing analysis considers the worst case scenario during the peak hours to ensure that the queue fits within the provided storage. Once operational the development can assess the actual need for valet attendants.

8.0 CONCLUSIONS

An assessment of the traffic impacts associated with the SkyGarden Miami project was performed in accordance with the requirements of the City of North Miami Beach. The results of the roadway capacity analysis shows that the NE 163rd Street roadway segment currently operates and will continue to operate within the FDOT established capacity and the City of North Miami Beach adopted level of service (LOS) standards. The results of the intersection analysis indicates that the following studied intersections are projected to continue to operate within the overall City's LOS standards during the AM and PM peak hours:

- NE 163rd Street / NE 19th Avenue
- NE 163rd Street / NE 18th Avenue
- NE 164th Street / NE 19th Avenue
- NE 164th Street / NE 18th Avenue
- NE 163rd Street / Alley
- NE 163rd Street / US-1 / Biscayne Boulevard
- NE 18th Avenue / Alley

For future without project and future with project conditions, the NE 22nd Avenue / NE 163rd Street intersection experiences delays in the AM peak hour and meets the overall LOS standards during the PM peak hour. Signal timing improvements are recommended to improve approach delays at the NE 18th Avenue / NE 163rd Street, Biscayne Boulevard / NE 163rd Street, and NE 22nd Avenue / NE 163rd Street intersections and to improve the overall delay of the NE 22nd Avenue / NE 163rd Street intersection during the AM peak hour.

The roadway segment of NE 163rd Street between NE 19th Avenue and Biscayne Boulevard was evaluated based on Policy 1.1.2 and Policy 1.1.3 of the Transportation Element of the North Miami Beach Comprehensive Plan. The analysis shows that this segment of NE 163rd Street meets the LOS and capacity standards established in Policy 1.1.2 at existing, future without project, and future with project conditions. The project also meets the transit proximity requirements and the LOS standard for SIS facilities established in Policy 1.1.3. Therefore, the project qualifies for a transportation concurrency exception.

The project area is currently served by the City of North Miami Beach shuttle and Miami-Dade Transit bus routes 3, 75, 93, 105, 210, and 108. The project is located in an area that is conducive for pedestrian activities providing ample sidewalks and pedestrian crosswalks. Pedestrian mobility, within and around the site, is also encouraged by providing on-site bicycle storage. The availability of transit and the existing pedestrian / bicyclist infrastructure will encourage the use of other modes of transportation and will reduce the project's vehicular impacts on the roadway network. An AutoTURN analysis was completed as part of the study. The AutoTURN analysis shows that the site will accommodate SU-30 commercial vehicles.

A queuing analysis was performed to ensure that the drop-off / pick-up demand at the proposed valet station would not extend past the provided storage space at the valet station during the AM and PM peak hours. The results of the queuing analysis shows that (with two valet attendants) the queue will not extend past the valet station storage area during the AM and PM peak hours of the adjacent street.

w:\20\20146\1_response to comments nov 2020\skygarden traffic study_jan 2021.docx

Appendix A

Site Plan



SKYGARDEN MIAMI

PLANNING & ZONING BOARD SUBMISSION

02-11-21

DEVELOPER

CEO CONTRACT INC

1019 KANE COURSE SUITE 202

Bay Harbor, Florida 33154

T.305.850.9450

ARCHITECT OF RECORD

PERMUY ARCHITECTURE

2717 PONCE DE LEON BLVD

Coral Gables, Florida 33134

T.305.200.5302

LANDSCAPE ARCHITECT

CURTIS + ROGERS DESIGN STUDIO INC.

7520 SOUTH RED ROAD

SUITE M

South Miami, Florida 33143

T.305.442.1774

CIVIL ENGINEER

DAVID PLUMMER & ASSOCIATES

1750 PONCE DE LEON BLVD

Coral Gables, Florida 33134

T.305.447.0900

ATTORNEY

BERCOW RADELL FERNANDEZ

LARKING & TAPANES

200 S. BISCAYNE BLVD SUITE 850

Miami, Florida 33131

T.305.374.5300

DRAWING INDEX				
Sheet Number	Sheet Name	06/04/20 - TRAD SUB.	10/26/20 - TRAD SUB.	12/10/20 - PROGRESS
A-0.00	COVER	•	•	•
A-0.01	RENDERING		•	•
A-0.02	RENDERING		•	•
A-0.03	RENDERING		•	•
A-0.04	AERIAL	•	•	•
A-0.05	CONTEXT PICTURES & MAPS	•	•	•
A-0.06	SURVEY	•	•	•
A-0.07	REGULATORY PLANS			
A-0.08	SITE PLAN	•	•	•
A-0.09	VARIANCE PLAN			
A-0.10	AREA CALCULATION	•	•	•
A-0.11	SITE DIAGRAMS		•	•
A-0.12	GLASS CALCULATION		•	•
A-0.13	UNIT AREA CALCULATION			
A-1.00	GROUND FLOOR PLAN	•	•	•
A-1.01	2nd FLOOR - PARKING LEVEL	•	•	•
A-1.02	TYPICAL PARKING LEVEL		•	•
A-1.03	5th FLOOR - PARKING LEVEL		•	•
A-1.04	6TH FLOOR - REC	•	•	•
A-1.05	RESIDENTIAL FLOOR PLANS ODD LEVELS			
A-1.06	RESIDENTIAL FLOOR PLAN EVEN LEVELS	•	•	•
A-1.07	ROOF PLAN		•	•
A-1.20	UNITS FLOOR PLANS		•	•
A-2.00	EAST ELEVATION	•	•	•
A-2.01	NORTH & SOUTH ELEVATIONS	•	•	•
A-2.02	WEST ELEVATION	•	•	•
A-3.00	BUILDING SECTION	•	•	•
A-3.01	GARAGE SCREEN		•	•
A-3.02	GARAGE DETAILS			
A-4.00	3D VIEW		•	•
A-4.01	3D VIEW		•	•
A-4.02	3D VIEW		•	•
C-1	SITE PLAN		•	•
C-2	UTILITY PLAN		•	•
C-3	GRADING PLAN		•	•
L-1.00	TREE DISPOSITION		•	•
L-1.01	GROUND FLOOR PLAN		•	•
L-1.02	7th FLOOR PLAN - REC		•	•
L-1.03	ROOF FLOOR PLAN		•	•

DRAWING INDEX					
Sheet Number	Sheet Name	060420 - TRAD SUB.	102620 - TRAD SUB.	121020 - PROGRESS	011521 - PROGRESS
LT-1	PHOTOMETRICS GROUND		•	•	
LT-1.1	PHOTOMETRICS GROUND		•	•	
LT-1.1E	PHOTOMETRICS GROUND		•	•	
LT-1E	PHOTOMETRICS GROUND		•	•	
LT-2	PHOTOMETRICS GARAGE		•	•	
LT-2E	PHOTOMETRICS GARAGE		•	•	
LT-3	PHOTOMETRICS GARAGE		•	•	
LT-3E	PHOTOMETRICS GARAGE		•	•	
LT-4	PHOTOMETRICS GARAGE		•	•	
LT-4E	PHOTOMETRICS GARAGE		•	•	
LT-5	PHOTOMETRICS TYPICAL LEVEL		•	•	
LT-5E	PHOTOMETRICS TYPICAL LEVEL		•	•	
LT-6	PHOTOMETRICS POOL DECK		•	•	
LT-7	PHOTOMETRICS ROOF PLAN		•	•	

[illegible]

PROJECT NO. 2025

DATE: 02/11/21

SHEET INDEX: COVER

SCALE:

SHEET NO. _____

A-0.00



TRASH NOTE:

1- THIS DEVELOPMENT IS MIXED USE, THERE WILL BE NO BULK TRASH REMOVAL SERVICE.

2- ALL GARBAGE SERVICE TO BE PROVIDED BY THE CITY OF NORTH MIAMI BEACH OR ITS CONTRACTOR, CURRENTLY, WASTE MANAGEMENT.

WATER PROVIDED BY CITY OF NORTH MIAMI
BEACH.

SEWER PROVIDER WILL BE MIAMI DADE
WATER AND SEWER AUTHORITY.

NATURAL GAS PROVIDER - TECO - PEOPLES
GAS

STORMWATER WILL BE DISCHARGED BY A
STORMWATER DEEP WELL

FIRE HYDRANT - THERE IS AN EXISTING FIRE HYDRANT ON THE SOUTH SIDE OF NE 164 STREET THAT WILL BE REMOVED AND A NEW FIRE HYDRANT INSTALLED TO THE WEST.

ZONING CLASSIFICATION	ALLOWED/REQUIRED	PROPOSED
	FULFORD MIXED-USE TOWN CENTER DISTRICT (MU/TC)	
	TRANSITION SUB - AREA	
LOT COVERAGE		33,010.45 SF (88.5%)
OPEN SPACE		4,269.45 SF (11.4%)
BUILDING FRONTAGE		
19TH AVENUE (PRIMARY STREET)	SITE LENGTH = 300' - 2" X 90% = 270' - 2"	281' - 4" (93%)
NE 164th STREET (PRIMARY STREET)	SITE WIDTH = 125' - 1" X 90% = 112' - 6"	120' - 5" (95%)
NE 163th STREET (SECONDARY STREET)	SITE WIDTH = 125' - 1" X 90% = 112' - 6"	120' - 5" (95%)
BUILDING MAXIMUM HORIZONTAL DIMENSION	300 FT MAX.	281' - 4"
SETBACKS	ALLOWED/REQUIRED	PROPOSED
PRINCIPAL FRONT		
19TH AVENUE (PRIMARY STREET)	0' MIN. - 20' MAX.	4'-7"
SECONDARY FRONTS		
NE 164th STREET (PRIMARY STREET)	0' MIN. - 20' MAX.	0'-7"
NE 163th STREET (SECONDARY STREET)	15' MIN. - 25' MAX.	16'-3"
REAR		
ALLEY	0' MIN.	0'
MAXIMUM HEIGHT	ALLOWED/REQUIRED	PROPOSED
	20 STORIES / 255 FEET - 25 STORIES / 315 FEET	19 STORIES / 224'-0" FEET
USES PROVIDED		
GROUND FLOOR RETAIL		12,635 SF
RESIDENTIAL UNITS		341 UNITS
PARKING CALCULATION		
RESIDENTIAL UNITS	1 SPACE / UNIT = 341 SPACES	341 SPACES
VISTORS PARKING	1 SPACE / 20 UNITS = 17.05	18 SPACES
RETAIL PARKING	2 SPACES / 1,000 SF = 26 SPACES	26 SPACES
TOTAL	384.05 SPACES	405 SPACES (1.18 PER UNIT RATIO)
BICYCLE STORAGE	1 SPACE / 15 REQUIRED PARKING SPACES = 405/15 = 27 SPACES	40 SPACES
UNIT SIZES		
1-1 UNIT		593 SF MIN - 674 SF MAX
2-1 UNIT		641 SF MIN - 842 SF MAX
2-2 UNIT		723 SF MIN - 991 SF MAX
AVERAGE UNIT SIZE	239,706.16 SF RESIDENTIAL / 341 UNITS = 702 SF AVERAGE	702 SF / UNIT (AVERAGE) (VARIANCE REQUIRED)

PARKING SCHEDULE	
Level	Count
2nd Level	91
3rd Level	91
4th Level	91
5th Level	132
Grand total: 405	

Appendix B

Approved Methodology

SKYGarden Miami Traffic Study Methodology

June 15, 2020

Revised: August 28, 2020

DPA will undertake a Traffic Impact Analysis as required by the City of North Miami Beach. This methodology will provide the details of the Traffic Impact Analysis proposed for this development. This methodology is based on the requirements from the City. Confirmation of this methodology will be requested from the City prior to performing the study. All work will be based on the final development plan to be provided by the client.

Location: The proposed project will be located at 16300 NE 19th Avenue in North Miami Beach, FL. The project proposes a new residential development with 372 dwelling units and approximately 16,000 SF of ground floor retail. Access to the site will be through the existing alley located west of the project site. The proposed site plan is provided in Attachment A.

Existing Site: Vacant

Proposed Plan: High Rise Multifamily Housing – 372 units
Retail – 16,000 square feet

Trip Generation:

Proposed ITE Land Use Designation ¹	Number of Units	Daily Vehicle Trips	AM Peak Hour Vehicle Trips			PM Peak Hour Vehicle Trips		
			In	Out	Total	In	Out	Total
(High-Rise) <i>Land Use Code: 222</i>	372 DU	1,678	28	89	117	82	53	135
Retail ² <i>Land Use Code: 820</i>	16,000 SF	1,730	9	6	15	67	73	140
Total Gross Trips		3,408	37	95	132	149	126	275
Internalization	AM	3.0%	-2	-2	-4	-26	-26	-52
	PM	18.9%						
Other Modes of Transportation ³		10.0%	-4	-10	-14	-12	-10	-22
Retail Passby ⁴ (PM)			0	0	0	-18	-18	-36
Net Proposed Trips			31	83	114	93	72	165

¹Based on ITE Trip Generation, 10th Edition.

²Rate was used for the AM peak hour to better reflect the size of the use.

³Capped at 10% per City, based on US Census Data, 22.7% reduction.

⁴Based on ITE Trip Generation Handbook, 3rd Edition.

Methodology: The proposed methodology is outlined below:

Study Area

The study area for the project will include the following intersections:

- NE 163rd Street / NE 19th Avenue
- NE 163rd Street / NE 18th Avenue
- NE 164th Street / NE 19th Avenue
- NE 164th Street / NE 18th Avenue
- NE 163rd Street / Alley
- NE 163rd Street / US-1/ Biscayne Boulevard
- NE 163rd Street / NE 22nd Avenue
- NE 18th Avenue / Alley

In addition, the roadway segment of NE 163rd Street between NE 19th Avenue and Biscayne Boulevard will be evaluated based on Policy 1.1.2 and Policy 1.1.3 of the Transportation Element of the North Miami Beach Comprehensive Plan.

Analysis Scenarios

The analysis scenarios for this study are as follows:

- Existing year
- Project build-out year (2022) without project trips (background traffic)
- Project build-out year (2022) with project trips (total traffic)

Data Collection

- Turning movement counts (TMCs) will be collected during the morning (7 – 9 am) and afternoon (4 – 6 pm) peak hour conditions of a regular weekday at the study intersections.
- Collected counts will be modified for COVID-19 traffic patterns. This volume adjustment will be made comparing historical traffic data for NE 163rd Street. Existing FDOT traffic count station 875225 data will be compared against a newly collected 72 hour tube count at same location.
- 72 hour tube counts will be collected on NE 163rd Street just east of NE 20th Avenue near existing FDOT permanent count station 875225.
- Field reviews will be performed to obtain existing physical and operating characteristics of the roadway network within the study area. Data to be acquired will include the number and type of traffic lanes, intersection geometrics, signal timings, speed limit information, and other appropriate physical and operating characteristics.
- Roadway improvements included within the first three years of the 5-year FDOT Work Program or roadway improvements identified by the City will be assumed as committed for analysis purposes.

Existing Conditions Intersection Analysis

- Intersection capacity analyses will be evaluated for the study area intersections using the Synchro software. Access driveways will be included as part of the LOS analysis. All input files will be provided for review purposes.

Future Conditions Intersection – Background Traffic Conditions

- Future background traffic volumes will be determined by applying a compound growth rate to existing volumes and adding committed development traffic (if any). The growth rate will be calculated based on a review of historical volumes obtained from FDOT and Miami-Dade County. If the historical growth rate is calculated to be less than 0.5 percent, a 0.5 percent annual growth will be used for analysis purposes.
- Committed trips for approved but unbuilt development projects for the following projects will be used as background traffic: Regions Bank, Self-Storage (15699 W Dixie Highway), New North Tower Center (15780 West Dixie Highway), Uptown Biscayne Boulevard (NE 163rd Street and US-1). Information was provided by the City.
- Committed roadway improvements will be obtained from the 2020 *Miami-Dade County TIP* and/or FDOT's 5-year program. Any programmed improvement that increases capacity will be included in the analysis.
- Planned roadway improvements will be obtained from MDC's 2040 *Long Range Plan* for documentation purposes only.

Project Trip Generation

Using information contained in the Institute of Transportation Engineer's (ITE) *Trip Generation Manual*, 10th Edition, trips associated with the existing and proposed development will be estimated. Pass-by and internal capture trips will be established based on the ITE, *Trip Generation Manual, Users Guide and Handbook*, 10th Edition. A deduction for other modes of transportation will be based on local characteristics and/or modal splits near the proposed development.

Project Trip Distribution

Trip Distribution / Trip Assignment – Net new external project traffic will be assigned to the adjacent street network using the appropriate cardinal distribution from the *Miami-Dade 2040 Long Range Transportation Plan Update*, published by the *Metropolitan Planning Organization*. Normal traffic patterns will also be considered when assigning project trips.

Future Conditions Intersection – Total Traffic Conditions

- Future total traffic volumes will be determined by adding project trips to committed development and background traffic volumes.
- Intersection capacity analyses will be evaluated using the Synchro software. Signal timings may be optimized for future conditions analyses. Signal timing optimizations and modifications will be coordinated with Miami Dade County Public Works Traffic and Signs Division for approval as necessary.
- For intersections that fail to operate at an acceptable level of service, improvements will be recommended to mitigate the impacts of project trips from the proposed development. The improvements are intended to mitigate project traffic impacts, the improvements will not necessarily result in the intersection operating at an acceptable level of service.
- Alternative modes of transportation in the area will be described in the report.
- Operation analysis at driveways providing access to / from the site will also be conducted.

Other Considerations:

- An Auto-turn analysis for the proposed loading area will be conducted.
- NE 163rd Street Turn Lane analysis (95th Percentile Back of Queue) will be performed.

- A queuing analysis will be performed if valet parking or a gated parking area is provided on site. The potential queue at the project entrances will be calculated based on the peak hour traffic published by ITE's Trip Generation, 10th Edition. The queuing analysis will be based on the methodology outlined in the Institute of Transportation Engineers (ITE) Transportation and Land Development. The analysis will be performed to determine if there is sufficient storage within the site to accommodate the anticipated queue at the proposed gated entrance and/or the valet station during peak hour so that the queue does not extend onto the adjacent street (95% confidence level analysis).

w:\20\20146\traffic study methodology_aug 2020.docx

Appendix C

Data Collection

Traffic Volumes

FDOT Count Station Traffic Volumes

Covid-19 Factor Calculations

Seasonal Factors

Signal Timings

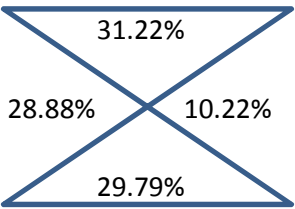
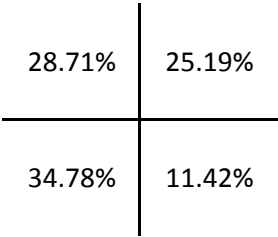
Historic Background Growth

Cardinal Distribution
Sky Garden

20146

TAZ 98

DIRECTION	2015	2045	2022
NNE	16.5%	18.9%	17.06%
ENE	8.6%	6.6%	8.13%
ESE	2.2%	1.7%	2.08%
SSE	9.1%	10.1%	9.33%
SSW	20.2%	21.3%	20.46%
WSW	14.3%	14.4%	14.32%
WNW	14.6%	14.4%	14.55%
NNW	14.6%	12.7%	14.16%



DIRECTIONAL TRIP DISTRIBUTION REPORT

Miami-Dade 2015 Base Year Direction Trip Distribution Summary											
TAZ of Origin		Trips / Percent	Cardinal Directions								Total Trips
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
79	2979	Trips	191	104	78	284	397	273	195	326	1,875
79	2979	Percent	10.4	5.6	4.3	15.4	21.5	14.8	10.6	17.6	
80	2980	Trips	8,681	2,809	1,368	5,932	13,818	10,867	8,744	14,261	73,625
80	2980	Percent	13.1	4.2	2.1	8.9	20.8	16.4	13.2	21.5	
81	2981	Trips	1,647	1,897	537	1,291	2,397	1,683	1,326	1,826	13,373
81	2981	Percent	13.1	15.1	4.3	10.2	19.0	13.4	10.5	14.5	
82	2982	Trips	4	8	0	8	11	5	14	3	54
82	2982	Percent	7.7	14.8	0.0	14.8	21.1	9.3	26.2	5.9	
83	2983	Trips	273	57	13	127	235	168	102	126	1,111
83	2983	Percent	24.8	5.2	1.2	11.6	21.4	15.3	9.3	11.4	
84	2984	Trips	432	452	108	276	747	592	444	462	3,632
84	2984	Percent	12.3	12.9	3.1	7.9	21.3	16.8	12.6	13.1	
85	2985	Trips	261	89	194	118	388	325	270	362	2,042
85	2985	Percent	13.0	4.4	9.7	5.9	19.3	16.2	13.5	18.0	
86	2986	Trips	771	180	89	332	764	741	432	552	3,920
86	2986	Percent	20.0	4.7	2.3	8.6	19.8	19.2	11.2	14.3	
87	2987	Trips	570	56	151	125	505	344	317	381	2,512
87	2987	Percent	23.3	2.3	6.2	5.1	20.6	14.0	13.0	15.6	
88	2988	Trips	474	50	21	119	300	208	162	216	1,570
88	2988	Percent	30.6	3.2	1.3	7.7	19.4	13.4	10.5	13.9	
89	2989	Trips	331	79	39	34	347	282	145	213	1,495
89	2989	Percent	22.5	5.4	2.6	2.3	23.6	19.2	9.9	14.5	
90	2990	Trips	4,146	286	429	825	3,640	2,975	2,072	3,514	19,467
90	2990	Percent	23.2	1.6	2.4	4.6	20.4	16.6	11.6	19.6	
91	2991	Trips	259	269	65	347	858	1,335	524	1,228	5,195
91	2991	Percent	5.3	5.5	1.3	7.1	17.6	27.3	10.7	25.1	
92	2992	Trips	349	364	45	275	580	901	348	802	3,879
92	2992	Percent	9.5	9.9	1.2	7.5	15.8	24.6	9.5	21.9	
93	2993	Trips	195	74	12	52	224	221	153	156	1,098
93	2993	Percent	18.0	6.8	1.1	4.8	20.6	20.3	14.0	14.4	
94	2994	Trips	701	165	38	164	564	493	412	394	2,980
94	2994	Percent	23.9	5.6	1.3	5.6	19.2	16.8	14.1	13.5	
95	2995	Trips	1,157	251	112	411	943	782	652	644	5,051
95	2995	Percent	23.4	5.1	2.3	8.3	19.0	15.8	13.2	13.0	
96	2996	Trips	334	88	58	100	222	229	226	189	1,480
96	2996	Percent	23.1	6.1	4.0	6.9	15.4	15.9	15.6	13.1	
97	2997	Trips	364	65	29	103	330	278	294	257	1,751
97	2997	Percent	21.2	3.8	1.7	6.0	19.2	16.1	17.1	14.9	
98	2998	Trips	388	202	52	214	475	336	344	343	2,414
98	2998	Percent	16.5	8.6	2.2	9.1	20.2	14.3	14.6	14.6	
99	2999	Trips	3,253	1,254	599	1,888	3,041	2,026	1,990	2,271	16,984
99	2999	Percent	19.9	7.7	3.7	11.6	18.6	12.4	12.2	13.9	
100	3000	Trips	1,054	1,070	420	946	1,241	1,166	758	737	7,600
100	3000	Percent	14.3	14.5	5.7	12.8	16.8	15.8	10.3	10.0	
101	3001	Trips	1,050	272	61	208	446	420	463	772	3,735
101	3001	Percent	28.4	7.4	1.7	5.6	12.1	11.4	12.5	20.9	
102	3002	Trips	1,000	1,037	351	727	1,353	1,013	956	831	7,620
102	3002	Percent	13.8	14.3	4.8	10.0	18.6	13.9	13.2	11.4	
103	3003	Trips	535	384	275	305	768	438	327	391	3,487
103	3003	Percent	15.6	11.2	8.0	8.9	22.4	12.8	9.6	11.4	
104	3004	Trips	817	817	333	688	1,488	854	412	712	6,219
104	3004	Percent	13.4	13.3	5.4	11.2	24.3	14.0	6.7	11.6	

DIRECTIONAL TRIP DISTRIBUTION REPORT

Miami-Dade 2045 Cost Feasible Plan Direction Trip Distribution Summary											
TAZ of Origin		Trips / Percent	Cardinal Directions								Total Trips
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
79	2979	Trips	432	111	79	570	940	474	311	510	3,577
79	2979	Percent	12.6	3.3	2.3	16.6	27.4	13.8	9.1	14.9	
80	2980	Trips	9,844	1,997	1,773	7,477	20,304	14,012	10,711	17,394	92,886
80	2980	Percent	11.8	2.4	2.1	9.0	24.3	16.8	12.8	20.8	
81	2981	Trips	1,842	1,762	455	1,081	3,190	2,037	1,539	1,744	14,144
81	2981	Percent	13.5	12.9	3.3	7.9	23.4	14.9	11.3	12.8	
82	2982	Trips	83	40	16	29	96	76	43	67	449
82	2982	Percent	18.5	8.8	3.5	6.4	21.3	16.9	9.7	15.0	
83	2983	Trips	377	47	26	111	348	272	152	160	1,501
83	2983	Percent	25.3	3.2	1.7	7.5	23.3	18.2	10.2	10.7	
84	2984	Trips	735	496	111	444	1,156	923	572	670	5,268
84	2984	Percent	14.4	9.7	2.2	8.7	22.6	18.1	11.2	13.1	
85	2985	Trips	290	76	195	158	538	388	266	307	2,249
85	2985	Percent	13.1	3.4	8.8	7.1	24.3	17.5	12.0	13.8	
86	2986	Trips	983	178	103	371	1,133	1,011	480	563	4,931
86	2986	Percent	20.4	3.7	2.1	7.7	23.5	21.0	10.0	11.7	
87	2987	Trips	890	81	242	222	904	629	429	529	4,032
87	2987	Percent	22.7	2.1	6.2	5.7	23.0	16.0	10.9	13.5	
88	2988	Trips	474	33	38	179	497	307	206	277	2,062
88	2988	Percent	23.6	1.6	1.9	8.9	24.7	15.3	10.2	13.8	
89	2989	Trips	359	73	61	68	402	399	199	286	1,883
89	2989	Percent	19.4	4.0	3.3	3.7	21.7	21.6	10.8	15.5	
90	2990	Trips	3,842	246	298	943	5,243	4,449	2,670	3,717	22,961
90	2990	Percent	18.0	1.2	1.4	4.4	24.5	20.8	12.5	17.4	
91	2991	Trips	311	248	41	363	1,180	1,730	706	1,403	6,349
91	2991	Percent	5.2	4.2	0.7	6.1	19.7	28.9	11.8	23.5	
92	2992	Trips	279	279	37	350	745	927	488	802	4,303
92	2992	Percent	7.1	7.1	1.0	9.0	19.1	23.7	12.5	20.5	
93	2993	Trips	197	19	2	75	255	244	176	174	1,145
93	2993	Percent	17.3	1.6	0.2	6.6	22.3	21.4	15.4	15.3	
94	2994	Trips	1,520	252	35	456	1,425	1,197	1,012	860	7,203
94	2994	Percent	22.5	3.7	0.5	6.8	21.1	17.7	15.0	12.7	
95	2995	Trips	1,340	181	119	476	1,334	974	745	709	6,013
95	2995	Percent	22.8	3.1	2.0	8.1	22.7	16.6	12.7	12.1	
96	2996	Trips	659	143	83	236	701	501	494	380	3,367
96	2996	Percent	20.6	4.5	2.6	7.4	21.9	15.7	15.5	11.9	
97	2997	Trips	674	92	48	196	724	476	461	424	3,226
97	2997	Percent	21.8	3.0	1.6	6.3	23.4	15.4	14.9	13.7	
98	2998	Trips	584	205	53	311	657	444	446	391	3,171
98	2998	Percent	18.9	6.6	1.7	10.1	21.3	14.4	14.4	12.7	
99	2999	Trips	3,843	1,448	804	1,816	3,592	2,286	2,527	2,624	19,836
99	2999	Percent	20.3	7.6	4.3	9.6	19.0	12.1	13.3	13.9	
100	3000	Trips	1,170	1,188	470	1,050	1,554	1,358	947	778	8,796
100	3000	Percent	13.7	14.0	5.5	12.3	18.3	15.9	11.1	9.1	
101	3001	Trips	1,373	134	82	208	663	517	510	941	4,546
101	3001	Percent	31.0	3.0	1.9	4.7	15.0	11.7	11.5	21.3	
102	3002	Trips	1,239	1,159	383	1,201	2,090	1,709	989	1,160	10,403
102	3002	Percent	12.5	11.7	3.9	12.1	21.1	17.2	10.0	11.7	
103	3003	Trips	566	483	242	390	1,115	701	423	486	4,574
103	3003	Percent	12.9	11.0	5.5	8.9	25.3	15.9	9.6	11.0	
104	3004	Trips	995	756	259	694	1,848	1,526	568	907	7,641
104	3004	Percent	13.2	10.0	3.4	9.2	24.5	20.2	7.5	12.0	



National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-001
Date: 10/7/2020

Cars

NS/EW Streets:	NE 19th Ave					NE 19th Ave					NE 163rd St					NE 163rd St					Burger King Dwy	
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	TOTAL
7:00 AM	0	0	7	0	0	38	3	35	0	0	35	228	1	0	0	0	188	15	0	0	0	550
7:15 AM	0	0	6	0	0	60	6	53	0	1	34	248	1	0	1	0	207	31	0	0	0	648
7:30 AM	0	0	6	0	0	64	8	56	0	1	41	287	0	0	3	0	183	16	0	0	0	665
7:45 AM	0	0	6	0	0	54	2	64	0	4	67	287	1	0	2	0	214	34	0	0	0	735
8:00 AM	0	0	7	0	1	84	8	68	1	1	58	291	0	0	2	0	229	37	0	0	0	787
8:15 AM	0	0	14	0	0	78	2	58	0	3	55	298	1	0	4	0	254	41	0	0	0	808
8:30 AM	0	0	9	0	0	87	10	74	0	0	60	331	0	0	3	0	240	36	0	0	0	850
8:45 AM	0	0	6	0	0	79	2	52	0	1	68	339	0	0	1	0	276	37	0	0	0	861
TOTAL VOLUMES :	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2R2	TOTAL
APPROACH %'s :	0	0	61	0	1	544	41	460	1	11	418	2309	4	0	16	0	1791	247	0	0	0	5904
	0.00%	0.00%	98.39%	0.00%	1.61%	51.47%	3.88%	43.52%	0.09%	1.04%	15.22%	84.06%	0.15%	0.00%	0.58%	0.00%	87.88%	12.12%	0.00%			
PEAK HR :	08:00 AM - 09:00 AM																					TOTAL
PEAK HR VOL :	0	0	36	0	1	328	22	252	1	5	241	1259	1	0	10	0	999	151	0	0	0	3306
PEAK HR FACTOR :	0.00	0.000	0.643	0.000	0.250	0.943	0.550	0.851	0.250	0.417	0.886	0.928	0.250	0.000	0.625	0.000	0.905	0.921	0.000	0.000	0.000	0.960
			0.661					0.889					0.926					0.919				

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	TOTAL
4:00 PM	0	0	4	0	0	73	0	76	1	0	80	317	0	0	2	0	379	63	0	0	0	995
4:15 PM	0	0	8	0	2	63	0	62	1	1	63	270	0	0	2	0	341	44	0	0	0	857
4:30 PM	0	0	8	0	0	67	0	64	1	1	49	299	0	0	1	0	389	66	0	0	0	945
4:45 PM	0	1	11	0	0	77	3	79	1	0	85	289	2	0	3	0	351	66	0	0	0	968
5:00 PM	0	0	7	0	0	64	1	77	0	1	67	316	0	0	0	0	373	83	0	0	1	990
5:15 PM	0	0	12	0	0	84	4	81	1	1	73	339	0	0	0	0	343	72	0	0	0	1010
5:30 PM	0	0	10	0	0	49	2	64	0	1	77	305	0	0	4	0	388	66	0	0	0	966
5:45 PM	0	0	7	0	0	68	3	75	0	2	67	358	0	0	2	0	377	55	0	0	2	1016
TOTAL VOLUMES :	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2R2	TOTAL
APPROACH %'s :	0	1	67	0	2	545	13	578	5	7	561	2493	2	0	14	0	2941	515	0	0	3	7747
	0.00%	1.43%	95.71%	0.00%	2.86%	47.47%	1.13%	50.35%	0.44%	0.61%	18.27%	81.21%	0.07%	0.00%	0.46%	0.00%	85.10%	14.90%	0.00%	0.00%	100.00%	
PEAK HR :	05:00 PM - 06:00 PM																					TOTAL
PEAK HR VOL :	0	0	36	0	0	265	10	297	1	5	284	1318	0	0	6	0	1481	276	0	0	3	3982
PEAK HR FACTOR :	0.00	0.000	0.750	0.000	0.000	0.789	0.625	0.917	0.250	0.625	0.922	0.920	0.000	0.000	0.375	0.000	0.954	0.831	0.000	0.000	0.375	0.980
			0.750					0.845					0.941					0.963			0.375	

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-001
Date: 10/7/2020

HT

NS/EW Streets:	NE 19th Ave					NE 19th Ave					NE 163rd St					NE 163rd St					Burger King Dwy	
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	TOTAL
7:00 AM	0	0	0	0	0	1	0	1	0	0	2	19	0	0	0	0	8	0	0	0	0	31
7:15 AM	0	0	0	0	0	0	0	3	0	0	2	14	0	0	0	0	8	1	0	0	0	28
7:30 AM	0	0	0	0	0	0	0	2	0	0	0	19	0	0	0	0	3	1	0	0	0	25
7:45 AM	0	0	1	0	0	0	0	2	0	0	2	18	0	0	0	0	3	1	0	0	0	27
8:00 AM	0	0	0	0	0	1	0	3	0	0	2	22	0	0	0	0	14	2	0	0	0	44
8:15 AM	0	0	0	0	0	2	0	1	0	0	3	23	0	0	0	0	10	0	0	0	0	39
8:30 AM	0	0	0	0	0	0	0	4	0	0	5	13	0	0	0	0	9	2	0	0	0	33
8:45 AM	0	0	0	0	0	1	0	3	0	0	2	25	0	0	0	0	22	1	0	0	0	54
TOTAL VOLUMES :	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2R2	TOTAL
APPROACH %'s :	0	0	1	0	0	5	0	19	0	0	18	153	0	0	0	0	77	8	0	0	0	281
	0.00%	0.00%	100.00%	0.00%	0.00%	20.83%	0.00%	79.17%	0.00%	0.00%	10.53%	89.47%	0.00%	0.00%	0.00%	0.00%	90.59%	9.41%	0.00%	0.00%	0	
PEAK HR :	08:00 AM - 09:00 AM																					TOTAL
PEAK HR VOL :	0	0	0	0	0	4	0	11	0	0	12	83	0	0	0	0	55	5	0	0	0	170
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.688	0.000	0.000	0.600	0.830	0.000	0.000	0.000	0.000	0.625	0.625	0.000	0.000	0.000	0.787
								0.938					0.880					0.652				

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	TOTAL
4:00 PM	0	0	1	0	0	1	0	3	0	0	2	6	0	0	0	0	18	2	0	0	0	33
4:15 PM	0	0	0	0	0	1	0	4	0	0	1	5	0	0	0	0	11	0	0	0	0	22
4:30 PM	0	0	0	0	0	0	0	2	0	0	2	5	0	0	0	0	8	4	0	0	0	21
4:45 PM	0	0	0	0	0	0	0	2	0	0	2	2	0	0	0	0	12	0	0	0	0	18
5:00 PM	0	0	0	0	0	3	0	0	0	0	1	3	0	0	0	0	6	1	0	0	0	14
5:15 PM	0	0	0	0	0	3	0	2	0	0	0	7	0	0	0	0	6	1	0	0	0	19
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	5	0	0	0	0	8	0	0	0	0	13
5:45 PM	0	0	0	0	0	1	0	2	0	0	0	3	0	0	0	0	6	0	0	0	0	12
TOTAL VOLUMES :	NL	NT	NR	NU	NU2	SL	ST	SR	SU	ST2	EL	ET	ER	EU	ER2	WL	WT	WR	WU	WL2	N2R2	TOTAL
APPROACH %'s :	0	0	1	0	0	9	0	15	0	0	8	36	0	0	0	0	75	8	0	0	0	152
	0.00%	0.00%	100.00%	0.00%	0.00%	37.50%	0.00%	62.50%	0.00%	0.00%	18.18%	81.82%	0.00%	0.00%	0.00%	0.00%	90.36%	9.64%	0.00%	0.00%	0	
PEAK HR :	05:00 PM - 06:00 PM																					TOTAL
PEAK HR VOL :	0	0	0	0	0	7	0	4	0	0	1	18	0	0	0	0	26	2	0	0	0	58
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.583	0.000	0.500	0.000	0.000	0.250	0.643	0.000	0.000	0.000	0.000	0.813	0.500	0.000	0.000	0.000	0.763
								0.550					0.679					0.875				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-001
Date: 10/7/2020

Bikes

NS/EW Streets:	NE 19th Ave					NE 19th Ave					NE 163rd St					NE 163rd St					Burger King Dwy	
AM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	TOTAL
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	1	0	2	0	0	0	6
APPROACH %'s :						33.33%	0.00%	66.67%	0.00%	0.00%						33.33%	0.00%	66.67%	0.00%	0.00%		
PEAK HR :	08:00 AM - 09:00 AM																					TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0	1	0	0	0	3
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.750
								0.500										0.250				

PM	NORTHBOUND					SOUTHBOUND					EASTBOUND					WESTBOUND					NORTHBOUND2	TOTAL
	0 NL	0 NT	0 NR	0 NU	0 NU2	0 SL	0 ST	0 SR	0 SU	0 ST2	0 EL	0 ET	0 ER	0 EU	0 ER2	0 WL	0 WT	0 WR	0 WU	0 WL2	0 N2R2	
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	2	1	1	0	0	0	1	2	0	0	0	9
APPROACH %'s :						0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	25.00%	25.00%	0.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%		
PEAK HR :	05:00 PM - 06:00 PM																					TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	1	2	0	0	0	5
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.000	0.000	0.250	0.500	0.000	0.000	0.000	0.625
													0.500					0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 163rd St
City: North Miami Beach

Project: 20-00148-001
Date: 10/7/2020

Pedestrians (Crosswalks)

NS/EW Streets:	NE 19th Ave		NE 19th Ave		NE 163rd St		NE 163rd St		Burger King Dwy		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	
7:00 AM	0	0	1	0	0	1	0	0	0	0	2
7:15 AM	0	0	1	1	0	1	0	0	1	1	5
7:30 AM	0	0	1	1	1	2	0	1	1	1	8
7:45 AM	0	0	1	0	0	1	0	0	1	0	3
8:00 AM	0	0	0	0	1	0	0	0	0	0	1
8:15 AM	2	1	0	0	0	0	2	2	0	0	7
8:30 AM	1	0	0	0	0	0	0	0	0	0	1
8:45 AM	0	2	0	0	1	0	0	1	1	0	5
TOTAL VOLUMES :	EB 3	WB 3	EB 4	WB 2	NB 3	SB 5	NB 2	SB 4	EB 4	WB 2	TOTAL 32
APPROACH %'s :	50.00%	50.00%	66.67%	33.33%	37.50%	62.50%	33.33%	66.67%	66.67%	33.33%	
PEAK HR :	08:00 AM - 09:00 AM										TOTAL
PEAK HR VOL :	3	3	0	0	2	0	2	3	1	0	14
PEAK HR FACTOR :	0.375	0.375			0.500		0.250	0.375	0.250		0.500
	0.500				0.500		0.313		0.250		

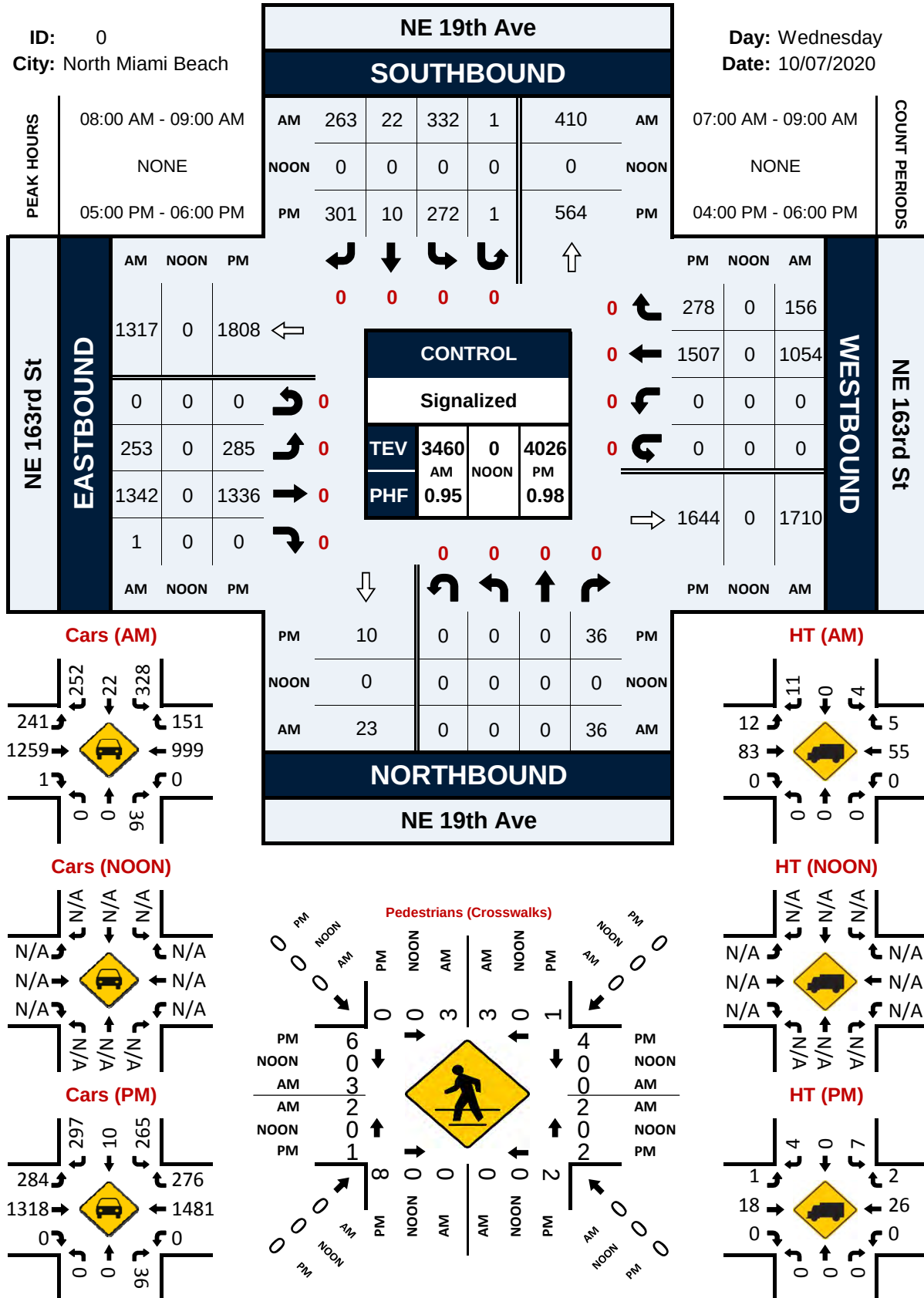
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		SOUTH LEG 2		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	EB	WB	
4:00 PM	0	0	0	0	0	0	1	0	0	2	3
4:15 PM	2	0	1	0	0	1	1	0	0	0	5
4:30 PM	0	0	0	2	0	0	0	0	1	3	6
4:45 PM	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	1	1	4	1	9
5:15 PM	0	0	1	0	1	0	0	0	1	0	3
5:30 PM	0	0	3	2	0	3	0	4	0	2	14
5:45 PM	0	1	2	0	1	1	0	1	0	0	6
TOTAL VOLUMES :	EB 2	WB 1	EB 9	WB 4	NB 2	SB 5	NB 3	SB 6	EB 6	WB 8	TOTAL 46
APPROACH %'s :	66.67%	33.33%	69.23%	30.77%	28.57%	71.43%	33.33%	66.67%	42.86%	57.14%	
PEAK HR :	05:00 PM - 06:00 PM										TOTAL
PEAK HR VOL :	0	1	8	2	2	4	1	6	5	3	32
PEAK HR FACTOR :		0.250	0.667	0.250	0.500	0.333	0.250	0.375	0.313	0.375	0.571
	0.250		0.500		0.500		0.438		0.400		

NE 19th Ave & NE 163rd St

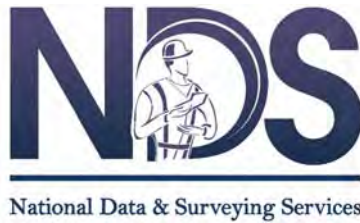
Peak Hour Turning Movement Count

ID: 0
City: North Miami Beach

Day: Wednesday
Date: 10/07/2020

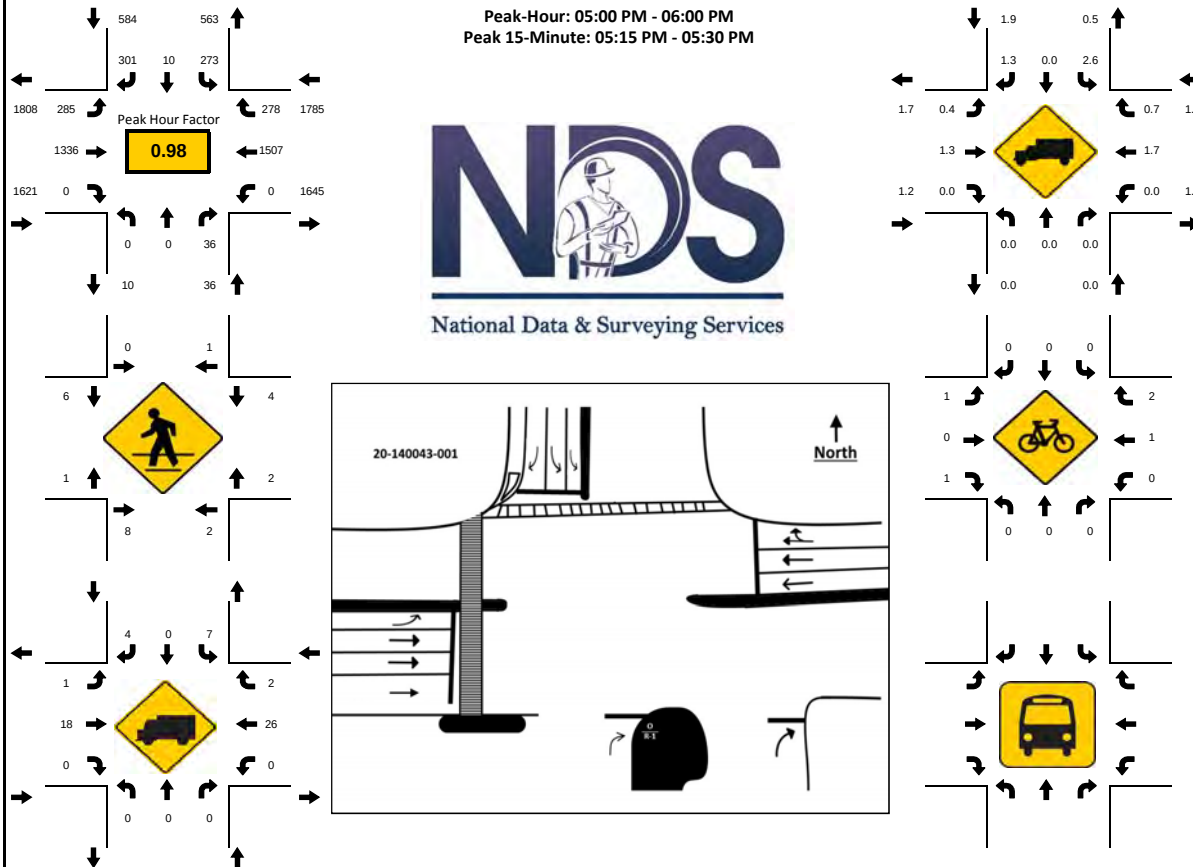


PROJECT ID: 20-140043-001
DATE: 10/07/2020



15-Min Count Period Beginning At	NE 19th Ave Northbound					NE 19th Ave Southbound					NE 163rd St Eastbound					NE 163rd St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	0	7	0		39	3	36	0		37	247	1	0		0	196	15	0		581	2697
07:15 AM	0	0	6	0		60	6	56	0		36	262	1	0		0	215	32	0		674	2943
07:30 AM	0	0	6	0		64	8	58	0		41	306	0	0		0	186	17	0		686	3109
07:45 AM	0	0	7	0		54	2	66	0		69	305	1	0		0	217	35	0		756	3303
08:00 AM	0	0	7	0		85	8	71	1		60	313	0	0		0	243	39	0		827	3460
08:15 AM	0	0	14	0		80	2	59	0		58	321	1	0		0	264	41	0		840	2633
08:30 AM	0	0	9	0		87	10	78	0		65	344	0	0		0	249	38	0		880	1793
08:45 AM	0	0	6	0		80	2	55	0		70	364	0	0		0	298	38	0		913	913
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	0	0	56	0		348	40	312	4		280	1456	4	0		0	1192	164	0		3856	
Heavy Trucks	0	0	0			8	0	16			20	100	0			0	88	8			240	
Pedestrians		0						12				16					4				32	
Bicycles	0	0	0			4	0	4			0	0	0			0	0	4			12	
Railroad																						
Stopped Buses																						

PROJECT ID: 20-140043-001
DATE: 10/07/2020

[illegible]

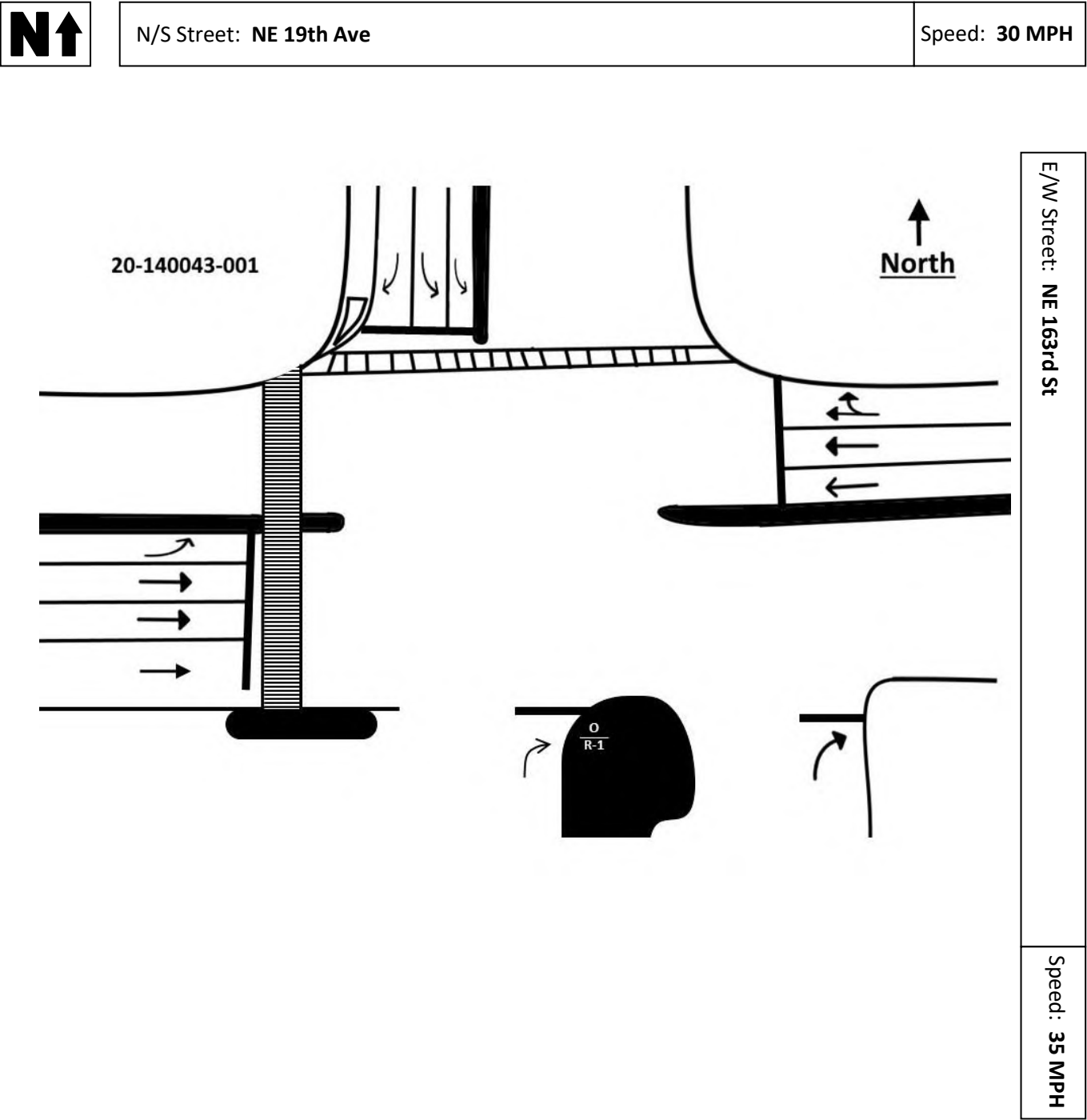


National Data & Surveying Services

Site Code: **20-140043-001**
 Date: **10/07/2020**
 Weather: **Sunny**
 City: **North Miami Beach**
 County: **Miami-Dade**
 Count Times: **07:00 - 09:00**
 16:00 - 18:00
 Control: **Signalized**

SIGNAL TIMING

PHASES	1	2	3
SL	00:29	00:29	00:29
EL/ET	00:26	00:27	-
ET/WT	01:15	01:14	01:37



National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 163rd St

City: North Miami Beach

Control: Signalized

Project ID: 20-140043-002

Date: 10/7/2020

Total

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	3	7	17	0	8	4	3	0	5	241	24	0	16	215	1	1	545
7:15 AM	17	3	12	0	6	8	4	0	4	278	27	0	18	240	4	1	622
7:30 AM	13	5	12	0	3	7	6	0	2	323	17	0	17	223	1	0	629
7:45 AM	19	6	25	0	10	12	7	0	7	346	20	0	28	270	3	3	756
8:00 AM	19	9	20	0	7	22	11	0	7	345	25	0	18	260	6	2	751
8:15 AM	19	10	19	0	8	15	6	0	4	351	18	1	26	285	8	4	774
8:30 AM	30	10	14	0	6	14	12	0	9	383	27	0	19	309	5	1	839
8:45 AM	25	20	31	0	8	14	8	0	9	400	32	1	23	319	5	1	896
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	145	70	150	0	56	96	57	0	47	2667	190	2	165	2121	33	13	5812
	39.73%	19.18%	41.10%	0.00%	26.79%	45.93%	27.27%	0.00%	1.62%	91.78%	6.54%	0.07%	7.08%	90.95%	1.42%	0.56%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	93	49	84	0	29	65	37	0	29	1479	102	2	86	1173	24	8	3260
PEAK HR FACTOR :	0.775	0.613	0.677	0.000	0.906	0.739	0.771	0.000	0.806	0.924	0.797	0.500	0.827	0.919	0.750	0.500	0.910
	0.743				0.819				0.912				0.927				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	39	21	35	0	11	23	8	0	6	363	20	3	21	459	9	3	1021
4:15 PM	27	12	26	0	10	16	10	0	5	329	18	2	24	391	9	5	884
4:30 PM	40	19	14	0	7	20	6	0	9	337	19	1	31	430	9	2	944
4:45 PM	36	16	33	0	9	26	5	0	16	344	17	2	19	413	7	6	949
5:00 PM	56	20	42	0	9	14	11	0	7	333	15	1	25	425	5	0	963
5:15 PM	50	22	30	0	13	17	8	0	8	356	23	0	19	415	5	5	971
5:30 PM	57	11	24	0	9	27	8	0	17	353	19	2	20	412	7	3	969
5:45 PM	36	16	27	0	12	13	6	0	9	404	19	0	18	435	9	3	1007
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	341	137	231	0	80	156	62	0	77	2819	150	11	177	3380	60	27	7708
	48.10%	19.32%	32.58%	0.00%	26.85%	52.35%	20.81%	0.00%	2.52%	92.21%	4.91%	0.36%	4.86%	92.76%	1.65%	0.74%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	199	69	123	0	43	71	33	0	41	1446	76	3	82	1687	26	11	3910
PEAK HR FACTOR :	0.873	0.784	0.732	0.000	0.827	0.657	0.750	0.000	0.603	0.895	0.826	0.375	0.820	0.970	0.722	0.550	0.971
	0.828				0.835				0.906				0.971				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-002
Date: 10/7/2020

Cars

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	3	7	17	0	8	4	3	0	5	222	23	0	16	207	1	1	517
7:15 AM	17	3	12	0	6	8	4	0	4	261	27	0	16	230	4	1	593
7:30 AM	13	5	12	0	3	7	6	0	2	302	16	0	17	218	1	0	602
7:45 AM	19	6	24	0	10	12	7	0	7	329	20	0	28	265	3	3	733
8:00 AM	19	9	19	0	7	21	11	0	7	321	25	0	17	244	6	2	708
8:15 AM	18	10	18	0	8	15	6	0	4	328	18	1	25	277	8	4	740
8:30 AM	26	10	13	0	6	14	12	0	9	367	27	0	19	294	5	1	803
8:45 AM	25	20	30	0	8	14	8	0	9	372	32	1	22	297	5	1	844
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	140	70	145	0	56	95	57	0	47	2502	188	2	160	2032	33	13	5540
	39.44%	19.72%	40.85%	0.00%	26.92%	45.67%	27.40%	0.00%	1.72%	91.35%	6.86%	0.07%	7.15%	90.80%	1.47%	0.58%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	88	49	80	0	29	64	37	0	29	1388	102	2	83	1112	24	8	3095
PEAK HR FACTOR :	0.85	0.613	0.667	0.000	0.906	0.762	0.771	0.000	0.806	0.933	0.797	0.500	0.830	0.936	0.750	0.500	0.917
	0.723				0.833				0.918				0.944				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	38	21	35	0	11	22	8	0	6	356	19	3	20	438	9	3	989
4:15 PM	26	12	26	0	10	16	9	0	5	323	18	2	22	380	9	5	863
4:30 PM	39	19	14	0	7	20	6	0	9	330	19	1	31	418	9	2	924
4:45 PM	36	16	32	0	9	26	5	0	16	341	16	2	19	401	6	6	931
5:00 PM	56	20	42	0	9	14	10	0	7	329	15	1	25	421	5	0	954
5:15 PM	49	22	30	0	13	17	7	0	8	350	21	0	17	409	5	5	953
5:30 PM	56	11	24	0	9	27	7	0	17	349	18	2	20	403	7	3	953
5:45 PM	36	16	27	0	12	13	6	0	9	399	19	0	18	427	9	3	994
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	336	137	230	0	80	155	58	0	77	2777	145	11	172	3297	59	27	7561
	47.80%	19.49%	32.72%	0.00%	27.30%	52.90%	19.80%	0.00%	2.56%	92.26%	4.82%	0.37%	4.84%	92.74%	1.66%	0.76%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	197	69	123	0	43	71	30	0	41	1427	73	3	80	1660	26	11	3854
PEAK HR FACTOR :	0.88	0.784	0.732	0.000	0.827	0.657	0.750	0.000	0.603	0.894	0.869	0.375	0.800	0.972	0.722	0.550	0.969
	0.824				0.837				0.904				0.972				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-002
Date: 10/7/2020

HT

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	19	1	0	0	8	0	0	28
7:15 AM	0	0	0	0	0	0	0	0	0	17	0	0	2	10	0	0	29
7:30 AM	0	0	0	0	0	0	0	0	0	21	1	0	0	5	0	0	27
7:45 AM	0	0	1	0	0	0	0	0	0	17	0	0	0	5	0	0	23
8:00 AM	0	0	1	0	0	1	0	0	0	24	0	0	1	16	0	0	43
8:15 AM	1	0	1	0	0	0	0	0	0	23	0	0	1	8	0	0	34
8:30 AM	4	0	1	0	0	0	0	0	0	16	0	0	0	15	0	0	36
8:45 AM	0	0	1	0	0	0	0	0	0	28	0	0	1	22	0	0	52
TOTAL VOLUMES :	NL 5	NT 0	NR 5	NU 0	SL 0	ST 1	SR 0	SU 0	EL 0	ET 165	ER 2	EU 0	WL 5	WT 89	WR 0	WU 0	TOTAL 272
APPROACH %'s :	50.00%	0.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	98.80%	1.20%	0.00%	5.32%	94.68%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	5	0	4	0	0	1	0	0	0	91	0	0	3	61	0	0	165
PEAK HR FACTOR :	0.313	0.000	1.000	0.000	0.000	0.250	0.000	0.000	0.000	0.813	0.000	0.000	0.750	0.693	0.000	0.000	0.793
	0.450				0.250				0.813				0.696				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	1	0	0	0	0	1	0	0	0	7	1	0	1	21	0	0	32
4:15 PM	1	0	0	0	0	0	1	0	0	6	0	0	2	11	0	0	21
4:30 PM	1	0	0	0	0	0	0	0	0	7	0	0	0	12	0	0	20
4:45 PM	0	0	1	0	0	0	0	0	0	3	1	0	0	12	1	0	18
5:00 PM	0	0	0	0	0	0	1	0	0	4	0	0	0	4	0	0	9
5:15 PM	1	0	0	0	0	0	1	0	0	6	2	0	2	6	0	0	18
5:30 PM	1	0	0	0	0	0	1	0	0	4	1	0	0	9	0	0	16
5:45 PM	0	0	0	0	0	0	0	0	0	5	0	0	0	8	0	0	13
TOTAL VOLUMES :	NL 5	NT 0	NR 1	NU 0	SL 0	ST 1	SR 4	SU 0	EL 0	ET 42	ER 5	EU 0	WL 5	WT 83	WR 1	WU 0	TOTAL 147
APPROACH %'s :	83.33%	0.00%	16.67%	0.00%	0.00%	20.00%	80.00%	0.00%	0.00%	89.36%	10.64%	0.00%	5.62%	93.26%	1.12%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	2	0	0	0	0	0	3	0	0	19	3	0	2	27	0	0	56
PEAK HR FACTOR :	0.50	0.000	0.000	0.000	0.000	0.000	0.750	0.000	0.000	0.792	0.375	0.000	0.250	0.750	0.000	0.000	0.778
	0.500				0.750				0.688				0.806				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 163rd St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-002
Date: 10/7/2020

Bikes

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	2	0	0	0	1	0	0	0	0	0	0	3
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	1	0	0	0	3	0	0	0	2	0	0	0	2	0	0	8
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	0	0	2	0	0	0	0	0	0	4
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.333
						0.250				0.500							

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1	2
5:00 PM	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	0	2	0	0	0	1	1	0	1	3	0	0	0	2	0	1	11
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	50.00%	50.00%	0.00%	25.00%	75.00%	0.00%	0.00%	0.00%	66.67%	0.00%	33.33%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	0	1	1	0	0	0	1	0	0	4
PEAK HR FACTOR :	0.00	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500
						0.250				0.500				0.250			

National Data & Surveying Services

Location: NE 18th Ave & NE 163rd St
City: North Miami Beach
Project: 2019-0043-002
Date: 10/7/2020

Intersection Turning Movement Count

Pedestrians (Crosswalks)

NS/EW Streets:	NE 18th Ave		NE 18th Ave		NE 163rd St		NE 163rd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	1	0	0	1
7:15 AM	0	1	1	0	1	0	0	3	6
7:30 AM	1	0	0	1	0	0	1	2	5
7:45 AM	0	2	0	0	0	0	0	2	4
8:00 AM	0	0	0	0	2	0	1	3	6
8:15 AM	1	1	0	1	0	0	1	2	6
8:30 AM	0	0	0	0	1	2	0	1	4
8:45 AM	0	0	0	1	0	0	2	0	3
TOTAL VOLUMES :	EB 2	WB 4	EB 1	WB 3	NB 4	SB 3	NB 5	SB 13	TOTAL 35
APPROACH %'s :	33.33%	66.67%	25.00%	75.00%	57.14%	42.86%	27.78%	72.22%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	1	1	0	2	3	2	4	6	19
PEAK HR FACTOR :	0.250	0.250		0.500	0.375	0.250	0.500	0.500	0.792
	0.250		0.500		0.417		0.625		

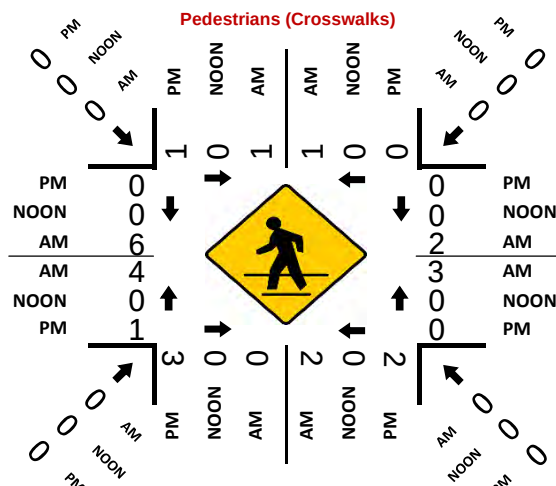
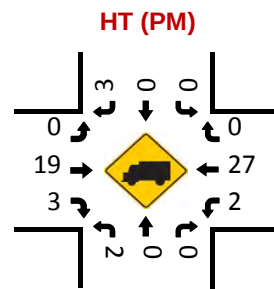
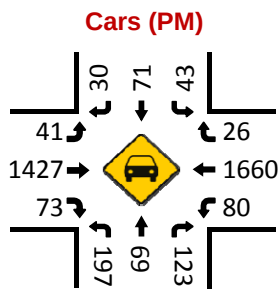
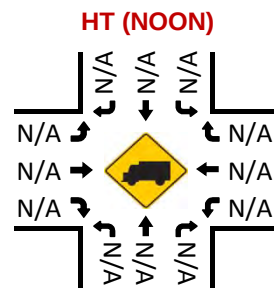
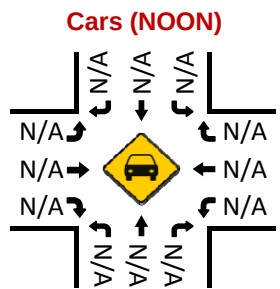
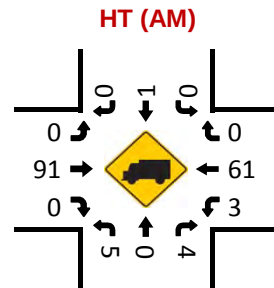
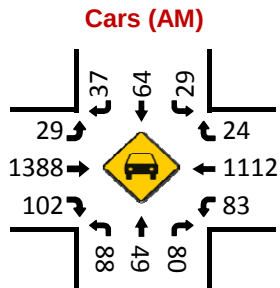
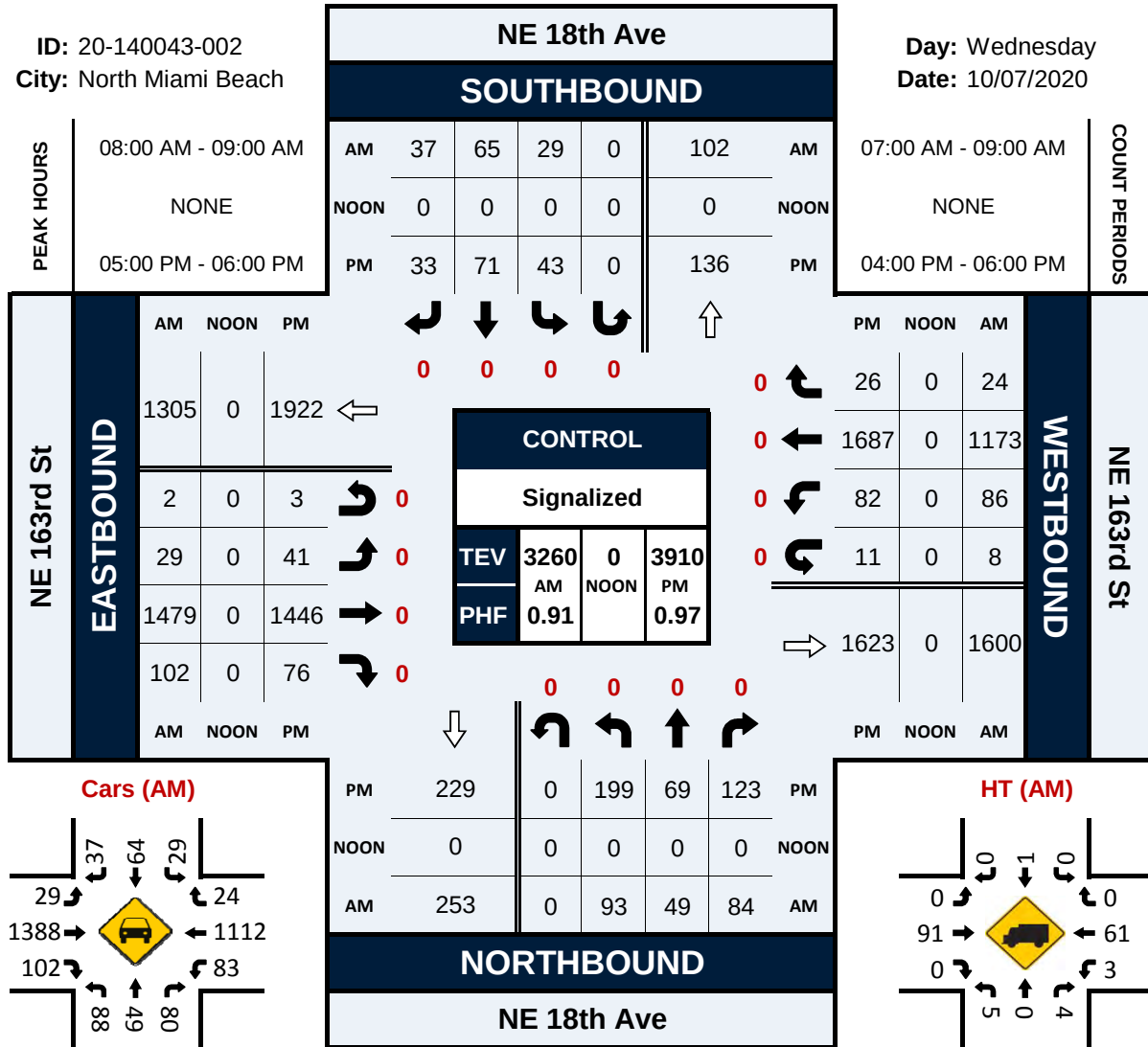
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	0	0	1	0	0	0	8	1	10
4:30 PM	0	1	0	3	0	0	0	0	4
4:45 PM	0	0	0	0	0	1	1	0	2
5:00 PM	0	0	1	0	0	0	1	0	2
5:15 PM	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	2	0	0	0	0	2
5:45 PM	1	0	1	0	0	0	0	0	2
TOTAL VOLUMES :	EB 1	WB 1	EB 4	WB 6	NB 0	SB 1	NB 10	SB 1	TOTAL 24
APPROACH %'s :	50.00%	50.00%	40.00%	60.00%	0.00%	100.00%	90.91%	9.09%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	1	0	3	2	0	0	1	0	7
PEAK HR FACTOR :	0.250		0.750	0.250			0.250		0.875
	0.250		0.625				0.250		

NE 18th Ave & NE 163rd St

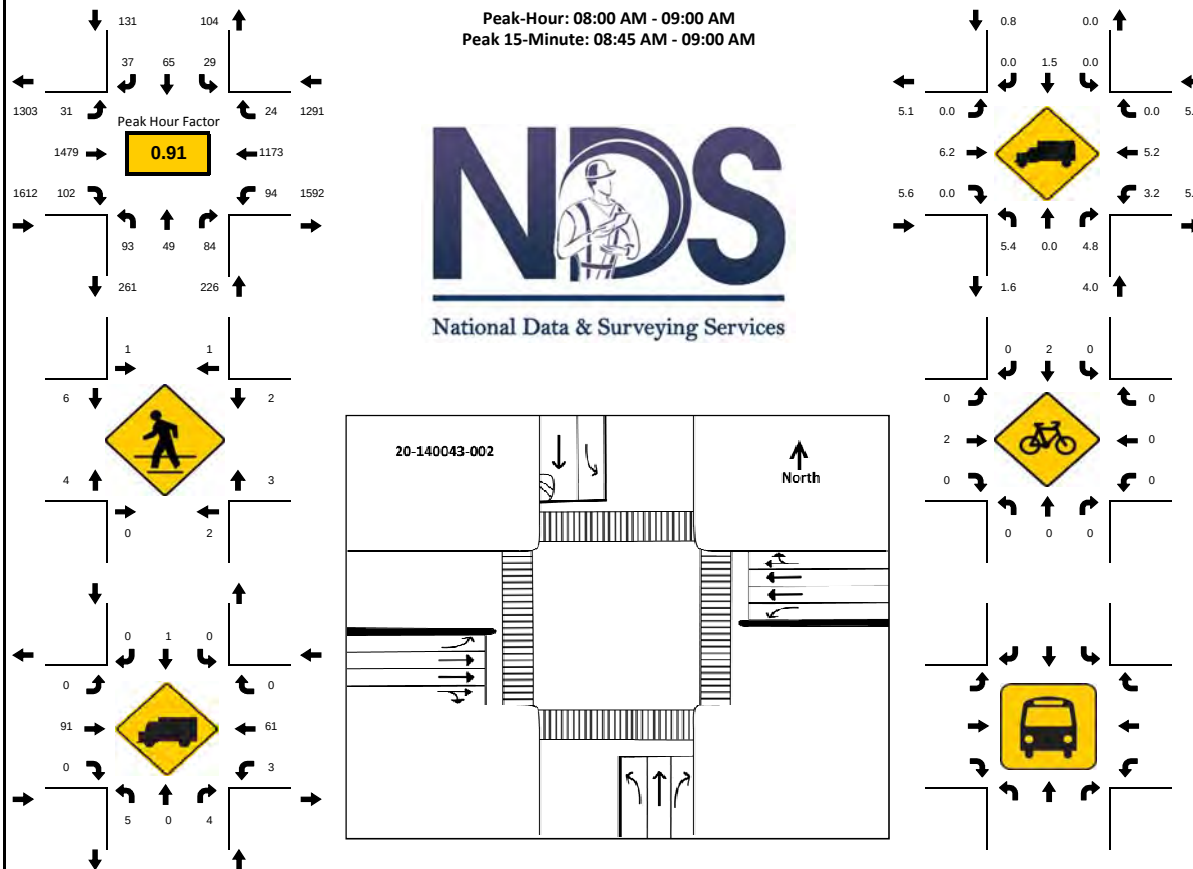
Peak Hour Turning Movement Count

ID: 20-140043-002
City: North Miami Beach

Day: Wednesday
Date: 10/07/2020

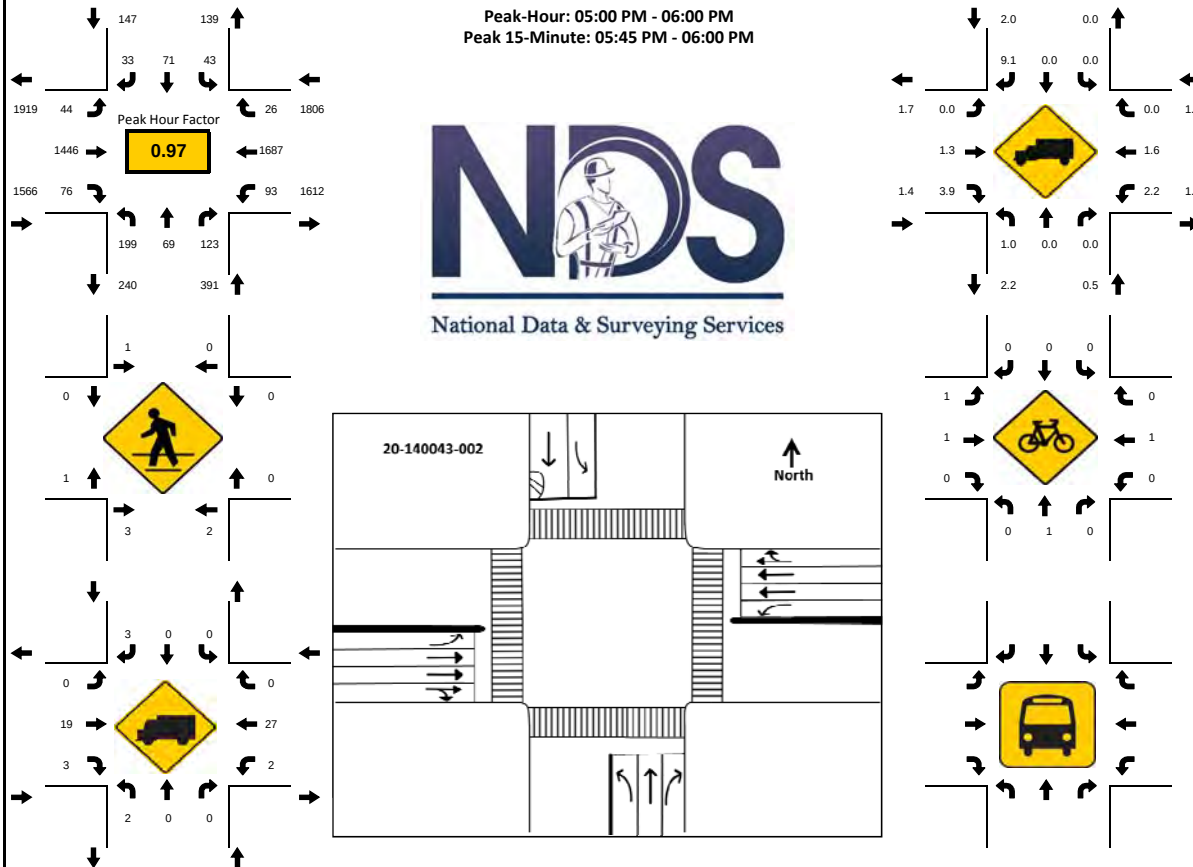


PROJECT ID: 20-140043-002
DATE: 10/07/2020



15-Min Count Period Beginning At	NE 18th Ave Northbound					NE 18th Ave Southbound					NE 163rd St Eastbound					NE 163rd St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	3	7	17	0		8	4	3	0		5	241	24	0		16	215	1	1		545	2552
07:15 AM	17	3	12	0		6	8	4	0		4	278	27	0		18	240	4	1		622	2758
07:30 AM	13	5	12	0		3	7	6	0		2	323	17	0		17	223	1	0		629	2910
07:45 AM	19	6	25	0		10	12	7	0		7	346	20	0		28	270	3	3		756	3120
08:00 AM	19	9	20	0		7	22	11	0		7	345	25	0		18	260	6	2		751	3260
08:15 AM	19	10	19	0		8	15	6	0		4	351	18	1		26	285	8	4		774	2509
08:30 AM	30	10	14	0		6	14	12	0		9	383	27	0		19	309	5	1		839	1735
08:45 AM	25	20	31	0		8	14	8	0		9	400	32	1		23	319	5	1		896	896
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	120	80	124	0		32	88	48	0		36	1600	128	4		104	1276	32	16		3688	
Heavy Trucks	16	0	4			0	4	0			0	112	0			4	88	0			228	
Pedestrians		4					8					16					12				40	
Bicycles	0	0	0			0	8	0			0	4	0			0	0	0			12	
Railroad																						
Stopped Buses																						

PROJECT ID: 20-140043-002
DATE: 10/07/2020

[illegible]



National Data & Surveying Services

Site Code: 20-140043-002
Date: 10/07/2020
Weather: Sunny
City: North Miami Beach
County: Miami-Dade
Count Times: 07:00 - 09:00
16:00 - 18:00
Control: Signalized

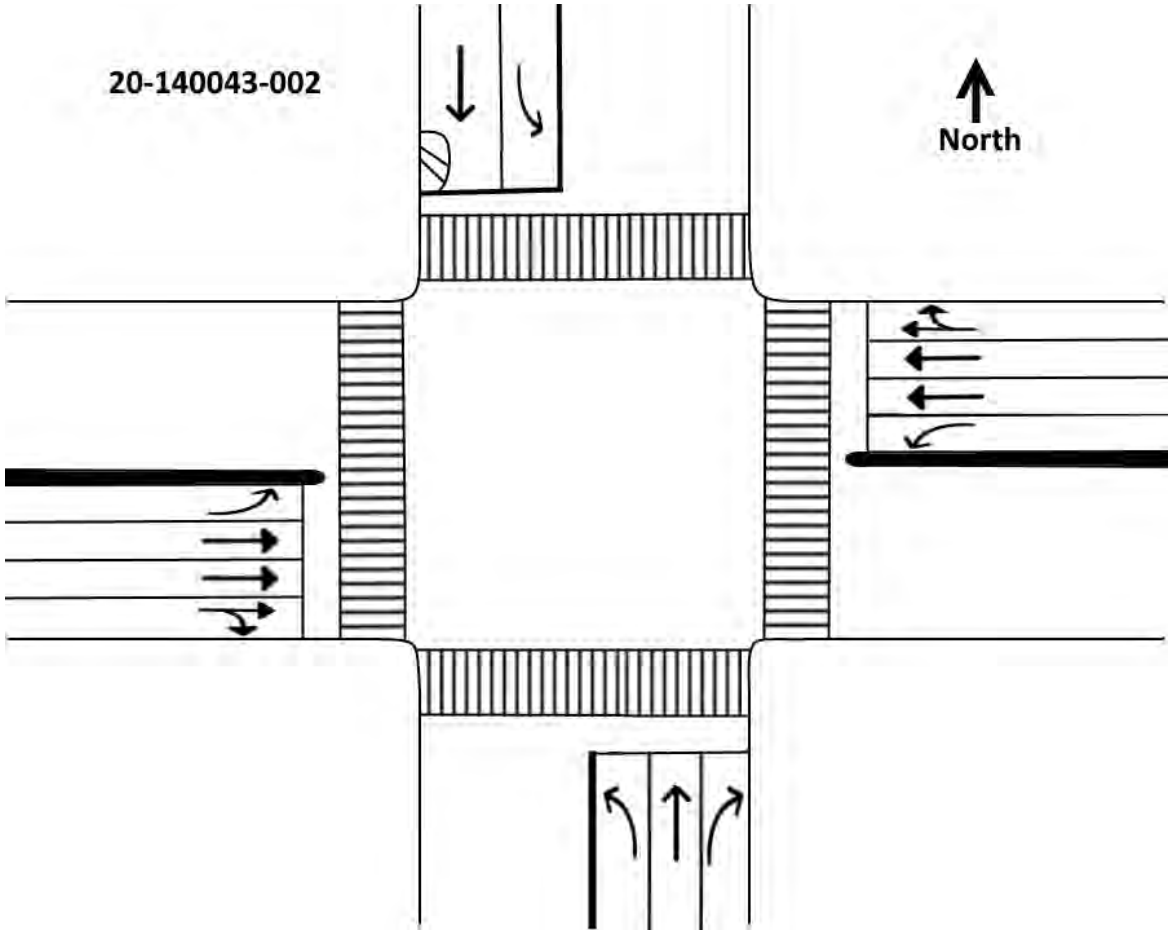
SIGNAL TIMING

PHASES	1	2	3
NL/SL	00:13	00:13	00:11
NT/ST	00:31	00:32	00:32
EL/WL	00:12	-	-
ET/WT	01:14	01:27	01:26



N/S Street: NE 18th Ave

Speed: 30 MPH



E/W Street: NE 163rd St

Speed: 35 MPH

National Data & Surveying Services

Location: NE 19th Ave & NE 164th St
City: North Miami Beach
Control: Signalized

Intersection Turning Movement Count

Project ID: 20-140043-003
Date: 10/7/2020

Total

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	47	4	0	5	83	18	0	0	1	1	0	0	5	5	0	169
7:15 AM	1	69	2	0	5	116	13	0	4	6	0	0	1	7	3	0	227
7:30 AM	1	55	1	0	13	139	25	2	3	5	0	0	0	5	10	0	259
7:45 AM	1	96	1	0	8	121	27	1	13	5	1	0	1	1	6	0	282
8:00 AM	5	96	3	0	7	169	31	0	10	10	2	0	1	6	4	0	344
8:15 AM	12	85	3	1	6	138	34	0	13	7	0	0	1	16	7	0	323
8:30 AM	6	87	1	0	16	157	36	0	5	9	2	0	4	8	3	0	334
8:45 AM	3	112	0	0	13	140	39	1	13	6	4	1	2	11	8	0	353
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	29	647	15	1	73	1063	223	4	61	49	10	1	10	59	46	0	2291
	4.19%	93.50%	2.17%	0.14%	5.36%	77.99%	16.36%	0.29%	50.41%	40.50%	8.26%	0.83%	8.70%	51.30%	40.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	26	380	7	1	42	604	140	1	41	32	8	1	8	41	22	0	1354
PEAK HR FACTOR :	0.542	0.848	0.583	0.250	0.656	0.893	0.897	0.250	0.788	0.800	0.500	0.250	0.500	0.641	0.688	0.000	0.959
	0.900				0.941				0.854				0.740				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	1	140	3	1	9	147	38	0	29	22	4	0	0	16	13	0	423
4:15 PM	1	106	2	2	9	126	39	1	24	18	4	0	1	14	16	0	363
4:30 PM	5	110	3	1	8	129	27	0	29	12	6	3	0	12	12	0	357
4:45 PM	4	148	3	0	12	153	30	0	30	16	4	0	3	15	7	0	425
5:00 PM	4	152	1	1	6	136	34	0	29	11	2	0	7	14	16	0	413
5:15 PM	2	139	0	1	8	167	38	0	25	22	6	0	3	14	7	0	432
5:30 PM	3	139	1	2	9	113	36	0	30	16	4	0	1	20	13	0	387
5:45 PM	1	120	2	1	6	140	30	0	23	13	3	1	2	8	9	0	359
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	21	1054	15	9	67	1111	272	1	219	130	33	4	17	113	93	0	3159
	1.91%	95.91%	1.36%	0.82%	4.62%	76.57%	18.75%	0.07%	56.74%	33.68%	8.55%	1.04%	7.62%	50.67%	41.70%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	13	578	5	4	35	569	138	0	114	65	16	0	14	63	43	0	1657
PEAK HR FACTOR :	0.813	0.951	0.417	0.500	0.729	0.852	0.908	0.000	0.950	0.739	0.667	0.000	0.500	0.788	0.672	0.000	0.959
	0.949				0.871				0.920				0.811				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 164th St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-003
Date: 10/7/2020

Cars

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	45	4	0	5	82	18	0	0	1	1	0	0	4	5	0	165
7:15 AM	1	66	2	0	5	112	13	0	4	6	0	0	1	7	3	0	220
7:30 AM	1	54	1	0	13	138	24	2	3	4	0	0	0	4	9	0	253
7:45 AM	1	94	1	0	8	119	27	1	13	5	1	0	1	1	6	0	278
8:00 AM	5	91	3	0	7	165	30	0	10	9	2	0	1	5	4	0	332
8:15 AM	12	82	3	1	6	135	34	0	13	7	0	0	1	16	7	0	317
8:30 AM	6	81	1	0	16	153	36	0	5	9	2	0	4	8	3	0	324
8:45 AM	3	108	0	0	13	136	39	1	13	6	4	1	2	10	8	0	344
TOTAL VOLUMES :	NL 29	NT 621	NR 15	NU 1	SL 73	ST 1040	SR 221	SU 4	EL 61	ET 47	ER 10	EU 1	WL 10	WT 55	WR 45	WU 0	TOTAL 2233
APPROACH %'s :	4.35%	93.24%	2.25%	0.15%	5.46%	77.73%	16.52%	0.30%	51.26%	39.50%	8.40%	0.84%	9.09%	50.00%	40.91%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	26	362	7	1	42	589	139	1	41	31	8	1	8	39	22	0	1317
PEAK HR FACTOR :	0.54	0.838	0.583	0.250	0.656	0.892	0.891	0.250	0.788	0.861	0.500	0.250	0.500	0.609	0.688	0.000	0.957
	0.892				0.940				0.844				0.719				

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	1	135	3	1	9	142	38	0	29	22	4	0	0	16	13	0	413
4:15 PM	1	106	2	2	9	122	38	1	24	17	4	0	1	13	16	0	356
4:30 PM	5	103	3	1	8	127	27	0	29	12	6	3	0	11	12	0	347
4:45 PM	4	147	3	0	12	151	30	0	30	15	4	0	3	15	6	0	420
5:00 PM	4	149	1	1	6	133	33	0	29	11	2	0	7	14	16	0	406
5:15 PM	2	138	0	1	8	162	38	0	25	21	6	0	3	13	7	0	424
5:30 PM	3	139	1	2	9	113	36	0	30	16	4	0	1	19	13	0	386
5:45 PM	1	120	2	1	6	137	30	0	23	13	3	1	2	8	9	0	356
TOTAL VOLUMES :	NL 21	NT 1037	NR 15	NU 9	SL 67	ST 1087	SR 270	SU 1	EL 219	ET 127	ER 33	EU 4	WL 17	WT 109	WR 92	WU 0	TOTAL 3108
APPROACH %'s :	1.94%	95.84%	1.39%	0.83%	4.70%	76.28%	18.95%	0.07%	57.18%	33.16%	8.62%	1.04%	7.80%	50.00%	42.20%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	13	573	5	4	35	559	137	0	114	63	16	0	14	61	42	0	1636
PEAK HR FACTOR :	0.81	0.961	0.417	0.500	0.729	0.863	0.901	0.000	0.950	0.750	0.667	0.000	0.500	0.803	0.656	0.000	0.965
	0.960				0.879				0.928				0.791				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 164th St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-003
Date: 10/7/2020

HT

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	2	0	0	0	1	0	0	0	0	0	0	0	1	0	0	4
7:15 AM	0	3	0	0	0	4	0	0	0	0	0	0	0	0	0	0	7
7:30 AM	0	1	0	0	0	1	1	0	0	1	0	0	0	1	1	0	6
7:45 AM	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	4
8:00 AM	0	5	0	0	0	4	1	0	0	1	0	0	0	1	0	0	12
8:15 AM	0	3	0	0	0	3	0	0	0	0	0	0	0	0	0	0	6
8:30 AM	0	6	0	0	0	4	0	0	0	0	0	0	0	0	0	0	10
8:45 AM	0	4	0	0	0	4	0	0	0	0	0	0	0	1	0	0	9
TOTAL VOLUMES :	0	26	0	0	0	23	2	0	0	2	0	0	0	4	1	0	58
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	92.00%	8.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	80.00%	20.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	18	0	0	0	15	1	0	0	1	0	0	0	2	0	0	37
PEAK HR FACTOR :	0.000	0.750	0.000	0.000	0.000	0.938	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.771
	0.750				0.800				0.250				0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	5	0	0	0	5	0	0	0	0	0	0	0	0	0	0	10
4:15 PM	0	0	0	0	0	4	1	0	0	1	0	0	0	1	0	0	7
4:30 PM	0	7	0	0	0	2	0	0	0	0	0	0	0	1	0	0	10
4:45 PM	0	1	0	0	0	2	0	0	0	1	0	0	0	0	1	0	5
5:00 PM	0	3	0	0	0	3	1	0	0	0	0	0	0	0	0	0	7
5:15 PM	0	1	0	0	0	5	0	0	0	1	0	0	0	1	0	0	8
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	3
TOTAL VOLUMES :	0	17	0	0	0	24	2	0	0	3	0	0	0	4	1	0	51
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	92.31%	7.69%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	80.00%	20.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	5	0	0	0	10	1	0	0	2	0	0	0	2	1	0	21
PEAK HR FACTOR :	0.00	0.417	0.000	0.000	0.000	0.500	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.250	0.000	0.656
	0.417				0.550				0.500				0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 19th Ave & NE 164th St
City: North Miami Beach
Control: Signalized

Project ID: 20-140043-003
Date: 10/7/2020

Bikes

NS/EW Streets:	NE 19th Ave				NE 19th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	1	0	0	0	1	0	0	0	1	0	0	0	1	0	0	4
8:15 AM	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	2
8:45 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
TOTAL VOLUMES :	NL 0	NT 2	NR 0	NU 0	SL 2	ST 3	SR 2	SU 0	EL 1	ET 1	ER 0	EU 0	WL 0	WT 3	WR 0	WU 0	TOTAL 14
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	28.57%	42.86%	28.57%	0.00%	50.00%	50.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	1	0	0	1	2	2	0	1	1	0	0	0	1	0	0	9
PEAK HR FACTOR :	0.000	0.250	0.000	0.000	0.250	0.500	0.500	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.563
	0.250				0.625				0.500				0.250				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	3	0	0	5
4:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	1	0	0	2	0	0	0	1	0	0	4
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:30 PM	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	2
5:45 PM	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	3
TOTAL VOLUMES :	NL 2	NT 1	NR 1	NU 0	SL 1	ST 2	SR 1	SU 0	EL 1	ET 3	ER 1	EU 0	WL 0	WT 5	WR 0	WU 0	TOTAL 18
APPROACH %'s :	50.00%	25.00%	25.00%	0.00%	25.00%	50.00%	25.00%	0.00%	20.00%	60.00%	20.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	1	0	1	0	0	0	1	0	1	2	0	0	0	2	0	0	8
PEAK HR FACTOR :	0.25	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.250	0.250	0.000	0.000	0.000	0.500	0.000	0.000	0.500
	0.500				0.250				0.375				0.500				

National Data & Surveying Services

Location: NE 19th Ave & NE 164th St / Project: 2019-0043-003
City: North Miami Beach Date: 10/7/2020

Intersection Turning Movement Count

Pedestrians (Crosswalks)

NS/EW Streets:	NE 19th Ave		NE 19th Ave		NE 164th St		NE 164th St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	1	0	2	0	0	3
7:15 AM	0	0	0	0	0	3	0	1	4
7:30 AM	0	1	0	0	1	1	0	0	3
7:45 AM	0	0	0	1	0	1	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	1	0	0	0	0	2	3
8:30 AM	0	0	0	0	0	0	1	0	1
8:45 AM	2	2	1	0	1	0	0	0	6
TOTAL VOLUMES :	EB 2	WB 3	EB 2	WB 2	NB 2	SB 7	NB 1	SB 3	TOTAL 22
APPROACH %'s :	40.00%	60.00%	50.00%	50.00%	22.22%	77.78%	25.00%	75.00%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	2	2	2	0	1	0	1	2	10
PEAK HR FACTOR :	0.250	0.250	0.500		0.250		0.250	0.250	0.417
	0.250		0.500		0.250		0.375		

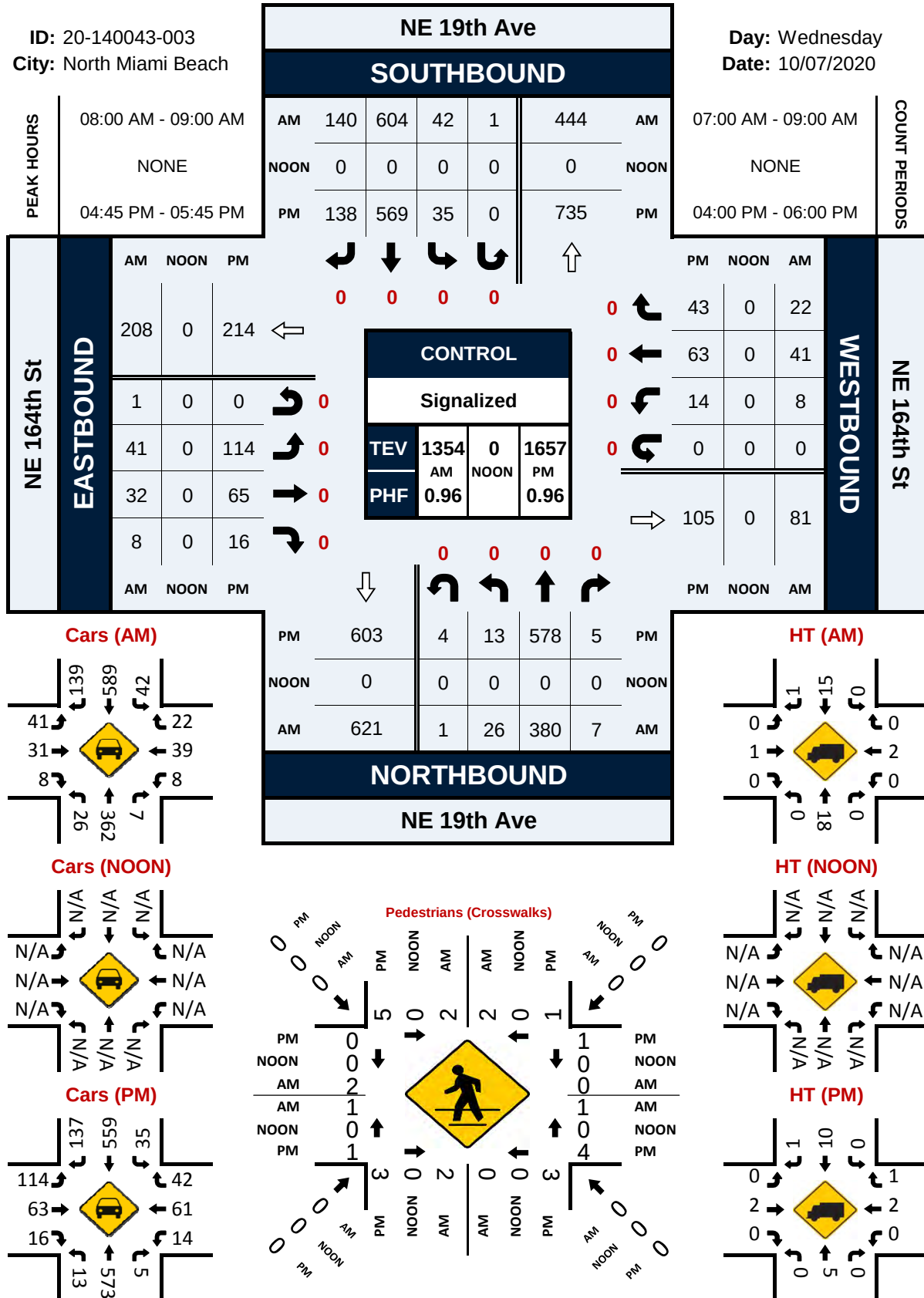
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	1	0	1	1	3
4:15 PM	0	0	1	0	0	0	0	1	2
4:30 PM	1	0	2	0	0	0	0	0	3
4:45 PM	3	1	3	2	0	0	0	0	9
5:00 PM	2	0	0	0	1	0	1	0	4
5:15 PM	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	0	1	2	1	0	0	4
5:45 PM	1	2	2	0	1	2	0	0	8
TOTAL VOLUMES :	EB 7	WB 3	EB 8	WB 3	NB 6	SB 3	NB 2	SB 2	TOTAL 34
APPROACH %'s :	70.00%	30.00%	72.73%	27.27%	66.67%	33.33%	50.00%	50.00%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	5	1	3	3	4	1	1	0	18
PEAK HR FACTOR :	0.417	0.250	0.250	0.375	0.500	0.250	0.250		0.500
	0.375		0.300		0.417		0.250		

NE 19th Ave & NE 164th St

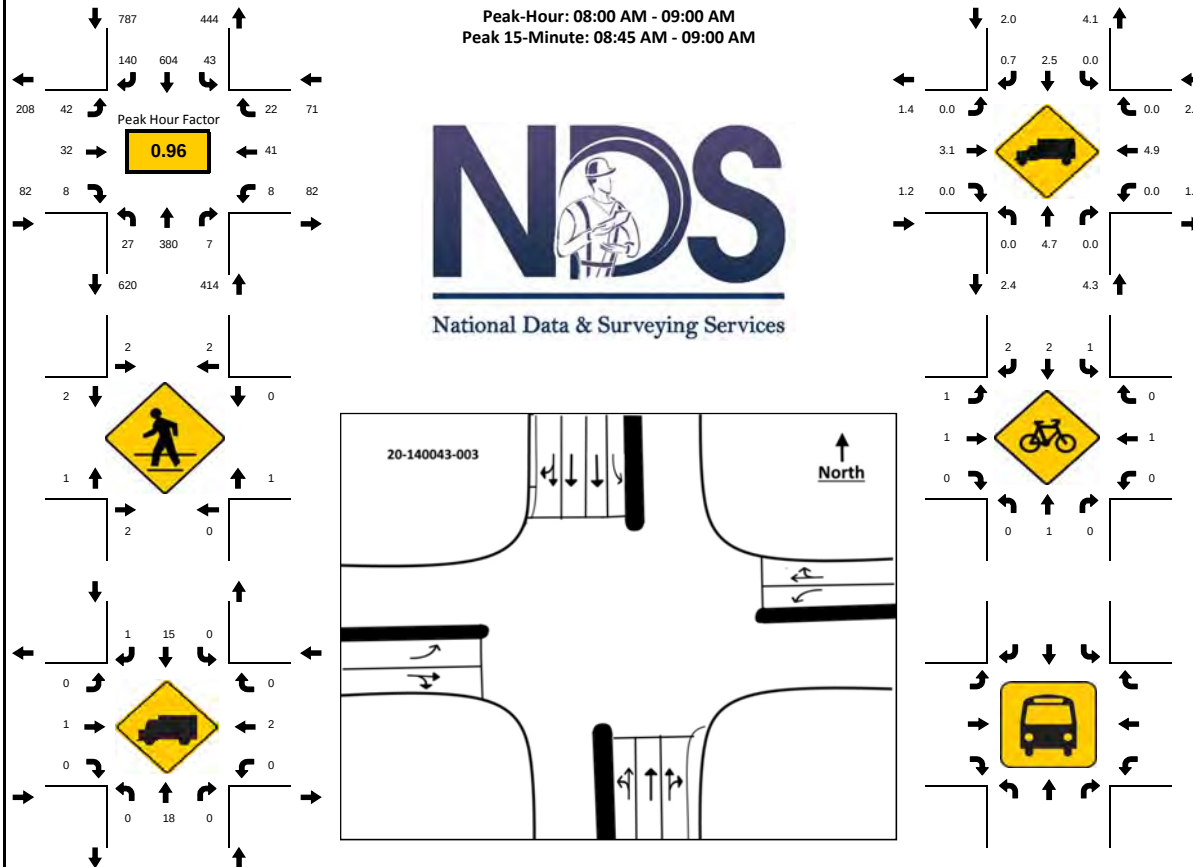
Peak Hour Turning Movement Count

ID: 20-140043-003
City: North Miami Beach

Day: Wednesday
Date: 10/07/2020

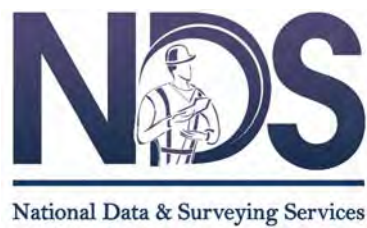


PROJECT ID: 20-140043-003
DATE: 10/07/2020



15-Min Count Period Beginning At	NE 19th Ave Northbound					NE 19th Ave Southbound					NE 164th St Eastbound					NE 164th St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	0	47	4	0		5	83	18	0		0	1	1	0		0	5	5	0		169	937
07:15 AM	1	69	2	0		5	116	13	0		4	6	0	0		1	7	3	0		227	1112
07:30 AM	1	55	1	0		13	139	25	2		3	5	0	0		0	5	10	0		259	1208
07:45 AM	1	96	1	0		8	121	27	1		13	5	1	0		1	1	6	0		282	1283
08:00 AM	5	96	3	0		7	169	31	0		10	10	2	0		1	6	4	0		344	1354
08:15 AM	12	85	3	1		6	138	34	0		13	7	0	0		1	16	7	0		323	1010
08:30 AM	6	87	1	0		16	157	36	0		5	9	2	0		4	8	3	0		334	687
08:45 AM	3	112	0	0		13	140	39	1		13	6	4	1		2	11	8	0		353	353
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	48	448	12	4		64	676	156	4		52	40	16	4		16	64	32	0		1636	
Heavy Trucks	0	24	0			0	16	4			0	4	0			0	4	0			52	
Pedestrians		4					16					8					4				32	
Bicycles	0	4	0			4	4	4			4	4	0			0	4	0			28	
Railroad																						
Stopped Buses																						

PROJECT ID: 20-140043-003
DATE: 10/07/2020



15-Min Count Period Beginning At	NE 19th Ave Northbound					NE 19th Ave Southbound					NE 164th St Eastbound					NE 164th St Westbound					Total	Hourly Total
	Lf	Thru	Rgt	U	R*	Lf	Thru	Rgt	U	R*	Lf	Thru	Rgt	U	R*	Lf	Thru	Rgt	U	R*		
04:00 PM	1	140	3	1		9	147	38	0		29	22	4	0		0	16	13	0		423	1568
04:15 PM	1	106	2	2		9	126	39	1		24	18	4	0		1	14	16	0		363	1558
04:30 PM	5	110	3	1		8	129	27	0		29	12	6	3		0	12	12	0		357	1627
04:45 PM	4	148	3	0		12	153	30	0		30	16	4	0		3	15	7	0		425	1657
05:00 PM	4	152	1	1		6	136	34	0		29	11	2	0		7	14	16	0		413	1591
05:15 PM	2	139	0	1		8	167	38	0		25	22	6	0		3	14	7	0		432	1178
05:30 PM	3	139	1	2		9	113	36	0		30	16	4	0		1	20	13	0		387	746
05:45 PM	1	120	2	1		6	140	30	0		23	13	3	1		2	8	9	0		359	359
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	16	608	12	8		48	668	152	0		120	88	24	0		28	80	64	0		1916	
Heavy Trucks	0	12	0			0	20	4			0	4	0			0	4	4			48	
Pedestrians		20					16					4					12				52	
Bicycles	4	0	4			0	0	4			4	8	0			0	4	0			28	
Railroad																						
Stopped Buses																						



National Data & Surveying Services

Site Code: 20-140043-003
Date: 10/07/2020
Weather: Sunny
City: North Miami Beach
County: Miami-Dade
Count Times: 07:00 - 09:00
16:00 - 18:00
Control: Signalized

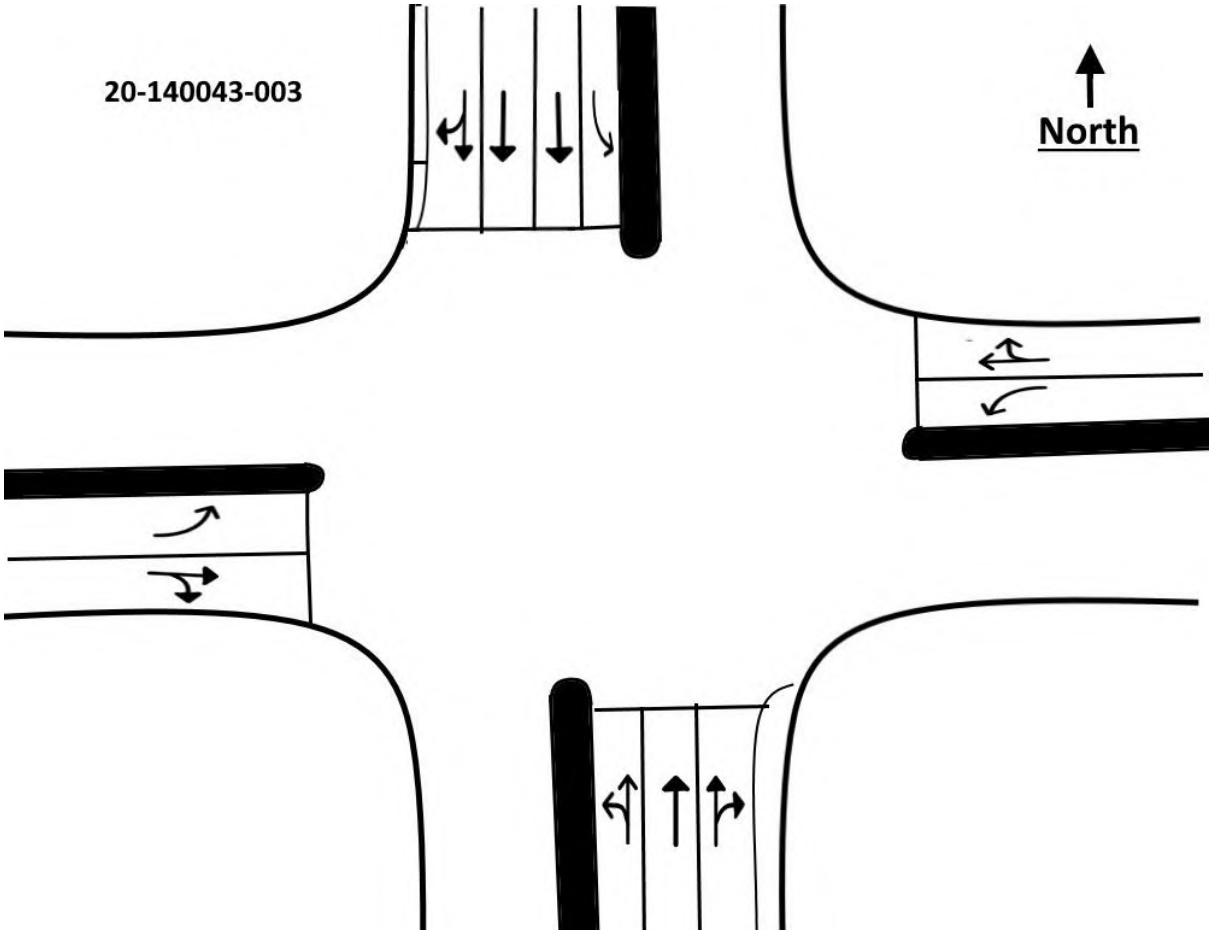
SIGNAL TIMING

PHASES	1	2	3
NT/ST	01:27	01:16	01:37
EL/ET	00:14	00:11	00:15
ET/WT	00:30	00:13	-



N/S Street: NE 19th Ave

Speed: 30 MPH



E/W Street: NE 164th St
Speed: 25 MPH

National Data & Surveying Services

Location: NE 18th Ave & NE 164th St
City: North Miami Beach
Control: 4-Way Stop

Intersection Turning Movement Count

Project ID: 20-140043-004
Date: 10/7/2020

Total

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	6	4	1	0	0	6	3	0	1	2	4	0	3	17	2	0	49
7:15 AM	4	3	4	0	1	6	3	0	1	3	8	1	3	15	0	1	53
7:30 AM	3	2	1	0	0	5	4	0	2	7	6	0	8	13	3	0	54
7:45 AM	5	2	9	0	1	11	2	0	2	11	6	0	19	15	0	2	85
8:00 AM	10	8	2	0	2	11	5	0	3	14	7	0	15	24	0	0	101
8:15 AM	4	12	7	0	3	11	7	0	5	12	11	0	14	34	4	0	124
8:30 AM	10	10	8	0	0	9	7	0	9	11	4	0	12	28	4	0	112
8:45 AM	14	8	9	0	1	8	4	0	6	14	9	1	20	32	1	0	127
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	56	49	41	0	8	67	35	0	29	74	55	2	94	178	14	3	705
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	38	38	26	0	6	39	23	0	23	51	31	1	61	118	9	0	464
PEAK HR FACTOR :	0.679	0.792	0.722	0.000	0.500	0.886	0.821	0.000	0.639	0.911	0.705	0.250	0.763	0.868	0.563	0.000	0.913
	0.823				0.810				0.883				0.887				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	11	8	13	1	2	2	5	0	9	33	20	1	20	31	4	0	160
4:15 PM	10	5	12	0	1	6	2	0	5	32	8	0	18	36	4	0	139
4:30 PM	11	8	16	0	0	8	4	0	5	30	11	0	18	24	2	0	137
4:45 PM	11	7	19	0	0	5	10	0	4	31	12	1	19	25	6	0	150
5:00 PM	17	4	10	0	3	7	4	0	4	25	12	1	17	33	3	0	140
5:15 PM	14	7	11	0	1	3	2	0	6	40	17	2	15	34	3	0	155
5:30 PM	18	10	9	0	1	6	5	0	3	32	18	0	16	37	6	0	161
5:45 PM	16	9	10	0	2	1	4	0	2	29	11	1	14	32	3	0	134
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	108	58	100	1	10	38	36	0	38	252	109	6	137	252	31	0	1176
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	60	28	49	0	5	21	21	0	17	128	59	4	67	129	18	0	606
PEAK HR FACTOR :	0.833	0.700	0.645	0.000	0.417	0.750	0.525	0.000	0.708	0.800	0.819	0.500	0.882	0.872	0.750	0.000	0.941
	0.926				0.783				0.800				0.907				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 164th St
City: North Miami Beach
Control: 4-Way Stop

Project ID: 20-140043-004
Date: 10/7/2020

Cars

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	6	4	1	0	0	6	3	0	1	2	4	0	3	16	2	0	48
7:15 AM	4	3	4	0	1	6	3	0	1	3	8	1	3	15	0	1	53
7:30 AM	3	2	1	0	0	5	4	0	2	6	6	0	8	12	2	0	51
7:45 AM	5	2	9	0	1	11	2	0	2	11	6	0	19	15	0	2	85
8:00 AM	10	8	2	0	2	11	5	0	3	13	7	0	14	23	0	0	98
8:15 AM	4	12	7	0	3	11	7	0	4	12	11	0	14	34	4	0	123
8:30 AM	10	10	8	0	0	9	7	0	9	11	4	0	12	28	4	0	112
8:45 AM	14	8	9	0	1	8	4	0	6	14	9	1	20	31	1	0	126
TOTAL VOLUMES :	NL 56	NT 49	NR 41	NU 0	SL 8	ST 67	SR 35	SU 0	EL 28	ET 72	ER 55	EU 2	WL 93	WT 174	WR 13	WU 3	TOTAL 696
APPROACH %'s :	38.36%	33.56%	28.08%	0.00%	7.27%	60.91%	31.82%	0.00%	17.83%	45.86%	35.03%	1.27%	32.86%	61.48%	4.59%	1.06%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	38	38	26	0	6	39	23	0	22	50	31	1	60	116	9	0	459
PEAK HR FACTOR :	0.68	0.792	0.722	0.000	0.500	0.886	0.821	0.000	0.611	0.893	0.705	0.250	0.750	0.853	0.563	0.000	0.911
	0.823				0.810				0.867				0.889				

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 164th St				NE 164th St				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	11	8	13	1	2	2	5	0	9	33	19	1	20	31	4	0	159
4:15 PM	10	5	12	0	1	6	2	0	5	31	7	0	18	34	4	0	135
4:30 PM	11	8	16	0	0	8	4	0	5	30	11	0	18	23	2	0	136
4:45 PM	11	7	19	0	0	5	10	0	4	30	12	1	19	25	6	0	149
5:00 PM	17	4	10	0	3	7	4	0	3	25	12	1	16	32	3	0	137
5:15 PM	14	7	11	0	1	3	2	0	6	39	17	2	15	33	3	0	153
5:30 PM	18	10	9	0	1	5	5	0	3	31	18	0	16	37	6	0	159
5:45 PM	16	9	10	0	2	1	4	0	2	29	11	1	14	31	3	0	133
TOTAL VOLUMES :	NL 108	NT 58	NR 100	NU 1	SL 10	ST 37	SR 36	SU 0	EL 37	ET 248	ER 107	EU 6	WL 136	WT 246	WR 31	WU 0	TOTAL 1161
APPROACH %'s :	40.45%	21.72%	37.45%	0.37%	12.05%	44.58%	43.37%	0.00%	9.30%	62.31%	26.88%	1.51%	32.93%	59.56%	7.51%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	60	28	49	0	5	20	21	0	16	125	59	4	66	127	18	0	598
PEAK HR FACTOR :	0.83	0.700	0.645	0.000	0.417	0.714	0.525	0.000	0.667	0.801	0.819	0.500	0.868	0.858	0.750	0.000	0.940
	0.926				0.767				0.797				0.894				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 164th St
City: North Miami Beach
Control: 4-Way Stop

Project ID: 20-140043-004
Date: 10/7/2020

HT

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	3
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	1	0	0	1	1	0	0	3
8:15 AM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 1	ET 2	ER 0	EU 0	WL 1	WT 4	WR 1	WU 0	TOTAL 9
APPROACH %'s :									33.33%	66.67%	0.00%	0.00%	16.67%	66.67%	16.67%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	1	0	0	1	2	0	0	5
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.250	0.500	0.000	0.000	0.417
										0.500				0.375			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	1	1	0	0	2	0	0	4
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	1	0	0	0	1	1	0	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:30 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 1	SR 0	SU 0	EL 1	ET 4	ER 2	EU 0	WL 1	WT 6	WR 0	WU 0	TOTAL 15
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%	14.29%	57.14%	28.57%	0.00%	14.29%	85.71%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	1	3	0	0	1	2	0	0	8
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.750	0.000	0.000	0.250	0.500	0.000	0.000	0.667
						0.250				1.000				0.375			

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & NE 164th St
City: North Miami Beach
Control: 4-Way Stop

Project ID: 20-140043-004
Date: 10/7/2020

Bikes

NS/EW Streets:	NE 18th Ave				NE 18th Ave				NE 164th St				NE 164th St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	2
8:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	2
8:30 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	2	0	0	3
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	0	1	0	0	1	2	0	0	0	1	0	0	1	5	0	0	11
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	33.33%	66.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	16.67%	83.33%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	1	1	0	0	0	1	0	0	1	3	0	0	7
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.250	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.375	0.000	0.000	0.583
						0.500				0.250				0.500			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	0	0	2	1	0	0	2	0	0	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	1	1	2	0	0	0	0	0	0	3	1	0	1	5	1	0	15
APPROACH %'s :	25.00%	25.00%	50.00%	0.00%					0.00%	75.00%	25.00%	0.00%	14.29%	71.43%	14.29%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	2	0	0	0	0	0	0	1	0	0	0	3	1	0	7
PEAK HR FACTOR :	0.00	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.375	0.250	0.000	0.583
			0.250							0.250				0.500			

National Data & Surveying Services

Location: NE 18th Ave & NE 164th St, Project: 2019-0043-004
City: North Miami Beach Date: 10/7/2020

Intersection Turning Movement Count

Pedestrians (Crosswalks)

NS/EW Streets:	NE 18th Ave		NE 18th Ave		NE 164th St		NE 164th St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	1	0	1	0	0	2
7:15 AM	0	2	0	0	0	0	0	3	5
7:30 AM	0	0	0	0	0	0	2	0	2
7:45 AM	1	1	0	1	0	0	0	0	3
8:00 AM	2	3	0	1	0	4	0	2	12
8:15 AM	1	1	2	1	0	1	1	0	7
8:30 AM	1	0	5	0	1	1	0	1	9
8:45 AM	2	0	0	0	0	0	2	0	4
TOTAL VOLUMES :	EB 7	WB 7	EB 7	WB 4	NB 1	SB 7	NB 5	SB 6	TOTAL 44
APPROACH %'s :	50.00%	50.00%	63.64%	36.36%	12.50%	87.50%	45.45%	54.55%	
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	6	4	7	2	1	6	3	3	32
PEAK HR FACTOR :	0.750	0.333	0.350	0.500	0.250	0.375	0.375	0.375	0.667
	0.500		0.450		0.438		0.750		

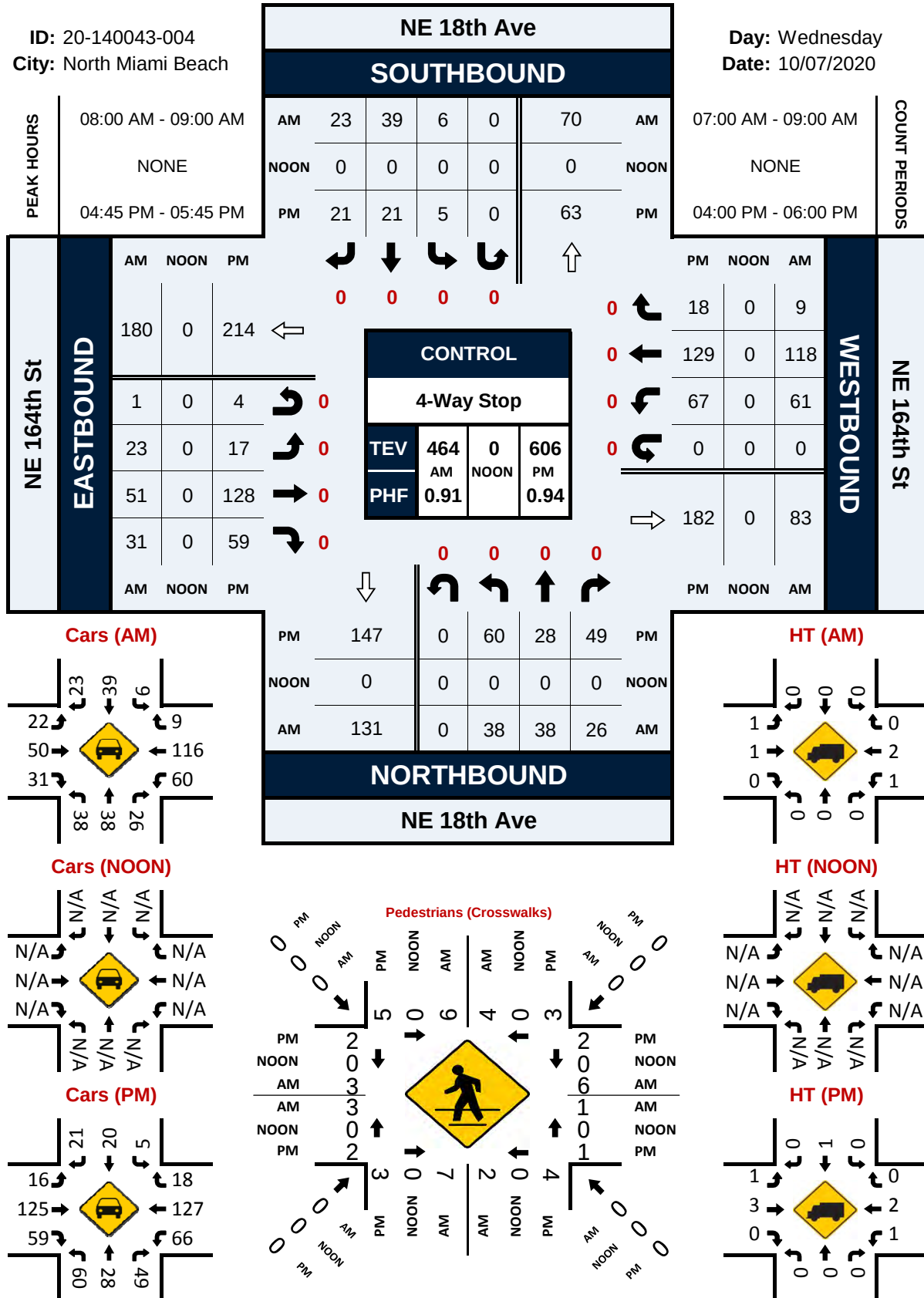
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	1	0	0	0	0	1
4:15 PM	8	0	2	0	0	0	9	1	20
4:30 PM	1	0	2	0	0	0	0	0	3
4:45 PM	3	2	2	2	1	1	1	1	13
5:00 PM	1	0	0	0	0	0	1	0	2
5:15 PM	1	1	1	0	0	1	0	1	5
5:30 PM	0	0	0	2	0	0	0	0	2
5:45 PM	1	1	2	3	1	2	0	0	10
TOTAL VOLUMES :	EB 15	WB 4	EB 9	WB 8	NB 2	SB 4	NB 11	SB 3	TOTAL 56
APPROACH %'s :	78.95%	21.05%	52.94%	47.06%	33.33%	66.67%	78.57%	21.43%	
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	5	3	3	4	1	2	2	2	22
PEAK HR FACTOR :	0.417	0.375	0.375	0.500	0.250	0.500	0.500	0.500	0.423
	0.400		0.438		0.375		0.500		

NE 18th Ave & NE 164th St

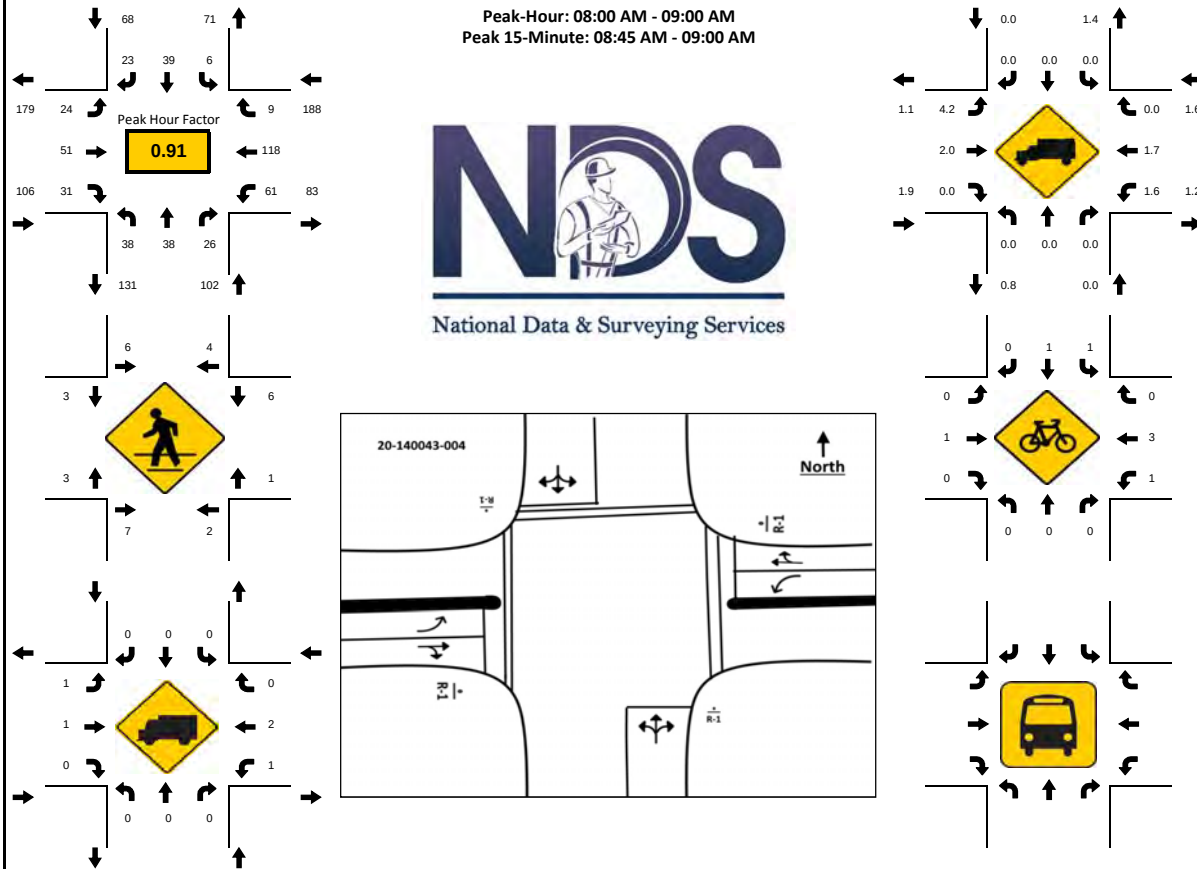
Peak Hour Turning Movement Count

ID: 20-140043-004
City: North Miami Beach

Day: Wednesday
Date: 10/07/2020

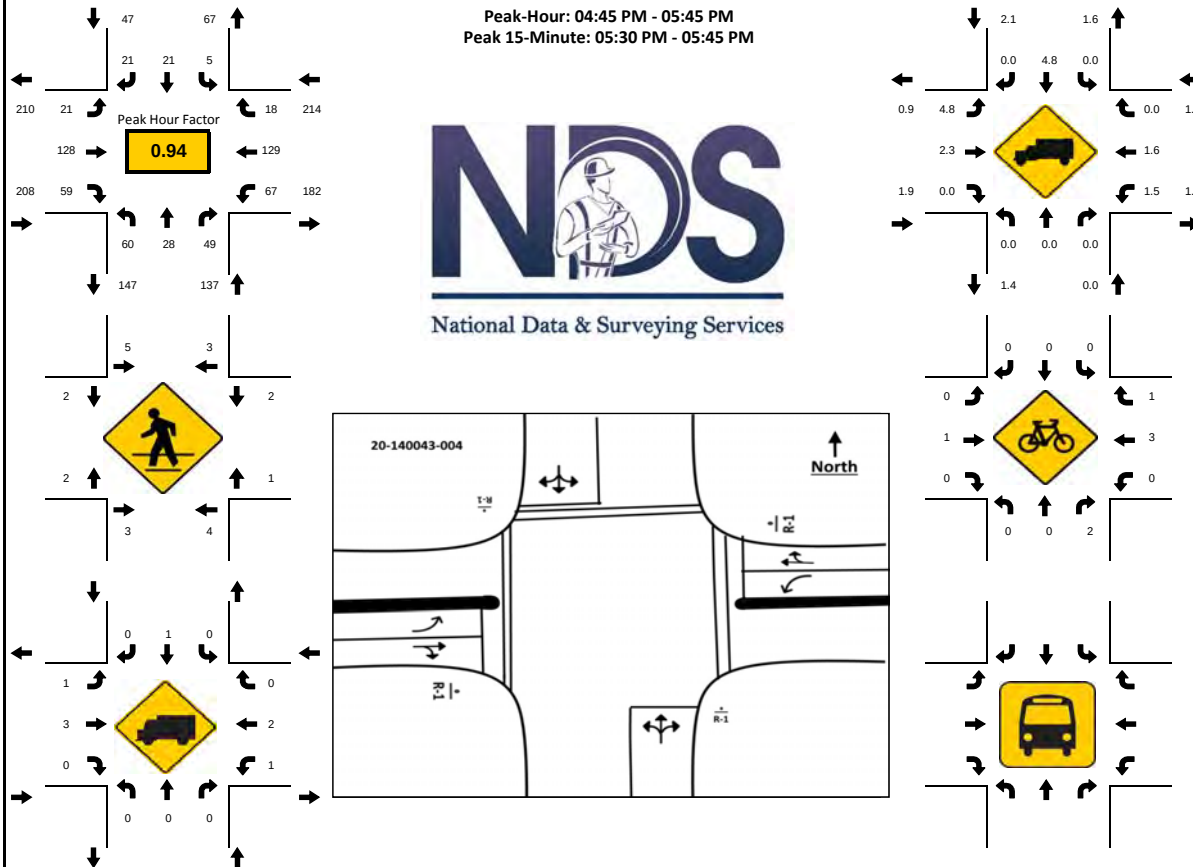


PROJECT ID: 20-140043-004
DATE: 10/07/2020



15-Min Count Period Beginning At	NE 18th Ave Northbound					NE 18th Ave Southbound					NE 164th St Eastbound					NE 164th St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	6	4	1	0		0	6	3	0		1	2	4	0		3	17	2	0		49	241
07:15 AM	4	3	4	0		1	6	3	0		1	3	8	1		3	15	0	1		53	293
07:30 AM	3	2	1	0		0	5	4	0		2	7	6	0		8	13	3	0		54	364
07:45 AM	5	2	9	0		1	11	2	0		2	11	6	0		19	15	0	2		85	422
08:00 AM	10	8	2	0		2	11	5	0		3	14	7	0		15	24	0	0		101	464
08:15 AM	4	12	7	0		3	11	7	0		5	12	11	0		14	34	4	0		124	363
08:30 AM	10	10	8	0		0	9	7	0		9	11	4	0		12	28	4	0		112	239
08:45 AM	14	8	9	0		1	8	4	0		6	14	9	1		20	32	1	0		127	127
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	56	48	36	0		12	44	28	0		36	56	44	4		80	136	16	0		596	
Heavy Trucks	0	0	0			0	0	0			4	4	0			4	4	0			16	
Pedestrians		20					20					8				16					64	
Bicycles	0	0	0			4	4	0			0	4	0			4	8	0			24	
Railroad																						
Stopped Buses																						

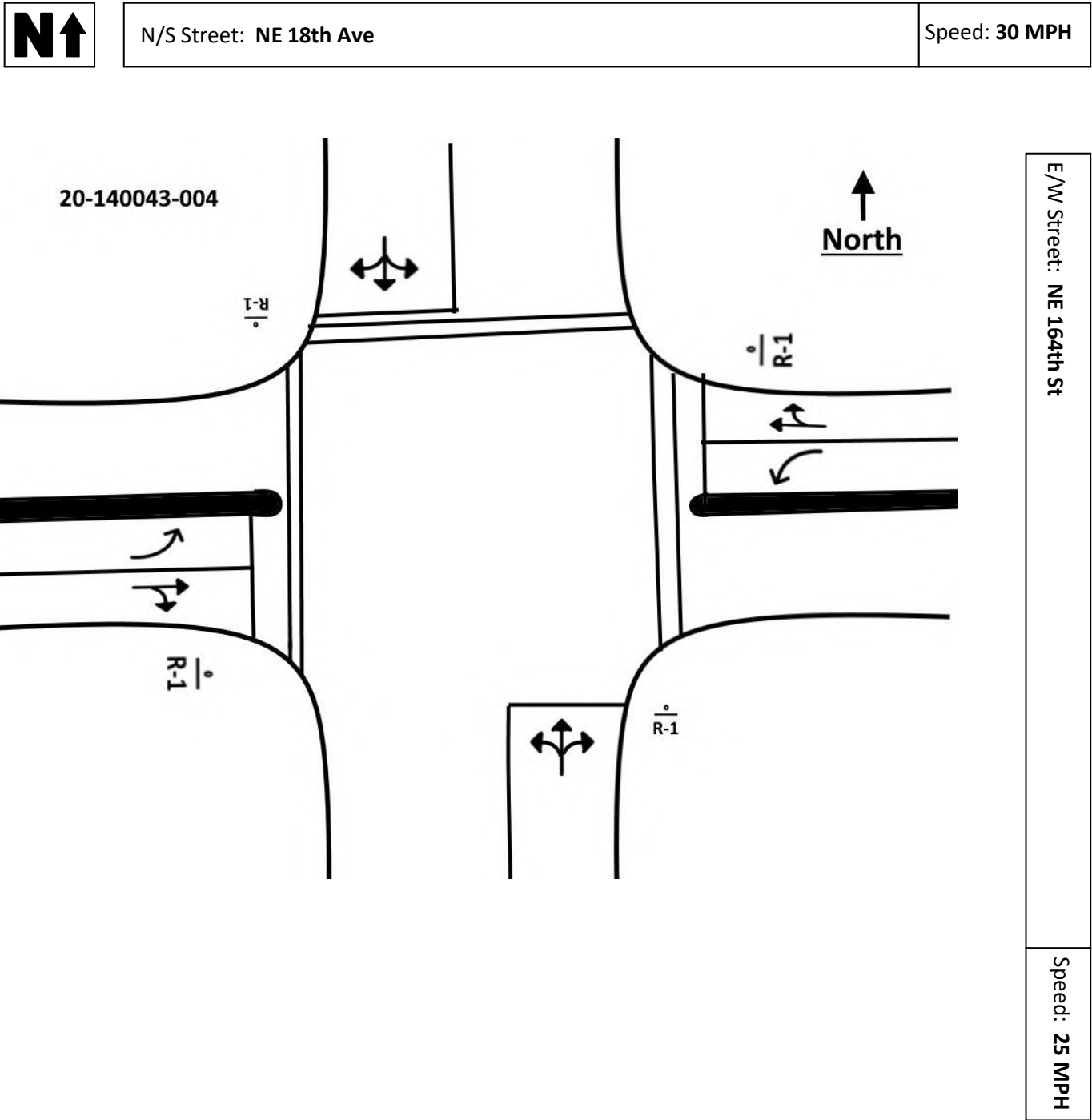
PROJECT ID: 20-140043-004
DATE: 10/07/2020

[illegible]



National Data & Surveying Services

Site Code: 20-140043-004
Date: 10/07/2020
Weather: Sunny
City: North Miami Beach
County: Miami-Dade
Count Times: 07:00 - 09:00
16:00 - 18:00
Control: 4-Way Stop



National Data & Surveying Services

Intersection Turning Movement Count

Location: Alley W/O NE 19th Ave & NE 163rd St

City: North Miami Beach

Control: No Control

Project ID: 20-140043-005

Date: 10/7/2020

Total

NS/EW Streets:	Alley W/O NE 19th Ave				Alley W/O NE 19th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	240	0	0	240
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	259	0	0	259
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	248	0	0	248
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	290	0	0	290
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	296	2	0	298
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	334	1	0	335
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	314	2	0	316
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	362	2	0	364
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	2343	7	0	2350
													0.00%	99.70%	0.30%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1306	7	0	1313
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.902	0.875	0.000	0.902
														0.902			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	474	1	0	476
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	423	0	0	423
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	454	0	0	455
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	448	0	0	450
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	444	0	0	445
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	441	1	0	442
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	451	0	0	451
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	471	0	0	471
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	5	0	0	0	0	0	0	3606	2	0	3613
					0.00%	0.00%	100.00%	0.00%					0.00%	99.94%	0.06%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	1807	1	0	1809
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.959	0.250	0.000	0.960
							0.250							0.960			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alley W/O NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: No Control

Project ID: 20-140043-005
Date: 10/7/2020

Cars

NS/EW Streets:	Alley W/O NE 19th Ave				Alley W/O NE 19th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	232	0	0	232
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	247	0	0	247
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	243	0	0	243
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	285	0	0	285
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	279	2	0	281
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	324	1	0	325
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	300	2	0	302
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	338	2	0	340
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	0	0	0	0	0	0	0	2248	7	0	2255
													0.00%	99.69%	0.31%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	1241	7	0	1248
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.918	0.875	0.000	0.918
														0.918			

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	452	1	0	454
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	409	0	0	409
4:30 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	443	0	0	444
4:45 PM	0	0	0	0	0	0	2	0	0	0	0	0	0	435	0	0	437
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	0	439	0	0	440
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	434	1	0	435
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	441	0	0	441
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	464	0	0	464
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	0	0	0	0	0	5	0	0	0	0	0	0	3517	2	0	3524
					0.00%	0.00%	100.00%	0.00%					0.00%	99.94%	0.06%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	0	0	0	0	0	0	1778	1	0	1780
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.958	0.250	0.000	0.959
							0.250							0.959			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alley W/O NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: No Control

Project ID: 20-140043-005
Date: 10/7/2020

HT

NS/EW Streets:	Alley W/O NE 19th Ave				Alley W/O NE 19th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	8	0	0	8
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	12	0	0	12
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	17	0	0	17
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	24	0	0	24
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 95	WR 0	WU 0	TOTAL 95
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	65	0	0	65
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.677	0.000	0.000	0.677
														0.677			

NS/EW Streets:	Alley W/O NE 19th Ave				Alley W/O NE 19th Ave				NE 163rd St				NE 163rd St				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	22	0	0	22
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	14
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	11	0	0	11
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	13	0	0	13
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	5	0	0	5
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	10	0	0	10
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	7	0	0	7
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 89	WR 0	WU 0	TOTAL 89
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	29	0	0	29
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.725	0.000	0.000	0.725
														0.725			

National Data & Surveying Services

Intersection Turning Movement Count

Location: Alley W/O NE 19th Ave & NE 163rd St
City: North Miami Beach
Control: No Control

Project ID: 20-140043-005
Date: 10/7/2020

Bikes

NS/EW Streets:	Alley W/O NE 19th Ave				Alley W/O NE 19th Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 2	WR 0	WU 0	TOTAL 2
APPROACH %'s :													0.00%	100.00%	0.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 0	SR 0	SU 0	EL 1	ET 2	ER 0	EU 0	WL 0	WT 3	WR 0	WU 0	TOTAL 6
APPROACH %'s :									33.33%	66.67%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	
PEAK HR :	05:00 PM - 06:00 PM																TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	1	0	0	0	1	0	0	2
PEAK HR FACTOR :	0.00	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.250	0.000	0.000	0.500

National Data & Surveying Services

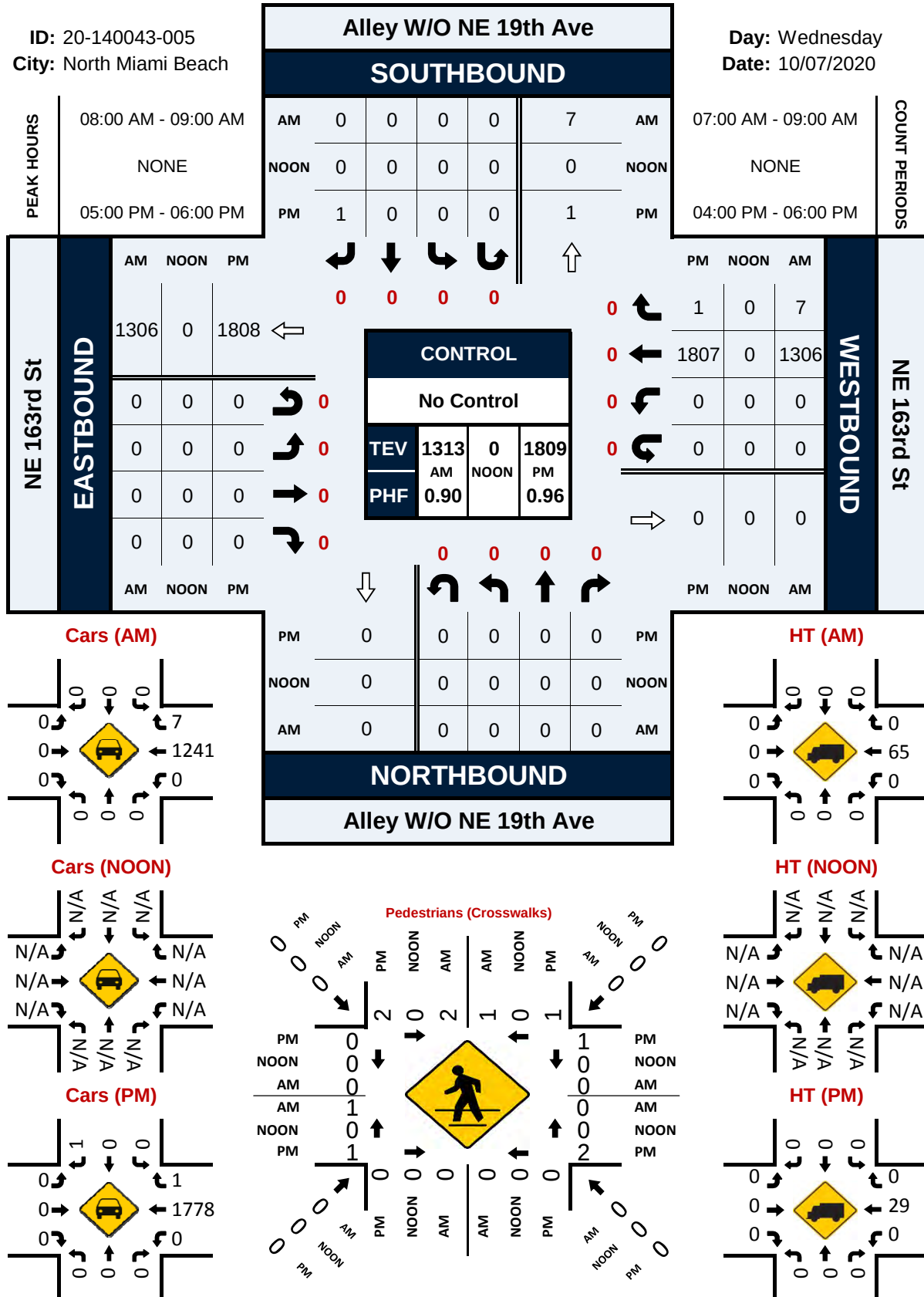
Location: Alley W/O NE 19th Ave & NE 163rd St, Project No: 2019-0043-005
City: North Miami Beach Date: 10/7/2020

Intersection Turning Movement Count

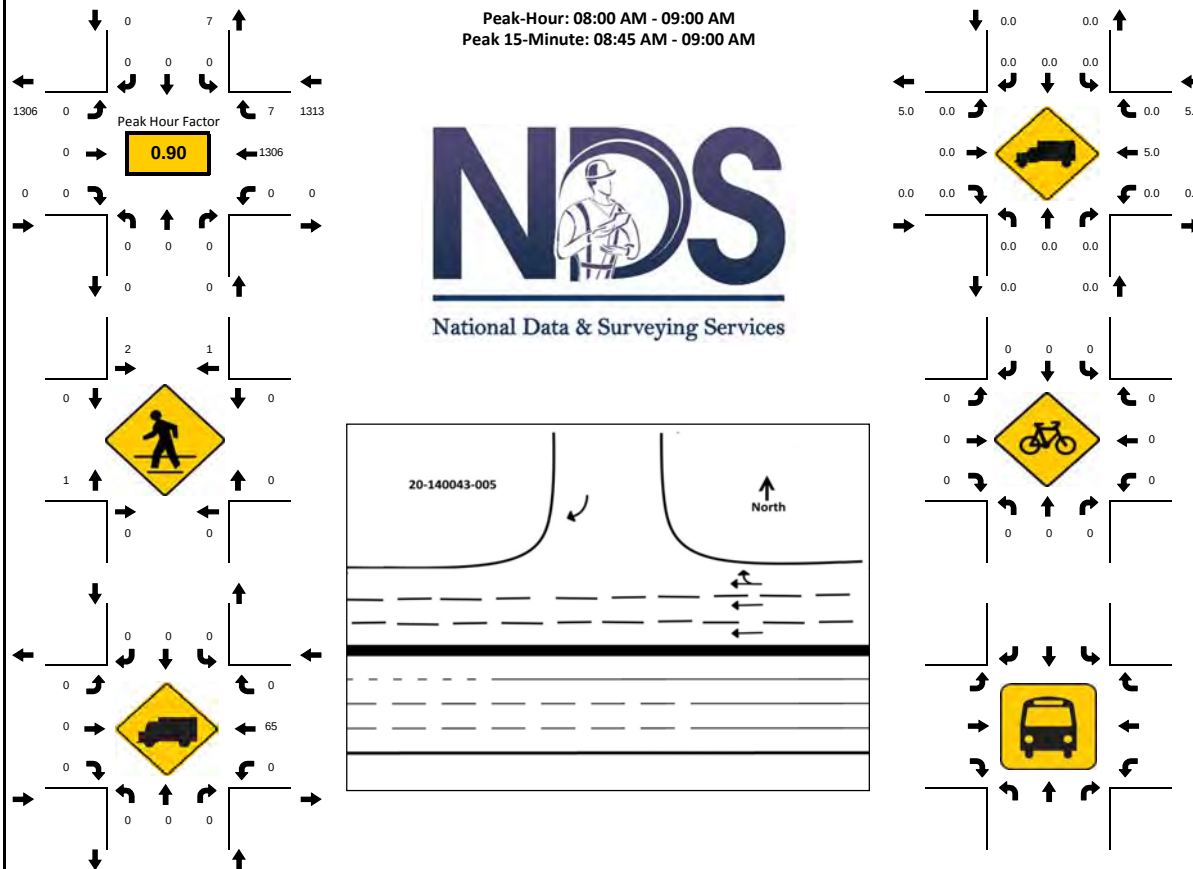
Pedestrians (Crosswalks)

NS/EW Streets:		Alley W/O NE 19th Ave		Alley W/O NE 19th Ave		NE 163rd St		NE 163rd St		
AM		NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
		EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	1	0	0	2
7:45 AM	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	1	0	1
8:15 AM	1	1	0	0	0	0	0	0	0	2
8:30 AM	1	0	0	0	0	0	0	0	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :		EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :		3	1	0	0	0	1	1	0	6
		75.00%	25.00%			0.00%	100.00%	100.00%	0.00%	
PEAK HR :		08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :		2	1	0	0	0	0	1	0	4
PEAK HR FACTOR :		0.500	0.250					0.250		0.500
		0.375						0.250		

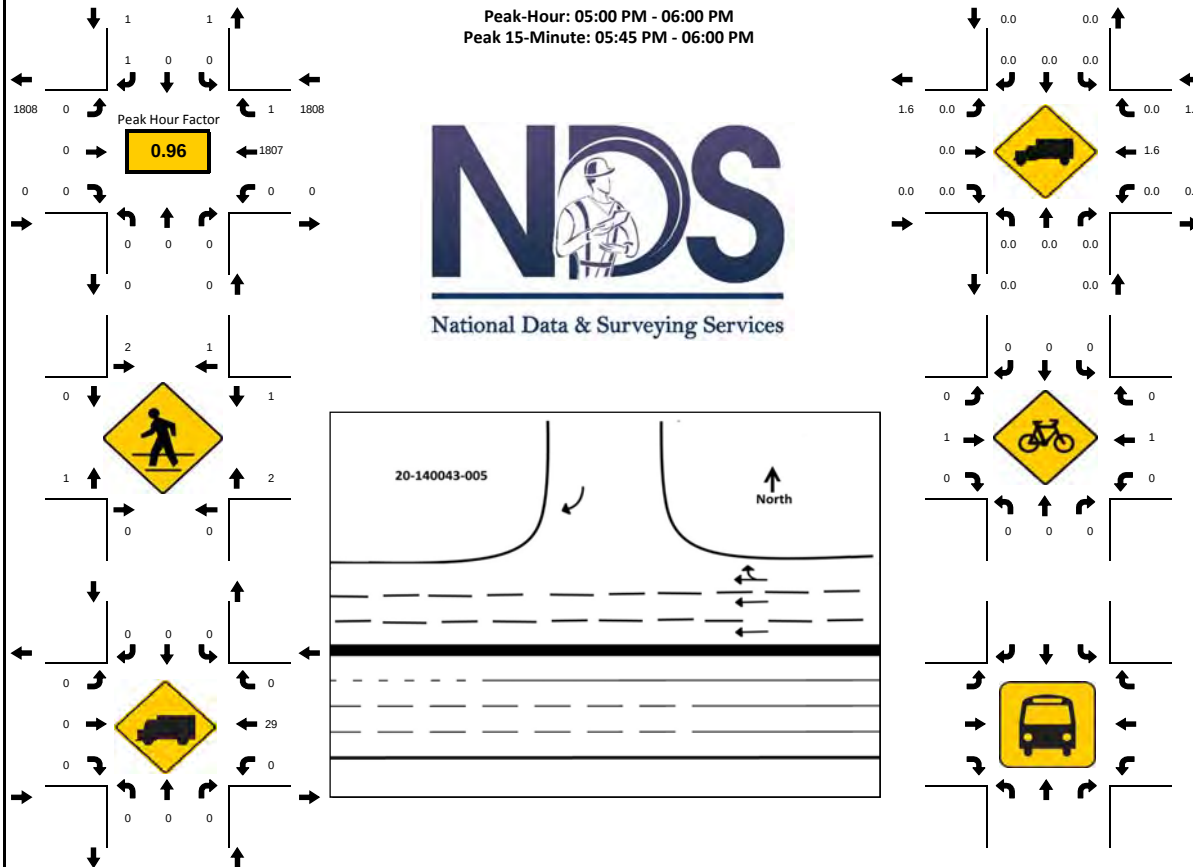
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	0	0	0	0	0	0	0	0
4:15 PM	1	1	0	0	0	0	0	1	3
4:30 PM	0	1	0	0	0	1	0	0	2
4:45 PM	1	1	0	0	0	0	0	0	2
5:00 PM	1	1	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	1	1	0	0	2
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	1	0	1	0	3
TOTAL VOLUMES :	EB 4	WB 4	EB 0	WB 0	NB 2	SB 2	NB 1	SB 1	TOTAL 14
APPROACH %'s :	50.00%	50.00%			50.00%	50.00%	50.00%	50.00%	
PEAK HR :	05:00 PM - 06:00 PM								TOTAL
PEAK HR VOL :	2	1	0	0	2	1	1	0	7
PEAK HR FACTOR :	0.500	0.250			0.500	0.250	0.250	0.250	0.583
	0.375				0.375		0.250		



PROJECT ID: 20-140043-005
DATE: 10/07/2020

[illegible]

PROJECT ID: 20-140043-005
DATE: 10/07/2020

[illegible]



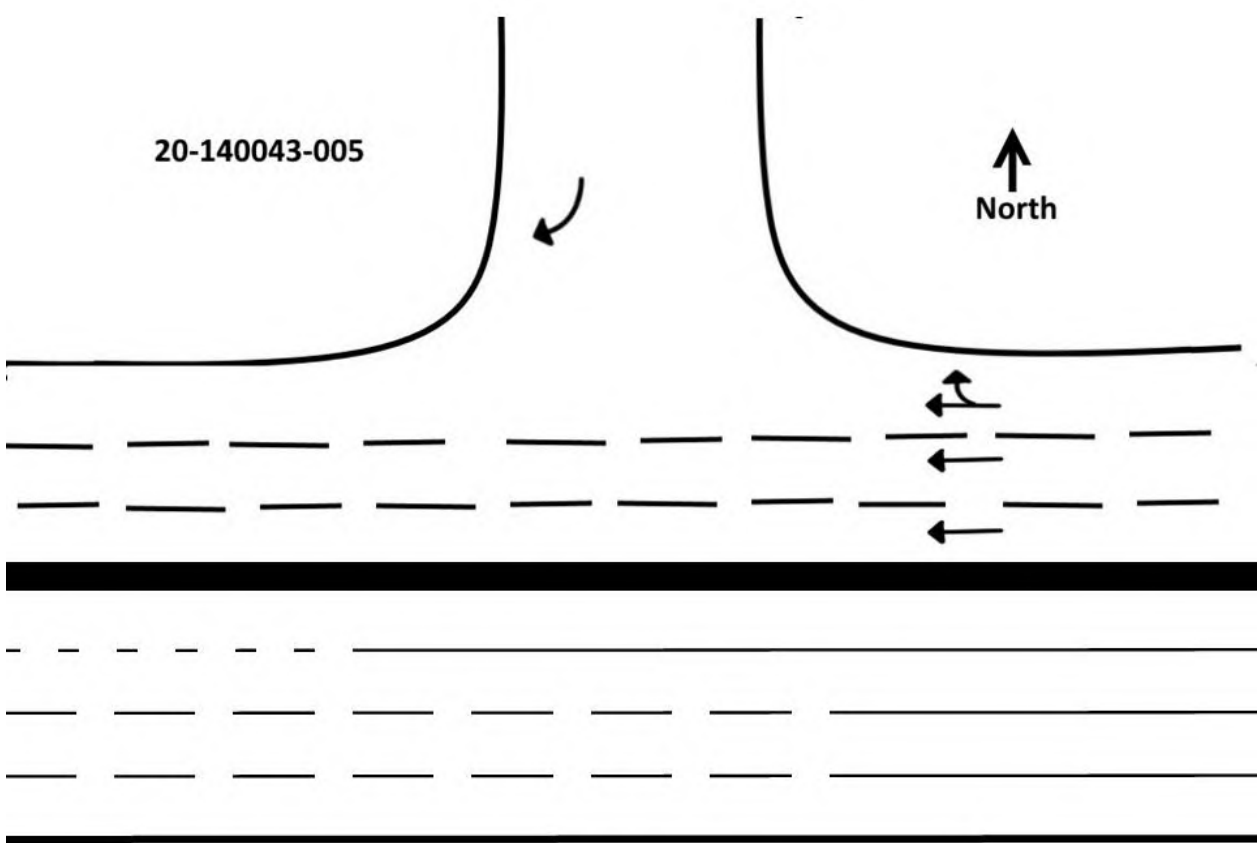
National Data & Surveying Services

Site Code: 20-140043-005
Date: 10/07/2020
Weather: Sunny
City: North Miami Beach
County: Miami-Dade
Count Times: 07:00 - 09:00
16:00 - 18:00
Control: No Control



N/S Street: Alley W/o NE 19th Ave

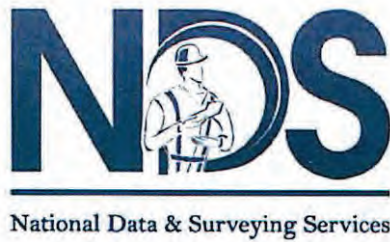
Speed: N/A



E/W Street: NE 163rd St

Speed: 35 MPH

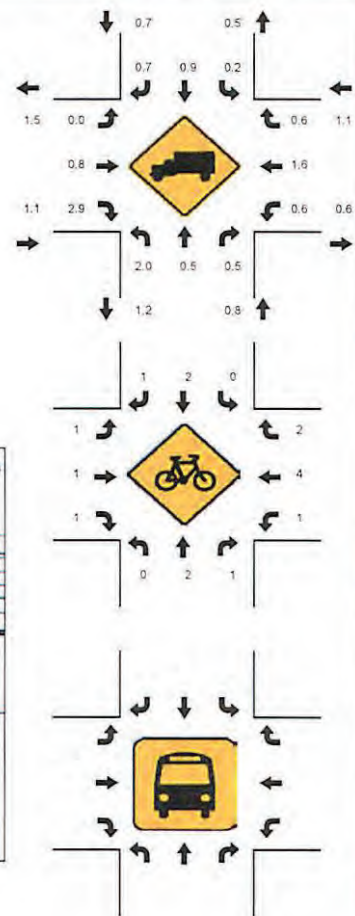
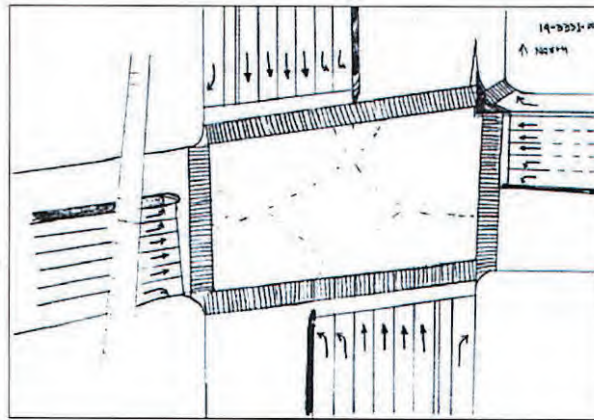
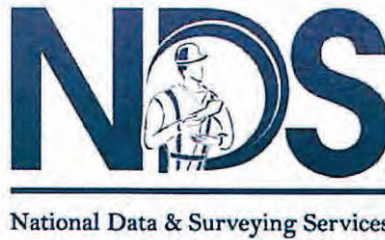
PROJECT ID: 19-03331-001
DATE: 05/14/2019

[illegible]

LOCATION: Biscayne Blvd/US 1 & NE 163rd St/SR 826
CITY/STATE: North Miami Beach, FL

PROJECT ID: 19-03331-001
DATE: 05/14/2019

Peak-Hour: 05:00 PM - 06:00 PM
Peak 15-Minute: 05:30 PM - 05:45 PM



15-Min Count Period Beginning At	Biscayne Blvd/US 1 Northbound					Biscayne Blvd/US 1 Southbound					NE 163rd St/SR 826 Eastbound					NE 163rd St/SR 826 Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
04:00 PM	120	281	123	3		109	303	114	0		64	250	86	0		100	363	194	0		2110	8217
04:15 PM	83	333	115	1		100	280	114	2		68	228	84	0		125	267	235	1		2036	8387
04:30 PM	104	310	133	5		94	317	131	4		76	232	94	0		118	287	174	0		2079	8512
04:45 PM	91	260	114	2		101	352	122	2		58	238	78	0		109	281	184	0		1992	8718
05:00 PM	136	358	143	2		119	291	106	4		71	259	124	0		113	345	209	0		2280	8842
05:15 PM	94	391	145	1		82	379	116	3		62	219	88	0		103	269	209	0		2161	6562
05:30 PM	106	298	172	8		116	313	126	2		90	309	113	0		147	303	182	0		2285	4401
05:45 PM	106	310	128	7		128	315	85	5		81	245	84	0		100	341	181	0		2116	2116
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
All Vehicles	544	1564	688	32		512	1516	504	20		360	1236	496	0		588	1380	836	0		10276	
Heavy Trucks	12	16	4			4	20	8			0	12	16			4	32	8			136	
Pedestrians		8					12					24					12				56	
Bicycles	0	4	4			0	4	4			4	4	4			4	4	4			40	
Railroad																						
Stopped Buses																						

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 22nd Ave & NE 163rd St
City: North Miami Beach
Control:

Project ID: 19-03224-001
Date: 4/10/2019

Total

NS/EW Streets:		NE 22nd Ave				NE 22nd Ave				NE 163rd St				NE 163rd St				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
	7:00 AM	17	55	30	0	33	86	17	0	27	246	12	1	61	228	11	4	828
	7:15 AM	14	55	25	0	26	77	8	0	20	350	19	1	38	258	22	1	914
	7:30 AM	7	59	31	0	40	69	14	0	17	363	15	0	47	268	18	1	949
	7:45 AM	20	74	33	0	43	96	21	0	19	362	8	0	52	299	29	4	1060
	8:00 AM	13	74	41	0	35	73	13	0	17	330	13	1	46	323	16	0	995
	8:15 AM	21	62	28	0	29	93	17	0	16	342	9	1	61	324	25	3	1031
	8:30 AM	26	60	29	0	42	92	13	0	14	282	1	3	63	369	13	2	1009
	8:45 AM	24	82	37	0	48	116	12	0	11	306	4	0	66	355	19	5	1085
TOTAL VOLUMES :		NL 142	NT 521	NR 254	NU 0	SL 296	ST 702	SR 115	SU 0	EL 141	ET 2581	ER 81	EU 7	WL 434	WT 2424	WR 153	WU 20	TOTAL 7871
APPROACH %'s :		15.49%	56.82%	27.70%	0.00%	26.59%	63.07%	10.33%	0.00%	5.02%	91.85%	2.88%	0.25%	14.32%	79.97%	5.05%	0.66%	
PEAK HR :		07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :		61	269	133	0	147	331	65	0	69	1397	45	2	206	1214	88	8	4035
PEAK HR FACTOR :		0.726	0.909	0.811	0.000	0.855	0.862	0.774	0.000	0.908	0.962	0.750	0.500	0.844	0.937	0.759	0.500	0.952
		0.904				0.848				0.958				0.918				

WB curb lane closed 8:36-9
AM for construction /
Maintenance vehicle

PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	TOTAL
	4:00 PM	42	76	34	0	34	67	18	0	30	300	20	0	58	410	27	4	1120
	4:15 PM	45	86	32	0	43	122	23	0	40	283	23	2	68	382	31	5	1185
	4:30 PM	27	93	48	0	39	93	22	0	36	335	25	2	55	446	25	5	1251
	4:45 PM	18	78	38	0	37	94	24	0	29	304	21	4	65	485	35	2	1234
	5:00 PM	45	80	44	0	58	79	22	0	35	349	24	1	57	433	33	6	1266
	5:15 PM	40	98	41	0	38	115	24	0	43	295	21	8	71	393	28	1	1216
	5:30 PM	23	77	30	0	39	102	21	0	34	296	11	1	58	380	28	2	1102
	5:45 PM	21	95	27	0	46	94	22	0	25	357	19	1	56	412	34	6	1215
TOTAL VOLUMES :		NL 261	NT 683	NR 294	NU 0	SL 334	ST 766	SR 176	SU 0	EL 272	ET 2519	ER 164	EU 19	WL 488	WT 3341	WR 241	WU 31	TOTAL 9589
APPROACH %'s :		21.08%	55.17%	23.75%	0.00%	26.18%	60.03%	13.79%	0.00%	9.15%	84.70%	5.51%	0.64%	11.90%	81.47%	5.88%	0.76%	
PEAK HR :		04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :		130	349	171	0	172	381	92	0	143	1283	91	15	248	1757	121	14	4967
PEAK HR FACTOR :		0.722	0.890	0.891	0.000	0.741	0.828	0.958	0.000	0.831	0.919	0.910	0.469	0.873	0.906	0.864	0.583	0.981
		0.908				0.911				0.936				0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 22nd Ave & NE 163rd St
City: North Miami Beach
Control: 0

Project ID: 19-03224-001
Date: 4/10/2019

Cars

NS/EW Streets:	NE 22nd Ave				NE 22nd Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	15	52	29	0	31	86	17	0	27	229	12	1	61	223	10	4	797
7:15 AM	13	55	25	0	26	76	8	0	20	342	18	1	38	255	20	1	898
7:30 AM	7	57	31	0	38	69	14	0	17	357	15	0	46	259	18	1	929
7:45 AM	19	74	31	0	43	95	20	0	19	354	7	0	52	292	27	3	1036
8:00 AM	13	72	38	0	34	72	12	0	17	323	12	1	43	316	15	0	968
8:15 AM	20	62	28	0	28	92	16	0	15	335	8	1	61	316	25	3	1010
8:30 AM	22	59	28	0	40	91	13	0	14	269	1	3	62	360	12	2	976
8:45 AM	22	77	36	0	48	115	12	0	8	291	4	0	65	346	17	5	1046
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	131	508	246	0	288	696	112	0	137	2500	77	7	428	2367	144	19	7660
	14.80%	57.40%	27.80%	0.00%	26.28%	63.50%	10.22%	0.00%	5.03%	91.88%	2.83%	0.26%	14.47%	80.02%	4.87%	0.64%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	59	265	128	0	143	328	62	0	68	1369	42	2	202	1183	85	7	3943
PEAK HR FACTOR :	0.74	0.895	0.842	0.000	0.831	0.863	0.775	0.000	0.895	0.959	0.700	0.500	0.828	0.936	0.787	0.583	0.951
	0.911				0.843				0.952				0.912				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	42	74	34	0	32	66	18	0	29	295	20	0	56	403	26	4	1099
4:15 PM	44	85	32	0	42	120	23	0	39	283	22	2	68	375	31	5	1171
4:30 PM	26	93	47	0	38	92	22	0	35	329	25	2	55	435	24	5	1228
4:45 PM	18	78	38	0	36	93	24	0	29	302	19	4	65	476	33	2	1217
5:00 PM	45	79	43	0	56	79	22	0	35	343	24	1	57	423	32	6	1245
5:15 PM	39	98	40	0	38	115	24	0	43	289	21	8	70	388	28	1	1202
5:30 PM	23	76	30	0	38	101	21	0	34	293	11	1	58	374	28	2	1090
5:45 PM	21	95	27	0	46	92	22	0	25	352	19	1	56	404	33	6	1199
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	258	678	291	0	326	758	176	0	269	2486	161	19	485	3278	235	31	9451
	21.03%	55.26%	23.72%	0.00%	25.87%	60.16%	13.97%	0.00%	9.17%	84.70%	5.49%	0.65%	12.04%	81.36%	5.83%	0.77%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	128	348	168	0	168	379	92	0	142	1263	89	15	247	1722	117	14	4892
PEAK HR FACTOR :	0.71	0.888	0.894	0.000	0.750	0.824	0.958	0.000	0.826	0.921	0.890	0.469	0.882	0.904	0.886	0.583	0.982
	0.910				0.903				0.936				0.911				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 22nd Ave & NE 163rd St
City: North Miami Beach
Control: 0

Project ID: 19-03224-001
Date: 4/10/2019

HT

NS/EW Streets:	NE 22nd Ave				NE 22nd Ave				NE 163rd St				NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	2	3	1	0	2	0	0	0	0	17	0	0	0	5	1	0	31
7:15 AM	1	0	0	0	0	1	0	0	0	8	1	0	0	3	2	0	16
7:30 AM	0	2	0	0	2	0	0	0	0	6	0	0	1	9	0	0	20
7:45 AM	1	0	2	0	0	1	1	0	0	8	1	0	0	7	2	1	24
8:00 AM	0	2	3	0	1	1	1	0	0	7	1	0	3	7	1	0	27
8:15 AM	1	0	0	0	1	1	1	0	1	7	1	0	0	8	0	0	21
8:30 AM	4	1	1	0	2	1	0	0	0	13	0	0	1	9	1	0	33
8:45 AM	2	5	1	0	0	1	0	0	3	15	0	0	1	9	2	0	39
TOTAL VOLUMES :	NL 11	NT 13	NR 8	NU 0	SL 8	ST 6	SR 3	SU 0	EL 4	ET 81	ER 4	EU 0	WL 6	WT 57	WR 9	WU 1	TOTAL 211
APPROACH %'s :	34.38%	40.63%	25.00%	0.00%	47.06%	35.29%	17.65%	0.00%	4.49%	91.01%	4.49%	0.00%	8.22%	78.08%	12.33%	1.37%	
PEAK HR :	07:30 AM - 08:30 AM																TOTAL
PEAK HR VOL :	2	4	5	0	4	3	3	0	1	28	3	0	4	31	3	1	92
PEAK HR FACTOR :	0.500	0.500	0.417	0.000	0.500	0.750	0.750	0.000	0.250	0.875	0.750	0.000	0.333	0.861	0.375	0.250	0.852
	0.550				0.833				0.889				0.886				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	2	0	0	2	1	0	0	1	5	0	0	2	7	1	0	21
4:15 PM	1	1	0	0	1	2	0	0	1	0	1	0	0	7	0	0	14
4:30 PM	1	0	1	0	1	1	0	0	1	6	0	0	0	11	1	0	23
4:45 PM	0	0	0	0	1	1	0	0	0	2	2	0	0	9	2	0	17
5:00 PM	0	1	1	0	2	0	0	0	0	6	0	0	0	10	1	0	21
5:15 PM	1	0	1	0	0	0	0	0	0	6	0	0	1	5	0	0	14
5:30 PM	0	1	0	0	1	1	0	0	0	3	0	0	0	6	0	0	12
5:45 PM	0	0	0	0	0	2	0	0	0	5	0	0	0	8	1	0	16
TOTAL VOLUMES :	NL 3	NT 5	NR 3	NU 0	SL 8	ST 8	SR 0	SU 0	EL 3	ET 33	ER 3	EU 0	WL 3	WT 63	WR 6	WU 0	TOTAL 138
APPROACH %'s :	27.27%	45.45%	27.27%	0.00%	50.00%	50.00%	0.00%	0.00%	7.69%	84.62%	7.69%	0.00%	4.17%	87.50%	8.33%	0.00%	
PEAK HR :	04:30 PM - 05:30 PM																TOTAL
PEAK HR VOL :	2	1	3	0	4	2	0	0	1	20	2	0	1	35	4	0	75
PEAK HR FACTOR :	0.50	0.250	0.750	0.000	0.500	0.500	0.000	0.000	0.250	0.833	0.250	0.000	0.250	0.795	0.500	0.000	0.815
	0.750				0.750				0.821				0.833				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 22nd Ave & NE 163rd St
City: North Miami Beach
Control: 0

Project ID: 19-03224-001
Date: 4/10/2019

Bikes

NS/EW Streets:		NE 22nd Ave				NE 22nd Ave				NE 163rd St				NE 163rd St				
AM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
	7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1
	7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	7:45 AM	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	1
	8:00 AM	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	0	2
	8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	8:30 AM	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	2
	8:45 AM	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	2
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		0	0	0	0	3	1	0	0	0	2	0	0	1	0	1	0	8
PEAK HR :		07:30 AM - 08:30 AM				75.00%	25.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	50.00%	0.00%	50.00%	0.00%	TOTAL
PEAK HR VOL :		0	0	0	0	1	0	0	0	0	1	0	0	1	0	0	0	3
PEAK HR FACTOR :		0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.250	0.000	0.000	0.000	0.375
						0.250				0.250				0.250				
PM		NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
		0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
	4:00 PM	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	2
	4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	4:30 PM	0	2	0	0	1	0	0	0	0	1	0	0	0	1	1	0	6
	4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	1	0	0	2
	5:00 PM	0	1	0	0	2	1	0	0	0	2	0	0	0	0	0	0	6
	5:15 PM	0	3	0	0	0	0	0	0	0	1	0	0	0	0	0	0	4
	5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	1
	5:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
TOTAL VOLUMES :		NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :		0	7	0	0	3	3	0	0	0	5	1	0	0	2	1	0	22
PEAK HR :		04:30 PM - 05:30 PM				50.00%	50.00%	0.00%	0.00%	0.00%	83.33%	16.67%	0.00%	0.00%	66.67%	33.33%	0.00%	TOTAL
PEAK HR VOL :		0	6	0	0	3	2	0	0	0	4	0	0	0	2	1	0	18
PEAK HR FACTOR :		0.00	0.500	0.000	0.000	0.375	0.500	0.000	0.000	0.000	0.500	0.000	0.000	0.000	0.500	0.250	0.000	0.750
						0.500				0.500				0.375				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 22nd Ave & NE 163rd St
City: North Miami Beach

Project ID: 19-03224-001
Date: 4/10/2019

Pedestrians (Crosswalks)

NS/EW Streets:	NE 22nd Ave		NE 22nd Ave		NE 163rd St		NE 163rd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	1	1	0	1	0	0	0	3
7:15 AM	0	0	1	0	1	2	1	0	5
7:30 AM	0	0	1	0	0	1	1	0	3
7:45 AM	0	0	2	0	1	1	0	0	4
8:00 AM	0	0	1	1	2	4	0	2	10
8:15 AM	0	0	0	0	2	0	0	0	2
8:30 AM	0	1	2	0	0	4	1	2	10
8:45 AM	1	1	0	0	0	0	0	1	3
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	3	8	1	7	12	3	5	40
	25.00%	75.00%	88.89%	11.11%	36.84%	63.16%	37.50%	62.50%	
PEAK HR :	07:30 AM - 08:30 AM								TOTAL
PEAK HR VOL :	0	0	4	1	5	6	1	2	19
PEAK HR FACTOR :			0.500	0.250	0.625	0.375	0.250	0.250	0.475
			0.625		0.458		0.375		

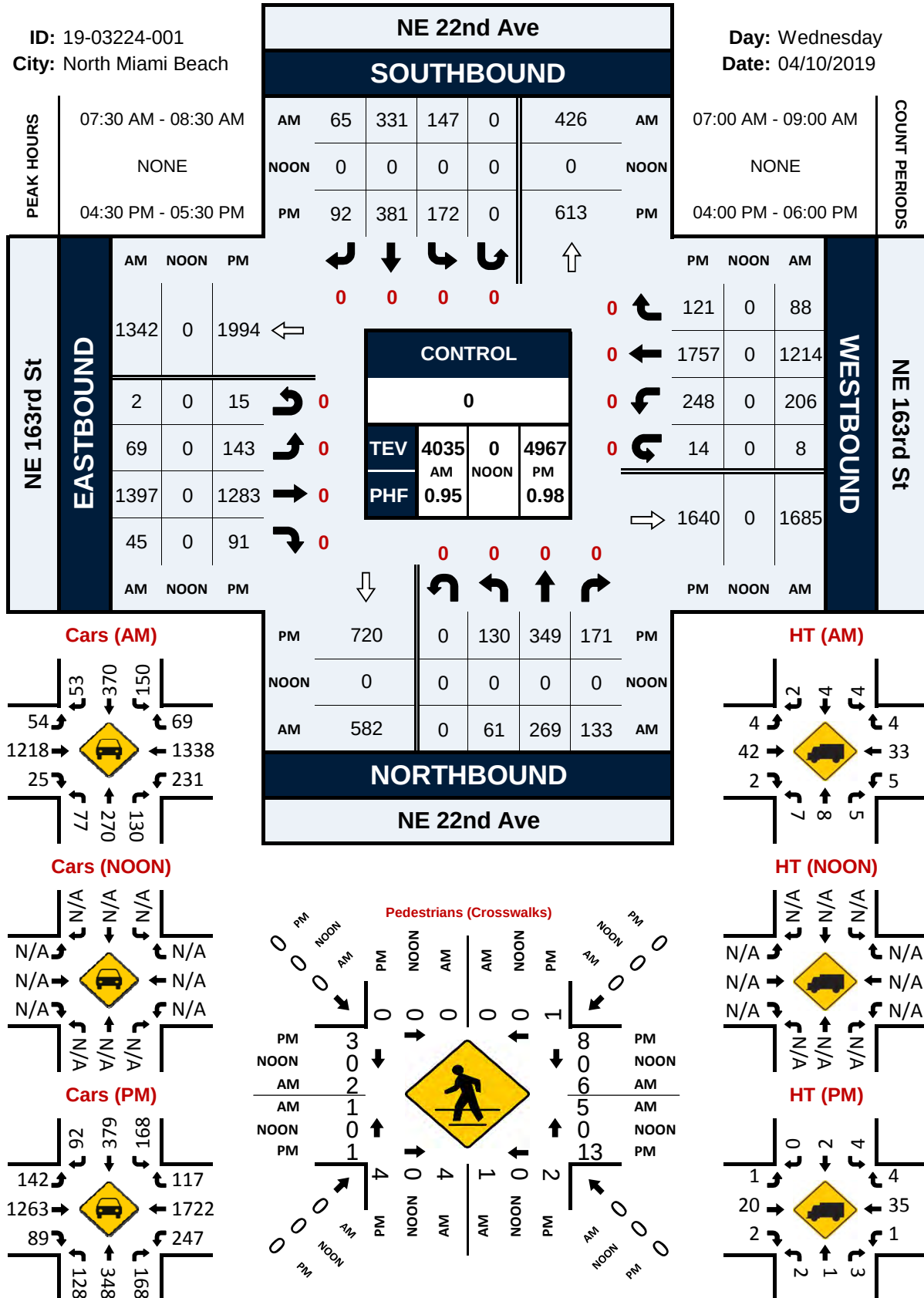
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	0	1	1	1	2	2	0	1	8
4:15 PM	0	0	0	0	1	1	0	0	2
4:30 PM	0	1	0	0	1	1	0	1	4
4:45 PM	0	0	2	2	1	4	1	0	10
5:00 PM	0	0	0	0	7	2	0	0	9
5:15 PM	0	0	2	0	4	1	0	2	9
5:30 PM	2	1	2	0	2	0	0	0	7
5:45 PM	1	2	2	0	4	5	0	2	16
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	3	5	9	3	22	16	1	6	65
	37.50%	62.50%	75.00%	25.00%	57.89%	42.11%	14.29%	85.71%	
PEAK HR :	04:30 PM - 05:30 PM								TOTAL
PEAK HR VOL :	0	1	4	2	13	8	1	3	32
PEAK HR FACTOR :		0.250	0.500	0.250	0.464	0.500	0.250	0.375	0.800
		0.250	0.375		0.583		0.500		

NE 22nd Ave & NE 163rd St

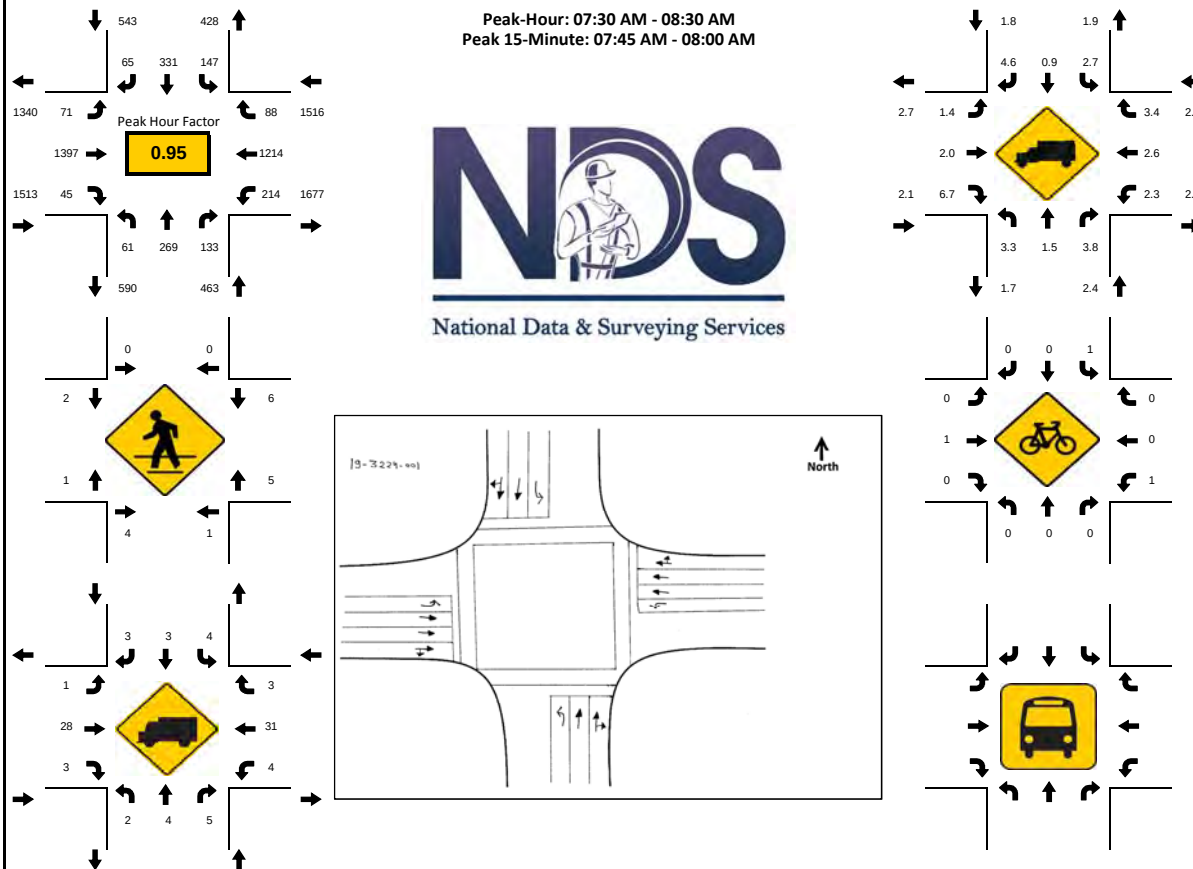
Peak Hour Turning Movement Count

ID: 19-03224-001
City: North Miami Beach

Day: Wednesday
Date: 04/10/2019



PROJECT ID: 19-03224-001
DATE: 04/10/2019

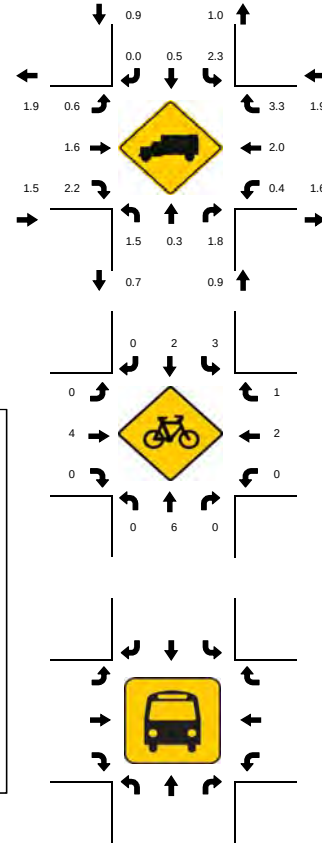
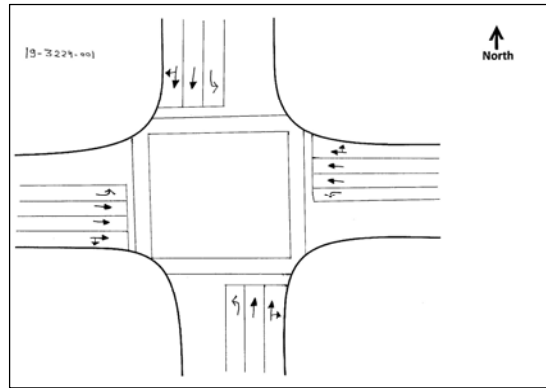
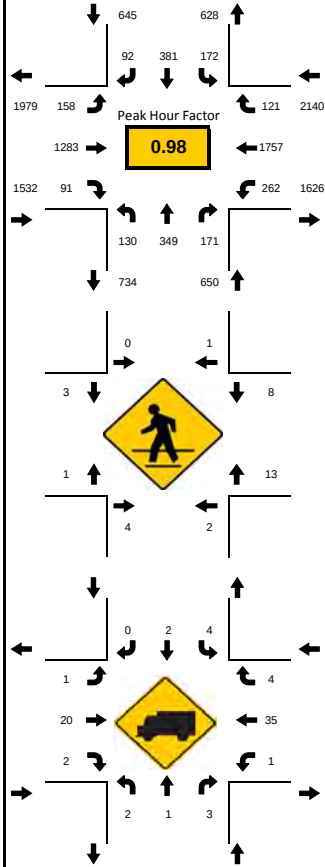
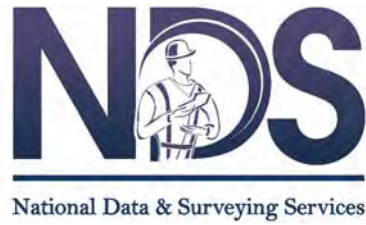


15-Min Count Period Beginning At	NE 22nd Ave Northbound					NE 22nd Ave Southbound					NE 163rd St Eastbound					NE 163rd St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
07:00 AM	17	55	30	0		33	86	17	0		27	246	12	1		61	228	11	4		828	3751
07:15 AM	14	55	25	0		26	77	8	0		20	350	19	1		38	258	22	1		914	3918
07:30 AM	7	59	31	0		40	69	14	0		17	363	15	0		47	268	18	1		949	4035
07:45 AM	20	74	33	0		43	96	21	0		19	362	8	0		52	299	29	4		1060	4095
08:00 AM	13	74	41	0		35	73	13	0		17	330	13	1		46	323	16	0		995	4120
08:15 AM	21	62	28	0		29	93	17	0		16	342	9	1		61	324	25	3		1031	3125
08:30 AM	26	60	29	0		42	92	13	0		14	282	1	3		63	369	13	2		1009	2094
08:45 AM	24	82	37	0		48	116	12	0		11	306	4	0		66	355	19	5		1085	1085
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	84	296	164	0		172	384	84	0		76	1452	60	4		244	1296	116	16		4448	
Heavy Trucks	4	8	12			8	4	4			4	32	4			12	36	8			136	
Pedestrians		8						0				8					24				40	
Bicycles	0	0	0			4	0	0			0	4	0			4	0	0			12	
Railroad																						
Stopped Buses																						

LOCATION: NE 22nd Ave & NE 163rd St
CITY/STATE: North Miami Beach, FL

PROJECT ID: 19-03224-001
DATE: 04/10/2019

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



15-Min Count Period Beginning At	NE 22nd Ave Northbound					NE 22nd Ave Southbound					NE 163rd St Eastbound					NE 163rd St Westbound					Total	Hourly Total
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
04:00 PM	42	76	34	0		34	67	18	0		30	300	20	0		58	410	27	4		1120	4790
04:15 PM	45	86	32	0		43	122	23	0		40	283	23	2		68	382	31	5		1185	4936
04:30 PM	27	93	48	0		39	93	22	0		36	335	25	2		55	446	25	5		1251	4967
04:45 PM	18	78	38	0		37	94	24	0		29	304	21	4		65	485	35	2		1234	4818
05:00 PM	45	80	44	0		58	79	22	0		35	349	24	1		57	433	33	6		1266	4799
05:15 PM	40	98	41	0		38	115	24	0		43	295	21	8		71	393	28	1		1216	3533
05:30 PM	23	77	30	0		39	102	21	0		34	296	11	1		58	380	28	2		1102	2317
05:45 PM	21	95	27	0		46	94	22	0		25	357	19	1		56	412	34	6		1215	1215
Peak 15-Min Flowrates	Northbound					Southbound					Eastbound					Westbound					Total	
	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*	Left	Thru	Rgt	U	R*		
All Vehicles	180	392	192	0		232	460	96	0		172	1396	100	32		284	1940	140	24		5640	
Heavy Trucks	4	4	4			8	4	0			4	24	8			4	44	8			116	
Pedestrians		16					4					8					36				64	
Bicycles	0	12	0			8	4	0			0	8	0			0	4	4			40	
Railroad																						
Stopped Buses																						



Site Code:	19-3224-001
Date:	04/10/2019
Weather:	Sunny
City:	North Miami Beach
County:	Miami-Dade
Count Times:	07:00 - 09:00 16:00 - 18:00
Control:	Signalized

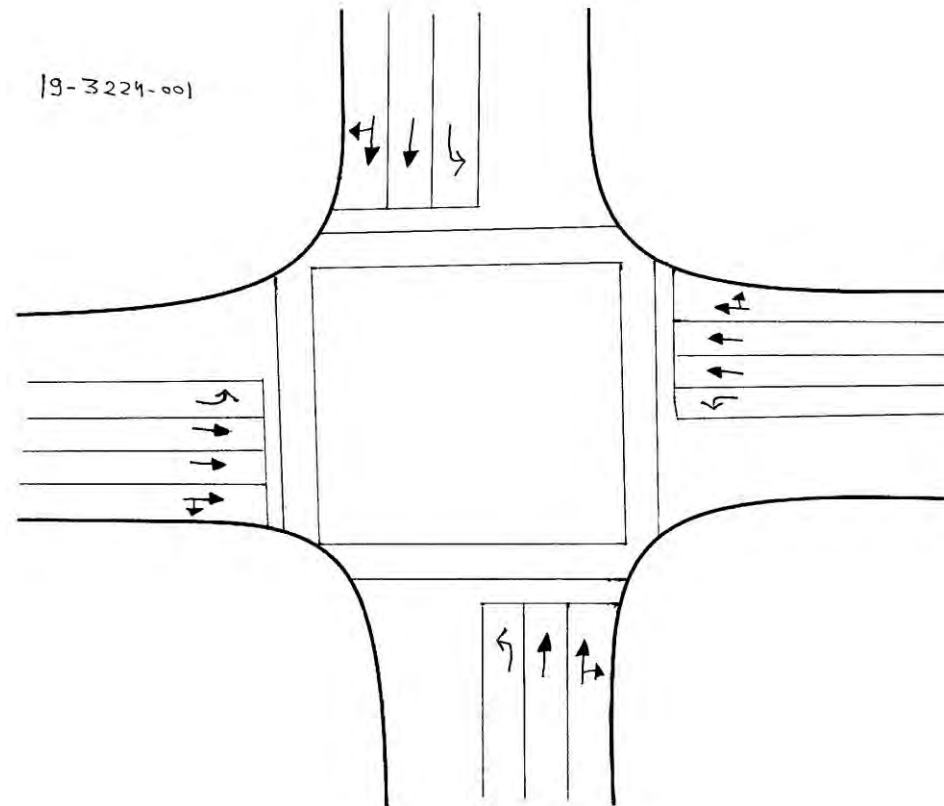
SIGNAL TIMING

PHASES	1	2	3
NL/SL	00:19	00:27	00:24
NT/ST	00:39	00:32	00:36
EL/WL	00:17	00:18	00:21
ET/WT	01:34	01:33	01:29



N/S Street: **NE 22nd Ave**

Speed: 40 MPH



North

E/W Street: **NE 163rd St**

Speed: **35 MPH**

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & Alley N/O NE 163rd St

City: North Miami Beach

Control: No Control

Project ID: 20-140043-008

Date: 10/7/2020

Total

NS/EW Streets:	NE 18th Ave				NE 18th Ave				Alley N/O NE 163rd St				Alley N/O NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	12	0	0	1	9	0	0	0	0	0	0	0	0	0	0	22
7:15 AM	0	10	1	0	0	18	0	0	0	0	0	0	1	0	0	0	30
7:30 AM	0	6	2	0	0	18	0	0	0	0	0	0	1	0	0	0	27
7:45 AM	0	16	0	0	3	34	0	0	0	0	0	0	1	0	0	0	54
8:00 AM	0	23	0	0	0	31	0	0	0	0	0	0	1	0	0	0	55
8:15 AM	0	20	0	0	0	35	0	0	0	0	0	0	0	0	0	0	55
8:30 AM	0	27	0	0	0	29	0	0	0	0	0	0	0	0	1	0	57
8:45 AM	0	32	3	0	0	34	0	0	0	0	0	0	0	0	0	0	69
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	146	6	0	4	208	0	0	0	0	0	0	4	0	1	0	369
	0.00%	96.05%	3.95%	0.00%	1.89%	98.11%	0.00%	0.00%	0	0	0	0	80.00%	0.00%	20.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	102	3	0	0	129	0	0	0	0	0	0	1	0	1	0	236
PEAK HR FACTOR :	0.000	0.797	0.250	0.000	0.000	0.921	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.855
	0.750				0.921								0.500				

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	30	5	0	3	39	0	0	0	0	0	0	4	0	1	0	82
4:15 PM	0	27	2	1	1	33	0	0	0	0	0	0	1	0	1	0	66
4:30 PM	0	36	3	0	1	33	0	0	0	0	0	0	0	0	0	0	73
4:45 PM	0	34	2	0	0	37	0	0	0	0	0	0	1	0	1	0	75
5:00 PM	0	30	1	1	1	38	0	0	0	0	0	0	2	0	2	0	75
5:15 PM	0	29	3	0	2	32	0	0	0	0	0	0	1	0	2	0	69
5:30 PM	0	30	1	0	1	43	0	0	0	0	0	0	1	0	3	0	79
5:45 PM	0	37	1	0	1	24	0	0	0	0	0	0	1	0	1	0	65
TOTAL VOLUMES :	NL	NT	NR	NU	SL	ST	SR	SU	EL	ET	ER	EU	WL	WT	WR	WU	TOTAL
APPROACH %'s :	0	253	18	2	10	279	0	0	0	0	0	0	11	0	11	0	584
	0.00%	92.67%	6.59%	0.73%	3.46%	96.54%	0.00%	0.00%	0	0	0	0	50.00%	0.00%	50.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	123	7	1	4	150	0	0	0	0	0	0	5	0	8	0	298
PEAK HR FACTOR :	0.000	0.904	0.583	0.250	0.500	0.872	0.000	0.000	0.000	0.000	0.000	0.000	0.625	0.000	0.667	0.000	0.943
	0.910				0.875								0.813				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & Alley N/O NE 163rd St
City: North Miami Beach
Control: No Control

Project ID: 20-140043-008
Date: 10/7/2020

Cars

NS/EW Streets:	NE 18th Ave				NE 18th Ave				Alley N/O NE 163rd St				Alley N/O NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	12	0	0	1	9	0	0	0	0	0	0	0	0	0	0	22
7:15 AM	0	10	1	0	0	18	0	0	0	0	0	0	1	0	0	0	30
7:30 AM	0	6	2	0	0	18	0	0	0	0	0	0	1	0	0	0	27
7:45 AM	0	16	0	0	3	34	0	0	0	0	0	0	1	0	0	0	54
8:00 AM	0	23	0	0	0	30	0	0	0	0	0	0	1	0	0	0	54
8:15 AM	0	20	0	0	0	35	0	0	0	0	0	0	0	0	0	0	55
8:30 AM	0	27	0	0	0	29	0	0	0	0	0	0	0	0	1	0	57
8:45 AM	0	32	3	0	0	34	0	0	0	0	0	0	0	0	0	0	69
TOTAL VOLUMES :	0	146	6	0	4	207	0	0	0	0	0	0	4	0	1	0	368
APPROACH %'s :	0.00%	96.05%	3.95%	0.00%	1.90%	98.10%	0.00%	0.00%	0	0	0	0	80.00%	0.00%	20.00%	0.00%	
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	102	3	0	0	128	0	0	0	0	0	0	1	0	1	0	235
PEAK HR FACTOR :	0.00	0.797	0.250	0.000	0.000	0.914	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.250	0.000	0.851
	0.750				0.914								0.500				

NS/EW Streets:	NE 18th Ave				NE 18th Ave				Alley N/O NE 163rd St				Alley N/O NE 163rd St				
PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	30	5	0	3	38	0	0	0	0	0	0	4	0	1	0	81
4:15 PM	0	27	2	1	1	32	0	0	0	0	0	0	1	0	1	0	65
4:30 PM	0	36	3	0	1	33	0	0	0	0	0	0	0	0	0	0	73
4:45 PM	0	34	1	0	0	37	0	0	0	0	0	0	1	0	1	0	74
5:00 PM	0	30	1	1	1	37	0	0	0	0	0	0	2	0	2	0	74
5:15 PM	0	29	3	0	2	32	0	0	0	0	0	0	0	0	2	0	68
5:30 PM	0	30	1	0	1	42	0	0	0	0	0	0	1	0	3	0	78
5:45 PM	0	37	1	0	1	24	0	0	0	0	0	0	1	0	1	0	65
TOTAL VOLUMES :	0	253	17	2	10	275	0	0	0	0	0	0	10	0	11	0	578
APPROACH %'s :	0.00%	93.01%	6.25%	0.74%	3.51%	96.49%	0.00%	0.00%	0	0	0	0	47.62%	0.00%	52.38%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	123	6	1	4	148	0	0	0	0	0	0	4	0	8	0	294
PEAK HR FACTOR :	0.00	0.904	0.500	0.250	0.500	0.881	0.000	0.000	0.000	0.000	0.000	0.000	0.500	0.000	0.667	0.000	0.942
	0.929				0.884								0.750				

National Data & Surveying Services

Intersection Turning Movement Count

Location: NE 18th Ave & Alley N/O NE 163rd St
City: North Miami Beach
Control: No Control

Project ID: 20-140043-008
Date: 10/7/2020

HT

NS/EW Streets:	NE 18th Ave				NE 18th Ave				Alley N/O NE 163rd St				Alley N/O NE 163rd St				
AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 0	NU 0	SL 0	ST 1	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 0	WT 0	WR 0	WU 0	TOTAL 1
APPROACH %'s :					0.00%	100.00%	0.00%	0.00%									
PEAK HR :	08:00 AM - 09:00 AM																TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
PEAK HR FACTOR :	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.250

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND				TOTAL
	0 NL	0 NT	0 NR	0 NU	0 SL	0 ST	0 SR	0 SU	0 EL	0 ET	0 ER	0 EU	0 WL	0 WT	0 WR	0 WU	
4:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
TOTAL VOLUMES :	NL 0	NT 0	NR 1	NU 0	SL 0	ST 4	SR 0	SU 0	EL 0	ET 0	ER 0	EU 0	WL 1	WT 0	WR 0	WU 0	TOTAL 6
APPROACH %'s :	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%					100.00%	0.00%	0.00%	0.00%	
PEAK HR :	04:45 PM - 05:45 PM																TOTAL
PEAK HR VOL :	0	0	1	0	0	2	0	0	0	0	0	0	1	0	0	0	4
PEAK HR FACTOR :	0.00	0.000	0.250	0.000	0.000	0.500	0.000	0.000	0.000	0.000	0.000	0.000	0.250	0.000	0.000	0.000	1.000

National Data & Surveying Services

City: North Miami Beach

Project ID: 20-140043-008

Bikes

[illegible][illegible]

National Data & Surveying Services

Intersection Turning Movement Count

Pedestrians (Crosswalks)

NS/EW Streets:	NE 18th Ave		NE 18th Ave		Alley N/O NE 163rd St		Alley N/O NE 163rd St		
AM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
7:00 AM	0	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0	0
7:45 AM	0	1	0	0	1	0	0	0	2
8:00 AM	1	0	0	0	2	0	0	0	3
8:15 AM	0	0	0	0	0	1	0	0	1
8:30 AM	0	0	0	0	0	3	0	0	3
8:45 AM	0	0	0	0	1	0	0	0	1
TOTAL VOLUMES :	EB	WB	EB	WB	NB	SB	NB	SB	TOTAL
APPROACH %'s :	1	1	0	0	4	4	0	0	10
	50.00%	50.00%			50.00%	50.00%			
PEAK HR :	08:00 AM - 09:00 AM								TOTAL
PEAK HR VOL :	1	0	0	0	3	4	0	0	8
PEAK HR FACTOR :	0.250				0.375	0.333			
	0.250				0.583				0.667

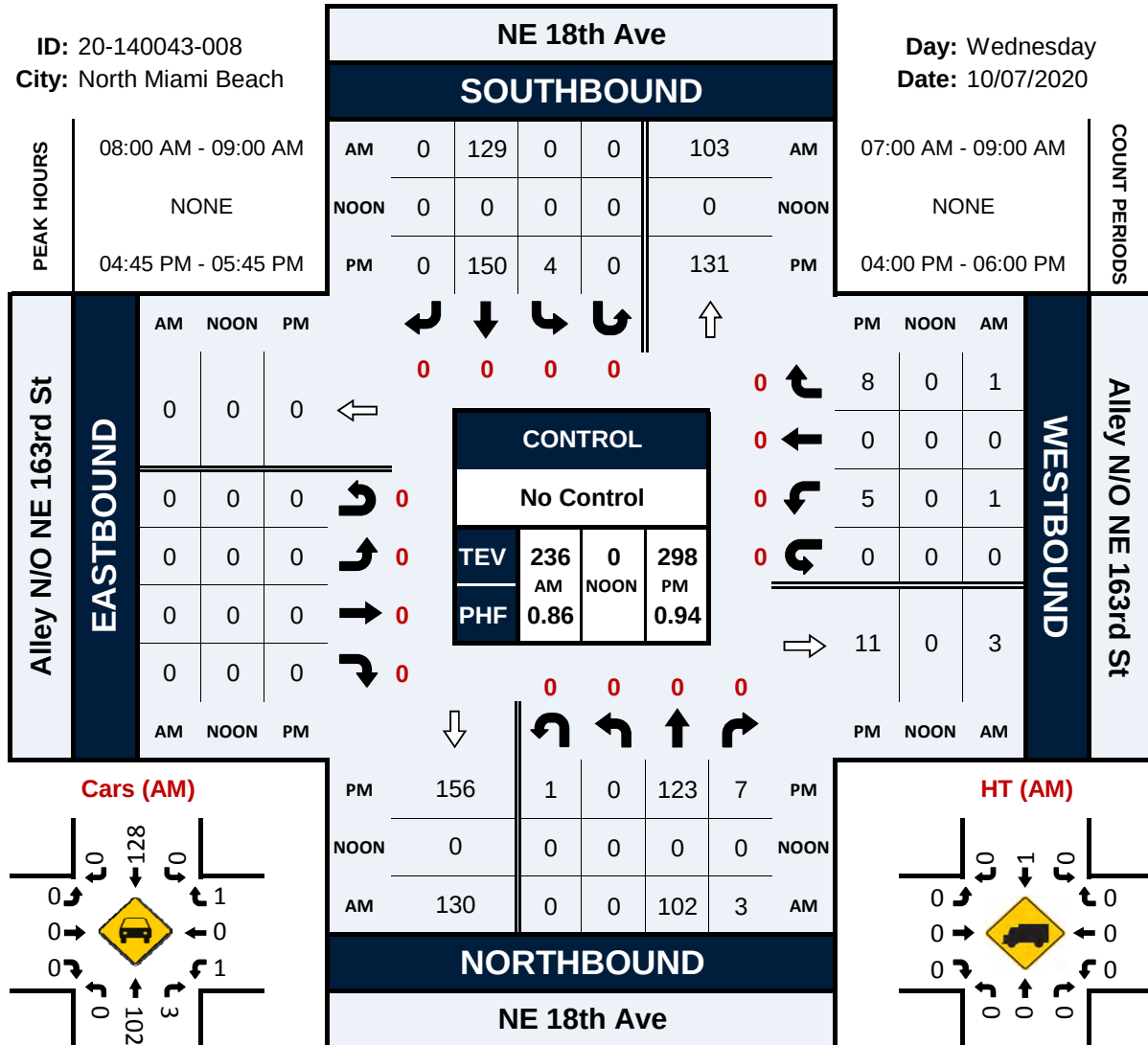
PM	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG		TOTAL
	EB	WB	EB	WB	NB	SB	NB	SB	
4:00 PM	1	0	0	0	1	0	0	0	2
4:15 PM	0	1	0	0	1	0	0	0	2
4:30 PM	0	0	0	0	0	1	0	0	1
4:45 PM	0	0	0	0	1	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0	0
5:15 PM	0	1	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	1	0	0	2
TOTAL VOLUMES :	EB 1	WB 2	EB 0	WB 1	NB 3	SB 2	NB 0	SB 0	TOTAL 9
APPROACH %'s :	33.33%	66.67%	0.00%	100.00%	60.00%	40.00%			
PEAK HR :	04:45 PM - 05:45 PM								TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	0	2
PEAK HR FACTOR :	0.250				0.250	0.250			0.500

NE 18th Ave & Alley N/O NE 163rd St

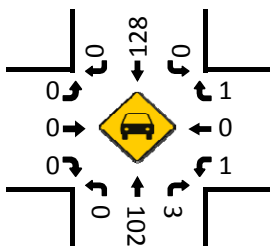
Peak Hour Turning Movement Count

ID: 20-140043-008
City: North Miami Beach

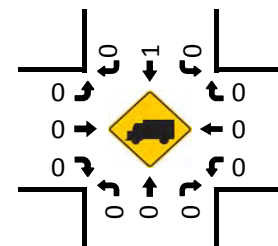
Day: Wednesday
Date: 10/07/2020



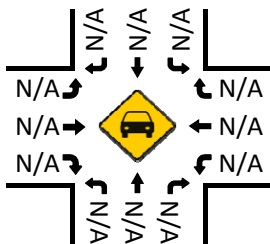
Cars (AM)



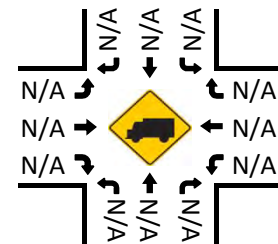
HT (AM)



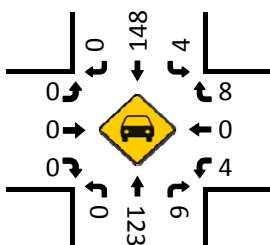
Cars (NOON)



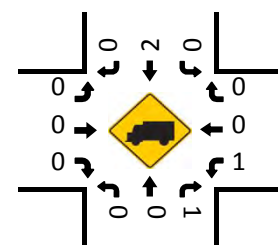
HT (NOON)



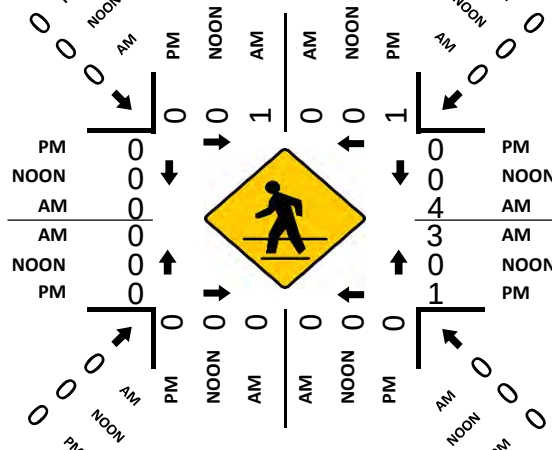
Cars (PM)



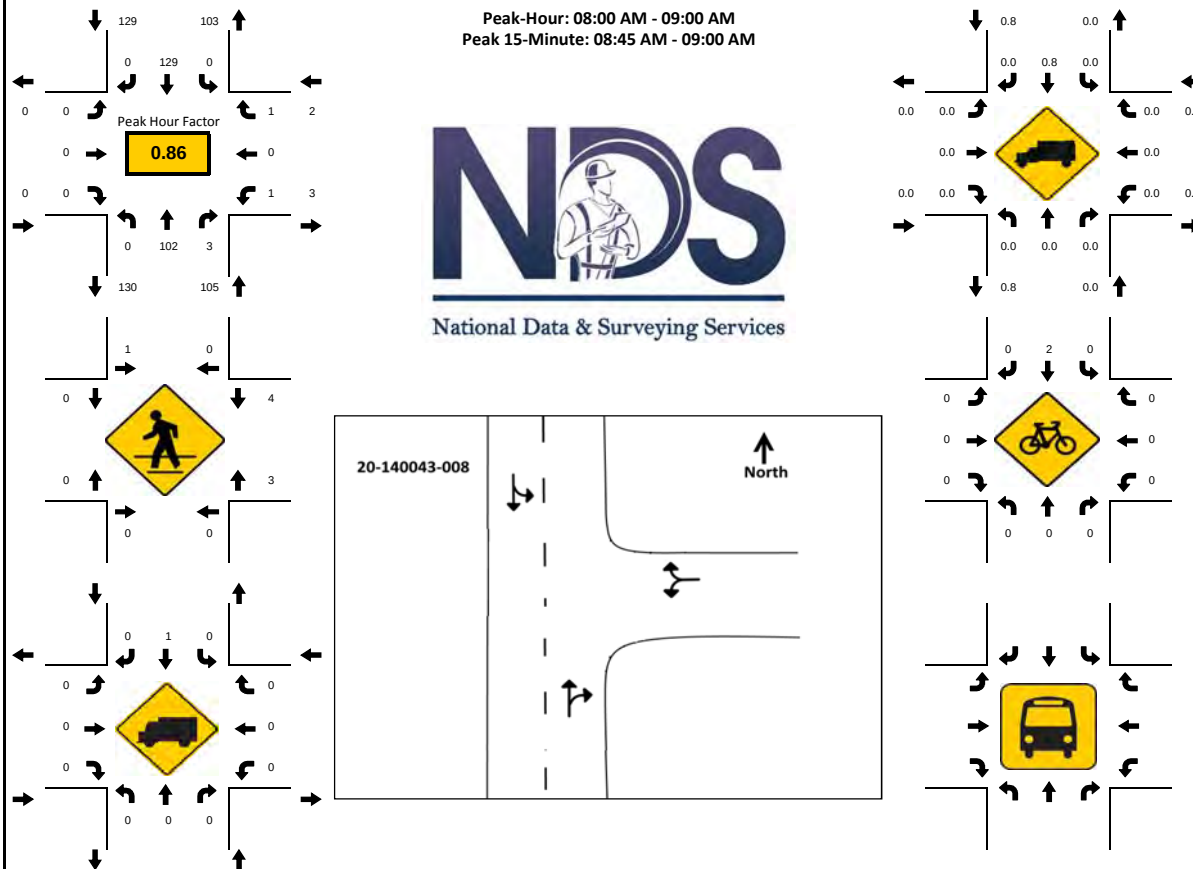
HT (PM)



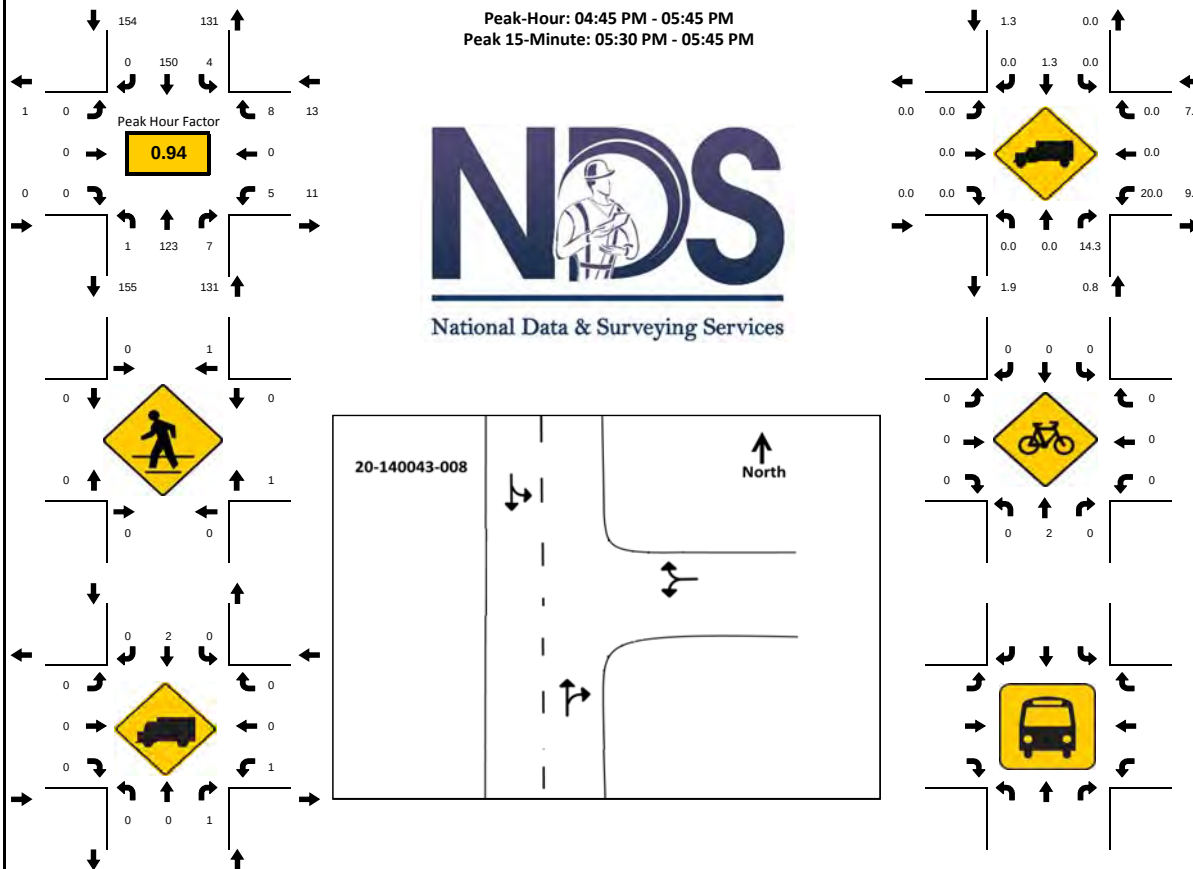
Pedestrians (Crosswalks)



PROJECT ID: 20-140043-008
DATE: 10/07/2020

[illegible]

PROJECT ID: 20-140043-008
DATE: 10/07/2020

[illegible]

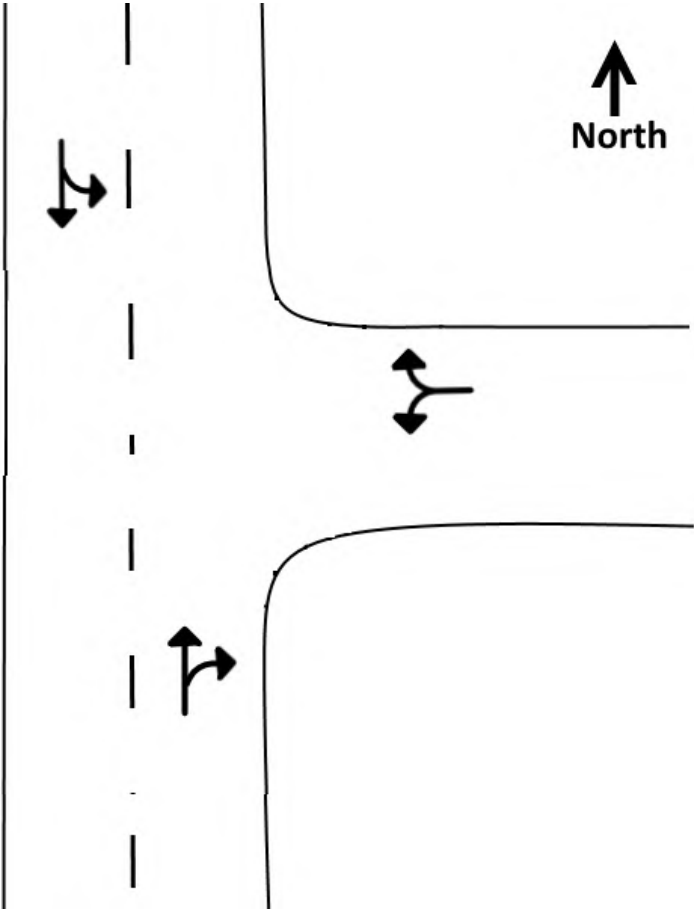


National Data & Surveying Services

Site Code: 20-140043-008
Date: 10/07/2020
Weather: Sunny
City: North Miami Beach
County: Miami-Dade
Count Times: 07:00 - 09:00
16:00 - 18:00
Control: No Control

N↑	N/S Street: NE 18th Ave	Speed: 30 MPH

20-140043-008



E/W Street: Alley N/o NE 163rd St	Speed: N/A

VOLUME

NE 163rd St E/O NE 20th Ave

Day: Tuesday
Date: 10/6/2020City: North Miami Beach
Project #: FL20_140042_001

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						23,308	22,039						45,347
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
0:00			61	99	160		12:00			383	357	740							
0:15			52	64	116		12:15			359	326	685							
0:30			49	73	122		12:30			372	372	744							
0:45			38	200	45	281	12:45			403	1517	327	1382	730	2899				
1:00			42	34	76		13:00			319	348	667							
1:15			28	37	65		13:15			371	353	724							
1:30			25	23	48		13:30			357	323	680							
1:45			23	118	30	124	13:45			361	1408	359	1383	720	2791				
2:00			23	20	43		14:00			385	406	791							
2:15			30	32	62		14:15			343	451	794							
2:30			27	24	51		14:30			369	397	766							
2:45			18	98	17	93	14:45			427	1524	407	1661	834	3185				
3:00			18	16	34		15:00			413	403	816							
3:15			23	13	36		15:15			375	448	823							
3:30			24	18	42		15:30			391	421	812							
3:45			29	94	28	75	15:45			365	1544	397	1669	762	3213				
4:00			19	22	41		16:00			392	448	840							
4:15			36	21	57		16:15			336	411	747							
4:30			36	29	65		16:30			423	432	855							
4:45			26	117	33	105	16:45			382	1533	443	1734	825	3267				
5:00			34	25	59		17:00			330	457	787							
5:15			66	47	113		17:15			401	431	832							
5:30			111	36	147		17:30			400	417	817							
5:45			173	384	60	168	17:45			423	1554	427	1732	850	3286				
6:00			174	92	266		18:00			363	416	779							
6:15			178	135	313		18:15			354	313	667							
6:30			278	119	397		18:30			360	380	740							
6:45			301	931	140	486	18:45			392	1469	344	1453	736	2922				
7:00			296	202	498		19:00			338	379	717							
7:15			317	207	524		19:15			331	324	655							
7:30			368	241	609		19:30			347	319	666							
7:45			370	1351	222	872	19:45			283	1299	266	1288	549	2587				
8:00			379	260	639		20:00			256	248	504							
8:15			385	294	679		20:15			249	204	453							
8:30			431	317	748		20:30			226	234	460							
8:45			347	1542	292	1163	20:45			229	960	198	884	427	1844				
9:00			321	251	572		21:00			198	178	376							
9:15			318	314	632		21:15			161	181	342							
9:30			332	259	591		21:30			178	182	360							
9:45			378	1349	295	1119	21:45			136	673	150	691	286	1364				
10:00			346	313	659		22:00			131	207	338							
10:15			305	278	583		22:15			137	145	282							
10:30			329	306	635		22:30			156	117	273							
10:45			315	1295	328	1225	22:45			111	535	125	594	236	1129				
11:00			358	310	668		23:00			108	146	254							
11:15			354	324	678		23:15			89	136	225							
11:30			367	350	717		23:30			79	107	186							
11:45			383	1462	341	1325	23:45			75	351	143	532	218	883				
TOTALS			8941	7036	15977		TOTALS			14367	15003	29370							
SPLIT %			56.0%	44.0%	35.2%		SPLIT %			48.9%	51.1%	64.8%							

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						23,308	22,039						45,347
AM Peak Hour			7:45	11:45	11:45		PM Peak Hour			14:45	16:30	16:30							
AM Pk Volume			1565	1396	2893		PM Pk Volume			1606	1763	3299							
Pk Hr Factor			0.908	0.938	0.972		Pk Hr Factor			0.940	0.964	0.965							
7 - 9 Volume	0	0	2893	2035	4928		4 - 6 Volume	0	0	3087	3466	6553							
7 - 9 Peak Hour			7:45	8:00	8:00		4 - 6 Peak Hour			17:00	16:30	16:30							
7 - 9 Pk Volume	0	0	1565	1163	2705		4 - 6 Pk Volume	0	0	1554	1763	3299							
Pk Hr Factor	0.000	0.000	0.908	0.917	0.904		Pk Hr Factor	0.000	0.000	0.918	0.964	0.965							

VOLUME

NE 163rd St E/O NE 20th Ave

Day: Wednesday

Date: 10/7/2020

City: North Miami Beach

Project #: FL20_140042_001

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						23,602	22,322						45,924
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL							TOTAL
0:00			84	119	203		12:00			367	360	727							
0:15			65	78	143		12:15			355	356	711							
0:30			51	61	112		12:30			388	380	768							
0:45			45	245	58	316	12:45			371	1481	327	1423	698	2904				
1:00			52	41	93		13:00			320	351	671							
1:15			30	34	64		13:15			373	299	672							
1:30			34	41	75		13:30			365	437	802							
1:45			36	152	42	158	13:45			369	1427	276	1363	645	2790				
2:00			28	26	54		14:00			272	289	561							
2:15			17	32	49		14:15			369	445	814							
2:30			31	18	49		14:30			371	385	756							
2:45			19	95	21	97	14:45			417	1429	343	1462	760	2891				
3:00			23	28	51		15:00			400	374	774							
3:15			22	25	47		15:15			399	456	855							
3:30			17	17	34		15:30			389	406	795							
3:45			27	89	31	101	15:45			411	1599	440	1676	851	3275				
4:00			15	24	39		16:00			388	469	857							
4:15			23	14	37		16:15			367	375	742							
4:30			21	31	52		16:30			363	449	812							
4:45			37	96	20	89	16:45			381	1499	458	1751	839	3250				
5:00			39	29	68		17:00			376	457	833							
5:15			71	49	120		17:15			379	400	779							
5:30			126	42	168		17:30			388	473	861							
5:45			154	390	76	196	17:45			396	1539	435	1765	831	3304				
6:00			187	77	264		18:00			355	393	748							
6:15			203	94	297		18:15			388	339	727							
6:30			273	124	397		18:30			334	325	659							
6:45			301	964	143	438	18:45			341	1418	344	1401	685	2819				
7:00			279	187	466		19:00			349	369	718							
7:15			317	230	547		19:15			318	356	674							
7:30			363	235	598		19:30			327	308	635							
7:45			361	1320	234	886	19:45			347	1341	292	1325	639	2666				
8:00			373	240	613		20:00			243	279	522							
8:15			395	308	703		20:15			250	263	513							
8:30			389	315	704		20:30			228	271	499							
8:45			427	1584	309	1172	20:45			203	924	219	1032	422	1956				
9:00			360	298	658		21:00			203	201	404							
9:15			375	283	658		21:15			183	191	374							
9:30			339	372	711		21:30			175	162	337							
9:45			345	1419	274	1227	21:45			175	736	151	705	326	1441				
10:00			356	324	680		22:00			137	127	264							
10:15			317	315	632		22:15			136	150	286							
10:30			378	288	666		22:30			156	163	319							
10:45			363	1414	342	1269	22:45			159	588	141	581	300	1169				
11:00			370	354	724		23:00			140	193	333							
11:15			331	268	599		23:15			86	167	253							
11:30			348	344	692		23:30			108	126	234							
11:45			370	1419	333	1299	23:45			100	434	104	590	204	1024				
TOTALS			9187	7248	16435		TOTALS			14415	15074	29489							
SPLIT %			55.9%	44.1%	35.8%		SPLIT %			48.9%	51.1%	64.2%							

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						23,602	22,322						45,924
AM Peak Hour			8:00	11:45	11:45		PM Peak Hour			14:45	16:45	15:15							
AM Pk Volume			1584	1429	2909		PM Pk Volume			1605	1788	3358							
Pk Hr Factor			0.927	0.940	0.947		Pk Hr Factor			0.962	0.945	0.980							
7 - 9 Volume	0	0	2904	2058	4962		4 - 6 Volume	0	0	3038	3516	6554							
7 - 9 Peak Hour			8:00	8:00	8:00		4 - 6 Peak Hour			17:00	16:45	16:45							
7 - 9 Pk Volume	0	0	1584	1172	2756		4 - 6 Pk Volume	0	0	1539	1788	3312							
Pk Hr Factor	0.000	0.000	0.927	0.930	0.936		Pk Hr Factor	0.000	0.000	0.972	0.945	0.962							

VOLUME

NE 163rd St E/O NE 20th Ave

Day: Thursday

Date: 10/8/2020

City: North Miami Beach

Project #: FL20_140042_001

DAILY TOTALS					NB	SB	EB					WB	Total				
					0	0	23,252					22,877	46,129				
AM Period	NB	SB	EB	WB	TOTAL		PM Period	NB	SB	EB	WB	TOTAL					
0:00			73	92	165		12:00			396	318	714					
0:15			67	81	148		12:15			347	344	691					
0:30			49	85	134		12:30			380	423	803					
0:45			47	236	60	318	12:45			367	1490	371	1456				
					107	554						738	2946				
1:00			44	42	86		13:00			389	358	747					
1:15			34	36	70		13:15			409	369	778					
1:30			25	50	75		13:30			348	387	735					
1:45			34	137	21	149	13:45			370	1516	390	1504				
					55	286						760	3020				
2:00			24	23	47		14:00			376	342	718					
2:15			25	40	65		14:15			175	328	503					
2:30			20	25	45		14:30			351	472	823					
2:45			21	90	23	111	14:45			346	1248	328	1470				
					44	201						674	2718				
3:00			21	23	44		15:00			358	416	774					
3:15			21	23	44		15:15			380	450	830					
3:30			15	26	41		15:30			431	449	880					
3:45			27	84	22	94	15:45			415	1584	440	1755				
					49	178						855	3339				
4:00			17	18	35		16:00			389	471	860					
4:15			21	18	39		16:15			375	431	806					
4:30			16	27	43		16:30			376	402	778					
4:45			42	96	31	94	16:45			395	1535	457	1761				
					73	190						852	3296				
5:00			34	31	65		17:00			346	463	809					
5:15			71	60	131		17:15			389	434	823					
5:30			128	51	179		17:30			388	428	816					
5:45			154	387	65	207	17:45			405	1528	399	1724				
					219	594						804	3252				
6:00			192	91	283		18:00			370	465	835					
6:15			207	119	326		18:15			393	386	779					
6:30			308	118	426		18:30			348	377	725					
6:45			293	1000	130	458	18:45			368	1479	357	1585				
					423	1458						725	3064				
7:00			286	187	473		19:00			309	343	652					
7:15			265	222	487		19:15			344	364	708					
7:30			323	245	568		19:30			329	351	680					
7:45			379	1253	239	893	19:45			288	1270	271	1329				
					618	2146						559	2599				
8:00			401	243	644		20:00			276	293	569					
8:15			416	289	705		20:15			238	258	496					
8:30			407	311	718		20:30			207	251	458					
8:45			288	1512	273	1116	20:45			218	939	235	1037				
					561	2628						453	1976				
9:00			288	282	570		21:00			171	217	388					
9:15			354	304	658		21:15			159	194	353					
9:30			345	304	649		21:30			167	197	364					
9:45			325	1312	329	1219	21:45			139	636	162	770				
					654	2531						301	1406				
10:00			419	343	762		22:00			167	177	344					
10:15			354	298	652		22:15			147	135	282					
10:30			313	328	641		22:30			146	153	299					
10:45			334	1420	346	1315	22:45			127	587	149	614				
					680	2735						276	1201				
11:00			333	347	680		23:00			111	169	280					
11:15			373	305	678		23:15			99	163	262					
11:30			392	326	718		23:30			115	149	264					
11:45			385	1483	335	1313	23:45			105	430	104	585				
					720	2796						209	1015				
TOTALS			9010	7287	16297		TOTALS			14242	15590	29832					
SPLIT %			55.3%	44.7%	35.3%		SPLIT %			47.7%	52.3%	64.7%					

DAILY TOTALS					NB	SB						EB	WB						Total
					0	0						23,252	22,877						46,129
AM Peak Hour			7:45	11:45	11:45		PM Peak Hour			15:15	15:15	15:15							
AM Pk Volume			1603	1420	2928		PM Pk Volume			1615	1810	3425							
Pk Hr Factor			0.963	0.839	0.912		Pk Hr Factor			0.937	0.961	0.973							
7 - 9 Volume	0	0	2765	2009	4774		4 - 6 Volume	0	0	3063	3485	6548							
7 - 9 Peak Hour			7:45	8:00	7:45		4 - 6 Peak Hour			16:00	16:45	16:45							
7 - 9 Pk Volume	0	0	1603	1116	2685		4 - 6 Pk Volume	0	0	1535	1782	3300							
Pk Hr Factor	0.000	0.000	0.963	0.897	0.935		Pk Hr Factor	0.000	0.000	0.972	0.962	0.968							

Traffic Volumes

FDOT Count Station Traffic Volumes

VOLUME

FDOT station 87-5225synapsis

Day: Tuesday
Date: 7/16/2019

City: North Miami Beach
Project #: FL20_140042_001

DAILY TOTALS					NB	SB	EB					WB	Total
					0	0	26,370					22,610	48,980
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
0:00					0	12:00					0		
0:15					0	12:15					0		
0:30					0	12:30					0		
0:45					0	12:45					0		
1:00					0	13:00					0		
1:15					0	13:15					0		
1:30					0	13:30					0		
1:45					0	13:45					0		
2:00					0	14:00					0		
2:15					0	14:15					0		
2:30					0	14:30					0		
2:45					0	14:45					0		
3:00					0	15:00					0		
3:15					0	15:15					0		
3:30					0	15:30					0		
3:45					0	15:45					0		
4:00					0	16:00					834		
4:15					0	16:15					823		
4:30					0	16:30					724		
4:45					0	16:45					737		
5:00					0	17:00					750		
5:15					0	17:15					821		
5:30					0	17:30					799		
5:45					0	17:45					752		
6:00					0	18:00					0		
6:15					0	18:15					0		
6:30					0	18:30					0		
6:45					0	18:45					0		
7:00					550	19:00					0		
7:15					588	19:15					0		
7:30					720	19:30					0		
7:45					599	19:45					0		
8:00					720	20:00					0		
8:15					604	20:15					0		
8:30					658	20:30					0		
8:45					608	20:45					0		
9:00					0	21:00					0		
9:15					0	21:15					0		
9:30					0	21:30					0		
9:45					0	21:45					0		
10:00					0	22:00					0		
10:15					0	22:15					0		
10:30					0	22:30					0		
10:45					0	22:45					0		
11:00					0	23:00					0		
11:15					0	23:15					0		
11:30					0	23:30					0		
11:45					0	23:45					0		
TOTALS					5047	TOTALS					6240		
SPLIT %					44.7%	SPLIT %					55.3%		

DAILY TOTALS					NB	SB					EB	WB	Total	
					0	0					26,370	22,610	48,980	
AM Peak Hour			7:15	8:00	7:30		PM Peak Hour			17:00	16:00	17:00		
AM Pk Volume			1633	1109	2643		PM Pk Volume			1563	1617	3122		
Pk Hr Factor			0.907	0.909	0.918		Pk Hr Factor			0.977	0.879	0.951		
7 - 9 Volume	0	0	3024	2023	5047		4 - 6 Volume	0	0	3064	3176	6240		
7 - 9 Peak Hour			7:15	8:00	7:30		4 - 6 Peak Hour			17:00	16:00	17:00		
7 - 9 Pk Volume	0	0	1633	1109	2643		4 - 6 Pk Volume	0	0	1563	1617	3122		
Pk Hr Factor	0.000	0.000	0.907	0.909	0.918		Pk Hr Factor	0.000	0.000	0.977	0.879	0.951		

VOLUME

FDOT station 87-5225synapsis

Day: Wednesday

Date: 7/17/2019

City: North Miami Beach

Project #: FL20_140042_001

DAILY TOTALS					NB	SB	EB					WB	Total
					0	0	26,817					22,822	49,639
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
0:00					0	12:00					0		
0:15					0	12:15					0		
0:30					0	12:30					0		
0:45					0	12:45					0		
1:00					0	13:00					0		
1:15					0	13:15					0		
1:30					0	13:30					0		
1:45					0	13:45					0		
2:00					0	14:00					0		
2:15					0	14:15					0		
2:30					0	14:30					0		
2:45					0	14:45					0		
3:00					0	15:00					0		
3:15					0	15:15					0		
3:30					0	15:30					0		
3:45					0	15:45					0		
4:00					0	16:00	376 413				789		
4:15					0	16:15	382 387				769		
4:30					0	16:30	430 410				840		
4:45					0	16:45	404 1592 428 1638				832 3230		
5:00					0	17:00	390 410				800		
5:15					0	17:15	397 456				853		
5:30					0	17:30	416 375				791		
5:45					0	17:45	408 1611 404 1645				812 3256		
6:00					0	18:00					0		
6:15					0	18:15					0		
6:30					0	18:30					0		
6:45					0	18:45					0		
7:00	314 209				523	19:00					0		
7:15	395 248				643	19:15					0		
7:30	406 215				621	19:30					0		
7:45	407 1522 274 946				681 2468	19:45					0		
8:00	414 284				698	20:00					0		
8:15	450 279				729	20:15					0		
8:30	373 295				668	20:30					0		
8:45	407 1644 349 1207				756 2851	20:45					0		
9:00					0	21:00					0		
9:15					0	21:15					0		
9:30					0	21:30					0		
9:45					0	21:45					0		
10:00					0	22:00					0		
10:15					0	22:15					0		
10:30					0	22:30					0		
10:45					0	22:45					0		
11:00					0	23:00					0		
11:15					0	23:15					0		
11:30					0	23:30					0		
11:45					0	23:45					0		
TOTALS	3166 2153				5319	TOTALS	3203 3283				6486		
SPLIT %	59.5% 40.5%				45.1%	SPLIT %	49.4% 50.6%				54.9%		

DAILY TOTALS					NB	SB					EB	WB	Total	
					0	0					26,817	22,822	49,639	
AM Peak Hour			7:30	8:00	8:00		PM Peak Hour			16:30	16:30	16:30		
AM Pk Volume			1677	1207	2851		PM Pk Volume			1621	1704	3325		
Pk Hr Factor			0.932	0.865	0.943		Pk Hr Factor			0.942	0.934	0.975		
7 - 9 Volume	0	0	3166	2153	5319		4 - 6 Volume	0	0	3203	3283	6486		
7 - 9 Peak Hour			7:30	8:00	8:00		4 - 6 Peak Hour			16:30	16:30	16:30		
7 - 9 Pk Volume	0	0	1677	1207	2851		4 - 6 Pk Volume	0	0	1621	1704	3325		
Pk Hr Factor	0.000	0.000	0.932	0.865	0.943		Pk Hr Factor	0.000	0.000	0.942	0.934	0.975		

VOLUME

FDOT station 87-5225synapsis

Day: Thursday
Date: 7/18/2019

City: North Miami Beach
Project #: FL20_140042_001

DAILY TOTALS					NB	SB	EB					WB	Total
					0	0	26,407					23,218	49,625
AM Period	NB	SB	EB	WB	TOTAL	PM Period	NB	SB	EB	WB	TOTAL		
0:00					0	12:00					0		
0:15					0	12:15					0		
0:30					0	12:30					0		
0:45					0	12:45					0		
1:00					0	13:00					0		
1:15					0	13:15					0		
1:30					0	13:30					0		
1:45					0	13:45					0		
2:00					0	14:00					0		
2:15					0	14:15					0		
2:30					0	14:30					0		
2:45					0	14:45					0		
3:00					0	15:00					0		
3:15					0	15:15					0		
3:30					0	15:30					0		
3:45					0	15:45					0		
4:00					0	16:00					749		
4:15					0	16:15					756		
4:30					0	16:30					858		
4:45					0	16:45					818 3181		
5:00					0	17:00					760		
5:15					0	17:15					808		
5:30					0	17:30					786		
5:45					0	17:45					789 3143		
6:00					0	18:00					0		
6:15					0	18:15					0		
6:30					0	18:30					0		
6:45					0	18:45					0		
7:00					522	19:00					0		
7:15					657	19:15					0		
7:30					608	19:30					0		
7:45					716 2503	19:45					0		
8:00					739	20:00					0		
8:15					686	20:15					0		
8:30					622	20:30					0		
8:45					703 2750	20:45					0		
9:00					0	21:00					0		
9:15					0	21:15					0		
9:30					0	21:30					0		
9:45					0	21:45					0		
10:00					0	22:00					0		
10:15					0	22:15					0		
10:30					0	22:30					0		
10:45					0	22:45					0		
11:00					0	23:00					0		
11:15					0	23:15					0		
11:30					0	23:30					0		
11:45					0	23:45					0		
TOTALS	2999 2254				5253	TOTALS	3137 3187				6324		
SPLIT %	57.1% 42.9%				45.4%	SPLIT %	49.6% 50.4%				54.6%		

DAILY TOTALS					NB	SB					EB	WB	Total	
					0	0					26,407	23,218	49,625	
AM Peak Hour			7:30	8:00	7:45		PM Peak Hour			16:15	16:00	16:30		
AM Pk Volume			1633	1221	2763		PM Pk Volume			1628	1654	3244		
Pk Hr Factor			0.961	0.972	0.935		Pk Hr Factor			0.911	0.946	0.945		
7 - 9 Volume	0	0	2999	2254	5253		4 - 6 Volume	0	0	3137	3187	6324		
7 - 9 Peak Hour			7:30	8:00	7:45		4 - 6 Peak Hour			16:15	16:00	16:30		
7 - 9 Pk Volume	0	0	1633	1221	2763		4 - 6 Pk Volume	0	0	1628	1654	3244		
Pk Hr Factor	0.000	0.000	0.961	0.972	0.935		Pk Hr Factor	0.000	0.000	0.911	0.946	0.945		

COUNTY: 87
STATION: 5225
DESCRIPTION: SR 826/NE 163 ST, 100' E OF NE 20 AVE
START DATE: 07/16/2019
START TIME: 0000

TIME	DIRECTION: E					DIRECTION: W					COMBINED	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL	TOTAL
0000	108	109	90	69	376	141	100	102	96	439		815
0100	56	44	33	33	166	61	54	58	43	216		382
0200	35	32	25	22	114	34	27	36	22	119		233
0300	23	23	27	19	92	26	28	29	19	102		194
0400	36	33	32	43	144	25	30	28	26	109		253
0500	65	78	128	219	490	39	48	88	81	256		746
0600	239	366	388	370	1363	103	124	114	129	470		1833
0700	331	363	450	399	1543	219	225	270	200	914		2457
0800	421	363	353	344	1481	299	241	305	264	1109		2590
0900	404	329	390	415	1538	352	283	320	315	1270		2808
1000	386	385	377	329	1477	310	299	321	338	1268		2745
1100	391	394	351	419	1555	314	265	332	298	1209		2764
1200	373	405	385	400	1563	328	325	320	316	1289		2852
1300	414	398	415	387	1614	373	354	335	397	1459		3073
1400	427	412	423	473	1735	349	371	377	343	1440		3175
1500	417	434	368	399	1618	381	376	390	429	1576		3194
1600	374	386	400	341	1501	460	437	324	396	1617		3118
1700	394	392	400	377	1563	356	429	399	375	1559		3122
1800	393	398	432	417	1640	393	370	374	312	1449		3089
1900	399	367	337	341	1444	326	341	310	293	1270		2714
2000	289	290	253	272	1104	277	323	250	279	1129		2233
2100	275	231	220	239	965	268	251	226	203	948		1913
2200	228	170	217	167	782	206	194	168	171	739		1521
2300	147	136	113	106	502	161	194	146	153	654		1156
24-HOUR TOTALS:					26370						22610	48980

PEAK VOLUME INFORMATION						
DIRECTION: E			DIRECTION: W		COMBINED DIRECTIONS	
A.M.	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
	715	1633	845	1219	845	2686
P.M.	1430	1747	1530	1716	1530	3243
DAILY	1430	1747	1530	1716	1530	3243

TRUCK PERCENTAGE 3.69 3.93 3.80

CLASSIFICATION SUMMARY DATABASE																
DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK TOTVOL
E	145	22071	3180	158	400	87	37	202	83	5	0	0	0	0	2	972 26370
W	54	19400	2125	202	521	33	3	54	44	14	0	0	17	0	143	888 22610

COUNTY: 87
STATION: 5225
DESCRIPTION: SR 826/NE 163 ST, 100' E OF NE 20 AVE
START DATE: 07/17/2019
START TIME: 0000

TIME	DIRECTION: E					DIRECTION: W					COMBINED	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL	TOTAL
0000	98	63	79	74	314	117	126	87	71	401		715
0100	46	43	41	24	154	70	43	39	39	191		345
0200	25	30	22	25	102	33	20	19	16	88		190
0300	15	25	27	27	94	33	25	28	24	110		204
0400	20	32	36	54	142	29	31	32	38	130		272
0500	43	80	144	203	470	27	45	72	92	236		706
0600	267	341	403	343	1354	97	128	130	155	510		1864
0700	314	395	406	407	1522	209	248	215	274	946		2468
0800	414	450	373	407	1644	284	279	295	349	1207		2851
0900	331	391	393	413	1528	278	288	339	330	1235		2763
1000	435	364	422	391	1612	303	321	296	352	1272		2884
1100	384	365	357	425	1531	309	321	349	315	1294		2825
1200	377	406	383	420	1586	303	331	329	325	1288		2874
1300	382	420	439	429	1670	352	366	277	288	1283		2953
1400	438	366	447	401	1652	412	357	306	429	1504		3156
1500	420	379	434	401	1634	388	354	443	395	1580		3214
1600	376	382	430	404	1592	413	387	410	428	1638		3230
1700	390	397	416	408	1611	410	456	375	404	1645		3256
1800	364	399	417	419	1599	400	311	410	350	1471		3070
1900	349	400	381	366	1496	329	304	295	296	1224		2720
2000	309	275	273	268	1125	286	265	295	237	1083		2208
2100	242	242	253	224	961	269	247	229	185	930		1891
2200	241	210	218	178	847	219	205	218	169	811		1658
2300	186	154	135	102	577	221	193	177	154	745		1322
24-HOUR TOTALS:					26817						22822	49639

PEAK VOLUME INFORMATION						
DIRECTION: E			DIRECTION: W		COMBINED DIRECTIONS	
A.M.	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
	730	1677	845	1254	800	2851
P.M.	1315	1726	1630	1704	1630	3325
DAILY	1315	1726	1630	1704	1630	3325

TRUCK PERCENTAGE 3.71 3.90 3.80

CLASSIFICATION SUMMARY DATABASE																
DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK TOTVOL
E	179	22492	3151	172	436	95	42	191	51	7	0	0	1	0	0	995 26817
W	67	19363	1985	191	503	39	10	75	37	21	0	0	14	0	517	890 22822

COUNTY: 87
STATION: 5225
DESCRIPTION: SR 826/NE 163 ST, 100' E OF NE 20 AVE
START DATE: 07/18/2019
START TIME: 0000

TIME	DIRECTION: E					DIRECTION: W					COMBINED	
	1ST	2ND	3RD	4TH	TOTAL	1ST	2ND	3RD	4TH	TOTAL	TOTAL	TOTAL
0000	111	72	79	67	329	139	119	101	78	437		766
0100	53	41	25	29	148	69	57	44	47	217		365
0200	36	37	35	24	132	45	46	29	29	149		281
0300	23	13	20	27	83	28	22	41	27	118		201
0400	23	31	43	53	150	24	32	29	35	120		270
0500	46	75	175	209	505	41	44	47	95	227		732
0600	271	342	394	343	1350	95	111	145	193	544		1894
0700	291	367	394	418	1470	231	290	214	298	1033		2503
0800	425	396	315	393	1529	314	290	307	310	1221		2750
0900	366	401	365	402	1534	332	282	317	309	1240		2774
1000	401	341	391	349	1482	319	289	334	316	1258		2740
1100	396	381	360	424	1561	297	243	376	329	1245		2806
1200	362	373	391	393	1519	344	316	373	310	1343		2862
1300	397	419	433	361	1610	369	363	332	317	1381		2991
1400	461	437	440	386	1724	394	345	377	369	1485		3209
1500	367	413	408	407	1595	424	369	425	409	1627		3222
1600	346	372	421	388	1527	403	384	437	430	1654		3181
1700	447	361	413	389	1610	313	447	373	400	1533		3143
1800	390	393	413	402	1598	395	375	385	320	1475		3073
1900	407	382	346	340	1475	328	301	267	321	1217		2692
2000	306	282	294	239	1121	303	276	271	264	1114		2235
2100	269	264	251	204	988	255	292	218	240	1005		1993
2200	214	205	220	190	829	219	235	208	178	840		1669
2300	151	154	122	111	538	223	202	173	137	735		1273
24-HOUR TOTALS:					26407						23218	49625

PEAK VOLUME INFORMATION						
DIRECTION: E			DIRECTION: W		COMBINED DIRECTIONS	
A.M.	HOUR	VOLUME	HOUR	VOLUME	HOUR	VOLUME
	730	1633	845	1241	845	2766
P.M.	1400	1724	1600	1654	1630	3244
DAILY	1400	1724	1600	1654	1630	3244

TRUCK PERCENTAGE 3.90 4.70 4.28

CLASSIFICATION SUMMARY DATABASE																
DIR	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	TOTTRK TOTVOL
E	352	22075	2949	158	426	144	27	179	89	6	0	0	1	0	1	1030 26407
W	65	19681	2209	223	676	35	5	94	40	8	0	0	11	0	171	1092 23218

Covid-19 Factor Calculations

Collected Counts - 10/6/2020 - peak Hour					Collected Counts - 10/7/2020 - peak Hour					Collected Counts - 10/8/2020 - peak Hour					Collected Average - peak Hour Oct 6-8, 2020				% increase w PSCF	Counted / FDOT
Am					Am					Am					Am					
EB	7:45	1,565	1.03	1,612	EB	8:00	1,584	1.03	1,632	EB	7:45	1,603	1.03	1,651	EB	1,584	1.03	1,632	-7%	0.93
WB	8:00	1,163	1.03	1,198	WB	8:00	1,172	1.03	1,207	WB	8:00	1,116	1.03	1,149	WB	1,150	1.03	1,185	-5%	0.95
Combined	8:00	2,705	1.03	2,786	Combined	8:00	2,756	1.03	2,839	Combined	7:45	2,685	1.03	2,766	Combined	2,715	1.03	2,797	-4%	0.96
PM					PM					PM					PM					
EB	5:00 PM	1,554	1.03	1,601	EB	5:00 PM	1,539	1.03	1,585	EB	4:00 PM	1,535	1.03	1,581	EB	1,543	1.03	1,589	-7%	0.93
WB	4:30 PM	1,763	1.03	1,816	WB	4:45 PM	1,788	1.03	1,842	WB	4:45 PM	1,782	1.03	1,835	WB	1,778	1.03	1,831	4%	1.04
Combined	4:30 PM	3,299	1.03	3,398	Combined	4:45 PM	3,312	1.03	3,411	Combined	4:45 PM	3,300	1.03	3,399	Combined	3,304	1.03	3,403	-1%	0.99

FDOT Counts - 7/16/2019 - peak Hour					FDOT Counts - 7/17/2019 - peak Hour					FDOT Counts - 7/18/2019 - peak Hour					FDOT Average - peak Hour July 16-18, 2019			
Am					Am					Am					Am			
EB	7:15	1,633	1.06	1,731	EB	7:30	1,677	1.06	1,778	EB	7:30	1,633	1.06	1,731	EB	1,648	1.06	1,747
WB	8:00	1,109	1.06	1,176	WB	8:00	1,207	1.06	1,279	WB	8:00	1,221	1.06	1,294	WB	1,179	1.06	1,250
Combined	7:30	2,643	1.06	2,802	Combined	8:00	2,851	1.06	3,022	Combined	7:45	2,763	1.06	2,929	Combined	2,752	1.06	2,917
PM					PM					PM					PM			
EB	5:00 PM	1,563	1.06	1,657	EB	4:30 PM	1,621	1.06	1,718	EB	4:15 PM	1,628	1.06	1,726	EB	1,604	1.06	1,700
WB	4:00 PM	1,617	1.06	1,714	WB	4:30 PM	1,704	1.06	1,806	WB	4:00 PM	1,654	1.06	1,753	WB	1,658	1.06	1,758
Combined	5:00 PM	3,122	1.06	3,309	Combined	4:30 PM	3,325	1.06	3,525	Combined	4:30 PM	3,244	1.06	3,439	Combined	3,230	1.06	3,424

Seasonal Factors

2019 PEAK SEASON FACTOR CATEGORY REPORT - REPORT TYPE: ALL
 CATEGORY: 8700 MIAMI-DADE NORTH

WEEK	DATES	SF	MOCF: 0.97 PSCF
1	01/01/2019 - 01/05/2019	1.03	1.06
2	01/06/2019 - 01/12/2019	1.02	1.05
3	01/13/2019 - 01/19/2019	1.01	1.04
4	01/20/2019 - 01/26/2019	1.00	1.03
* 5	01/27/2019 - 02/02/2019	0.98	1.01
* 6	02/03/2019 - 02/09/2019	0.97	1.00
* 7	02/10/2019 - 02/16/2019	0.96	0.99
* 8	02/17/2019 - 02/23/2019	0.96	0.99
* 9	02/24/2019 - 03/02/2019	0.96	0.99
*10	03/03/2019 - 03/09/2019	0.96	0.99
*11	03/10/2019 - 03/16/2019	0.97	1.00
*12	03/17/2019 - 03/23/2019	0.97	1.00
*13	03/24/2019 - 03/30/2019	0.97	1.00
*14	03/31/2019 - 04/06/2019	0.97	1.00
*15	04/07/2019 - 04/13/2019	0.98	1.01
*16	04/14/2019 - 04/20/2019	0.98	1.01
*17	04/21/2019 - 04/27/2019	0.98	1.01
18	04/28/2019 - 05/04/2019	0.99	1.02
19	05/05/2019 - 05/11/2019	0.99	1.02
20	05/12/2019 - 05/18/2019	1.00	1.03
21	05/19/2019 - 05/25/2019	1.00	1.03
22	05/26/2019 - 06/01/2019	1.01	1.04
23	06/02/2019 - 06/08/2019	1.01	1.04
24	06/09/2019 - 06/15/2019	1.02	1.05
25	06/16/2019 - 06/22/2019	1.02	1.05
26	06/23/2019 - 06/29/2019	1.02	1.05
27	06/30/2019 - 07/06/2019	1.02	1.05
28	07/07/2019 - 07/13/2019	1.03	1.06
29	07/14/2019 - 07/20/2019	1.03	1.06
30	07/21/2019 - 07/27/2019	1.03	1.06
31	07/28/2019 - 08/03/2019	1.02	1.05
32	08/04/2019 - 08/10/2019	1.02	1.05
33	08/11/2019 - 08/17/2019	1.02	1.05
34	08/18/2019 - 08/24/2019	1.02	1.05
35	08/25/2019 - 08/31/2019	1.02	1.05
36	09/01/2019 - 09/07/2019	1.03	1.06
37	09/08/2019 - 09/14/2019	1.03	1.06
38	09/15/2019 - 09/21/2019	1.03	1.06
39	09/22/2019 - 09/28/2019	1.02	1.05
40	09/29/2019 - 10/05/2019	1.01	1.04
41	10/06/2019 - 10/12/2019	1.00	1.03
42	10/13/2019 - 10/19/2019	0.99	1.02
43	10/20/2019 - 10/26/2019	1.00	1.03
44	10/27/2019 - 11/02/2019	1.00	1.03
45	11/03/2019 - 11/09/2019	1.01	1.04
46	11/10/2019 - 11/16/2019	1.01	1.04
47	11/17/2019 - 11/23/2019	1.02	1.05
48	11/24/2019 - 11/30/2019	1.02	1.05
49	12/01/2019 - 12/07/2019	1.02	1.05
50	12/08/2019 - 12/14/2019	1.03	1.06
51	12/15/2019 - 12/21/2019	1.03	1.06
52	12/22/2019 - 12/28/2019	1.02	1.05
53	12/29/2019 - 12/31/2019	1.01	1.04

* PEAK SEASON

14-FEB-2020 15:39:30

830UPD

6_8700_PKSEASON.TXT

Signal Timings

TOD Schedule Report
for 2010: SR- 826&US 1

Print Date:
9/24/2019

Print Time:
3:13 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
2010	SR- 826&US 1	DOW-3		N/A	0	0	N/A	0	Max 0

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
NBL	SBT	EBL	WBT	SBL	NBT	WBL	EBT
0	0	0	0	0	0	0	0
							

Active Phase Bank: Phase Bank 1

<u>Phase</u>	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	<u>Phase Bank</u>																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 NBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	3	-	3 - 3	24	-	24 - 24	27	-	27 - 27	4.8	2
2 SBT	4	-	4 - 4	38	-	38 - 38	7	-	7 - 7	1	-	1 - 1	50	-	50 - 50	50	-	50 - 50	4.8	2.4
3 EBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	3	-	3 - 3	25	-	25 - 25	34	-	34 - 34	4.8	2
4 WBT	4	-	4 - 4	47	-	47 - 47	7	-	7 - 7	2.5	-	2.5 - 2.5	55	-	55 - 55	55	-	55 - 55	4.8	2.9
5 SBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	3	-	3 - 3	24	-	24 - 24	27	-	27 - 27	4.8	2
6 NBT	4	-	4 - 4	38	-	38 - 38	7	-	7 - 7	1	-	1 - 1	50	-	50 - 50	50	-	50 - 50	4.8	2.4
7 WBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	3	-	3 - 3	25	-	25 - 25	34	-	34 - 34	4.8	2
8 EBT	4	-	4 - 4	47	-	47 - 47	7	-	7 - 7	2.5	-	2.5 - 2.5	55	-	55 - 55	55	-	55 - 55	4.8	2.9

Last In Service Date: unknown

Permitted Phases

12345678

Default 12345678

External Permit 0 -----

External Permit 1 -----

External Permit 2 -----

TOD Schedule Report
for 2010: SR- 826&US 1

Print Date:
9/24/2019

Print Time:
3:13 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 NBL	2 SBT	3 EBL	4 WBT	5 SBL	6 NBT	7 WBL	8 EBT		
1		140	13	57	14	27	13	57	14	27	0	56
2		125	15	32	17	32	15	32	17	32	0	107
3		170	25	43	26	47	25	43	26	47	0	77
4		170	22	44	26	49	22	44	26	49	0	77
5		130	14	32	17	38	14	32	17	38	0	18
6		150	19	48	19	35	19	48	19	35	0	60
7		150	19	48	19	35	19	48	19	35	0	60
8		105	10	32	13	21	10	32	13	21	0	60
9		150	24	33	25	39	24	33	25	39	0	71
10		125	16	32	17	31	16	32	17	31	0	107
11		170	25	43	26	47	25	43	26	47	0	77
12		115	12	32	14	28	12	32	14	28	0	79
13		130	14	32	20	35	14	32	20	35	0	54
14		130	14	32	17	38	14	32	17	38	0	62
15		150	15	45	22	39	15	45	22	39	0	81
16		115	10	34	12	30	10	34	12	30	0	56
22		145	14	53	14	35	14	53	14	35	0	60
23		140	14	48	14	35	14	48	14	35	0	60
25		120	13	33	12	32	14	32	19	26	0	52
26		135	23	32	17	33	22	33	23	28	0	5
27		160	23	42	17	48	27	38	28	38	0	34
28		100	13	31	12	14	12	32	13	14	0	83

Local TOD Schedule

Time	Plan	DOW
0000	23	M T W Th F
0000	23	Su S
0100	22	Su S
0100	22	M T W Th F
0500	7	M T W Th F
0530	4	M T W Th F
0600	1	Su S
1000	11	Su S
1000	3	M T W Th F
1500	11	M T W Th F
2100	6	M T W Th F
2100	6	Su S
2300	23	M T W Th F

Current Time of Day Function

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

Local Time of Day Function

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

*** Settings**

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

SIGNAL OPERATING PLAN

		SIGNAL HEAD NUMBER																
PHASE	INT	1	2	2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8		
$\phi 1+5$ NBLT-SBLT ACTUATED	R/W		R	R	R	R		R	R	R	R		DW	DW	DW	DW		
	1+6		R	R	R	R		R	R	R	R		DW	DW	DW	DW		
	2+5		R	R	R	R		R	R	R	R		DW	DW	DW	DW		
	2+6		R	R	R	R		R	R	R	R		DW	DW	DW	DW		
	TRACK CL		R	R	R	R		R	R	R	R		DW	DW	DW	DW		
	CLEAR																	
$\phi 1+6$ NBLT ACTUATED	R/W		R	R	R	R	R		R	R		DW	DW	DW	DW			
	2+6		R	R	R	R	R		R		DW	DW	DW	DW				
	TRACK CL		R	R	R	R	R		R		DW	DW	DW	DW				
	CLEAR																	
$\phi 2+5$ SBLT ACTUATED	R/W	R			R	R		R	R	R	R	R	DW	DW	DW	DW		
	2+6	R			R	R		R	R	R	R	R	DW	DW	DW	DW		
	TRACK CL	R	Y	Y	R	R		R	R	R	R	R	DW	DW	DW	DW		
	CLEAR																	
$\phi 2+6$ N-S RECALL	R/W	R			R	R	R			R	R	R	W	DW	W	DW		
	RED CL	R			R	R	R			R	R	R	F	DW	F	DW		
	3+7	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW		
	3+8	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW		
	4+7	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW		
	4+8	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW		
	TRACK CL	R	Y	Y	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW		
	CLEAR																	

Drawn
F. Potts

Check
E. Hu

Division Engineer

Date
5/8/98

Date
5/8/97

Date

METROPOLITAN DADE COUNTY
DEPARTMENT OF PUBLIC WORKS

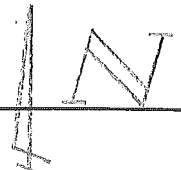
ASSET NO: 32010

SR 826 & US 1
SHEET 1 of 3

Placed in Service
Date: *10/20/98* By: *CONTRACTOR*

Phasing Number
10

SIGNAL OPERATING PLAN



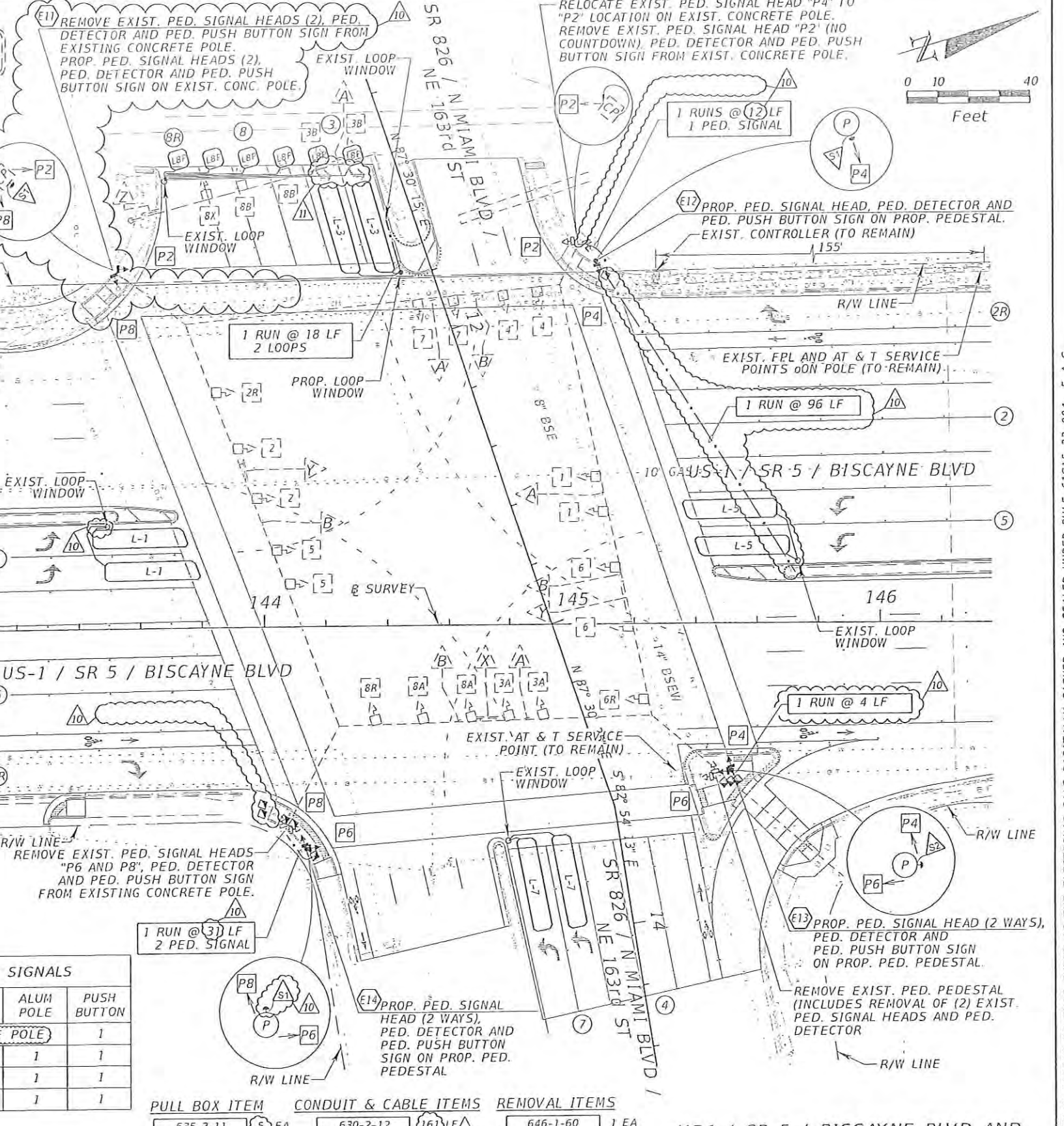
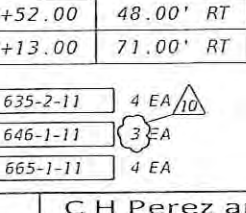
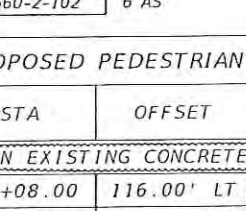
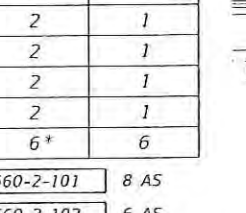
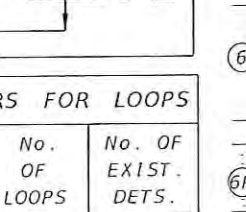
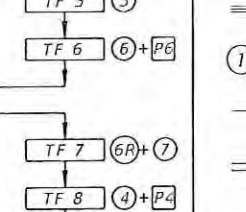
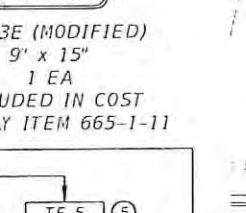
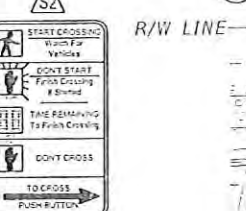
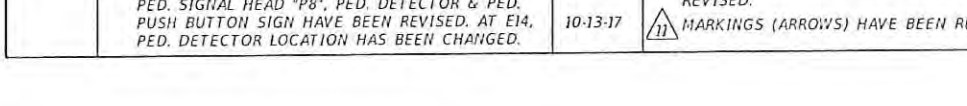
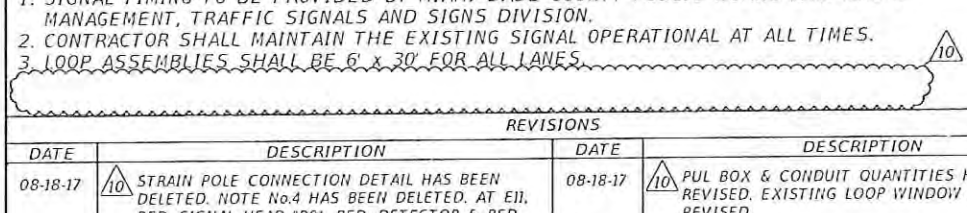
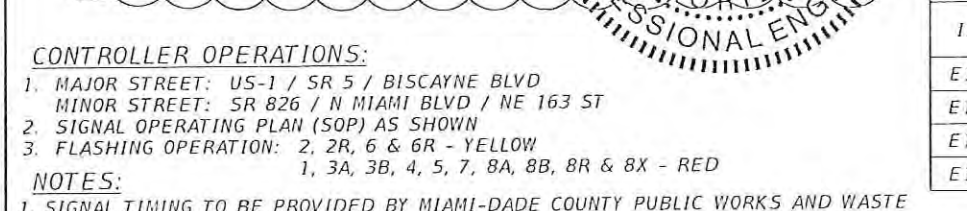
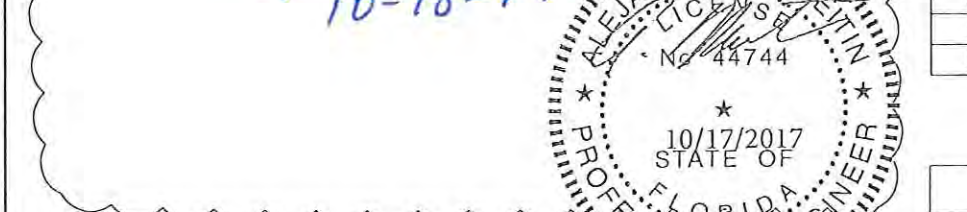
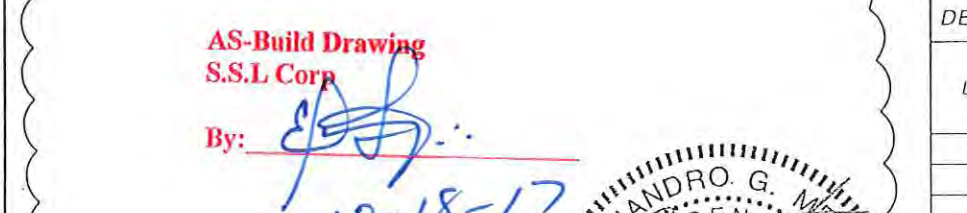
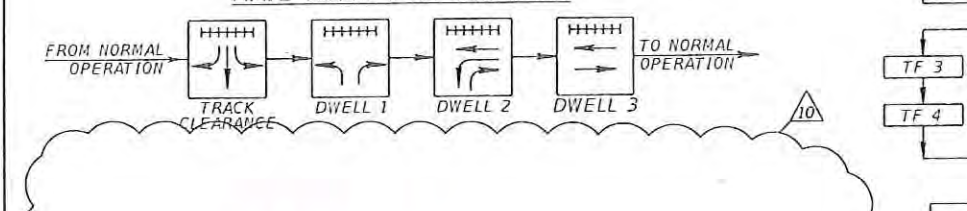
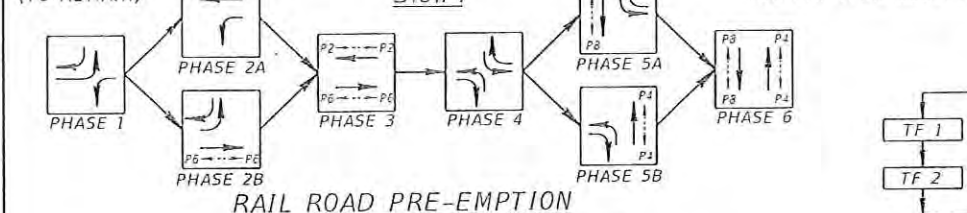
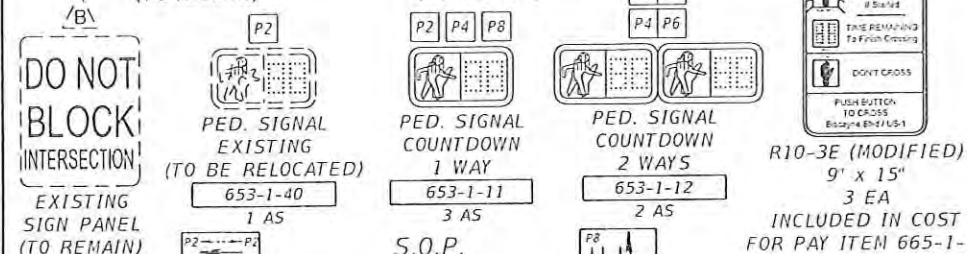
				SIGNAL HEAD NUMBER														
PHASE	INT	1	2	2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8		
$\phi 3+7$ EBLT-WBLT Activated	R/W	R	R	~~R~~	~~R~~	R	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	3+8	R	R	~~R~~	~~R~~	R	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	4+7	R	R	~~R~~	~~R~~	R	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	4+8	R	R	~~R~~	~~R~~	R	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	Track CL	R	R	~~R~~	~~R~~	R	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	CLEAR																	
$\phi 3+8$ EBLT Activated	R/W	R	R	~~R~~	~~R~~	R	R	R	R	R	E	G	DW	DW	DW	DW		
	4+8	R	R	~~R~~	~~R~~	R	R	R	R	R	E	G	DW	DW	DW	DW		
	Track CL	R	R	~~R~~	~~R~~	R	R	R	R	R	E	G	DW	DW	DW	DW		
	CLEAR																	
$\phi 4+7$ WBLT Activated	R/W	R	R	R	R	E	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	4+8	R	R	R	R	E	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	Track CL	R	R	R	R	Y	R	R	~~R~~	~~R~~	R	R	DW	DW	DW	DW		
	CLEAR																	
$\phi 4+8$ E=W Activated	R/W	R	R	R	R	E	R	R	R	R	E	G	DW	W	DW	W		
	P2 CL	R	R	R	R	E	R	R	R	R	E	G	DW	F	DW	F		
	1+5	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW		
	1+6	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW		
	2+5	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW		
	2+6	R	R	R	R	Y	R	R	R	R	Y	Y	DW	DW	DW	DW		
	Track CL	R	R	R	R	Y	R	R	R	R	E	G	DW	DW	DW	DW		

Drawn <i>F. Prats</i>	Date 5/8/97	METROPOLITAN DADE COUNTY DEPARTMENT OF PUBLIC WORKS
		ASSET NO: 32010
Check <i>E Lu</i>	Date 5/8/97	SR 826 & LISI SHEET 2 of 3
Division Engineer	Date	
Placed in Service		Phasing Number
Date: 10/20/98 By: CONTRACTOR		10

SIGNAL OPERATING PLAN

		SIGNAL HEAD NUMBER																	
PHASE	INT	1	2	2R	3	4	5	6	6R	7	8	8R	P2	P4	P6	P8			
TRACK CLEARANCE R.R.	R/W	R	R	R	~~R~~	R	R	R	R	R	E	E	DW	DW	DW	DW			
	TRAIN PASSAGE	R	R	R	~~R~~	R	R	R	R	R	Y	Y	DW	DW	DW	DW			
	TO																		
	CLEAR																		
TRAIN PASSAGE R.R.	R/W	R	E	R	R	R	R	E	E	R	R	R	DW	DW	DW	DW			
	3+8	R	Y	R	R	R	R	Y	Y	R	R	R	DW	DW	DW	DW			
	TO																		
	CLEAR	MAY CYCLE TO ϕ 2+5 OR ϕ 7 DURING TRAIN PASSAGE																	
	R/W																		
	TO																		
	CLEAR																		
	R/W																		
	TO																		
	CLEAR																		
FLASHING DP		R	Y	R	R	R	R	Y	R	R	R								
Drawn <i>F. PRATS</i>		Date 5/8/97		METROPOLITAN DADE COUNTY DEPARTMENT OF PUBLIC WORKS															
Check <i>E Lu</i>		Date 5/8/97		ASSET NO: 32010															
Division Engineer		Date		SR 826 & LIS 1 sheet 3 of 3															
				Placed in Service Date: 10/20/98 By: Contractor								Phasing Number 10							

SIGNAL HEAD AND SIGN DETAILS



LOOP	No. OF LOOPS	No. OF EXIST. DETS.
L-1	2	1
L-3	2	1
L-5	2	1
L-7	2	1
L-8P	6*	6

660-2-101	8 AS
660-2-102	6 AS

ID	STA	OFFSET	ALUM POLE	PUSH BUTTON
E11	ON EXISTING CONCRETE POLE			1
E12	145+08.00	116.00' LT	1	1
E13	145+52.00	48.00' RT	1	1
E14	144+13.00	71.00' RT	1	1

635-2-11	4 EA
646-1-11	3 EA
665-1-11	4 EA

PULL BOX ITEM	CONDUIT & CABLE ITEMS	REMOVAL ITEMS
635-2-11 5 EA	630-2-12 161 LF	646-1-60 1 EA
	632-7-1 1 PI	653-1-60 3 EA
		665-1-60 3 EA

CONTROLLER OPERATIONS:

- MAJOR STREET: US-1 / SR 5 / BISCAYNE BLVD
MINOR STREET: SR 826 / N MIAMI BLVD / NE 163 ST
- SIGNAL OPERATING PLAN (SOP) AS SHOWN
- FLASHING OPERATION: 2, 2R, 6 & 6R - YELLOW
1, 3A, 3B, 4, 5, 7, 8A, 8B, 8R & 8X - RED

NOTES:

- SIGNAL TIMING TO BE PROVIDED BY MIAMI-DADE COUNTY PUBLIC WORKS AND WASTE MANAGEMENT, TRAFFIC SIGNALS AND SIGNS DIVISION.
- CONTRACTOR SHALL MAINTAIN THE EXISTING SIGNAL OPERATIONAL AT ALL TIMES.
- LOOP ASSEMBLIES SHALL BE 6' x 30' FOR ALL LANES.

DATE	DESCRIPTION	DATE	DESCRIPTION
08-18-17	STRAIN POLE CONNECTION DETAIL HAS BEEN DELETED. NOTE NO. 4 HAS BEEN DELETED. AT E11, PED. SIGNAL HEAD "P8", PED. DETECTOR & PED. PUSH BUTTON SIGN HAVE BEEN REVISED. AT E14, PED. DETECTOR LOCATION HAS BEEN CHANGED.	08-18-17	PULL BOX & CONDUIT QUANTITIES HAVE BEEN REVISED. EXISTING LOOP WINDOW L-1 HAS BEEN REVISED.
		10-13-17	MARKINGS (ARROWS) HAVE BEEN REVISED.

CH Perez and Associates
Consulting Engineers, Inc.
Certificate of Authorization No. 25976
9551 NW 41 Street, Suite 201 | Doral, Florida 33178
Tel. (305) 592-1070 | Fax. (305) 592-1078
Alejandro G. Meitin
Florida P.E. No. 44744
www.p-a.cc agm@p-a.cc

ROAD No.	COUNTY	FINANCIAL PROJECT ID
SR 5	MIAMI-DADE	430808-1-52-01

SIGNALIZATION PLAN

US-1 / SR 5 / BISCAYNE BLVD AND
SR 826 / N MIAMI BLVD / NE 163rd ST
INTERSECTION ID No. 2010

SHEET No. T-6

THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE DIGITALLY SIGNED AND SEALED UNDER RULE 61G15-23.004, F.A.C.

Miami-Dade, FL



TOD Schedule Report

2013 - NE 163rd St. & NE 19th Ave.

2070-1C-Econolite Type-Cobalt

3/30/2020, 2:28 PM

Phase Data

Phase	Direction	Split	Timing Plan	Walk	Ped Clear	Min Green	Max Green	Vehicle Ext	MAX 2	MAX 3	Yellow	Red Clear
1	E - L	35	1	0	0	5	15	2	35	0	4	2
			2	0	0	5	7	2	7	0	4	2
			3	0	0	5	15	2	0	0	4	2
			4	0	0	0	0	0	0	0	0	0
2	W - T	65	1	7	31	7	40	1	0	0	4	2.5
			2	7	31	7	37	1	40	0	4	2.5
			3	7	31	7	40	1	0	0	4	2.5
			4	0	0	0	0	0	0	0	0	0
6	E - T	100	1	7	31	7	40	1	0	0	4	2.5
			2	7	31	7	37	1	40	0	4	2.5
			3	7	31	7	40	1	0	0	4	2.5
			4	0	0	0	0	0	0	0	0	0
8	S - T	30	1	7	26	7	20	2.5	45	0	4	3
			2	7	26	7	25	2.5	30	0	4	3
			3	7	26	7	26	2.5	0	0	4	3
			4	0	0	0	0	0	0	0	0	0

Schedule - 1

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
-	X	X	X	-	X	-

Day Plan - 1 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 6	Phs Spl 8
00:00:00	23	90	14	12	48	60	30
01:00:00	64	-	-	-	-	-	-
05:00:00	7	90	14	12	48	60	30
06:00:00	8	90	32	12	48	60	30
07:00:00	17	130	92	30	69	99	31
09:00:00	14	130	4	30	69	99	31
10:00:00	13	130	37	35	56	91	39
14:00:00	18	130	16	35	65	100	30
16:15:00	11	150	25	35	85	120	30
19:00:00	6	105	14	12	63	75	30
20:30:00	9	105	10	12	63	75	30
23:00:00	23	90	14	12	48	60	30

Schedule - 2

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
-	-	-	-	X	-	-

Day Plan - 2 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 6	Phs Spl 8
00:00:00	23	90	14	12	48	60	30
01:00:00	64	-	-	-	-	-	-
05:00:00	7	90	14	12	48	60	30
06:00:00	8	90	32	12	48	60	30
07:00:00	17	130	92	30	69	99	31
09:00:00	14	130	4	30	69	99	31
10:00:00	13	130	37	35	56	91	39
14:00:00	18	130	16	35	65	100	30
16:15:00	11	150	25	35	85	120	30
19:00:00	10	125	9	17	77	94	31
20:30:00	9	105	10	12	63	75	30
23:00:00	23	90	14	12	48	60	30

Schedule - 3

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
-	-	-	-	-	-	X

Day Plan - 3 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 6	Phs Spl 8
00:00:00	23	90	14	12	48	60	30
01:00:00	64	-	-	-	-	-	-
06:00:00	1	90	59	14	45	59	31
10:00:00	11	150	25	35	85	120	30
20:00:00	16	115	31	30	54	84	31
22:15:00	6	105	14	12	63	75	30
23:00:00	23	90	14	12	48	60	30

Schedule - 4

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
X	-	-	-	-	-	-

Day Plan - 4 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 6	Phs Spl 8
00:00:00	23	90	14	12	48	60	30

01:00:00	64	-	-	-	-	-	-
06:00:00	1	90	59	14	45	59	31
10:00:00	11	150	25	35	85	120	30
20:00:00	16	115	31	30	54	84	31
23:00:00	23	90	14	12	48	60	30

Action Plan

Name	Pattern	Enabled Logic Processor Statements
23	23	N/A
64	Free	N/A
7	7	N/A
8	8	N/A
17	17	N/A
14	14	N/A
13	13	N/A
18	18	N/A
11	11	N/A
6	6	N/A
9	9	N/A
23	23	N/A

Miami-Dade, FL



2013 - NE 163rd St. & NE 19th Ave. - 2070-1C - Econolite Type - Cobalt

Configuration Controller Sequence**Phase Ring Sequence and Assignment (MM) 1-1-1**

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B													

Sequence 1

Ring 1 | 1 2 | 8

Ring 2 | . 6 |

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X				X		X								
Exclusive Ped																

Phase Compatibility (MM)

1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	E	W	N	N	N	E	N	S	N	N	N	N	N	N	N	N
Movement	L	T				T		T								
Associated PED		X						X								
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet No

Interlock CRC

CRC (16 bit) 3279

Enable Automatic Backup Yes

to Datakey

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	2	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	.	.	.	X	X	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	X	X	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	X	X	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	X	X	.	.	.	.	.	.	.	.
	5	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.
Phase	6	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.
Must	7	.	.	X	X	.	.	.	.	.	.	.	.	.	.	.
Gap	8	.	.	X	X	.	.	.	.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				+	Red	X		X
2	2	V				+	Yel		X	X
3	0	.				+	.			
4	0	.				+	.			
5	0	.				+	.			
6	6	V				+	Yel		X	X
7	0	.				+	.			
8	8	V				+	Red	X		
9	0	.				+	.			
10	0	.				+	.			
11	0	.				+	.			
12	0	.				+	.			
13	2	P				+	.			
14	0	.				+	.			
15	0	.				+	.			
16	8	P				+	.			

Miami-Dade, FL



2013 - NE 163rd St. & NE 19th Ave. - 2070-1C - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1**Plan 1 - "Phase Bank 1"**

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	31	0	0	0	31	0	26	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	40	0	0	0	40	0	20	0	0	0	0	0	0	0	0
Max2	35	0	0	0	0	0	0	45	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.5	0.0	0.0	0.0	2.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2 - "Phase Bank 2"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	31	0	0	0	31	0	26	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	7	37	0	0	0	37	0	25	0	0	0	0	0	0	0	0
Max2	7	40	0	0	0	40	0	30	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.5	0.0	0.0	0.0	2.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3 - "Phase Bank 3"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	0	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	31	0	0	0	31	0	26	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	15	40	0	0	0	40	0	26	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	0.0	0.0	0.0	4.0	0.0	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.5	0.0	0.0	0.0	2.5	0.0	3.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	0.0	0.0	0.0	1.0	0.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4 - "Phase Bank 4"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Miami-Dade, FL



2013 - NE 163rd St. & NE 19th Ave. - 2070-1C - Econolite Type - Cobalt

Controller Overlaps**Vehicle Overlaps (MM) 2-2**

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	4	7	3.0	2.0	5
B02	5	4	7	3.0	2.0	5
C03	5	4	7	3.0	2.0	5
D04	5	4	7	3.0	2.0	5
E05	5	4	7	3.0	2.0	5
F06	5	4	7	3.0	2.0	5
G07	5	4	7	3.0	2.0	5
H08	5	4	7	3.0	2.0	5
I09	5	4	7	3.0	2.0	5
J10	5	4	7	3.0	2.0	5
K11	5	4	7	3.0	2.0	5
L12	5	4	7	3.0	2.0	5
M13	5	4	7	3.0	2.0	5
N14	5	4	7	3.0	2.0	5
O15	5	4	7	3.0	2.0	5
P16	5	4	7	3.0	2.0	5

Miami-Dade, FL



2013 - NE 163rd St. & NE 19th Ave. - 2070-1C - Econolite Type - Cobalt

Controller Options

Controller Options (MM) 2-6-1

[illegible]

Ped Clear Protect: Off Unit Red Revert: 5.0 MUTCD 3 Seconds Don't Walk: No

Pre-Timed Mode (MM) 2-7

Enable Pre-Timed Mode: Free Input Disables Pre-Timed: No

[illegible]

Phase Recall Options (MM) 2-8

Plan # 1

[illegible]

Plan # 2

[illegible]

Plan # 3

[illegible]

Plan # 4

[illegible]

Coordinator Pattern # 11

Split Pattern	11	TS2 (Pat-Off)	3-2	Splits In	Seconds
Cycle	150	Std (COS)	137	Offsets In	Seconds
Offset Value	25s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 11)	35	85	0	0	0	120	0	30	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	120s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 12

Split Pattern	12	TS2 (Pat-Off)	3-3	Splits In	Seconds
Cycle	130	Std (COS)	145	Offsets In	Seconds
Offset Value	97s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 12)	30	69	0	0	0	99	0	31	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	99s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Coordinator Pattern # 17

Split Pattern	17	TS2 (Pat-Off)	5-2	Splits In	Seconds
Cycle	130	Std (COS)	209	Offsets In	Seconds
Offset Value	92s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 17)	30	69	0	0	0	99	0	31	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	99s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 18

Split Pattern	18	TS2 (Pat-Off)	5-3	Splits In	Seconds
Cycle	130	Std (COS)	217	Offsets In	Seconds
Offset Value	16s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	N	N	N	E-T	N	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 18)	35	65	0	0	0	100	0	30	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	100s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Action Plan - 11 - "11"

Pattern 11 Override Sys No
 Timing Plan 1 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Action Plan - 12 - "12"

Pattern 12 Override Sys No
 Timing Plan 1 Sequence 0
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 0 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 16-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 31-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 46-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 61-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 76-90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 91-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Action Plan - 17 - "17"

Pattern 17 Override Sys No
 Timing Plan 1 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Action Plan - 18 - "18"

Pattern 18 Override Sys No
 Timing Plan 1 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Miami-Dade, FL



2013 - NE 163rd St. & NE 19th Ave. - 2070-1C - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3
Day Plan #1 - "1"

Event	Action Plan	Start Time
1	23	00:00
2	64	01:00
3	7	05:00
4	8	06:00
5	17	07:00
6	14	09:00
7	13	10:00
8	18	14:00
9	11	16:15
10	6	19:00
11	9	20:30
12	23	23:00

Day Plan #2 - "2"

Event	Action Plan	Start Time
1	23	00:00
2	64	01:00
3	7	05:00
4	8	06:00
5	17	07:00
6	14	09:00
7	13	10:00
8	18	14:00
9	11	16:15
10	10	19:00
11	9	20:30
12	23	23:00

Day Plan #3 - "3"

Event	Action Plan	Start Time
1	23	00:00
2	64	01:00
3	1	06:00
4	11	10:00
5	16	20:00
6	6	22:15
7	23	23:00

Day Plan #4 - "4"

Event	Action Plan	Start Time
1	23	00:00
2	64	01:00
3	1	06:00
4	11	10:00
5	16	20:00
6	23	23:00

Schedule (MM) 5-4

Schedule Number - 1

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X		X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
					X		

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

SIGNAL OPERATING PLAN



		Direction		E	W	S	Ped Heads		
Timing Phases	Head No.	1	6	2	8	8R	P2	P8	Movements/Display/Actuation
(1+6) EBLT (Actuated)	Dwell	<E/G	G	R	R	R/G	DW	DW	
	(2+6)	<Y/G	G	R	R	R/Y	DW	DW	
	C								
	l								
	e								
(2+6) E-W (Recall)	Dwell	G	G	G	R	R	W/F	DW	
	(8)	Y	Y	Y	R	R	DW	DW	
	C								
	l								
	e								
(8) S'END (Actuated)	Dwell	R	R	R	<E/G	G	DW	W/F	
	(1+6)	R	R	R	Y	Y	DW	DW	
	(2+6)	R	R	R	Y	Y	DW	DW	
	C								
	l								

Flashing Operation

FY FY

FY FR FR

Page 1 of 1

Miami-Dade County Public Works Department

 Drawn **F. PRATS**

 Date **1/22/13**
SR 826 & NE 19 AV

 Checked **H. HERNANDEZ**

 Date **1/24/13**

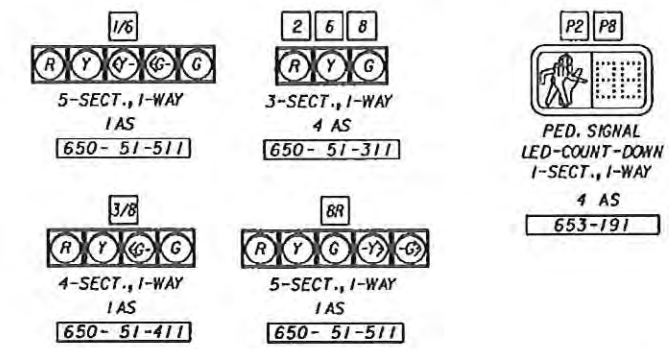
Placed in Service

Phasing No.

Asset Number

 Date **3/5/13** By **CONTRALOR**
6
2013

SIGNAL HEAD & SIGN DETAILS



NE 163 ST
N Miami Beach Blvd

D3-1
72" X 24"
1 EA
699-1-1
LED INTERNALLY
ILLUMINATED SIGN

NE 19 AV

D3-1
72" X 24"
2 EA
699-1-1
LED INTERNALLY
ILLUMINATED SIGN

NOTES

- SIGNAL TIMING TO BE PROVIDED BY MIAMI-DADE COUNTY SIGNAL DIVISION.
- PAY ITEM 690-100 INCLUDES THE REMOVAL OF EXISTING SIGNAL PULL BOXES AND EXISTING SERVICE POINT AT THE INTERSECTION.
- FOR VVH (VERIFIED UTILITY LOCATIONS), SEE SHEET UTV-1.
- PROPOSED PEDESTRIAN SIGNAL HEADS SHOULD BE ALIGNED WITH THE CENTER OF FAR-SIDED (OPPOSITE) CROSSWALK END.

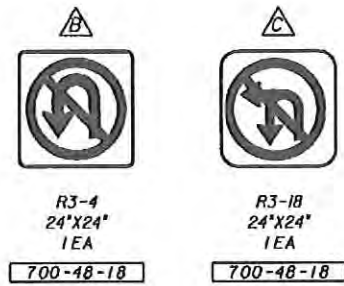
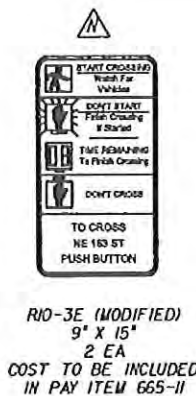
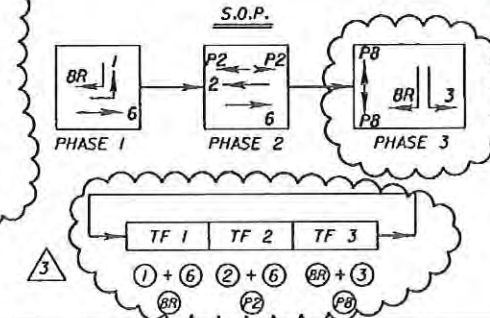
CONTROLLER OPERATIONS

- MAJOR STREET: SR-826 / N.E. 163rd ST
MINOR STREET: N.E. 19th AV
- FLASHING OPERATION: 2 & 6 - YELLOW
3 & 8R - RED
- SOP: AS SHOWN BELOW.
- PHASE 1 & 3 ACTUATED
PHASE 2 RECALL
- PED. SIGNALS UPON ACTUATION ONLY.
P2 IS ON RECALL.



7900 NW 60 Street
Doral, FL 33166

DETECTORS FOR LOOPS		
LOOP	NO. OF LOOPS	NO. OF NEW DETS.
L-1	1	1
L-3	2	1
L-8R	1	-



SERVICE POINT ITEMS

- 639-1-23 1 AS
- 639-2-1 1225 LF

REMOVAL ITEMS

- 690-10 7 EA
- 690-20 4 EA
- 690-32-1 4 EA
- 690-50 1 EA
- 690-70 2 EA
- 690-80 1 EA
- 690-90 1 PI
- 690-100 1 PI
- 700-48-60 2 EA

NEW CONTROLLER LOCATION
STA. 873+66.00 (71.50' LT)
CONTROLLER ITEMS

- 632-7-1 1 PI
- 635-1-11 5 EA
- 660-1-109 3 EA
- 670-5-120 1 AS

EXIST. CONC. POLE
(TO BE REMOVED)

EL 7.50
STA 873+69.50 (59.50' LT)
ARM LENGTH= 46.00'
ARM BEARING= S 1° 37' 57" E

- 635-1-11 2 EA
- 665-1-1 1 EA
- 649-31-202 1 EA

EXIST. CONTROLLER
(TO BE REMOVED)

- 635-1-11 3 EA

EXIST. 5' SIDEWALK

EXIST. GUARDRAIL
(TO BE REMOVED)

- 635-1-11 1 EA

- 660-2-101 1 AS

EXIST. AT&T FLORIDA
SERVICE POINT-M.H.
(TO REMAIN)
INSTALL A PULL BOX
DESIGNATED FOR TELEPHONE
SERVICE

- 635-1-13 1 EA

EXIST. 40.00' X 5.00'
SIGNAL EASEMENT

EL 8.00
STA. 873+78.50 (52.00' RT)
ARM LENGTH= 36.00'
ARM BEARING= N 87° 21' 26" E

- 635-1-11 1 EA
- 649-31-201 1 EA

- 630-1-13 1275 LF

715-14-12 1 EA
REPLACE EXIST.
STREET LIGHT
PULL BOX

- 635-1-11 1 EA
- 660-2-101 3 AS

EXIST. CONC. POLE
(TO BE REMOVED)

CORE BORING B-20
(SEE SHEET GT-3)

EXIST. SIGNAL SPIN WIRE
(TO BE REMOVED) (TYP.)

SR 826 / N.E. 163rd ST

874

875

EXIST. CONC. POLE
(TO BE REMOVED)
CORE BORING B-19
(SEE SHEET GT-3)

EXIST. CONC. POLE
AND EXIST. F&L
SERVICE POINT
(TO BE REMOVED)

EXIST. 6.66' X 5.00'
SIGNAL EASEMENT

EL 8.00
STA 874+52.00 (53.00' RT)
ARM LENGTH= 52.00'
ARM BEARING= N 1° 37' 57" W

- 635-1-11 1 EA
- 649-31-203 1 EA



EXIST. SIGNS
(TO REMAIN)

SR 826 / N.E. 163rd ST AND N.E. 19th AV

ID No.: 2013

REVISIONS		DESCRIPTION	
DATE		DESCRIPTION	
1-14-13	3	AS REQUESTED BY MD COUNTY, SOUTHBOUND DUAL RIGHT-LEFT TURN ARROWS WERE REMOVED. EXCLUSIVE PEDESTRIAN CROSSING WAS REMOVED.	

ENGINEER OF RECORD:



A&P Consulting Transportation
Engineers Corporation
10305 N.W. 41 Street, Suite 115
Miami, FL 33178
(305) 692-7283 / fax: (305) 593-1594
CA No.: EB-0007797
Ethel M. Sierra, P.E. No. 55401



COUNTY		FINANCIAL PROJECT ID	
826	MIAMI-DADE	412637-4-52-01	

SIGNALIZATION PLAN

SHEET NO.

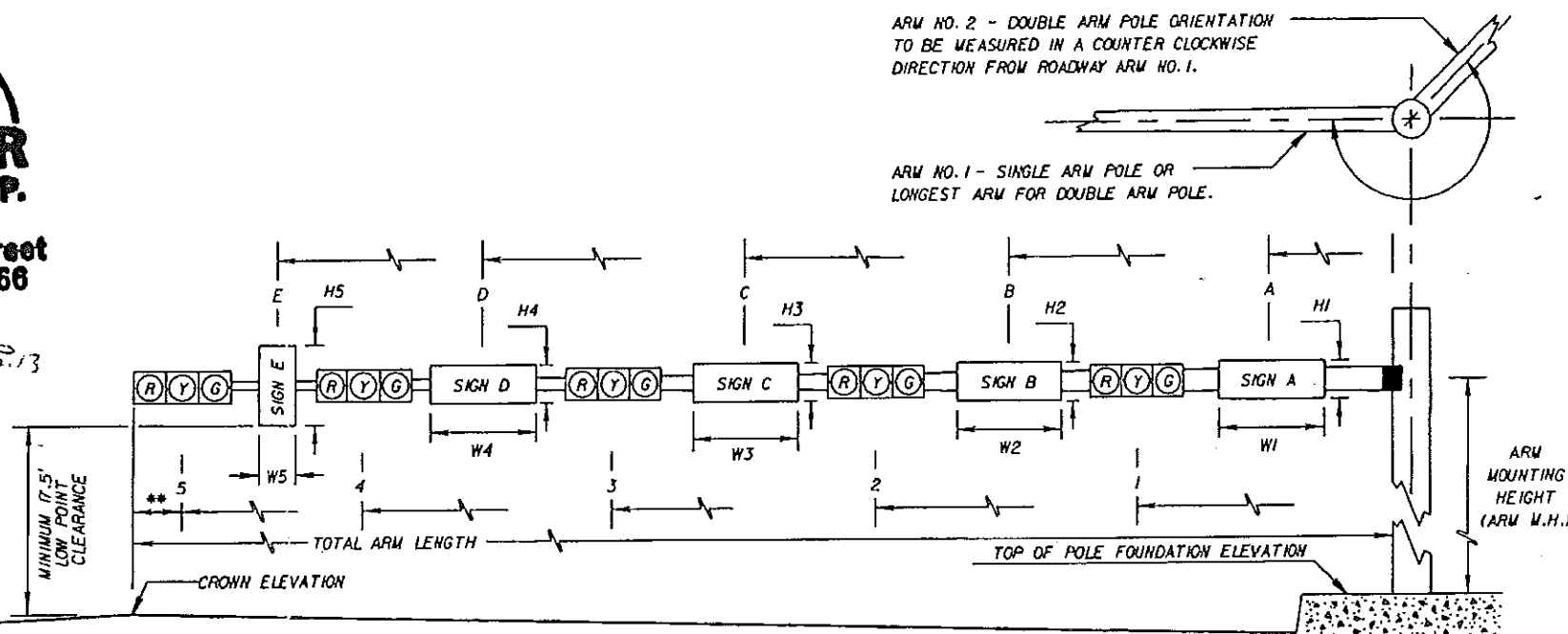
T-8

SPECIAL INSTRUCTIONS				
ID NO.	LOCATION BY STATION	PED. BUTTON	PED. SIGNALS	HANDHOLE LOCATION
A-1	744+22 (57' LT)	0°	270°	0°
B-1	744+88 (59' LT)			0°
C-1	744+84 (56' RT)	270°	0° 270°	0°
A-2	758+28 (53' LT)	0°	0°	0°
B-2	758+06 (65' LT)		0°	0°
C-2	758+02 (58' RT)		270°	0°
A-3	767+53.55 (52.15' LT)			0°
B-3	768+40 (52' RT)	270°	270°	0°
A-4	797+03 (60' LT)		0°	0°
B-4	797+84 (53' RT)		0°	0°
A-5	812+81 (52' LT)		270°	0°
B-5	812+82 (58' RT)	270°	325°	0°
C-5	812+69 (52' RT)			0°



*** FIVE SECTION SIGNAL HEAD 3'-0"
FOUR SECTION SIGNAL HEAD 2'-6"
THREE SECTION SIGNAL HEAD 2'-0"

*** SIGNAL HEAD TO BE MOUNTED
ON BACK SIDE OF MAST ARM

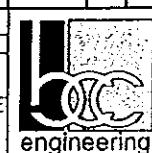


(1) ELEVATION DIFFERENCE = TOP OF POLE FOUNDATION - CROWN ELEVATION
(ELEVATION DIFFERENCE TO BE MEASURED ALONG THE LENGTH OF MAST ARM)

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															
ID NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUNDATION ELEVATION	RDWY ARM NO.	CROWN ELEV.	SIGNAL DATA												TOTAL ARM LENGTH	ARM W.H.	L BETWEEN DUAL ARMS 90/270	SIGN DATA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
						SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE												DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
									1	*	2	*	3	*	4***	*	5				*	A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																											
A-1	T-4	744+22 (57' LT)	10.50'	1	10.30'	H	Y	Y	24.0'	3	35.0'	3	43.0'	5		46'	20'		6.0'	2.0'	6.0'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										

REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION
6/5/12	RELOCATED MAST ARMS A-1, A-3 AND ADJUSTED SIGNAL HEAD LOCATIONS	12/12/12	REVISED ANGLE BETWEEN DUAL ARMS
8/13/12	RELOCATED MAST ARM C-2 AND REVISED SIGNAL HEAD LOCATIONS	5/29/13	RELOCATED PED. SIGNAL TO A PED. POLE
12/3/12	REVISED MAST ARM A-3 LOCATION	12/5/13	REVISED SIGN DIMENSIONS

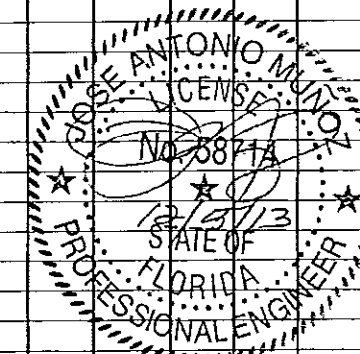


JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 670-2350
Fax: (305) 670-2351
Certificate of Authorization No. 7184

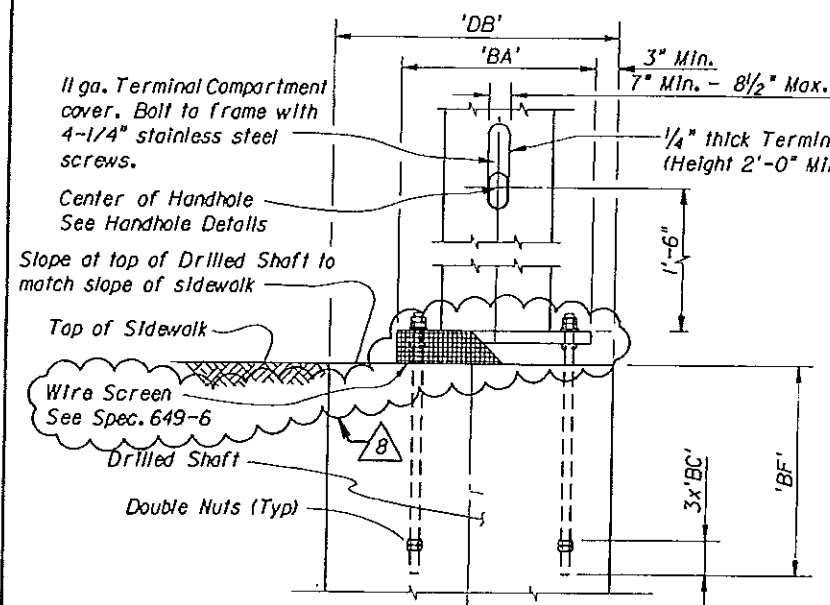
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

MAST ARM TABULATION

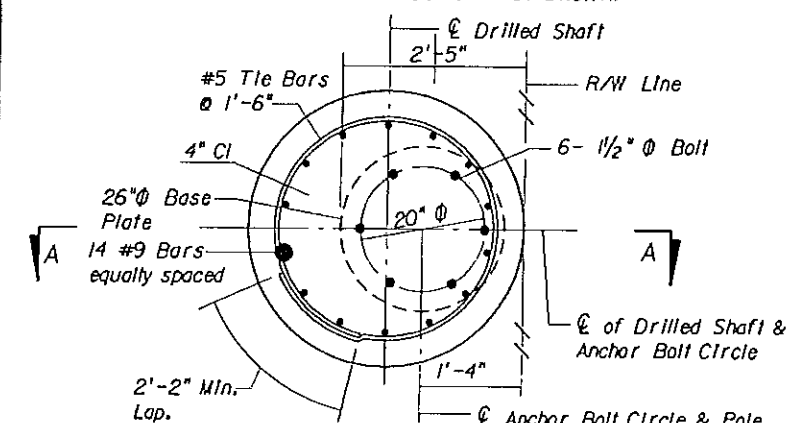
SHEET NO.
T-12



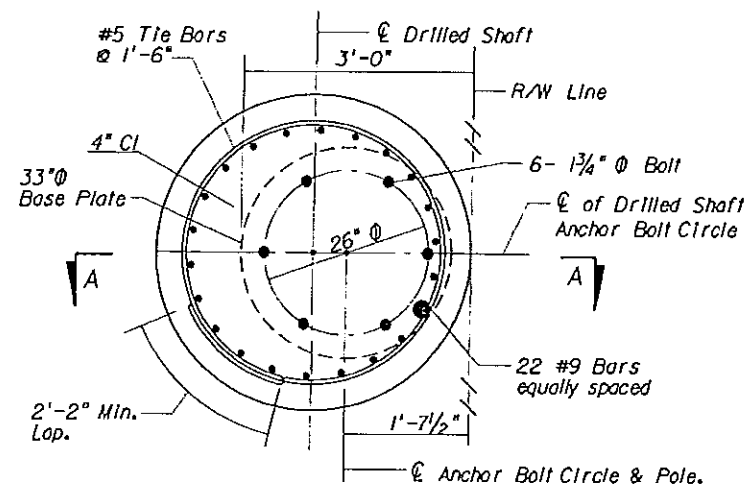
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 6G05-23.003, F.A.C.



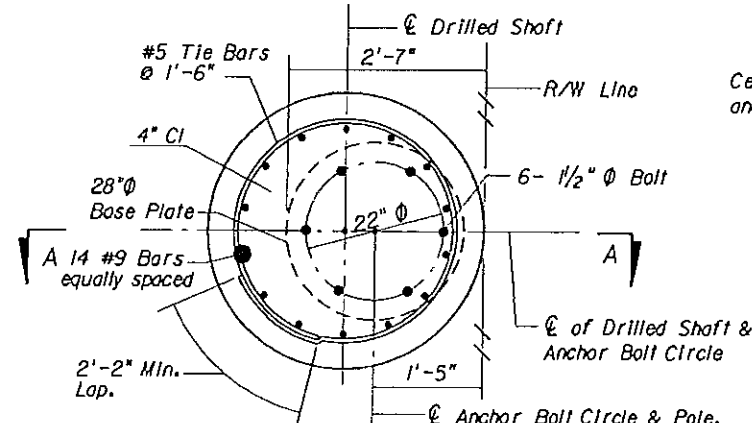
BASE PLATE AND ANCHORAGE ELEVATION
(Reinforcement Not Shown)



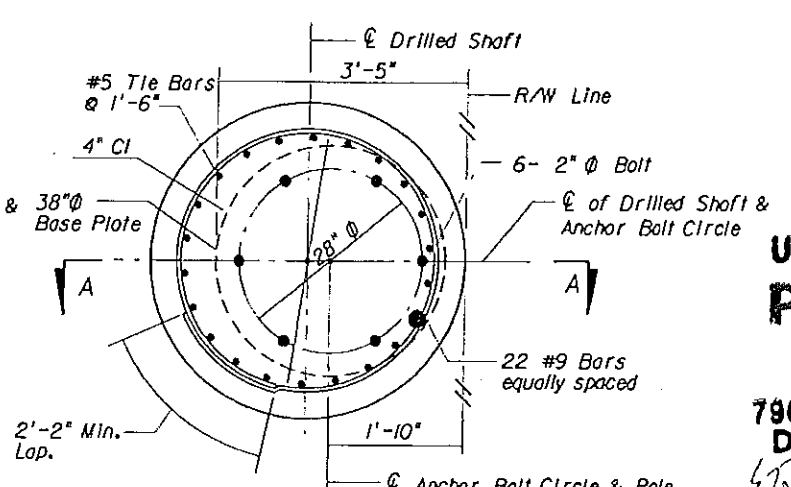
FOUNDATION PLAN FOR POLE TYPE T1
42\"/>



FOUNDATION PLAN FOR POLE TYPE T3
48\"/>

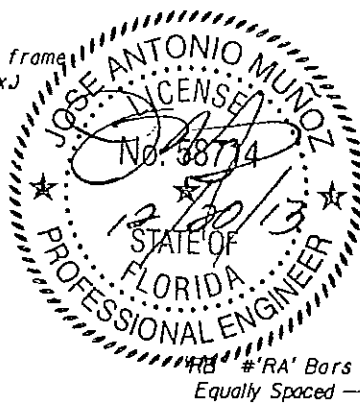


FOUNDATION PLAN FOR POLE TYPE T2
42\"/>

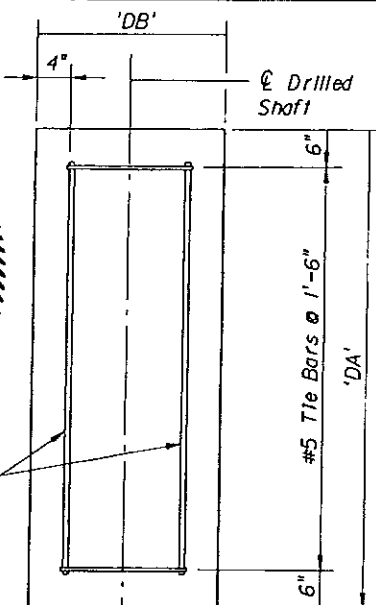


FOUNDATION PLAN FOR POLE TYPE T4
48\"/>

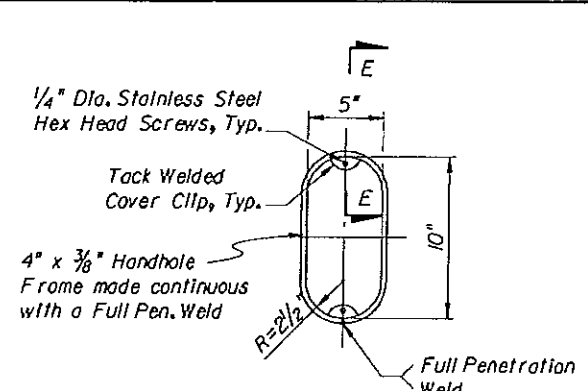
FOUNDATION & BASE PLATE DETAILS



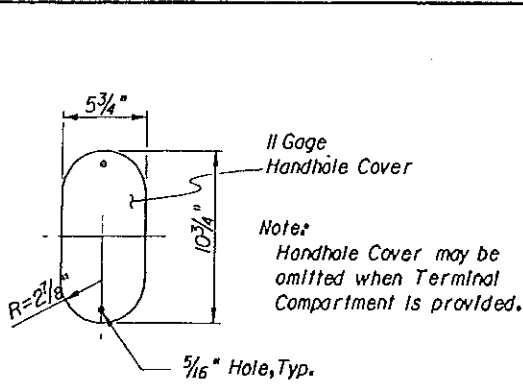
NOTE:
Spacers shall be provided along
reinforcing bars cage to insure the
required concrete cover.



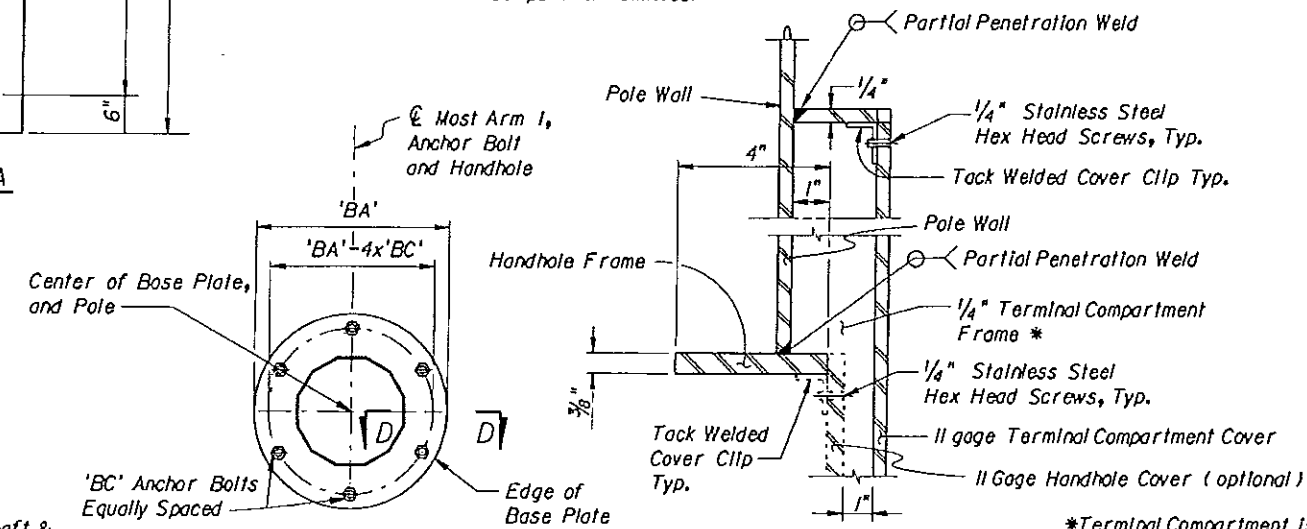
SECTION A-A



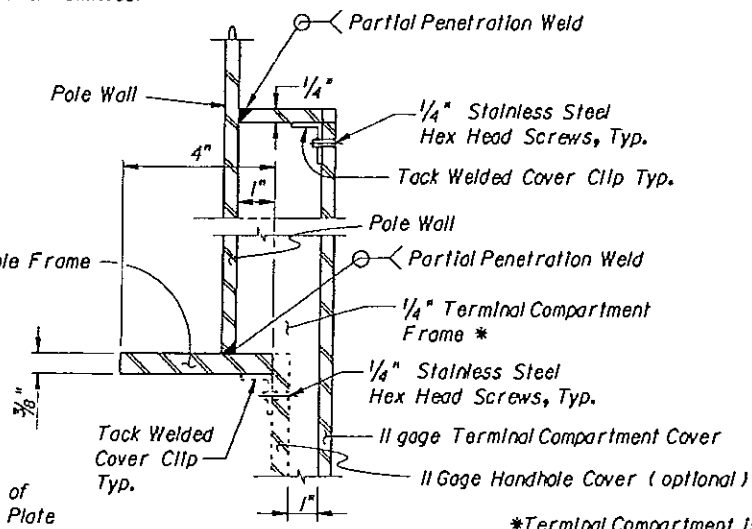
HANDHOLE FRAME
(w/Terminal Compartment Omitted)



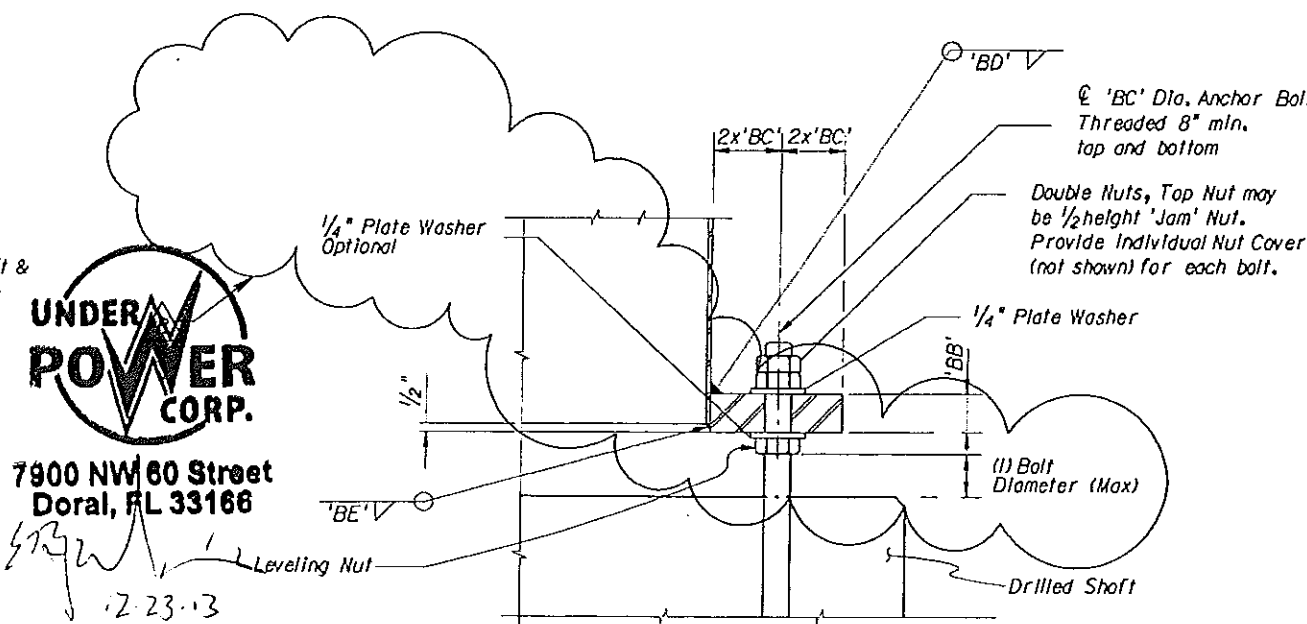
HANDHOLE COVER



BASE PLATE DETAIL
(6 Anchor Bolts)



SECTION E-E
(thru Handhole & Terminal Compartment)



SECTION D-D

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/12/13	8 REPLACED GROUT PAD WITH WIRE SCREEN, ADDED OPTIONAL WASHERS AND REVISED SPACING BETWEEN TOP OF DRILLED SHAFT AND LEVELING NUT		



JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 670-2350
Fax: (305) 670-2351
Certificate of Authorization No. 7184

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

POLES THAT ARE OFF-CENTERED TO DRILLED SHAFT	
SHEET NO.	
T-14	

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G5-23.003, F.A.C.

TOD Schedule Report
for 2016: NE 19 Av&NE 164 St

Print Date:
9/24/2019

Print Time:
3:13 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
2016	NE 19 Av&NE 164 St	DOW-3		[04] HEAVY AM PEAK	120	31	N/A	1	Max 2

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
-	SBT	EBL	WBT	-	NBT	WBL	EBT
0	33	38	32	0	33	38	32
↓	↗	←	↑			→	

Active Phase Bank: Phase Bank 1

<u>Phase</u>	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	<u>Phase Bank</u>																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 -	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	0
2 SBT	7	-	7 - 7	22	-	22 - 22	7	-	7 - 7	1	-	1 - 1	40	-	40 - 40	0	-	0 - 0	4	2
3 EBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	2	-	2 - 2	7	-	7 - 7	17	-	17 - 17	3.4	2
4 WBT	5	-	5 - 5	27	-	27 - 27	7	-	7 - 7	3.5	-	2.5 - 2.5	20	-	20 - 20	32	-	32 - 32	4	2
5 -	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	-	0 - 0	0	0
6 NBT	7	-	7 - 7	22	-	22 - 22	7	-	7 - 7	1	-	1 - 1	40	-	40 - 40	0	-	0 - 0	4	2
7 WBL	0	-	0 - 0	0	-	0 - 0	5	-	5 - 5	2	-	2 - 2	7	-	7 - 7	17	-	17 - 17	3.4	2
8 EBT	5	-	5 - 5	27	-	27 - 27	7	-	7 - 7	3.5	-	2.5 - 2.5	20	-	20 - 20	32	-	32 - 32	4	2

Last In Service Date: unknown

Permitted Phases

12345678

Default -234-678
External Permit 0 -----
External Permit 1 -2-4-6-8
External Permit 2 -2-4-6-8

		<u>Green Time</u>											
<u>Current TOD Schedule</u>	<u>Plan</u>	<u>Cycle</u>	1	2	3	4	5	6	7	8		<u>Ring Offset</u>	<u>Offset</u>
			-	SBT	EBL	WBT	-	NBT	WBL	EBT			
1		90	0	11	30	32	0	11	30	32		0	1
2		120	0	43	28	32	0	43	28	32		0	28
3		110	0	28	33	32	0	28	33	32		0	26
4		120	0	33	38	32	0	33	38	32		0	31

Local TOD Schedule

<u>Time</u>	<u>Plan</u>	<u>DOW</u>
0000	1	Su M T W Th F S
0630	2	Su M T W Th F S
1000	3	Su M T W Th F S
1330	4	Su M T W Th F S
2000	3	Su M T W Th F S

TOD Schedule Report
for 2016: NE 19 Av&NE 164 St

Print Date:
9/24/2019

Print Time:
3:13 PM

Current Time of Day Function				Local Time of Day Function				* Settings
<u>Time</u>	<u>Function</u>	<u>Settings *</u>	<u>Day of Week</u>	<u>Time</u>	<u>Function</u>	<u>Settings *</u>	<u>Day of Week</u>	
0000	TOD OUTPUTS	-----	SuM T W ThF S	0000	TOD OUTPUTS	-----	SuM T W ThF S	Blank - FREE - Phase Bank 1, Max 1 Blank - Plan - Phase Bank 1, Max 2 1 - Phase Bank 2, Max 1 2 - Phase Bank 2, Max 2 3 - Phase Bank 3, Max 1 4 - Phase Bank 3, Max 2 5 - EXTERNAL PERMIT 1 6 - EXTERNAL PERMIT 2 7 - X-PED OMIT 8 - TBA

No Calendar Defined/Enabled

SIGNAL OPERATING PLAN

PHASE		SIGNAL HEAD NUMBER												PEDESTRIAN HEAD NUMBER					
		INT	1	2	3	4	5	6	7	8	9	10	11	12	P2	P4	P6		P8
Ø 2+6 NE 19 AVE	R/W		G	R	R		G	R	R						Y	DW	W	DW	
	PED CLEAR		G	R	R		G	R	R						FDW	DW	FDW	DW	
	TO Ø 3+7		Y	R	R		Y	R	R						DW	DW	DW	DW	
	Ø 3+8		Y	R	R		Y	R	R						DW	DW	DW	DW	
	Ø 4+7		Y	R	R		Y	R	R						DW	DW	DW	DW	
(RECALL)	Ø 4+8		Y	R	R		Y	R	R						DW	DW	DW	DW	
	R/W		R	~~R~~	R		R	~~R~~	R						DW	DW	DW	DW	
	Ø 3+8		R	~~R~~	R		R	~~R~~	R					DW	DW	DW	DW		
	Ø 4+7		R	~~R~~	R		R	~~R~~	R					DW	DW	DW	DW		
	Ø 4+8		R	~~R~~	R		R	~~R~~	R					DW	DW	DW	DW		
Ø 2+6		R	~~R~~	R		R	~~R~~	R					DW	DW	DW	DW			
(ACTUATED)																			
	R/W		R	~~R~~	R		R	~~R~~	R		G				DW	DW	DW	DW	
	Ø 4+8		R	~~R~~	R		R	~~R~~	R		G			DW	DW	DW	DW		
	Ø 2+6		R	~~R~~	R		R	~~R~~	R		Y			DW	DW	DW	DW		
(ACTUATED)																			
	R/W		R	R	G		R	~~R~~	R						DW	DW	DW	DW	
	Ø 4+8		R	R	G		R	~~R~~	R					DW	DW	DW	DW		
	Ø 2+6		R	R	Y		R	~~R~~	R					DW	DW	DW	DW		
(ACTUATED)																			
	R/W		R	G	G		R	G	G						DW	W	DW	W	
	PED CLEAR		R	G	G		R	G	G					DW	FDW	DW	FDW		
	TO Ø 2+6		R	Y	Y		R	Y	Y					DW	DW	DW	DW		
(ACTUATED)																			
	FLASHING OPERATION		Y	R	R		Y	R	R										

RECEIPT OF THE SHIP PULSE FROM THE TRAFFIC CONTROL SYSTEM WILL CAUSE PHASES 3+7 TO BE OMITTED.

*PEDESTRIAN SEQUENCE SHALL BE DISPLAYED UPON ACTUATION ONLY.

Drawn	Date	METROPOLITAN DADE COUNTY DEPARTMENT OF PUBLIC WORKS	
F. PRATS	1/16/98		
Check	Date	ASSET NO: 32016	
H. HERNANDEZ	1/20/98		
Division Engineer	Date	NE 19 AVENUE & NE 164 STREET	
		Placed in Service	Phasing Number
		Date: 2/25/98 By: CONTHUR	5

SCALE: 1" = 20'

STA. 15+10, 39' LT.
620-1-1 (20 LF)
632-7-1
635-1-11
647-11-52
665-11
INSTALL INTERCONNECT CONDUIT 2-2" PVC
WITH PULL BOXES AT 250' INTERVALS TO
THE CONTROLLER AT NE 19 AV & S. GLADES DR

EXIST. F.P.L. SERVICE POINT
620-1-1 (20 LF)
630-1-13A
635-1-11
639-1-13
639-2-1

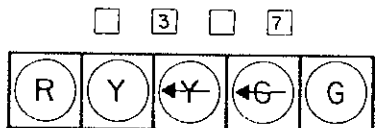
STA. 14+03, 41' LT.
620-1-1 (20 LF)
632-7-1
635-1-11
647-11-50
665-11
STA. 13+60, 37' LT.
620-1-1 (50 LF)
632-7-1
635-1-11 (4 EA)
660-1-109 (4 EA)
672-1-1
685-320
685-324

INSTALL INTERCONNECT CONDUIT 2-2" PVC
WITH PULL BOXES AT 250' INTERVALS TO
THE CONTROLLER AT NE 19 AV & NE 163 ST.

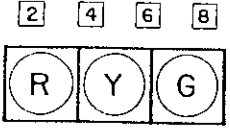
P2 P4
P6 P8



ITEM NO. 653-171
8 - REQ'D



ITEM NO. 650-1-151
2 - REQ'D



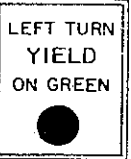
ITEM NO. 650-1-131
6 - REQ'D

NE 19 AV

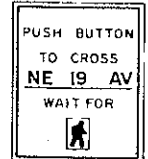
HANFORD BLVD
NE 164 ST

33-1S
ITEM NO. 700-48-18
2 - REQ'D

03-1S
ITEM NO. 700-48-18
2 - REQ'D

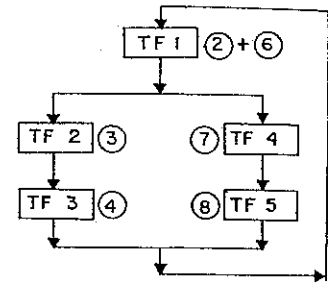
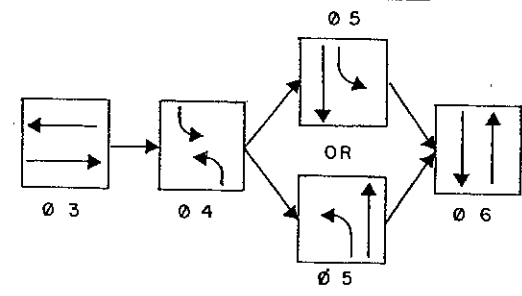


110-12
ITEM NO. 700-48-18
01 - REQ'D



110-4B
ITEM NO. 700-48-18
4 - REQ'D

SIGNAL OPERATING PLAN



NOTES

DEMAND WATTAGE FOR THIS INTERSECTION IS 1265 WATTS.
F.P.L. REPRESENTATIVE MR. TOM HODGDON TEL. 770-7934
S.B.T. REPRESENTATIVE TEL.
SIGNAL TIMING SHALL BE PROVIDED BY DADE COUNTY P.W.D.
SIGNALS & SIGNS DIVISION.

CONTROLLER TIMINGS								
INTERVAL	TIMING FUNCTION							
	1	2	3	4	5	6	7	8
GREEN (INITIAL)								
GREEN (PASSAGE)								
GREEN 1								
GREEN 2								
OW								
RED								
IN "WALK"								
IN CLEAR								

DETECTORS FOR LOOPS		
MVMT NO.	NO. OF LOOPS	NO. OF DETS.
3	1	1
4	2	1
7	1	1
8	3	1

CONTROLLER OPERATIONS

- MAJOR STREET IS NE 19 AV, MINOR STREET IS NE 164 ST
- STD SIGNAL OPERATING PLAN → or (SOP AS SHOWN)
- PHASE(S) 4, 5, 6 ACTUATED, PHASE 3 RECALL
- MOVEMENT(S) 3, 7 IS(ARE) PROTECTED/PERMISSIVE
- SIGNAL COORDINATION PHASE IS 3
- FLASHING OPERATION: 2 + 6 YELLOW; 3+4+7+8 RED
- WIRE/PROGRAM CONTROLLER TO SKIP MOVEMENT(S) 3, 7

TAP
TRANSPORT ANALYSIS PROFESSIONALS
INC.
A Transportation Consultant Group
9300 S. DADELAND BLVD. SUITE 501
MIAMI, FLORIDA 33156-2704
TEL: 305/670-0007 FAX: 305/670-9997

REV.	DATE	DESCRIPTION	BY

INTERSECTION ID NO. 2016

SIGNALIZATION
NE 19 AV & NE 164 ST

DCR	PH	12/22/95	NF-053
DESIGN	DRAWN	DATE	

TOD Schedule Report
for 2019: SR- 826&W Dixie Hwy

Print Date:
9/24/2019

Print Time:
3:14 PM

<u>Asset</u>	<u>Intersection</u>	<u>TOD Schedule</u>	<u>Op Mode</u>	<u>Plan #</u>	<u>Cycle</u>	<u>Offset</u>	<u>TOD Setting</u>	<u>Active PhaseBank</u>	<u>Active Maximum</u>
2019	SR- 826&W Dixie Hwy	DOW-3		N/A	0	0	N/A	0	Max 0

Splits

<u>PH 1</u>	<u>PH 2</u>	<u>PH 3</u>	<u>PH 4</u>	<u>PH 5</u>	<u>PH 6</u>	<u>PH 7</u>	<u>PH 8</u>
EBL	WBT	SBL	NBT	WBL	EBT	NBL	SBT
0	0	0	0	0	0	0	0
							

Active Phase Bank: Phase Bank 1

<u>Phase</u>	<u>Walk</u>			<u>Don't Walk</u>			<u>Min Initial</u>			<u>Veh Ext</u>			<u>Max Limit</u>			<u>Max 2</u>			<u>Yellow</u>	<u>Red</u>
	<u>Phase Bank</u>																			
	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3	1	2	3		
1 EBL	0	0	0	0	0	0	5	5	5	2	2	2	12	12	12	25	25	25	4	2
2 WBT	7	7	7	19	19	19	7	7	7	1	1	1	45	45	45	0	0	0	4	2
3 SBL	0	0	0	0	0	0	5	5	5	2	2	2	12	12	12	23	23	23	4.4	2
4 NBT	4	4	4	20	20	20	7	7	7	2.5	2.5	2.5	25	25	25	40	40	40	4.4	2
5 WBL	0	0	0	0	0	0	5	5	5	3	3	3	12	12	12	30	30	30	4	2
6 EBT	7	7	7	19	19	19	7	7	7	1	1	1	45	45	45	0	0	0	4	2
7 NBL	0	0	0	0	0	0	5	5	5	2	2	2	12	12	12	26	26	26	4.4	2
8 SBT	4	4	4	20	20	20	7	7	7	2.5	2.5	2.5	25	25	25	40	40	40	4.4	2

Last In Service Date: unknown

Permitted Phases

12345678

Default 12345678
External Permit 0 -----
External Permit 1 -2-4-6-8
External Permit 2 12345678

TOD Schedule Report
for 2019: SR- 826&W Dixie Hwy

Print Date:
9/24/2019

Print Time:
3:14 PM

Current TOD Schedule	Plan	Cycle	Green Time								Ring Offset	Offset
			1 EBL	2 WBT	3 SBL	4 NBT	5 WBL	6 EBT	7 NBL	8 SBT		
1		140	12	66	12	26	12	66	12	26	0	12
2		125	12	51	16	22	12	51	16	22	0	64
3		170	18	84	18	26	18	84	18	26	0	27
4		170	18	84	18	26	18	84	18	26	0	27
5		130	12	56	16	22	12	56	16	22	0	88
6		150	15	75	10	26	15	75	10	26	0	19
7		150	15	75	10	26	15	75	10	26	0	19
8		105	13	45	6	17	13	45	6	17	0	19
9		150	0	144	0	0	0	144	0	0	0	0
10		125	14	51	14	22	14	51	14	22	0	64
11		170	18	84	18	26	18	84	18	26	0	27
12		115	12	45	12	22	12	45	12	22	0	25
13		130	12	56	16	22	12	56	16	22	0	127
14		130	12	56	16	22	12	56	16	22	0	5
15		150	13	66	18	29	13	66	18	29	0	28
16		115	12	45	12	22	12	45	12	22	0	12
22		145	14	71	10	26	14	71	10	26	0	19
23		140	14	66	10	26	14	66	10	26	0	19
25		120	8	52	10	26	14	46	10	26	0	8
26		135	14	59	14	24	19	54	14	24	0	98
27		160	19	69	14	34	24	64	19	29	0	137
28		100	14	31	12	19	14	31	12	19	0	37

Local TOD Schedule

Time	Plan	DOW
0000	23	Su M T W Th F S
0100	22	Su M T W Th F S
0500	7	M T W Th F
0530	4	M T W Th F
0600	1	Su S
1000	3	M T W Th F
1000	11	Su S
1500	11	M T W Th F
2100	6	M T W Th F
2100	6	Su S
2300	23	M T W Th F

Current Time of Day Function

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

Local Time of Day Function

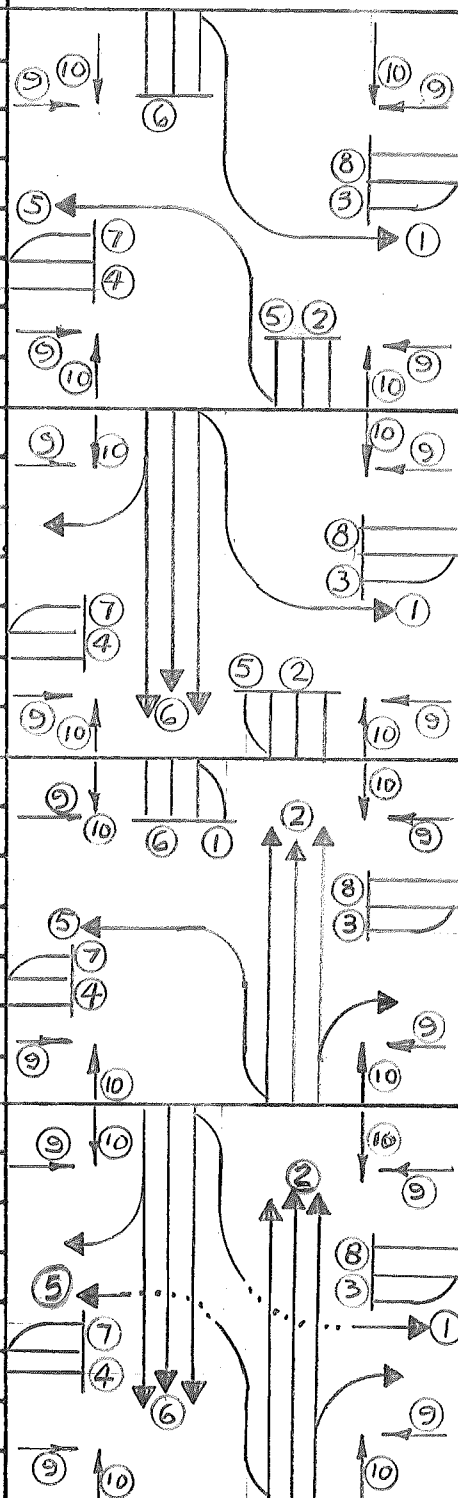
Time	Function	Settings *	Day of Week
0000	TOD OUTPUTS	-----	SuM T W ThF S

*** Settings**

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

SIGNAL OPERATING PLAN

		SIGNAL HEAD NUMBER											
PHASE	INT	1	2	3	4	5	6	7	8	9	10	11	12
$\phi(1+5)$ SR 826 EBLT/WBLT.	R/W	←	R	R	R	←	R	R	R	DW	DW		
	PED. CL.												
	TO	146	←	R	R	R	Y	R	R	R	DW	DW	
	TO	245	Y	R	R	R	←	R	R	R	DW	DW	
	TO	246	Y	R	R	R	Y	R	R	R	DW	DW	
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
$\phi(1+6)$ SR 826 EBND. LEAD	R/W	←	R	R	R	R	G	R	R	DW	DW		
	PED. CL.												
	TO	246	Y	R	R	R	R	G	R	R	DW	DW	
	TO												
	TO												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
$\phi(2+5)$ SR 826 WBND. LEAD	R/W	R	G	R	R	←	R	R	R	DW	DW		
	PED. CL.												
	TO	246	R	G	R	G	Y	R	R	R	DW	DW	
	TO												
	TO												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
$\phi(2+6)$ SR 826 EAST/WEST	R/W	G	G	R	R	G	G	R	R	DW	FW		
	PED. CL.	G	G	R	R	R	R	R	R	DW	FW		
	TO	347	Y	Y	R	R	Y	Y	R	R	DW	DW	
	TO	447	Y	Y	R	R	Y	Y	R	R	DW	DW	
	TO	348	Y	Y	R	R	Y	Y	R	R	DW	DW	
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												
	CLEAR												



Drawn
R. CUZA

Date
9/16/80

METROPOLITAN DADE COUNTY
DEPARTMENT OF TRAFFIC AND TRANSPORTATION

Check
C.L. ROQUE

Date
9/18/80

ASSET NO. 32019

SR 826 & WEST DIXIE HWY

Division Engineer

Date

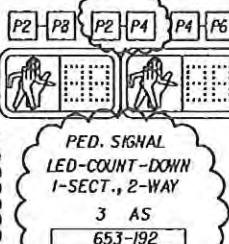
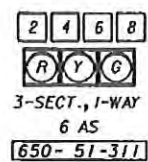
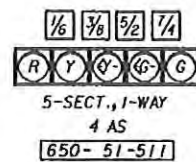
SHEET 1 OF 2

Placed In Service	Timing Number	Phasing Number
Date: 9/24/80	By: ASTOR WHITE	4

SIGNAL OPERATING PLAN

PHASE		INT	SIGNAL HEAD NUMBER												
			1	2	3	4	5	6	7	8	9	10	11	12	
$\phi(3+7)$ WEST DIXIE HWY NBLT/SBLT	R/W		R	R	←	R	R	R	←	R	DW	DW			
	4+7	R	R	Y	R	R	R	←	R	DW	DW				
	3+8	R	R	←	R	R	R	Y	R	DW	DW				
	4+8	R	R	Y	R	R	R	Y	R	DW	DW				
	4+5	R	R	Y	R	R	R	Y	R	DW	DW				
	4+6	R	R	Y	R	R	R	Y	R	DW	DW				
	2+5	R	R	Y	R	R	R	Y	R	DW	DW				
	2+6	R	R	Y	R	R	R	Y	R	DW	DW				
$\phi(4+7)$ WEST DIXIE HWY NBND. LEAD	R/W		R	R	R	G	R	R	←	R	DW	DW			
	PED. CL.														
	4+8	R	R	R	G	R	R	Y	R	DW	DW				
	4+5	R	R	R	Y	R	R	Y	R	DW	DW				
	4+6	R	R	R	Y	R	R	Y	R	DW	DW				
	2+5	R	R	R	Y	R	R	Y	R	DW	DW				
	2+6	R	R	R	Y	R	R	Y	R	DW	DW				
	$\phi(3+8)$ WEST DIXIE HWY SBND. LEAD	R/W		R	R	←	R	R	R	R	G	DW	DW		
PED. CL.															
4+8		R	R	Y	R	R	R	R	G	DW	DW				
4+5		R	R	Y	R	R	R	Y	DW	DW					
4+6		R	R	Y	R	R	R	Y	DW	DW					
2+5		R	R	Y	R	R	R	Y	DW	DW					
2+6		R	R	Y	R	R	R	Y	DW	DW					
$\phi(4+8)$ WEST DIXIE HWY NBLT/SBLT		R/W		R	R	G	G	R	R	G	G	FW	DW		
	PED. CL.	R	R	G	G	R	R	G	G	FW	DW				
	4+5	R	R	Y	Y	R	R	Y	Y	DW	DW				
	4+6	R	R	Y	Y	R	R	Y	Y	DW	DW				
	2+5	R	R	Y	Y	R	R	Y	Y	DW	DW				
	2+6	R	R	Y	Y	R	R	Y	Y	DW	DW				
	5-SEC HEADS FOR LT'S INSTALLED BETWEEN 8/27/92 & 7/25/94 F.P.														
	Drawn	Date	METROPOLITAN DADE COUNTY DEPARTMENT OF TRAFFIC AND TRANSPORTATION ASSET NO. 32019 SR 826 & WEST DIXIE HWY SHEET 2 OF 2												
Check	Date														
Division Engineer	Date														
		Placed In Service				Timing Number				Phasing Number					
		Date: 7/24/80				By: ASFOR WHITE				4					

SIGNAL HEAD & SIGN DETAILS



NE 163 ST
N Miami Beach Blvd

D3-1
72" X 24"
2 EA
699-1-1
LED INTERNALLY
ILLUMINATED SIGN

NE 22 AV
W Dixie Hwy →

D3-1
72" X 24"
1 EA
699-1-1
LED INTERNALLY
ILLUMINATED SIGN

NE 22 AV
← W Dixie Hwy

D3-1
72" X 24"
1 EA
699-1-1
LED INTERNALLY
ILLUMINATED SIGN

NOTES

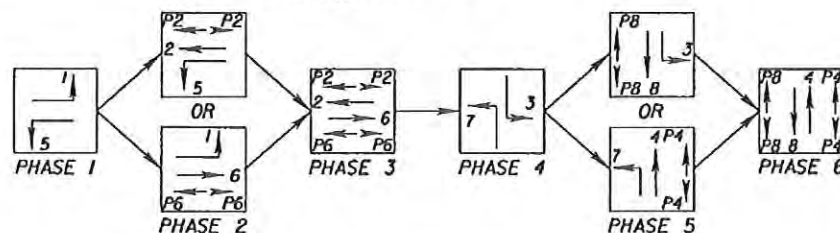
- SIGNAL TIMING TO BE PROVIDED BY MIAMI-DADE COUNTY SIGNAL DIVISION.
- PAY ITEM 690-100 INCLUDES THE REMOVAL OF EXISTING SIGNAL PULL BOXES AT THE INTERSECTION.
- FOR VU (VERIFIED UTILITY LOCATIONS), SEE SHEET UTV-1.
- PROPOSED PEDESTRIAN SIGNAL HEADS SHOULD BE ALIGNED WITH THE CENTER OF FAR-SIDED (OPPOSITE) CROSSWALK END.



7900 NW 60 Street
Doral, FL 33166
Amy Mateo
6/26/13

CONTROLLER OPERATIONS

- MAJOR STREET: SR-826 / N.E. 163rd ST
MINOR STREET: N.E. 22nd AV / W. DIXIE HWY.
- FLASHING OPERATION: 2 & 6 - YELLOW
3, 4, 7, & 8 - RED
- SOP: 10 (AS SHOWN BELOW).
- PHASES: 1, 2, 4, 5 & 6 ACTUATED
3 RECALL
- PED. SIGNALS UPON ACTUATION ONLY.
P2 & P6 ARE ON RECALL.



DETECTORS FOR LOOPS

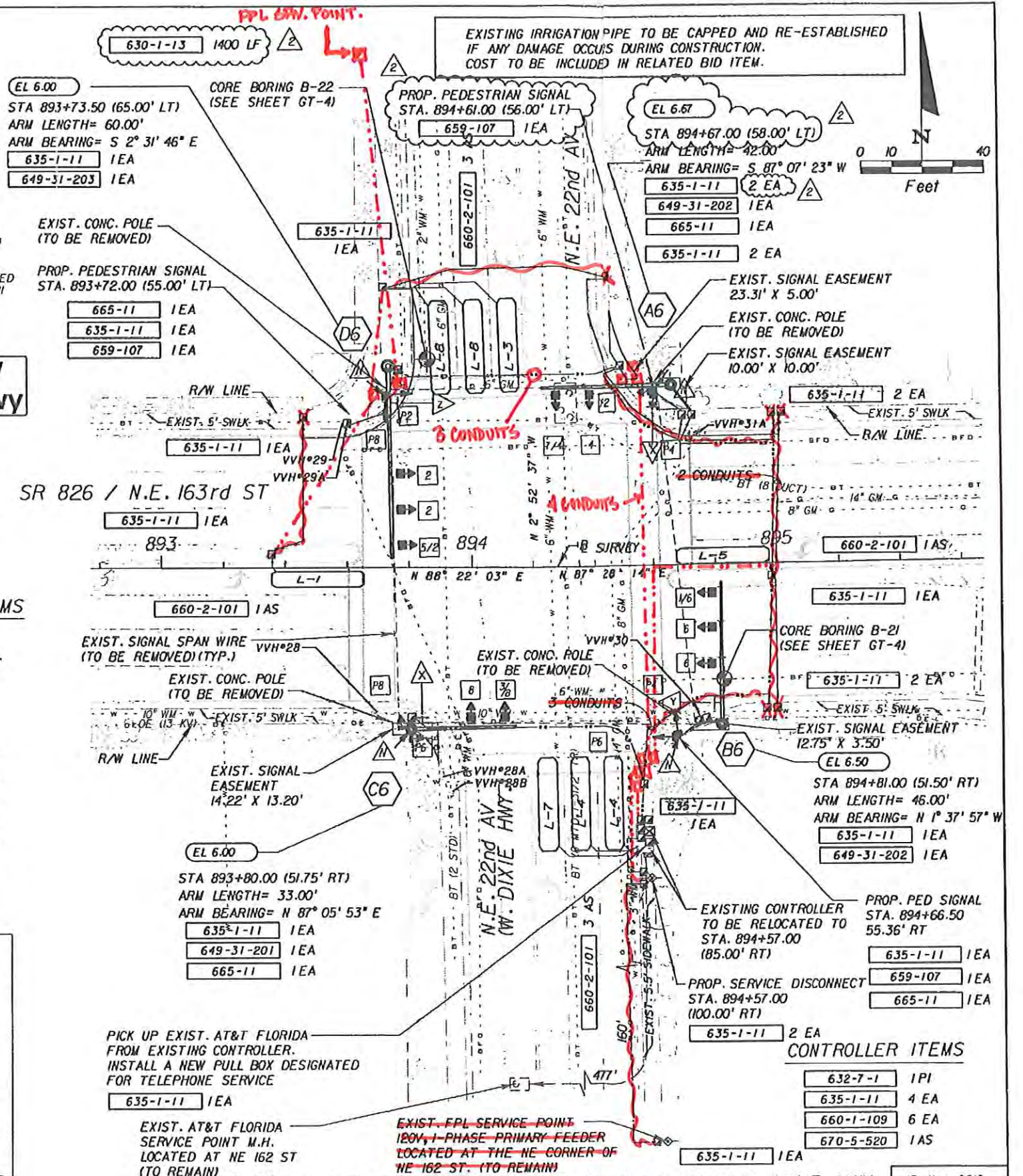
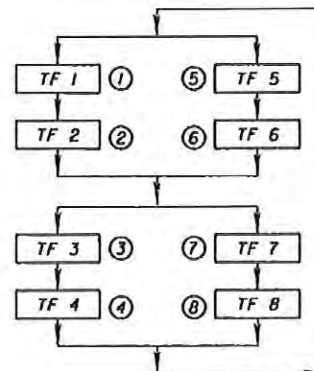
LOOP	NO. OF LOOPS	NO. OF NEW DETS.
L-1	1	1
L-3	1	1
L-4	2	1
L-5	1	1
L-7	1	1
L-8	2	1

SERVICE POINT ITEMS

639-1-23	1 AS
639-2-1	160 LF

REMOVAL ITEMS

690-10	10 EA
690-20	8 EA
690-32-1	4 EA
690-70	4 EA
690-80	1 EA
690-90	1 PI
690-100	1 PI
700-48-60	2 EA



CONTROLLER ITEMS

632-7-1	1 PI
635-1-11	4 EA
660-1-109	6 EA
670-5-520	1 AS

SR 826 / N.E. 163rd ST AND N.E. 22nd AV / WEST DIXIE HWY.

ID No.: 2019

REVISIONS		DESCRIPTION	
DATE	DESCRIPTION	DATE	DESCRIPTION
1-8-13	RELOCATED WEST ARM AS, ADDED PEDESTRIAN POLE AND REVISED QUANTITIES		

ENGINEER OF RECORD:
APCT ENGINEERS
A&P Consulting Transportation Engineers Corporation
10305 NW 41 Street, Suite 116
Miami, FL 33178
(305) 692-7283 / fax: (305) 693-1594
CA No.: EB-0007797
Ethel M. Sierra, P.E. No. 65401

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-4-52-01

SIGNALIZATION PLAN

SHEET NO.
T-9

ensterra

1/8/2013

5:47:40 PM

X:\Post Design Projects\4126374520\signals\PLAN5005.DGN

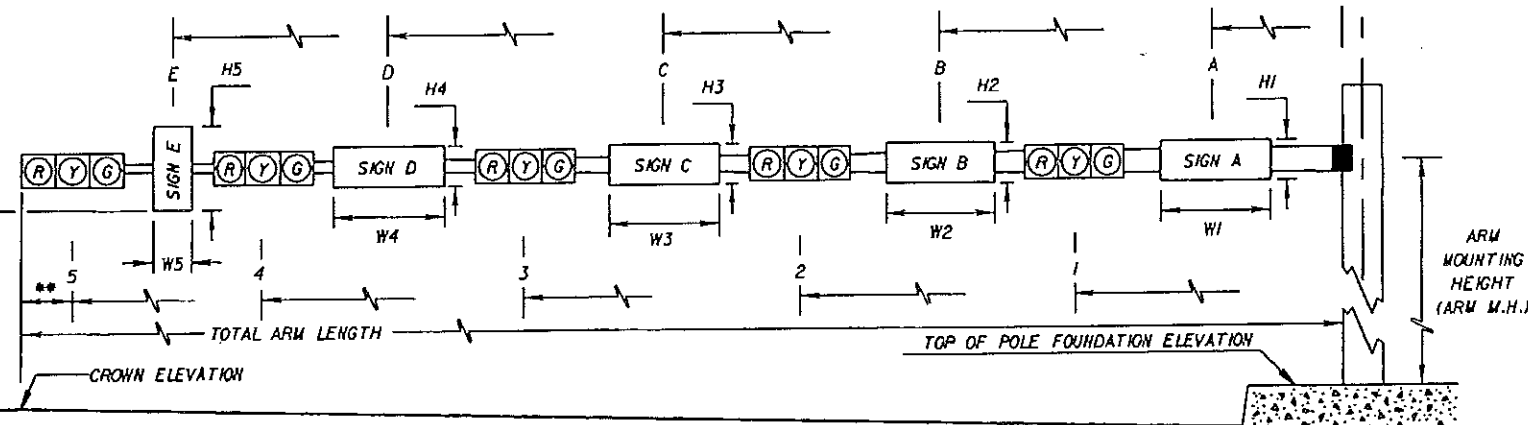
SPECIAL INSTRUCTIONS				
ID NO.	LOCATION BY STATION	PED. BUTTON	PED. SIGNALS	HANDHOLE LOCATION
A-1	744+22 (57' LT)	0°	270°	0°
B-1	744+88 (59' LT)			0°
C-1	744+84 (56' RT)	270°	0°	270°
A-2	758+28 (53' LT)	0°	0°	0°
B-2	758+06 (65' LT)		0°	0°
C-2	758+02 (58' RT)	270°		0°
A-3	767+53.55 (52.15' LT)	270°		0°
B-3	768+40 (52' RT)	270°	270°	0°
A-4	797+03 (60' LT)	0°	0°	0°
B-4	797+84 (53' RT)	0°	0°	0°
A-5	812+81 (52' LT)		270°	0°
B-5	812+82 (58' RT)	270°	325°	0°
C-5	812+69 (52' RT)			0°



7900 NW 60 Street
Doral, FL 33166

** FIVE SECTION SIGNAL HEAD 3'-0"
FOUR SECTION SIGNAL HEAD 2'-6"
THREE SECTION SIGNAL HEAD 2'-0"

*** SIGNAL HEAD TO BE MOUNTED
ON BACK SIDE OF MAST ARM

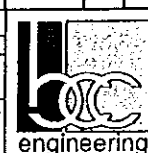


(1) ELEVATION DIFFERENCE = TOP OF POLE FOUNDATION - CROWN ELEVATION
(ELEVATION DIFFERENCE TO BE MEASURED ALONG THE LENGTH OF MAST ARM)

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

			* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY																		SIGN DATA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				
ID NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUNDATION ELEVATION	ROWY ARM NO.	CROWN ELEV.	SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE										TOTAL ARM LENGTH	ARM W.H.	L BETWEEN DUAL ARMS 90/270	DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
									1	*	2	*	3	*	4***	*	5	*				A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																					
A-1	T-4	744+22 (57' LT)	10.50'	1	10.30'	H	Y	Y	24.0'	3	35.0'	3	43.0'	5		46'	20'		6.0'	2.0'	6.0'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																				</

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/5/12	RELOCATED MAST ARMS A-1, A-3 AND ADJUSTED SIGNAL HEAD LOCATIONS	12/12/12	REVISED ANGLE BETWEEN DUAL ARMS
8/13/12	RELOCATED MAST ARM C-2 AND REVISED SIGNAL HEAD LOCATIONS	5/29/13	RELOCATED PED. SIGNAL TO A PED. POLE
12/3/12	REVISED MAST ARM A-3 LOCATION	12/5/13	REVISED SIGN DIMENSIONS



JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 670-2350
Fax: (305) 670-2351
Certificate of Authorization No. 7184

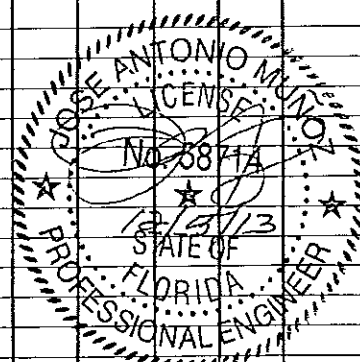
STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

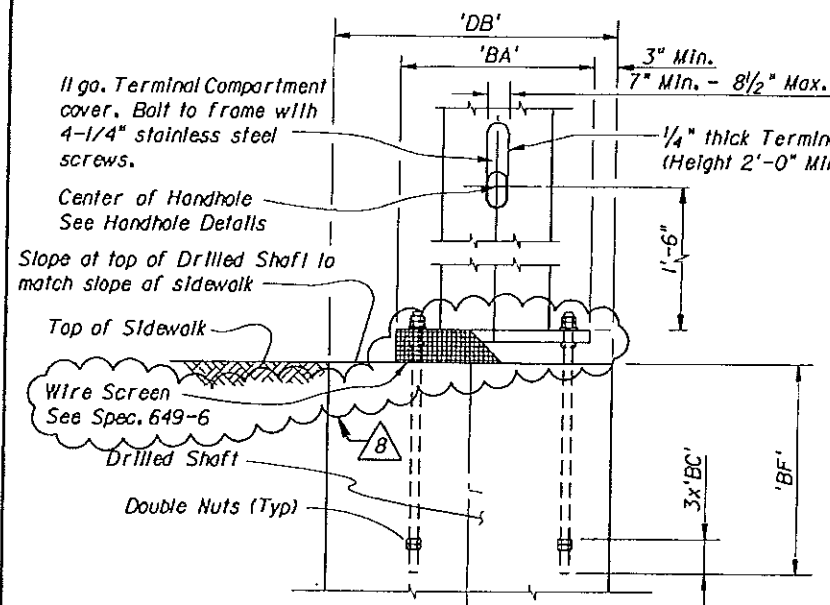
MAST ARM TABULATION

SHEET NO.

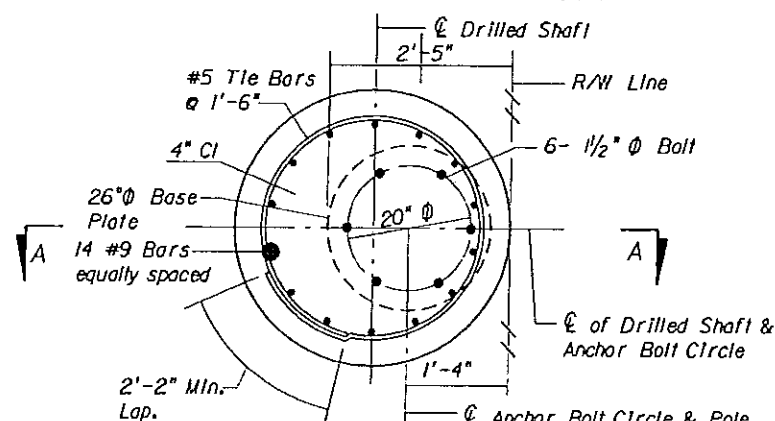
T-12

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G05-23.003, F.A.C.

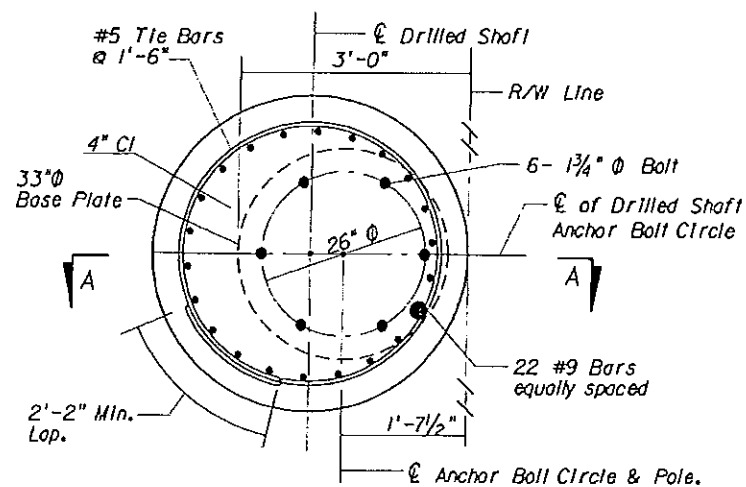




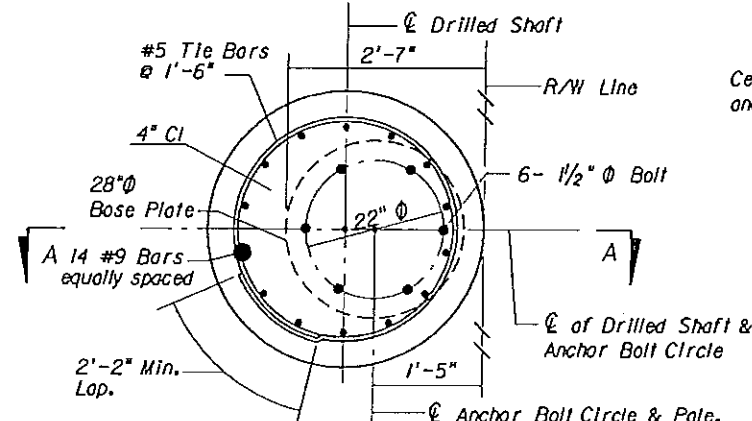
BASE PLATE AND ANCHORAGE ELEVATION
(Reinforcement Not Shown)



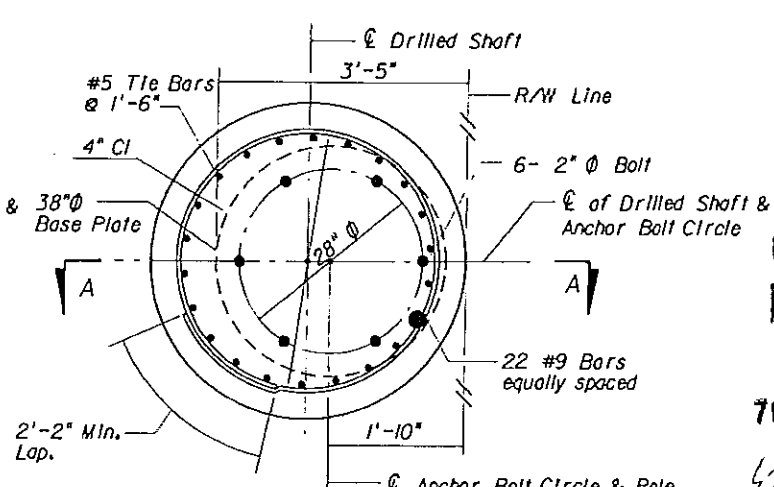
FOUNDATION PLAN FOR POLE TYPE T1
42" DIAMETER - DRILLED SHAFT



FOUNDATION PLAN FOR POLE TYPE T3
48" DIAMETER - DRILLED SHAFT

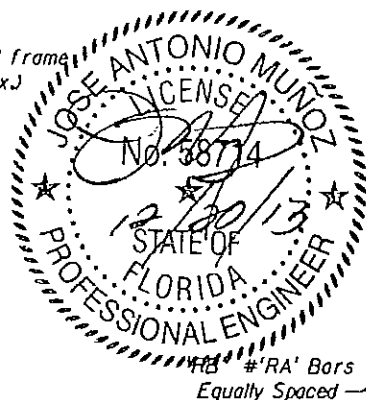


FOUNDATION PLAN FOR POLE TYPE T2
42" DIAMETER - DRILLED SHAFT

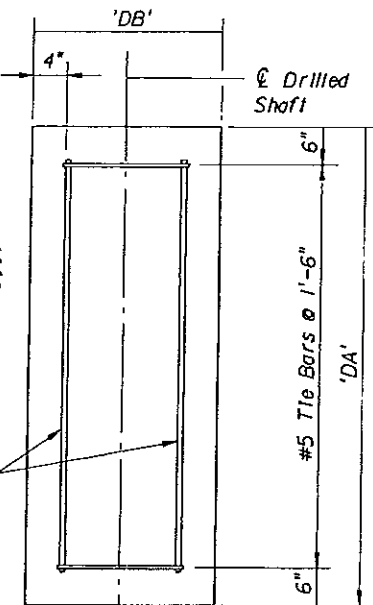


FOUNDATION PLAN FOR POLE TYPE T4
48" DIAMETER - DRILLED SHAFT

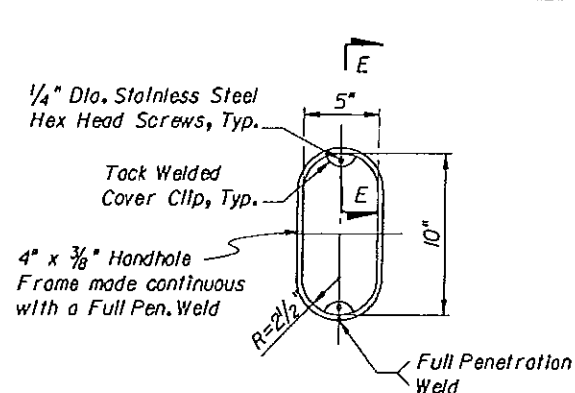
FOUNDATION & BASE PLATE DETAILS



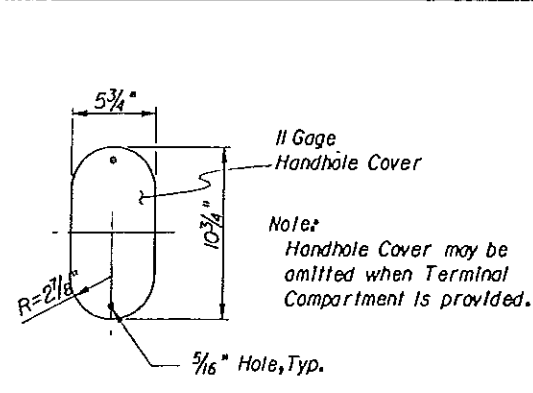
NOTE:
Spacers shall be provided along reinforcing bars cage to insure the required concrete cover.



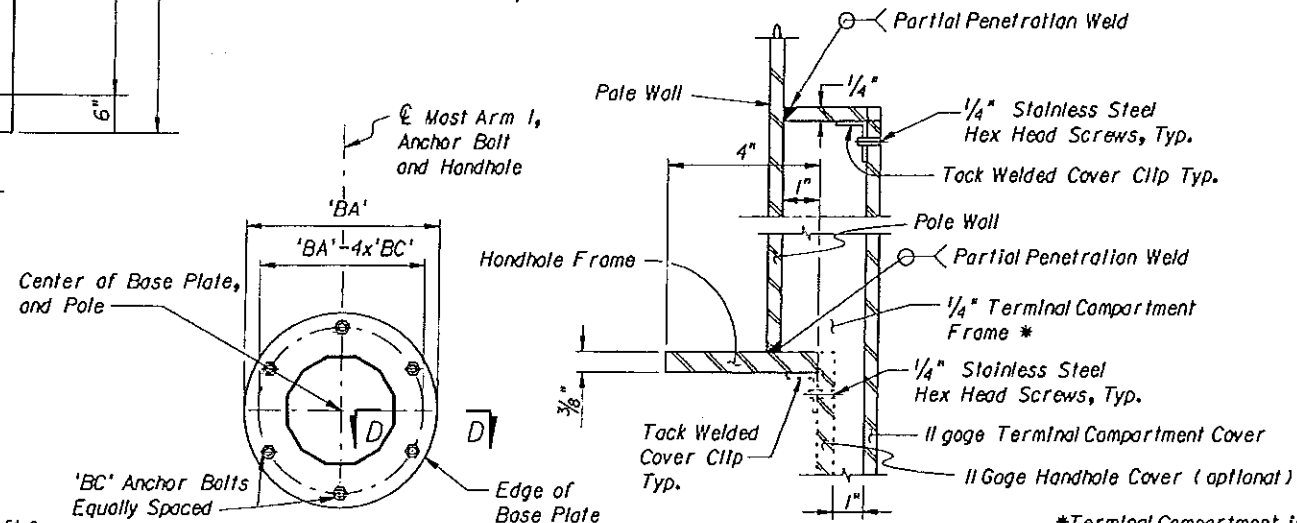
SECTION A-A



HANDHOLE FRAME
(w/Terminal Compartment Omitted)

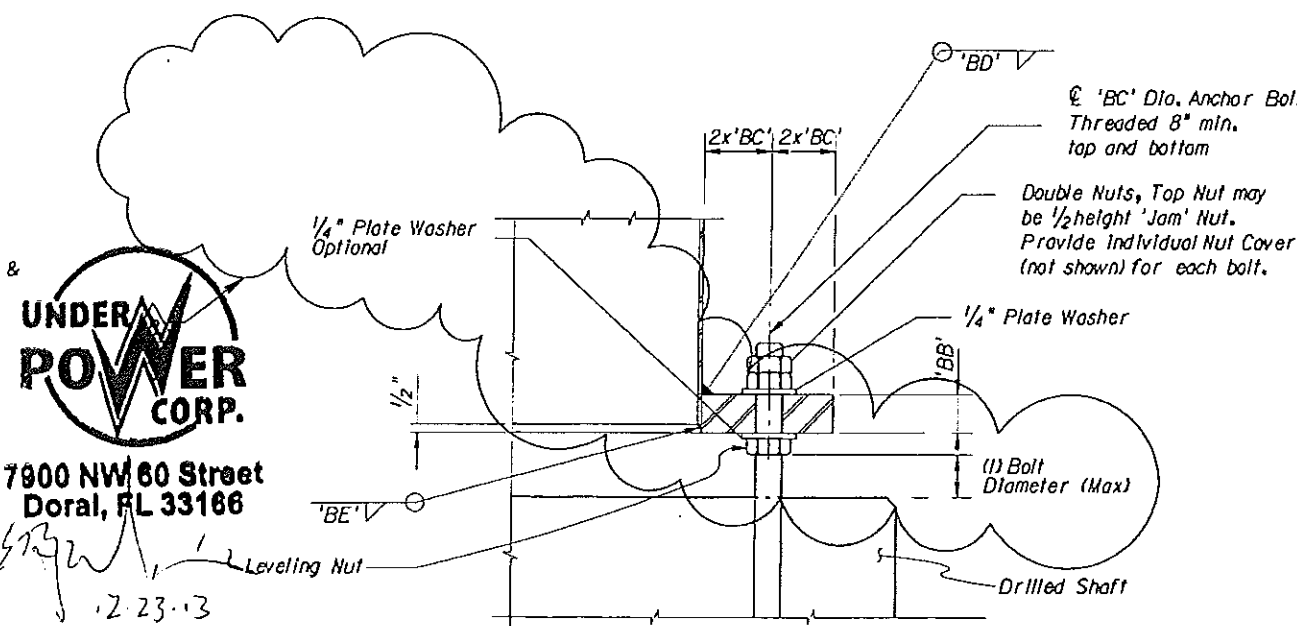


HANDHOLE COVER



BASE PLATE DETAIL
(6 Anchor Bolts)

SECTION E-E
(thru Handhole & Terminal Compartment)



SECTION D-D



7900 NW 60 Street
Doral, FL 33166

12.23.13

REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
12/12/13	REPLACED GROUT PAD WITH WIRE SCREEN, ADDED OPTIONAL WASHERS AND REVISED SPACING BETWEEN TOP OF DRILLED SHAFT AND LEVELING NUT		



JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 670-2350
Fax: (305) 670-2351
Certificate of Authorization No. 7184

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

POLES THAT ARE OFF-CENTERED TO DRILLED SHAFT

SHEET NO.
T-14

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G5-23.003, F.A.C.

Miami-Dade, FL



TOD Schedule Report

3915 - NE 163rd St. & NE 18th Ave.

2070-1C-Econolite Type-Cobalt

3/30/2020, 2:37 PM

Phase Data

Phase	Direction	Split	Timing Plan	Walk	Ped Clear	Min Green	Max Green	Vehicle Ext	MAX 2	MAX 3	Yellow	Red Clear
1	E - L	14	1	0	0	5	7	2	15	0	4	2
			2	0	0	5	7	2	0	0	4	2
			3	0	0	5	7	2	0	0	4	2
			4	0	0	0	0	0	0	0	0	0
2	W - T	71	1	7	20	7	40	1	0	0	4	2.1
			2	7	20	7	40	1	0	0	4	2.1
			3	7	20	7	40	1	0	0	4	2.1
			4	0	0	0	0	0	0	0	0	0
3	S - L	13	1	0	0	5	7	2	15	0	3.7	2
			2	0	0	5	7	2	0	0	3.7	2
			3	0	0	5	7	2	0	0	3.7	2
			4	0	0	0	0	0	0	0	0	0
4	N - T	32	1	7	27	7	28	2.5	40	0	4	3.2
			2	7	27	7	28	2.5	0	0	4	3.2
			3	7	27	7	28	2.5	0	0	4	3.2
			4	0	0	0	0	0	0	0	0	0
5	W - L	14	1	0	0	5	7	2	15	0	4	2
			2	0	0	5	7	2	0	0	4	2
			3	0	0	5	7	2	0	0	4	2
			4	0	0	0	0	0	0	0	0	0
6	E - T	71	1	7	20	7	40	1	0	0	4	2.1
			2	7	20	7	40	1	0	0	4	2.1
			3	7	20	7	40	1	0	0	4	2.1
			4	0	0	0	0	0	0	0	0	0
7	N - L	13	1	0	0	5	7	2	15	0	3.7	2
			2	0	0	5	7	2	0	0	3.7	2
			3	0	0	5	7	2	0	0	3.7	2
			4	0	0	0	0	0	0	0	0	0
8	S - T	32	1	7	27	7	28	2.5	40	0	4	3.2
			2	7	27	7	28	2.5	0	0	4	3.2
			3	7	27	7	28	2.5	0	0	4	3.2
			4	0	0	0	0	0	0	0	0	0

Schedule - 1

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
-	X	X	X	X	X	-

Day Plan - 1 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 3	Phs Spl 4	Phs Spl 5	Phs Spl 6	Phs Spl 7	Phs Spl 8
00:00:00	23	90	45	14	44	15	17	14	44	15	17
01:00:00	63	-	-	-	-	-	-	-	-	-	-
05:00:00	7	90	40	13	45	15	17	13	45	15	17
06:00:00	8	90	36	13	42	15	20	13	42	15	20
07:00:00	17	130	109	14	71	13	32	14	71	13	32
09:00:00	14	130	42	14	71	13	32	14	71	13	32
10:00:00	13	130	54	14	71	13	32	14	71	13	32
14:00:00	18	130	17	14	71	13	32	14	71	13	32
16:15:00	11	150	55	14	91	13	32	14	91	13	32
19:00:00	6	105	33	13	60	15	17	13	60	15	17
20:30:00	9	105	37	13	60	15	17	13	60	15	17
23:00:00	23	90	45	14	44	15	17	14	44	15	17

Schedule - 2

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
-	-	-	-	-	-	X

Day Plan - 2 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 3	Phs Spl 4	Phs Spl 5	Phs Spl 6	Phs Spl 7	Phs Spl 8
00:00:00	23	90	45	14	44	15	17	14	44	15	17
01:00:00	63	-	-	-	-	-	-	-	-	-	-
06:00:00	1	90	31	13	43	13	21	13	43	13	21
10:00:00	11	150	55	14	91	13	32	14	91	13	32
20:00:00	16	115	73	13	69	15	18	13	69	15	18
22:15:00	6	105	33	13	60	15	17	13	60	15	17
23:00:00	23	90	45	14	44	15	17	14	44	15	17

Schedule - 3

Day of Week

SUN	MON	TUE	WED	THU	FRI	SAT
X	-	-	-	-	-	-

Day Plan - 3 -

Time of Day	Action Plan	Cycle Length	Offset	Phs Spl 1	Phs Spl 2	Phs Spl 3	Phs Spl 4	Phs Spl 5	Phs Spl 6	Phs Spl 7	Phs Spl 8
00:00:00	23	90	45	14	44	15	17	14	44	15	17
01:00:00	63	-	-	-	-	-	-	-	-	-	-
06:00:00	1	90	31	13	43	13	21	13	43	13	21
10:00:00	11	150	55	14	91	13	32	14	91	13	32
20:00:00	16	115	73	13	69	15	18	13	69	15	18
23:00:00	23	90	45	14	44	15	17	14	44	15	17

Action Plan

Name	Pattern	Enabled Logic Processor Statements
23	23	N/A
63	Flash	N/A
7	7	N/A
8	8	N/A
17	17	N/A
14	14	N/A
13	13	N/A
18	18	N/A
11	11	N/A
6	6	N/A
9	9	N/A

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Configuration Controller Sequence**Phase Ring Sequence and Assignment (MM) 1-1-1**

Hardware Alternate Sequence Enable: No

Phase Ring Sequence.....(Note: Sequences identical to the prior one are not printed)

	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16
	B		B		B											

Sequence 1

Ring 1	1	2	3	4	.	.	.	.	.	.	.	.	.	.	.	.
Ring 2	5	6	7	8	.	.	.	.	.	.	.	.	.	.	.	.

Phases In Use/Exclusive Ped (MM) 1-2

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Phases In Use	X	X	X	X	X	X	X	X								
Exclusive Ped																

Phase Compatibility (MM)

1-1-2

Phase	
n/a	Barrier Mode

Phase and Overlap Descriptions

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Approach	E	W	S	N	W	E	N	S	N	N	N	N	N	N	N	N
Movement	L	T	L	T	L	T	L	T								
Associated PED													X	X	X	X
Overlap	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P
Approach	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Movement																

Administration (MM) 1-7-1

Enable Controller/Cabinet No

Interlock CRC

CRC (16 bit) 150F

Enable Automatic Backup Yes
to Datakey

Backup Prevent (MM) 1-1-3

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Timing	1	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phases	2	X	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	4	.	.	X	.	.	.	.	.	.	.	.	.	.	.	.
	5	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	6	.	.	.	.	X	.	.	.	.	.	.	.	.	.	.
	7	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	8	.	.	.	.	.	X	.	.	.	.	.	.	.	.	.
	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Simultaneous Gap (MM) 1-1-4

Phases	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	1	.	.	.	X	X	.	.	.	.	.	.	.	.	.	.
	2	.	.	.	X	X	.	.	.	.	.	.	.	.	.	.
	3	.	.	.	.	.	X	X	.	.	.	.	.	.	.	.
	4	.	.	.	.	.	X	X	.	.	.	.	.	.	.	.
	5	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.
Phase	6	X	X	.	.	.	.	.	.	.	.	.	.	.	.	.
Must	7	.	.	X	X	.	.	.	.	.	.	.	.	.	.	.
Gap	8	.	.	X	X	.	.	.	.	.	.	.	.	.	.	.
With	9	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Phase	10	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	11	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	12	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	13	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	14	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
	16	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
Disable	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Load Switch Assignments (MM) 1-3

	Phase / Overlap	Type	Dimming				Power Up	Auto		Flash Together
			Red	Yellow	Green	Dark		Red	Yellow	
1	1	V				+	Red	X		X
2	2	V				+	Yel		X	X
3	3	V				+	Red	X		
4	4	V				+	Red	X		
5	5	V				+	Red	X		X
6	6	V				+	Yel		X	X
7	7	V				+	Red	X		
8	8	V				+	Red	X		
9	0	.				+	.			
10	0	.				+	.			
11	0	.				+	.			
12	0	.				+	.			
13	2	P				+	.			
14	4	P				+	.			
15	6	P				+	.			
16	8	P				+	.			

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Controller Timing Plan (MM) 2-1**Plan 1 - "Phase Bank 1"**

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	5	7	5	7	5	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	27	0	20	0	27	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	7	40	7	28	7	40	7	28	0	0	0	0	0	0	0	0
Max2	15	0	15	40	15	0	15	40	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	3.7	4.0	4.0	4.0	3.7	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.1	2.0	3.2	2.0	2.1	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 2 - "Phase Bank 2"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	5	7	5	7	5	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	27	0	20	0	27	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	7	40	7	28	7	40	7	28	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	3.7	4.0	4.0	4.0	3.7	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.1	2.0	3.2	2.0	2.1	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 3 - "Phase Bank 3"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Min Green	5	7	5	7	5	7	5	7	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	7	0	7	0	7	0	7	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	20	0	27	0	20	0	27	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	7	40	7	28	7	40	7	28	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	4.0	4.0	3.7	4.0	4.0	4.0	3.7	4.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	2.0	2.1	2.0	3.2	2.0	2.1	2.0	3.2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	2.0	1.0	2.0	2.5	2.0	1.0	2.0	2.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Plan 4 - "Phase Bank 4"

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Direction	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Bk Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CS Min Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Delay Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Walk Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped Clear Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Ped CO	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Vehicle Ext	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Vehicle Ext 2	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Max3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
DYM Max	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Dym Step	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Yellow	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Clear	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Max	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Red Revert	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Act B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Sec/Act	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Max Int	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Time B4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Cars Wt	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
STPTDuc	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
TTReduc	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Min Gap	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Controller Overlaps**Vehicle Overlaps (MM) 2-2**

Overlap	Type	Lag Green	Yellow	Red	Adv. Green

Phases

Overlap	Phase	Included	Protect	Ped Protect	Not Overlap	Modifier	Lag X Phases	Lag 2 Phases	Flash Green

PPLT FYA

Overlap	Protected Phase (Left Turn)	Permissive Phase (Opposing Thru)	Flashing Arrow Output	Flashing Arrow Output CH	Delay Start of FYA	Delay Start of Clearance	Action Plan SF Bit Disable	Ped Protected Enable

Guaranteed Minimum Time Data (MM) 2-4

Phase	Min Green	Walk	Ped Clear	Yellow	Red Clear	Overlap Green
A01	5	4	7	3.0	2.0	5
B02	5	4	7	3.0	2.0	5
C03	5	4	7	3.0	2.0	5
D04	5	4	7	3.0	2.0	5
E05	5	4	7	3.0	2.0	5
F06	5	4	7	3.0	2.0	5
G07	5	4	7	3.0	2.0	5
H08	5	4	7	3.0	2.0	5
I09	5	4	7	3.0	2.0	5
J10	5	4	7	3.0	2.0	5
K11	5	4	7	3.0	2.0	5
L12	5	4	7	3.0	2.0	5
M13	5	4	7	3.0	2.0	5
N14	5	4	7	3.0	2.0	5
O15	5	4	7	3.0	2.0	5
P16	5	4	7	3.0	2.0	5

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Coordination Options**Options (MM) 3-1**

Manual Pattern	Auto	ECPI Coord	Yes
System Source	SYS	System Format	PTN
Splits In	Seconds	Offsets In	Seconds
Transition	Smooth	Max Select	MAXINH
Dwell / Add Time	0		
Delay Coord Wk-LZ	No	Force Off	Fixed
Offset Reference	Lead	Use Ped Time	Yes
Ped Recall	No	Ped Reservice	Yes
Local Zero	Yes	FO Added Ini	No
Override		Green	No
Re-sync Count	0	Multisync	No

Auto Perm Minimum Green (Seconds) (MM) 3-4

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Minimum Green	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Split Demand (MM) 3-5

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Demand 1																
Demand 2																

Demand	1	2
Detector	0	0
Call Time (Sec)	0	0
Cycle Count	0	0

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Coordination Pattern Data**Coordinator Pattern Data (MM) 3-2****Coordinator Pattern # 1**

Split Pattern	1	TS2 (Pat-Off)	0-1	Splits In	Seconds
Cycle	90	Std (COS)	9	Offsets In	Seconds
Offset Value	31s	Dwell/Add Time	0		
Actuated Coord	No	Timing Plan	1		
Actuated Walk	No	Sequence	1		
Phase					
Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 1)	13	43	13	21	13	43	13	21	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	90s	90s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 11

Split Pattern	11	TS2 (Pat-Off)	3-2	Splits In	Seconds
Cycle	150	Std (COS)	137	Offsets In	Seconds
Offset Value	55s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 11)	14	91	13	32	14	91	13	32	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	150s	150s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 12

Split Pattern	12	TS2 (Pat-Off)	3-3	Splits In	Seconds
Cycle	130	Std (COS)	145	Offsets In	Seconds
Offset Value	84s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	0		
Actuated Walk Rest	No	Sequence	0		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 12)	16	67	17	30	16	67	17	30	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Coordinator Pattern # 17

Split Pattern	17	TS2 (Pat-Off)	5-2	Splits In	Seconds
Cycle	130	Std (COS)	209	Offsets In	Seconds
Offset Value	109s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 17)	14	71	13	32	14	71	13	32	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X
Special Function Outputs																

Coordinator Pattern # 18

Split Pattern	18	TS2 (Pat-Off)	5-3	Splits In	Seconds
Cycle	130	Std (COS)	217	Offsets In	Seconds
Offset Value	17s	Dwell/Add Time	0		
Actuated Coord No		Timing Plan	1		
Actuated Walk Rest	No	Sequence	1		
Phase Reservice	No	Action Plan	0		
Max Select	None	Force Off	None		

Split Preference Phases

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Description	E-L	W-T	S-L	N-T	W-L	E-T	N-L	S-T	N	N	N	N	N	N	N	N
Splits (Split Pat 18)	14	71	13	32	14	71	13	32	0	0	0	0	0	0	0	0
Pref 1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Pref 2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Ring	1	2	3	4
Ring Split Ext	0	0	0	0
Ring Displacement	-	0	0	0
Split Sum	130s	130s	0s	0s

Misc. Data

Veh Perm 1	0	Veh Perm 2	0	Veh Perm 2 Disp	0
Split Demand Pat 1	0	Split Demand Pat 2	0	Crossing Arterial Pat	0

Split Pattern

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Coord Phase		X				X										
Vehicle Recall																
Pedestrian Recall																
Recall to Max. Time																
Omit Phase									X	X	X	X	X	X	X	X

Action Plan - 11 - "11"

Pattern 11 Override Sys No
 Timing Plan 0 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 16-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 31-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 46-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 61-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 76-90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 91-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Action Plan - 12 - "12"

Pattern 12 Override Sys No
 Timing Plan 0 Sequence 0
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 0 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 16-30	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 31-45	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 46-60	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 61-75	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 76-90	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
LP 91-100	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

Action Plan - 17 - "17"

Pattern 17 Override Sys No
 Timing Plan 0 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Action Plan - 18 - "18"

Pattern 18 Override Sys No
 Timing Plan 0 Sequence 1
 Veh Detector Plan 0 Det Log None
 Flash No Red Rest No
 Veh Det Diag 2 Ped Det Diag 0
 Plan Plan
 Dimming Enable No Pmt Veh Priority No
 Ret Ret
 Pmt Ped Priority No Pmt Queue Delay No
 Ret
 Pmt Cond Delay No

Phase	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Ped Recall																
Walk 2																
Veh Ext 2																
Veh Recall																
Max Recall																
Max 2																
Max 3																
CS Inhibit																
Omit																
Spec Func (1-8)																
Aux Func (1-3)																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
LP 1-15	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 16-30	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 31-45	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 46-60	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 61-75	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 76-90	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.
LP 91-100	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.	.

Miami-Dade, FL



3915 - NE 163rd St. & NE 18th Ave. - 2070-1C - Econolite Type - Cobalt

Time Base Day Plan/Schedule
Day Plan (MM) 5-3
Day Plan #1 - "1"

Event	Action Plan	Start Time
1	23	00:00
2	63	01:00
3	7	05:00
4	8	06:00
5	17	07:00
6	14	09:00
7	13	10:00
8	18	14:00
9	11	16:15
10	6	19:00
11	9	20:30
12	23	23:00

Day Plan #2 - "2"

Event	Action Plan	Start Time
1	23	00:00
2	63	01:00
3	1	06:00
4	11	10:00
5	16	20:00
6	6	22:15
7	23	23:00

Day Plan #3 - "3"

Event	Action Plan	Start Time
1	23	00:00
2	63	01:00
3	1	06:00
4	11	10:00
5	16	20:00
6	23	23:00

Schedule (MM) 5-4**Schedule Number - 1**

Day Plan No.: 1

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
		X	X	X	X	X	

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 2

Day Plan No.: 2

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
							X

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

Schedule Number - 3

Day Plan No.: 3

Month	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
	X	X	X	X	X	X	X	X	X	X	X	X

Day (DOW)	SUN	MON	TUE	WED	THU	FRI	SAT
	X						

Day (DOM)	1	2	3	4	5	6	7	8	9	10	11
	X	X	X	X	X	X	X	X	X	X	X
	12	13	14	15	16	17	18	19	20	21	22
	X	X	X	X	X	X	X	X	X	X	X
	23	24	25	26	27	28	29	30	31		
	X	X	X	X	X	X	X	X	X		

SIGNAL OPERATING PLAN

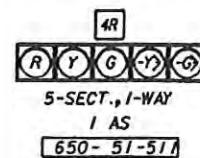
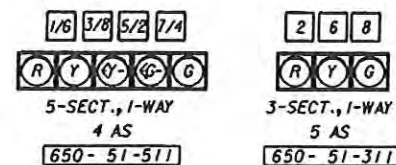


Timing Phases	Direction	E			W			S			N			Ped Heads				Movements/Display/Actuation
	Head No.	1/6	6		5/2	2		3/8	8		7/4	4	4R	P6	P2	P8	P4	
EWLT (Actuated)	Dwell	<G/R	R		<G/R	R		R	R		R	R	R/Y	DW	DW	DW	DW	
	(1+6)	<G/R	R		<Y/R	R		R	R		R	R	R/Y	DW	DW	DW	DW	
	(2+5)	<Y/R	R		<G/R	R		R	R		R	R	R/Y	DW	DW	DW	DW	
	(2+6)	<Y/R	R		<Y/R	R		R	R		R	R	R/Y	DW	DW	DW	DW	
EBLT (Actuated)	Dwell	<G/G	G		R	R		R	R		R	R	R	W/F	DW	DW	DW	
	(2+6)	<Y/G	G		R	R		R	R		R	R	R	DW	DW	DW	DW	
WBLT (Actuated)	Dwell	R	R		<G/G	G		R	R		R	R	R/Y	DW	W/F	DW	DW	
	(2+6)	R	R		<Y/G	G		R	R		R	R	R/Y	DW	DW	DW	DW	
E-W (Recall)	Dwell	G	G		G	G		R	R		R	R	R	W/F	W/F	DW	DW	
	(3+7)	Y	Y		Y	Y		R	R		R	R	R	DW	DW	DW	DW	
	(3+8)	Y	Y		Y	Y		R	R		R	R	R	DW	DW	DW	DW	
	(4+7)	Y	Y		Y	Y		R	R		R	R	R	DW	DW	DW	DW	
NSLT (Actuated)	Dwell	R	R		R	R		<G/R	R		<G/R	R	R	DW	DW	DW	DW	
	(3+8)	R	R		R	R		<G/R	R		<Y/R	R	R	DW	DW	DW	DW	
	(4+7)	R	R		R	R		<Y/R	R		<G/R	R	R	DW	DW	DW	DW	
	(4+8)	R	R		R	R		<Y/R	R		<Y/R	R	R	DW	DW	DW	DW	
SBLT (Actuated)	Dwell	R	R		R	R		<G/G	G		R	R	R	DW	DW	W/F	DW	
	(4+8)	R	R		R	R		<Y/G	G		R	R	R	DW	DW	DW	DW	
	(1+5)	R	R		R	R		<Y/Y	Y		R	R	R	DW	DW	DW	DW	
	(1+6)	R	R		R	R		<Y/Y	Y		R	R	R	DW	DW	DW	DW	
NBLT (Actuated)	Dwell	R	R		R	R		R	R		<G/G	G	G	DW	DW	DW	W/F	
	(4+8)	R	R		R	R		R	R		<Y/G	G	G	DW	DW	DW	DW	
	(1+5)	R	R		R	R		R	R		<Y/Y	Y	Y	DW	DW	DW	DW	
	(1+6)	R	R		R	R		R	R		<Y/Y	Y	Y	DW	DW	DW	DW	
N-S (Actuated)	Dwell	R	R		R	R		G	G		G	G	G	DW	DW	W/F	W/F	
	(1+5)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	
	(1+6)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	
	(2+5)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	
Flashing Operation	Dwell	R	R		R	R		R	R		R	R	R	DW	DW	DW	DW	
	(1+5)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	
	(1+6)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	
	(2+5)	R	R		R	R		Y	Y		Y	Y	Y	DW	DW	DW	DW	

Miami-Dade County Public Works Department

Drawn F PRATS	Date 11/30/12	SR 826 NE 18 Av		
Checked H. Hernandez	Date 12/5/12	Placed in Service Date 3/12/13	Phasing No. 5	Asset Number 3915

SIGNAL HEAD & SIGN DETAILS



NOTES

- SIGNAL TIMING TO BE PROVIDED BY MIAMI-DADE COUNTY SIGNAL DIVISION.
- PAY ITEM 690-100 INCLUDES THE REMOVAL OF EXISTING SIGNAL PULL BOXES AND EXISTING SERVICE POINT AT THE INTERSECTION.
- FOR VVH (VERIFIED UTILITY LOCATIONS), SEE SHEET UTV-1.
- PROPOSED PEDESTRIAN SIGNAL HEADS SHOULD BE ALIGNED WITH THE CENTER OF FAR-SIDED (OPPOSITE) CROSSWALK END.
- AUDIBLE/TACTILE PEDESTRIAN DETECTOR FEATURE:
 - AUDIBLE MESSAGE SHALL BE ACTUATED. UPON ACTUATION THE FOLLOWING MESSAGE SHALL BE DELIVERED: "YOU HAVE ACTIVATED THE CROSS WALK TO CROSS NORTH EAST 163rd STREET, WAIT FOR THE TRAFFIC TO STOP".
 - TACTILE SHALL BE ALIGNED PARALLEL TO THE DIRECTION OF TRAVEL ON THE ASSOCIATED CROSS WALK.
 - PUSH BUTTON SHALL INCORPORATE A LOCATOR TONE. LOCATOR TONE SHALL HAVE A DURATION OF 0.15 SECONDS OR LESS, AND SHALL REPEAT AT 1-SECOND INTERVALS.

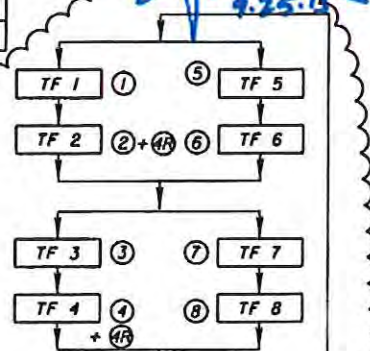
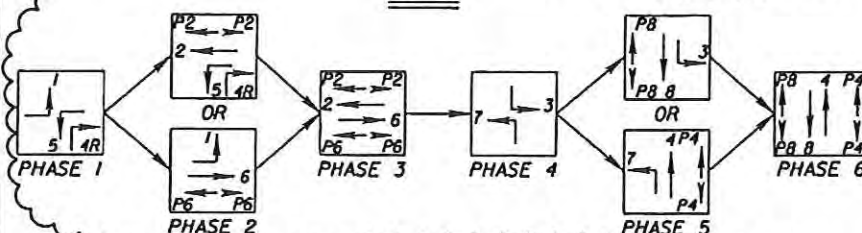
CONTROLLER OPERATIONS

- MAJOR STREET: SR 826 / NE 163rd ST
MINOR STREET: NE 18th AV
- FLASHING OPERATION: 2 & 6 - YELLOW
3, 4, 4R, 7 & 8 - RED
- SOP: 10
- PHASES 1, 2, 4, & 5 ACTUATED
PHASE 3 & 6 RECALL
- PED. SIGNALS UPON ACTUATION ONLY
P2 & P6 ARE ON RECALL.

DETECTORS FOR LOOPS

LOOP	NO. OF LOOPS	NO. OF NEW DETS.
L-1	1	1
L-3	1	1
L-4	1	1
L-4R	1	1
L-5	1	1
L-7	1	1
L-8	1	1

S.O.P.



7900 NW 60 Street
Doral, FL 33166

REMOVAL ITEMS

690-10	12 EA
690-20	6 EA
690-32-1	3 EA
690-50	1 EA
690-70	3 EA
690-80	1 EA
690-90	1 PI
690-100	1 PI
700-48-60	2 EA

SERVICE POINT ITEMS

639-1-23	1 AS
639-2-1	675 LF

LEGEND

DENOTES CONCRETE SLAB PROVIDED FOR PULL BOXES LOCATED ON UNPAVED/GRASS AREAS

NE 163 ST
N Miami Beach Blvd

NE 18 AV

SR 826 / N.E. 163rd ST

SR 826 / N.E. 163rd ST AND N.E. 18th AV

ID No.: 3915

SIGNALIZATION PLAN

SHEET NO.

T-7

ENGINEER OF RECORD:



A&P CONSULTING TRANSPORTATION ENGINEERS CORPORATION
10305 N.W. 41 Street, Suite 115
Miami, FL 33178
(305) 592-7283 / fax: (305) 593-1594
CA No.: EB-000797
Ethel M. Sierra, P.E. No. 55401

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO. COUNTY FINANCIAL PROJECT ID
826 MIAMI-DADE 412637-4-52-01

#USER#

#DATE#

#TIME#

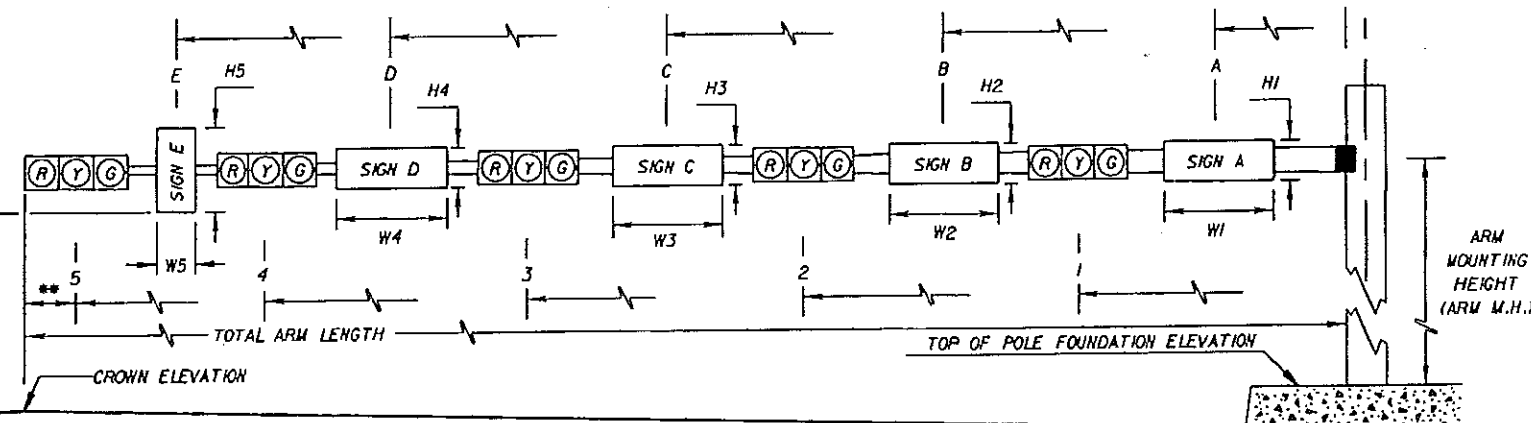
#FILE#

SPECIAL INSTRUCTIONS				
ID NO.	LOCATION BY STATION	PED. BUTTON	PED. SIGNALS	HANDHOLE LOCATION
A-1	744+22 (57' LT)	0°	270°	0°
B-1	744+88 (59' LT)			0°
C-1	744+84 (56' RT)	270°	0°	270°
A-2	758+28 (53' LT)	0°	0°	0°
B-2	758+06 (65' LT)		0°	0°
C-2	758+02 (58' RT)	270°		0°
A-3	767+53.55 (52.15' LT)			0°
B-3	768+40 (52' RT)	270°	270°	0°
A-4	797+03 (60' LT)		0°	0°
B-4	797+84 (53' RT)		0°	0°
A-5	812+81 (52' LT)		270°	0°
B-5	812+82 (58' RT)	270°	325°	0°
C-5	812+69 (52' RT)			0°



** FIVE SECTION SIGNAL HEAD 3'-0"
FOUR SECTION SIGNAL HEAD 2'-6"
THREE SECTION SIGNAL HEAD 2'-0"

*** SIGNAL HEAD TO BE MOUNTED
ON BACK SIDE OF MAST ARM

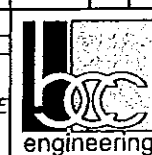


(1) ELEVATION DIFFERENCE = TOP OF POLE FOUNDATION - CROWN ELEVATION
(ELEVATION DIFFERENCE TO BE MEASURED ALONG THE LENGTH OF MAST ARM)

* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY

		* DENOTES NUMBER OF SECTIONS IN SIGNAL HEAD ASSEMBLY																	SIGN DATA																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
ID NO.	SHEET NO.	LOCATION BY STA.	TOP OF FOUNDATION ELEVATION	RDMY ARM NO.	CROWN ELEV.	SIGNAL V/H	BACK PLATES Y/N	PED. SIGNAL Y/N	DISTANCE FROM POLE										TOTAL ARM LENGTH	ARM M.H.	Z BETWEEN DUAL ARMS 90/270	DISTANCE FROM POLE / HEIGHT AND WIDTH OF SIGN																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
									1	*	2	*	3	*	4***	*	5	*				A	H1	W1	B	H2	W2	C	H3	W3	D	H4	W4	E	H5	W5																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																
A-1	T-4	744+22 (57' LT)	10.50'	1	10.30'	H	Y	Y	24.0'	3	35.0'	3	43.0'	5		46'	20'		6.0'	2.0'	6.0'																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																															</

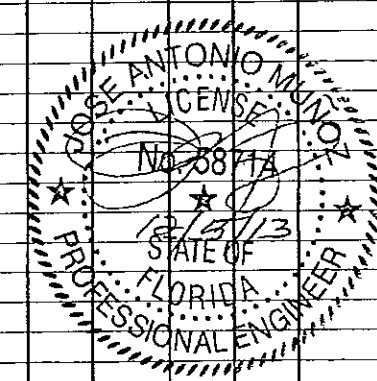
REVISIONS			
DATE	DESCRIPTION	DATE	DESCRIPTION
6/5/12	RELOCATED MAST ARMS A-1, A-3 AND ADJUSTED SIGNAL HEAD LOCATIONS	12/12/12	REVISED ANGLE BETWEEN DUAL ARMS
8/13/12	RELOCATED MAST ARM C-2 AND REVISED SIGNAL HEAD LOCATIONS	5/29/13	RELOCATED PED. SIGNAL TO A PED. POLE
12/3/12	REVISED MAST ARM A-3 LOCATION	12/5/13	REVISED SIGN DIMENSIONS



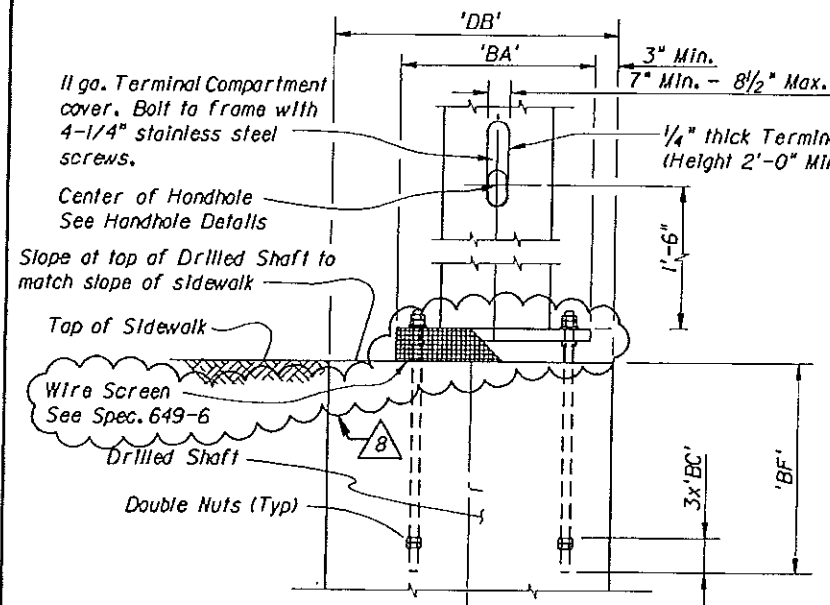
JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 870-2350
Fax: (305) 870-2351
Certificate of Authorization No. 7184

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

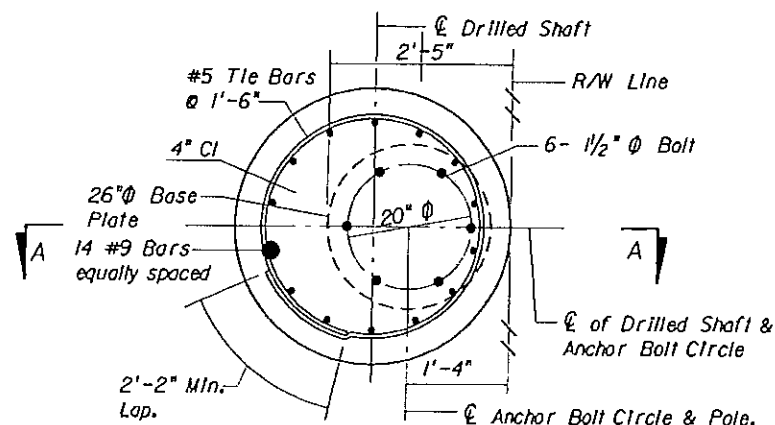
MAST ARM TABULATION		SHEET NO.
		T-12



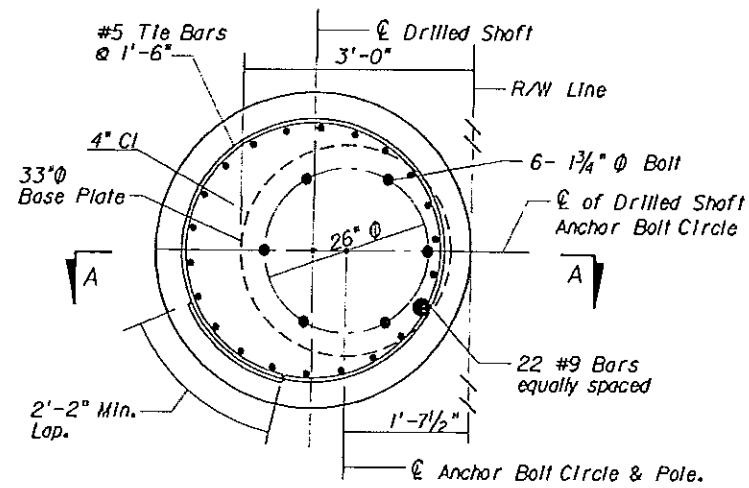
NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 61G15-23.003, F.A.C.



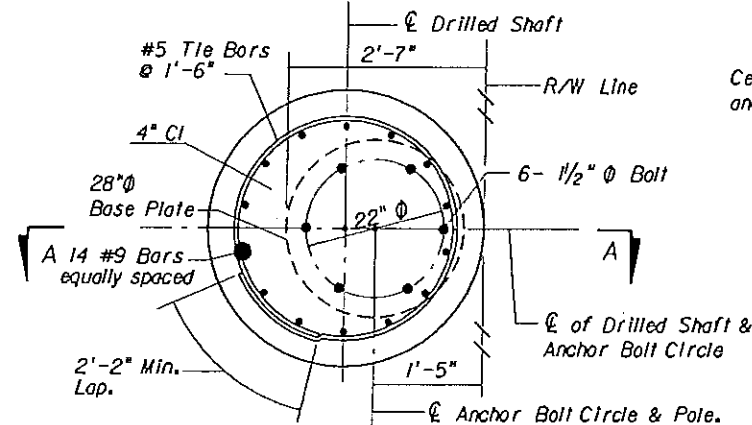
BASE PLATE AND ANCHORAGE ELEVATION
(Reinforcement Not Shown)



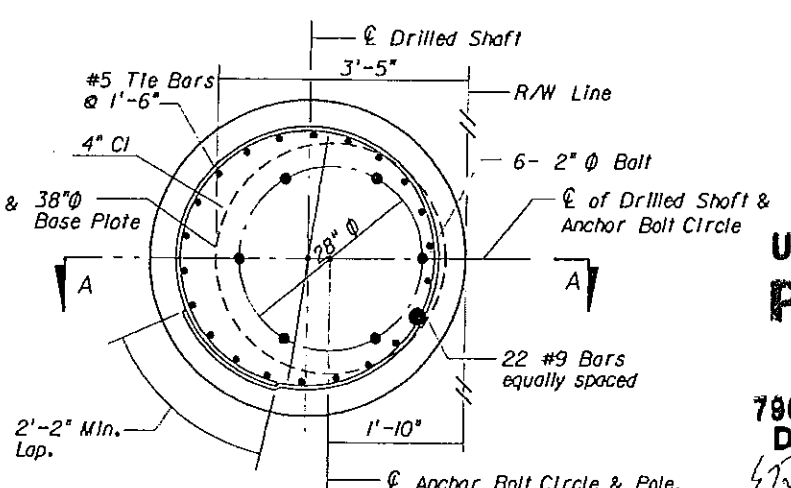
FOUNDATION PLAN FOR POLE TYPE T1
42" DIAMETER - DRILLED SHAFT



FOUNDATION PLAN FOR POLE TYPE T3
48" DIAMETER - DRILLED SHAFT

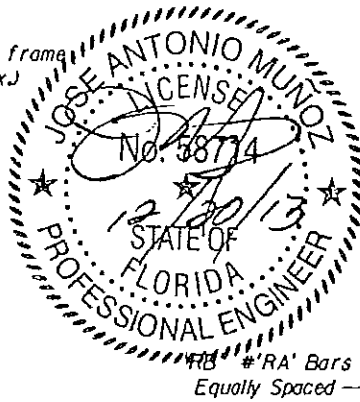


FOUNDATION PLAN FOR POLE TYPE T2
42" DIAMETER - DRILLED SHAFT

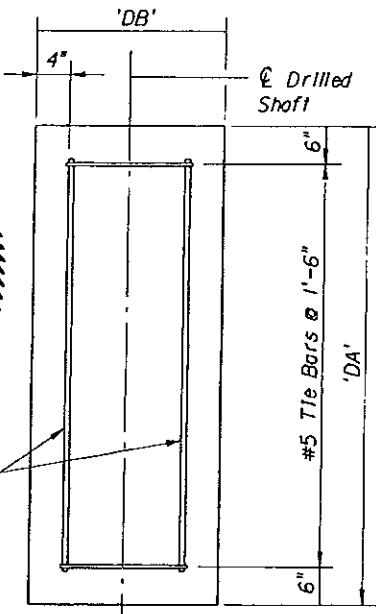


FOUNDATION PLAN FOR POLE TYPE T4
48" DIAMETER - DRILLED SHAFT

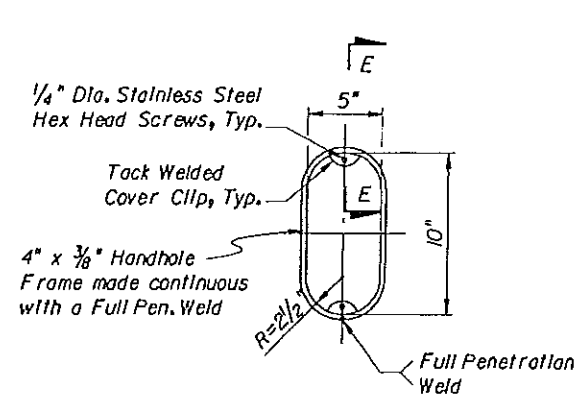
FOUNDATION & BASE PLATE DETAILS



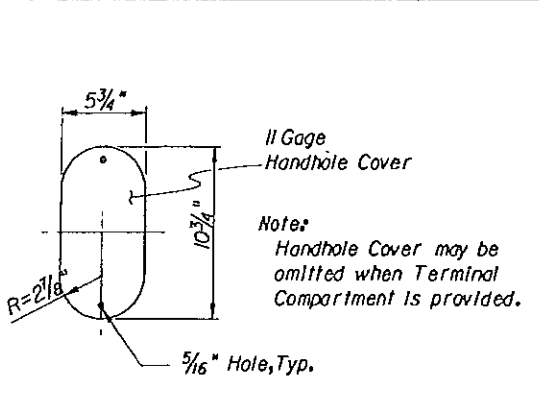
NOTE:
Spacers shall be provided along
reinforcing bars cage to insure the
required concrete cover.



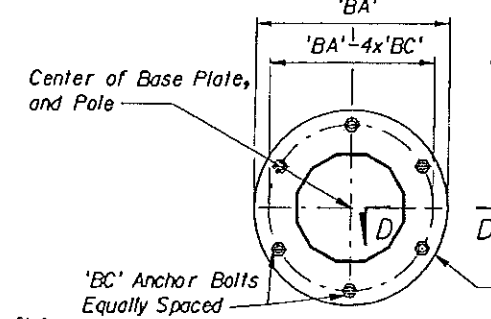
SECTION A-A



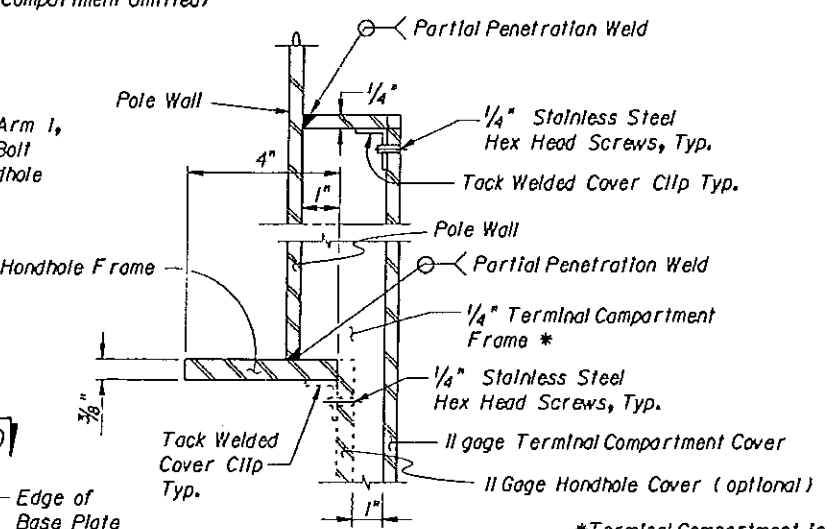
HANDHOLE FRAME
(w/ Terminal Compartment Omitted)



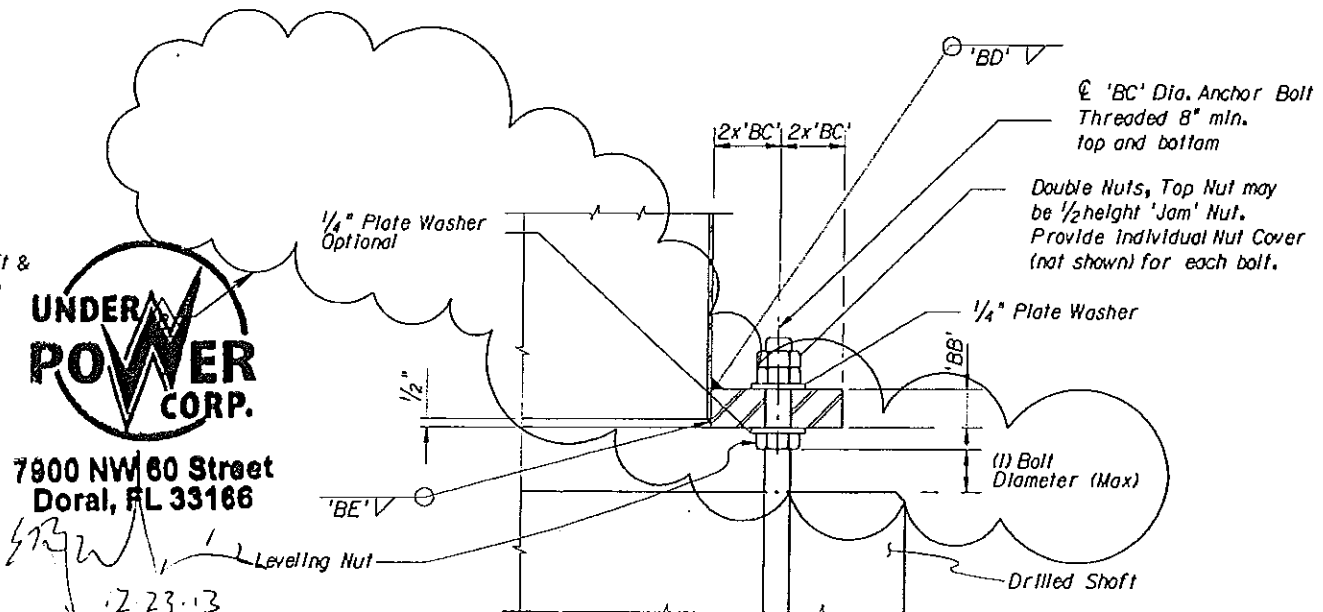
HANDHOLE COVER



BASE PLATE DETAIL
(6 Anchor Bolts)



SECTION E-E
(thru Handhole & Terminal Compartment)



SECTION D-D



7900 NW 60 Street
Doral, FL 33166

12/23/13

REVISIONS		REVISIONS	
DATE	DESCRIPTION	DATE	DESCRIPTION
12/12/13	REPLACED GROUT PAD WITH WIRE SCREEN, ADDED OPTIONAL WASHERS AND REVISED SPACING BETWEEN TOP OF DRILLED SHAFT AND LEVELING NUT		



JOSE A. MUÑOZ, P.E.
P.E. License No. 58714
7300 N. Kendall Drive, Suite 400
Miami, Florida 33156
Phone: (305) 670-2350
Fax: (305) 670-2351
Certificate of Authorization No. 7184

STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION		
ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	412637-3-52-01

POLES THAT ARE OFF-CENTERED TO DRILLED SHAFT

SHEET NO.
T-14

NOTICE: THE OFFICIAL RECORD OF THIS SHEET IS THE ELECTRONIC FILE SIGNED AND SEALED UNDER RULE 68G5-23.003, F.A.C.

Historic Background Growth

Sky Garden Miami Beach

20146

Background Growth Rate

Station	Location	2015	2016	2017	2018	2019
5225	SR 826/NE 163 ST, 100' E OF NE 20 AVE	56,000	49,000	58,000	49,500	51,000
5219	SR 5/US-1, 300' S NE 163 ST/SUNNY ISLES CSWY	60,000	63,500	63,500	59,500	61,000
0556	SR 826/NE 163 ST, 1700' E SR 5/US-1	64,000	65,500	63,500	59,500	61,500
8505	NE 159 ST, 200' WEST OF NE 14 AVE	14,500	14,300	14,100	12,600	13,900
8455	NE 171 ST, 200 W OF NE 20 AVE	5,600	5,500	5,500	6,900	6,700
Total		200,100	197,800	204,600	188,000	194,100
Yearly Growth			-1.1%	3.4%	-8.1%	3.2%
Growth Trend						-0.6%

<---- far no change in growth

<---- far brings it from -0.8-->-0.6

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 0556 - SR 826/NE 163 ST, 1700' E SR 5/US-1

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	61500 C	E 30000	W 31500	9.00	54.60	3.60
2018	59500 C	E 29500	W 30000	9.00	54.30	5.10
2017	63500 C	E 31000	W 32500	9.00	55.00	3.30
2016	65500 C	E 32000	W 33500	9.00	54.50	3.10
2015	64000 C	E 31500	W 32500	9.00	54.70	6.00
2014	56500 C	E 27500	W 29000	9.00	54.50	6.00
2013	60000 C	E 29000	W 31000	9.00	52.40	6.00
2012	61000 C	E 29500	W 31500	9.00	55.70	3.40
2011	63500 C	E 34000	W 29500	9.00	55.10	4.90
2010	55000 C	E 26500	W 28500	8.98	54.08	4.90
2009	57000 C	E 28500	W 28500	8.99	53.24	2.70
2008	53000 C	E 26500	W 26500	9.09	55.75	2.70
2007	42500 C	E 21000	W 21500	8.01	54.34	3.40
2006	66500 C	E 35500	W 31000	7.97	54.22	2.10
2005	61500 C	E 29000	W 32500	8.80	53.80	14.70
2004	67500 C	E 32500	W 35000	9.00	53.30	14.70

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
2019 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5219 - SR 5/US-1, 300' S NE 163 ST/SUNNY ISLES CSWY

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	61000 C	N 30000	S 31000	9.00	54.60	2.20
2018	59500 C	N 29500	S 30000	9.00	54.30	2.40
2017	63500 C	N 31500	S 32000	9.00	55.00	2.30
2016	63500 C	N 31000	S 32500	9.00	54.50	2.00
2015	60000 C	N 29500	S 30500	9.00	54.70	2.00
2014	55000 C	N 25500	S 29500	9.00	54.50	4.90
2013	54000 C	N 25000	S 29000	9.00	52.40	3.50
2012	64000 C	N 31000	S 33000	9.00	55.70	4.80
2011	61500 C	N 30500	S 31000	9.00	55.10	3.90
2010	60000 C	N 30000	S 30000	8.98	54.08	3.90
2009	60500 C	N 29500	S 31000	8.99	53.24	3.40
2008	55000 C	N 27000	S 28000	9.09	55.75	4.70
2007	60500 C	N 29000	S 31500	8.01	54.34	5.90
2006	58000 C	N 29000	S 29000	7.97	54.22	4.20
2005	57500 C	N 28500	S 29000	8.80	53.80	7.70
2004	50000 C	N 24000	S 26000	9.00	53.30	7.70

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
2019 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 5225 - SR 826/NE 163 ST, 100' E OF NE 20 AVE

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	51000 C	E 27500	W 23500	9.00	54.60	3.90
2018	49500 C	E 26500	W 23000	9.00	54.30	4.20
2017	58000 C	E 29000	W 29000	9.00	55.00	9.40
2016	49000 C	E 26500	W 22500	9.00	54.50	5.30
2015	56000 C	E 29500	W 26500	9.00	54.70	4.50
2014	50000 C	E 27000	W 23000	9.00	54.50	3.70
2013	50000 C	E 27500	W 22500	9.00	52.40	3.30
2012	54000 C	E 29500	W 24500	9.00	55.70	2.80
2011	55000 C	E 27500	W 27500	9.00	55.10	2.80
2010	52500 C	E 26500	W 26000	8.98	54.08	2.80
2009	58000 C	E 29500	W 28500	8.99	53.24	4.10
2008	53500 C	E 27500	W 26000	9.09	55.75	4.20
2007	54000 C	E 27500	W 26500	8.01	54.34	3.20
2006	51000 C	E 25500	W 25500	7.97	54.22	5.10
2005	51000 C	E 26000	W 25000	8.80	53.80	5.50
2004	46000 C	E 23000	W 23000	9.00	53.30	8.50

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
2019 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8455 - NE 171 ST, 200 W OFNE 20 AVE (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	6700 F	E 3300	W 3400	9.00	56.00	3.70
2018	6900 C	E 3400	W 3500	9.00	54.30	2.30
2017	5500 T	E 3000	W 2500	9.00	59.30	5.10
2016	5500 S	E 3000	W 2500	9.00	56.10	3.80
2015	5600 F	E 3100	W 2500	9.00	57.40	4.10
2014	5600 C	E 3100	W 2500	9.00	59.30	6.70
2013	850 F	0	0	9.00	58.90	16.20
2012	850 C	E 0	W 0	9.00	59.70	16.00

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

FLORIDA DEPARTMENT OF TRANSPORTATION
TRANSPORTATION STATISTICS OFFICE
2019 HISTORICAL AADT REPORT

COUNTY: 87 - MIAMI-DADE

SITE: 8505 - NE 159 ST, 200' WEST OFNE 14 AVE (2011 OFF SYSTEM CYCLE)

YEAR	AADT	DIRECTION 1	DIRECTION 2	*K FACTOR	D FACTOR	T FACTOR
2019	13900 C	E 6800	W 7100	9.00	56.00	3.70
2018	12600 T	E 6300	W 6300	9.00	54.30	2.30
2017	14100 S	E 7000	W 7100	9.00	59.30	5.10
2016	14300 F	E 7100	W 7200	9.00	56.10	3.80
2015	14500 C	E 7200	W 7300	9.00	57.40	4.10
2014	12500 S			9.00	59.30	6.70
2013	12500 F	0	0	9.00	58.90	16.20
2012	12500 C	E 0	W 0	9.00	59.70	16.00

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

Appendix D

Intersection Capacity Analysis

Worksheets

SKY Garden Miami- AM Intersection Assignment

INTERSECTION	MOVEMENT	Existing (2020)	BACKGROUND Growth rate: 0.50% No. of years: 2	Regions Bank			Self storage			New North Tower Center			Uptown Biscayne Boulevard			COMMITTED DEVELOPMENTS	FUTURE W/O PROJECT (2022)	SKY Garden Miami			Valet			FUTURE WITH PROJECT (2022)
				In 163	Out 82	Total 245	In 10	Out 7	Total 17	In/out	Out	Total 0	In/out 0	Out 0	Total 0			IN 27	OUT 77	Total 104	IN 27	OUT 77	Total 104	
1) NE 163 St / NE 19th Ave (S)	NBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBR*	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	SBL	382	386	0%	0%	0	0%	0%	0	88	0	88	0	0	0	88	474	0%	10%	8	0%	0%	0	482
	SBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	SBR	279	282	0%	0%	0	0%	0%	0	75	0	75	0	0	0	75	357	14%	5%	8	10%	0%	3	367
	EBL	268	271	0%	0%	0	0%	0%	0	54	0	54	0	0	0	54	325	0%	0%	0	0%	0%	0	325
	EBT	1,434	1448	7%	0%	11	26%	0%	3	0	0	0	50	0	50	64	1512	0%	9%	7	0%	0%	0	1519
	EBR*	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
PHF = 0.95	WBT	1,117	1128	0%	7%	6	0%	26%	2	27	0	27	31	0	31	66	1194	40%	0%	11	0%	0%	0	1205
	WBR	165	167	0%	0%	0	0%	0%	0	36	0	36	0	0	0	36	203	0%	0%	0	0%	0%	0	203
	TOTAL	3,645	3682	7%	7%	17	26%	26%	4	280	0	280	81	0	81	383	4064	54%	24%	33	10%	0%	3	4100
2) NE 163 St / NE 18th Ave (S)	NBL	99	100	0%	0%	0	0%	0%	0	63	0	63	0	0	0	63	163	0%	0%	0	0%	0%	0	163
	NBT	52	53	0%	0%	0	0%	0%	0	18	0	18	0	0	0	18	71	10%	0%	3	0%	0%	0	74
	NBR	89	90	0%	0%	0	0%	0%	0	54	0	54	0	0	0	54	144	0%	0%	0	0%	0%	0	144
	SBL	31	31	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	31	0%	6%	5	0%	0%	0	36
	SBT	69	70	0%	0%	0	0%	0%	0	25	0	25	0	0	0	25	95	0%	5%	4	0%	0%	0	99
	SBR	39	39	0%	0%	0	0%	0%	0	0	0	0	0	0	0	39	0%	6%	5	0%	0%	0	44	
	EBU	2	2	0%	0%	0	0%	0%	0	0	0	0	0	0	0	2	0%	0%	0	0%	0%	0	2	
	EBL	31	31	0%	0%	0	0%	0%	0	0	0	0	0	0	0	31	26%	0%	7	0%	0%	0	38	
	EBT	1,568	1584	7%	0%	11	26%	0%	3	0	0	0	50	0	50	64	1648	0%	0%	0	0%	0%	0	1648
	EBR	108	109	0%	0%	0	0%	0%	0	88	0	88	0	0	0	88	197	0%	0%	0	0%	0%	0	197
	WBU	8	8	0%	0%	0	0%	0%	0	0	0	0	0	0	0	8	0%	3%	2	0%	0%	0	10	
	WBL	91	92	0%	0%	0	0%	0%	0	75	0	75	0	0	0	75	167	0%	5%	4	0%	0%	0	171
	WBT	1,243	1255	0%	7%	6	0%	26%	2	27	0	27	31	0	31	66	1321	0%	20%	15	0%	0%	0	1336
	WBR	25	25	0%	0%	0	0%	0%	0	0	0	0	0	0	0	25	0%	0%	0	0%	0%	0	25	
TOTAL	3,455	3490	7%	7%	17	26%	26%	4	350.00	0.00	350	81.00	0.00	81	453	3942	36%	45%	45	0%	0%	0	3987	
3) NE 164 St / NE 19th Ave (S)	NBL	29	29	0%	0%	0	0%	0%	0	0	0	0	0	0	0	29	0%	0%	0	0%	0%	0	29	
	NBT	403	407	0%	0%	0	0%	0%	0	36	0	36	0	0	0	36	443	0%	0%	0	0%	0%	0	443
	NBR	7	7	0%	0%	0	0%	0%	0	0	0	0	0	0	0	7	0%	0%	0	0%	0%	0	7	
	SBL	46	46	0%	0%	0	0%	0%	0	0	0	0	0	0	0	46	0%	0%	0	0%	0%	0	46	
	SBT	640	646	0%	0%	0	0%	0%	0	163	0	163	0	0	0	163	809	10%	0%	3	0%	0%	0	812
	SBR	148	149	0%	0%	0	0%	0%	0	0	0	0	0	0	0	149	0%	0%	0	0%	0%	0	149	
	EBL	45	45	0%	0%	0	0%	0%	0	0	0	0	0	0	0	45	0%	10%	8	0%	0%	0	53	
	EBT	34	34	0%	0%	0	0%	0%	0	0	0	0	0	0	0	34	0%	31%	24	0%	0%	0	58	
	EBR	8	8	0%	0%	0	0%	0%	0	0	0	0	0	0	0	8	4%	5%	5	0%	10%	8	21	
	WBL	8	8	0%	0%	0	0%	0%	0	0	0	0	0	0	0	8	10%	0%	3	0%	0%	0	11	
	WBT	43	43	0%	0%	0	0%	0%	0	0	0	0	0	0	0	43	0%	0%	0	0%	0%	0	43	
	WBR	23	23	0%	0%	0	0%	0%	0	0	0	0	0	0	0	23	0%	0%	0	0%	0%	0	23	
TOTAL	1,434	1448	0	0	0	0%	0%	0	199.00	0.00	199	0.00	0.00	0	199	1647	24%	46%	42	0%	10%	8	1697	
4) NE 164 St / NE 18th Ave (U)	NBL	40	40	0%	0%	0	0%	0%	0	6	0	6	0	0	0	6	46	0%	4%	3	0%	0%	0	49
	NBT	40	40	0%	0%	0	0%	0%	0	6	0	6	0	0	0	6	46	0%	0%	0	0%	0%	0	46
	NBR	28	28	0%	0%	0	0%	0%	0	6	0	6	0	0	0	6	34	10%	0%	3	0%	0%	0	37
	SBL	6	6	0%	0%	0	0%	0%	0	0	0	0	0	0	0	6	0%	0%	0	0%	0%	0	6	
	SBT	41	41	0%	0%	0	0%	0%	0	5	0	5	0	0	0	5	46	0%	0%	0	0%	0%	0	46
	SBR	24	24	0%	0%	0	0%	0%	0	0	0	0	0	0	0	24	0%	0%	0	0%	0%	0	24	
	EBL	25	25	0%	0%	0	0%	0%	0	0	0	0	0	0	0	25	0%	0%	0	0%	0%	0	25	
	EBT	54	55	0%	0%	0	0%	0%	0	0	0	0	0	0	0	55	4%	0%	1	0%	0%	0	56	
	EBR	33	33	0%	0%	0	0%	0%	0	10	0	10	0	0	0	10	43	0%	0%	0	0%	0%	0	43
	WBL	65	66	0%	0%	0	0%	0%	0	10	0	10	0	0	0	10	76	0%	0%	0	0%	0%	0	76
WBT	125	126	0%	0%	0	0%	0%	0	0	0	0	0	0	0	126	0%	0%	0	0%	0%	0	126		
WBR	10	10	0%	0%	0	0%	0%	0	0	0	0	0	0	0	10	0%	0%	0	0%	0%	0	10		
TOTAL	491	496	0%	0%	0	0%	0%	0	43.00	0.00	43	0	0	0	43	539	14%	4%	7	0%	0%	0	546	
5) Alley / NE 163rd Street (U)	NBL	0	0	0%	0%	0	0%	0%	0	0	0	0												

INTERSECTION	MOVEMENT	Existing (2020)	BACKGROUND Growth rate: 0.50% No. of years: 2	Regions Bank			Self storage			New North Tower Center			Uptown Biscayne Boulevard			COMMITTED DEVELOPMENTS	FUTURE W/O PROJECT (2022)	SKY Garden Miami			Valet			FUTURE WITH PROJECT (2022)
				In 163	Out 82	Total 245	In 10	Out 7	Total 17	In/out	Out	Total 0	In/out 0	Out 0	Total 0			IN 27	OUT 77	Total 104	IN 27	OUT 77	Total 104	
6) Biscayne Blvd (US-1) / NE 163rd Street (S)	NBU	5	5	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	0	5	0%	0%	0	0%	0%	0	5
	NBL	227	229	12.8%	0.0%	21	0%	0%	0	0	0	0	0	0	0	21	250	10%	0%	3	0%	0%	0	253
	NBT	1,014	1024	0.0%	0.0%	0	0%	0%	0	0	0	0	34	0	34	1058	0	0%	0%	0	0%	0%	0	1058
	NBR	480	485	0.0%	0.0%	0	0%	0%	0	0	0	0	14	0	14	499	0	0%	0%	0	0%	0%	0	499
	SBU	8	8	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	8	0	0%	0%	0	0%	0%	0	8
	SBL	445	450	0.0%	0.0%	0	0%	0%	0	0	0	0	8	0	8	458	0	0%	0%	0	0%	0%	0	458
	SBT	1,442	1457	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	1457	0	0%	0%	0	0%	0%	0	1457
	SBR	448	453	23.8%	0.0%	39	10%	0%	1	138	0	138	0	0	0	178	631	8%	0%	2	0%	0%	0	633
	EBL	226	228	0.0%	20.0%	16	0%	10%	1	99	0	99	35	0	35	151	379	0%	8%	6	0%	0%	0	385
	EBT	1,182	1194	0.0%	7.0%	6	0%	10%	1	90	0	90	15	0	15	111	1305	0%	10%	8	0%	0%	0	1313
	EBR	289	292	0.0%	11.0%	9	0%	0%	0	0	0	0	0	0	0	9	301	0%	10%	8	0%	0%	0	309
	WBL	411	415	0.0%	0.0%	0	0%	0%	0	0	0	0	30	0	30	30	445	0%	0%	0	0%	0%	0	445
PHF = 0.99	WBT	1,005	1015	7.5%	0.0%	12	10%	0%	1	125	0	125	31	0	31	169	1184	10%	0%	3	0%	0%	0	1187
	WBR	573	579	0.0%	0.0%	0	0%	0%	0	0	0	0	7	0	7	586	586	0%	0%	0	0%	0%	0	586
TOTAL		7,757	7834	44%	38%	103	20%	20%	3	452.00	0.00	452	174.00	0.00	174	732	8567	28%	28%	30	0%	0%	0	8597
7) NE 22nd Ave / NE 163rd St (U)	NBL	62	63	0.0%	7.0%	6	0%	26%	2	63	0	63	0	0	0	71	133	7%	0%	2	0%	0%	0	135
	NBT	273	276	0.0%	0.0%	0	0%	10%	1	90	0	90	0	0	0	91	367	5%	0%	1	0%	0%	0	368
	NBR	135	136	0.0%	38.0%	31	0%	20%	1	162	0	162	0	0	0	195	331	0%	0%	0	0%	0%	0	331
	SBL	149	150	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	0	150	0%	16%	12	0%	0%	0	162
	SBT	336	339	7.0%	0.0%	11	10%	0%	1	126	0	126	0	0	0	138	477	0%	5%	4	0%	0%	0	481
	SBR	66	67	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	0	67	5%	0%	1	0%	0%	0	68
	EBU	2	2	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	2	2	0%	0%	0	0%	0%	0	2
	EBL	70	71	0.0%	0.0%	0	20%	0%	2	0	0	0	0	0	0	2	73	0%	0%	0	0%	0%	0	73
	EBT	1,418	1432	0.0%	0.0%	0	0%	0%	0	27	0	27	50	0	50	77	1509	0%	12%	9	0%	0%	0	1518
	EBR	45	46	7.0%	0.0%	11	0%	0%	0	63	0	63	0	0	0	74	120	0%	7%	5	0%	0%	0	125
	WBU	8	8	0.0%	0.0%	0	0%	0%	0	0	0	0	0	0	0	0	8	0%	0%	0	0%	0%	0	8
	WBL	209	211	44.1%	0.0%	72	0%	0%	0	225	0	225	0	0	0	297	508	0%	0%	0	0%	0%	0	508
PHF = 0.95	WBT	1,232	1244	0.0%	0.0%	0	0%	0%	0	38	0	38	31	0	31	69	1313	28%	0%	8	0%	0%	0	1321
	WBR	89	90	0.0%	0.0%	0	26%	0%	3	0	0	0	0	0	0	3	93	0%	0%	0	0%	0%	0	93
TOTAL		4,095	4136	58%	45%	132	56%	56%	10	794.00	0.00	794	81.00	0.00	81	1016	5153	45%	40%	42	0%	0%	0	5195
8) NE 18th Ave / Alley (North of 163rd street) (U)	NBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	108	109	0%	0%	0	0%	0%	0	18	0	18	0	0	0	18	127	10%	0%	3	0%	0%	0	130
	NBR	3	3	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	3	26%	0%	7	0%	0%	0	10
	SBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	SBT	137	138	0%	0%	0	0%	0%	0	25	0	25	0	0	0	25	163	0%	0%	0	0%	0%	0	163
	SBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	1	1	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1	0	0%	4%	3	0%	0%	0	4
	WBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBR	1	1	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1	1	0%	17%	13	0%	0%	0	14
TOTAL		250	253	0%	0%	0	0%	0%	0	43.00	0.00	43	0.00	0.00	0	43	296	36%	21%	26	0%	0%	0	322
9) Alley / Driveway (U)	NBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	7	7	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	7	0%	0%	0	0%	0%	0	7
	NBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	80%	0%	22	10%	0%	3	25
	SBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	10%	0%	3	0%	0%	0	3
	SBT	1	1	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1	0	0%	0%	0	0%	0%	0	1
	SBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	44%	34	0%	0%	0	34
	WBT	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBR	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	46%	35	0%	10%	8	43
TOTAL			8	0%	0%	0	0%	0%	0	0.00	0.00	0	0.00	0.00	0	0	8	90%	90%	94	10%	10%	10	112

SKY Garden Miami- PM Intersection Assignment

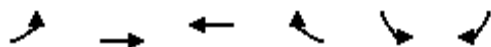
2019-2020 growth years: 1																									*Passby added back			
INTERSECTION	MOVEMENT	Raw Traffic Volumes	adjusted to Covid Factor 1.01	raw*PSCF 1.03 1.01	Grown to 2020	Existing 2020	BACKGROUND Growth rate: 0.50% No. of years: 2	Regions Bank			Self storage			New North Tower Center			Uptown Biscayne Boulevard			COMMITTED DEVELOPMENTS	FUTURE W/O PROJECT (2022)	SKY Garden Miami			Valet			FUTURE WITH PROJECT (2022)
								In 80	Out 96	Total 176	In 14	Out 15	Total 29	In/out 0	Out 0	Total 0	In/out 0	Out 0	Total 0			IN 85	OUT 65	Total 150	IN 99	OUT 79	Total 178	
1) NE 163 St / NE 19th Ave (S)	NBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBR*	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	SBL	288	291	0	0	291	294	0%	0%	0	0%	0%	0	17	0	17	0	0	0	17	311	0%	10%	7	0%	0%	0	317
	SBT	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	SBR	301	304	0	0	304	307	0%	0%	0	0%	0%	0	39	0	39	0	0	0	39	346	14%	5%	15	10%	0%	10	371
	EBL	285	288	0	0	288	291	0%	0%	0	0%	0%	0	21	0	21	0	0	0	21	312	0%	0%	0	0%	0%	0	312
	EBT	1342	1355	0	0	1,355	1369	7%	0%	6	26%	0%	4	0	0	0	78	0	78	87	1456	0%	9%	6	0%	0%	0	1462
	EBR*	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
PHF = 0.95	WBT	1507	1522	0	0	1,522	1537	0%	7%	7	0%	26%	4	0	0	0	91	0	91	102	1639	40%	0%	34	0%	0%	0	1673
	WBR	278	281	0	0	281	284	0%	0%	0	0%	0%	0	50	0	50	0	0	0	50	334	0%	0%	0	0%	0%	0	334
TOTAL		4,001	4041	0	0	4,041	4082	7%	7%	12	26%	26%	8	127	0	127	169	0	169	316	4397	54%	24%	62	10%	0%	10	4469
2) NE 163 St / NE 18th Ave (S)	NBL	199	201	0	0	201	203	0%	0%	0	0%	0%	0	57	0	57	0	0	0	57	260	0%	0%	0	0%	0%	0	260
	NBT	69	70	0	0	70	71	0%	0%	0	0%	0%	0	7	0	7	0	0	0	7	78	10%	0%	9	0%	0%	0	87
	NBR	123	124	0	0	124	125	0%	0%	0	0%	0%	0	21	0	21	0	0	0	21	146	0%	0%	0	0%	0%	0	146
	SBL	43	43	0	0	43	43	0%	0%	0	0%	0%	0	0	0	0	0	0	0	43	43	0%	6%	4	0%	0%	0	47
	SBT	71	72	0	0	72	73	0%	0%	0	0%	0%	0	6	0	6	0	0	0	6	79	0%	5%	3	0%	0%	0	82
	SBR	33	33	0	0	33	33	0%	0%	0	0%	0%	0	0	0	0	0	0	0	33	33	0%	6%	4	0%	0%	0	37
	EBU	3	3	0	0	3	3	0%	0%	0	0%	0%	0	0	0	0	0	0	0	3	3	0%	0%	0	0%	0%	0	3
	EBL	41	41	0	0	41	41	0%	0%	0	0%	0%	0	17	0	17	0	0	0	17	58	26%	0%	22	0%	0%	0	80
	EBT	1446	1460	0	0	1,460	1475	7%	0%	6	26%	0%	4	0	0	0	78	0	78	87	1562	0%	0%	0	0%	0%	0	1562
	EBR	76	77	0	0	77	78	0%	0%	0	0%	0%	0	0	0	0	0	0	0	78	78	0%	0%	0	0%	0%	0	78
	WBU	11	11	0	0	11	11	0%	0%	0	0%	0%	0	0	0	0	0	0	0	11	11	0%	3%	2	0%	0%	0	13
	PHF = 0.97	WBL	82	83	0	0	83	84	0%	0%	0	0%	0%	0	0	0	0	0	0	84	84	0%	5%	3	0%	0%	0	87
	WBT	1687	1704	0	0	1,704	1721	0%	7%	7	0%	26%	4	0	0	0	91	0	91	102	1823	0%	20%	13	0%	0%	0	1836
	WBR	26	26	0	0	26	26	0%	0%	0	0%	0%	0	45	0	45	0	0	0	45	71	0%	0%	0	0%	0%	0	71
TOTAL		3,910	3,948	0	0	3,948	3988	7%	7%	12	26%	26%	8	153.00	0.00	153	169.00	0.00	169	342	4329	36%	45%	60	0%	0%	0	4389
3) NE 164 St / NE 19th Ave (S)	NBL	17	17	0	0	17	17	0%	0%	0	0%	0%	0	0	0	0	0	0	0	17	0	0%	0%	0	0%	0%	0	17
	NBT	578	584	0	0	584	590	0%	0%	0	0%	0%	0	50	0	50	0	0	0	50	640	0%	0%	0	0%	0%	0	640
	NBR	5	5	0	0	5	5	0%	0%	0	0%	0%	0	0	0	0	0	0	0	5	5	0%	0%	0	0%	0%	0	5
	SBL	35	35	0	0	35	35	0%	0%	0	0%	0%	0	0	0	0	0	0	0	35	35	0%	0%	0	0%	0%	0	35
	SBT	569	575	0	0	575	581	0%	0%	0	0%	0%	0	56	0	56	0	0	0	56	637	10%	0%	9	0%	0%	0	646
	SBR	138	139	0	0	139	140	0%	0%	0	0%	0%	0	0	0	0	0	0	0	140	140	0%	0%	0	0%	0%	0	140
	EBL	114	115	0	0	115	116	0%	0%	0	0%	0%	0	0	0	0	0	0	0	116	116	0%	10%	7	0%	0%	0	123
	EBT	65	66	0	0	66	67	0%	0%	0	0%	0%	0	0	0	0	0	0	0	67	67	0%	31%	20	0%	0%	0	87
	EBR	16	16	0	0	16	16	0%	0%	0	0%	0%	0	0	0	0	0	0	0	16	16	4%	5%	7	0%	10%	8	31
	PHF = 0.96	WBL	14	14	0	0	14	14	0%	0%	0	0%	0%	0	0	0	0	0	0	14	14	10%	0%	9	0%	0%	0	23
	WBT	63	64	0	0	64	65	0%	0%	0	0%	0%	0	0	0	0	0	0	0	65	65	0%	0%	0	0%	0%	0	65
	WBR	43	43	0	0	43	43	0%	0%	0	0%	0%	0	0	0	0	0	0	0	43	43	0%	0%	0	0%	0%	0	43
TOTAL		1657	1673	0	0	1,673	1690	0	0	0	0%	0%	0	106.00	0.00	106	0.00	0.00	0	106	1796	24%	46%	52	0%	10%	8	1856
4) NE 164 St / NE 18th Ave (U)	NBL	60	61	0	0	61	62	0%	0%	0	0%	0%	0	1	0	1	0	0	0	1	63	0%	4%	3	0%	0%	0	66
	NBT	28	28	0	0	28	28	0%	0%	0	0%	0%	0	3	0	3	0	0	0	3	31	0%	0%	0	0%	0%	0	31
	NBR	49	49	0	0	49	49	0%	0%	0	0%	0%	0	3	0	3	0	0	0	3	52	10%	0%	9	0%	0%	0	61
	SBL	5	5	0	0	5	5	0%	0%	0	0%	0%	0	0	0	0	0	0	0	5	5	0%	0%	0	0%	0%	0	5
	SBT	21	21	0	0	21	21	0%	0%	0	0%	0%	0	0	0	0	0	0	0									

INTERSECTION	MOVEMENT	Raw Traffic Volumes	adjusted to Covid Factor 1.01	raw*PSCF 1.03 1.01	Grown to 2020	Existing 2020	BACKGROUND Growth rate: 0.50% No. of years: 2	Regions Bank			Self storage			New North Tower Center			Uptown Biscayne Boulevard			COMMITTED DEVELOPMENTS	FUTURE W/O PROJECT (2022)	SKY Garden Miami			Valet			FUTURE WITH PROJECT (2022)
								In 80	Out 96	Total 176	In 14	Out 15	Total 29	In/out	Out	Total 0	In/out 0	Out 0	Total 0			IN 85	OUT 65	Total 150	IN 99	OUT 79	Total 178	
6) Biscayne Blvd (US-1) / NE 163rd Street (S)	NBU	18		19	19	19	19	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	19	0%	0%	0	0%	0%	0	19
	NBL	442		455	457	457	462	13%	0%	10	0%	0%	0	0	0	0	0	0	0	10	472	10%	0%	9	0%	0%	0	481
	NBT	1357		1,398	1,405	1,405	1419	0%	0%	0	0%	0%	0	0	0	0	54	0	54	1473	0%	0%	0	0%	0%	0	1473	
	NBR	588		606	609	609	615	0%	0%	0	0%	0%	0	0	0	0	22	0	22	637	0%	0%	0	0%	0%	0	637	
	SBU	14		14	14	14	14	0%	0%	0	0%	0%	0	0	0	0	0	0	0	14	0%	0%	0	0%	0%	0	14	
	SBL	445		458	460	460	465	0%	0%	0	0%	0%	0	0	0	0	22	0	22	487	0%	0%	0	0%	0%	0	487	
	SBT	1298		1,337	1,344	1,344	1357	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1357	0%	0%	0	0%	0%	0	1357	
	SBR	433		446	448	448	453	24%	0%	19	10%	0%	1	62	0	62	0	0	0	82	535	8%	0%	7	0%	0%	0	542
	EBL	304		313	315	315	318	0%	20%	19	0%	10%	2	78	0	78	54	0	54	153	470	0%	8%	5	0%	0%	0	475
	EBT	1032		1,063	1,068	1,068	1079	0%	7%	7	0%	10%	2	71	0	71	24	0	24	103	1182	0%	10%	7	0%	0%	0	1189
	EBR	409		421	423	423	427	0%	11%	11	0%	0%	0	0	0	0	0	0	0	11	438	0%	10%	7	0%	0%	0	445
	WBL	463		477	479	479	484	0%	0%	0	0%	0%	0	0	0	0	87	0	87	571	0%	0%	0	0%	0%	0	571	
PHF = 0.97	WBT	1258		1,296	1,302	1,302	1316	8%	0%	6	10%	0%	1	56	0	56	91	0	91	154	1470	10%	0%	9	0%	0%	0	1479
WBR	781		804	808	808	816	0%	0%	0	0%	0%	0	0	0	0	16	0	16	832	0%	0%	0	0%	0%	0	832		
TOTAL		8842		9,107	9,153	9,153	9244	44%	38%	72	20%	20%	6	267.00	0.00	267	370.00	0.00	370	715	9959	28%	28%	44	0%	0%	0	10003
7) NE 22nd Ave / NE 163rd St (U)	NBL	130		131	132	132	133	0%	7%	7	0%	26%	4	50	0	50	0	0	0	61	194	7%	0%	6	0%	0%	0	200
	NBT	349		352	354	354	357	0%	0%	0	0%	10%	2	78	0	78	0	0	0	80	437	5%	0%	4	0%	0%	0	441
	NBR	171		173	174	174	176	0%	38%	36	0%	20%	3	128	0	128	0	0	0	167	343	0%	0%	0	0%	0%	0	343
	SBL	172		174	175	175	177	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	177	0%	16%	10	0%	0%	0	187
	SBT	381		385	387	387	391	7%	0%	6	10%	0%	1	62	0	62	0	0	0	69	460	0%	5%	3	0%	0%	0	463
	SBR	92		93	93	93	94	0%	0%	0	0%	0%	0	0	0	0	0	0	0	94	0%	0%	4	0%	0%	0	98	
	EBU	15		15	15	15	15	0%	0%	0	0%	0%	0	0	0	0	0	0	0	15	0%	0%	0	0%	0%	0	15	
	EBL	143		144	145	145	146	0%	0%	0	20%	0%	3	101	0	101	0	0	0	104	250	0%	0%	0	0%	0%	0	250
	EBT	1283		1,296	1,302	1,302	1316	0%	0%	0	0%	0%	0	17	0	17	78	0	78	95	1411	0%	12%	8	0%	0%	0	1419
	EBR	91		92	92	92	93	7%	0%	6	0%	0%	0	0	0	0	0	0	0	6	99	0%	7%	5	0%	0%	0	104
	WBU	14		14	14	14	14	0%	0%	0	0%	0%	0	0	0	0	0	0	0	14	0%	0%	0	0%	0%	0	14	
	WBL	248		250	251	251	254	44%	0%	35	0%	0%	0	0	0	0	0	0	0	35	289	0%	0%	0	0%	0%	0	289
	PHF = 0.98	WBT	1757		1,775	1,784	1,802	0%	0%	0	0%	0%	0	21	0	21	91	0	91	112	1914	28%	0%	24	0%	0%	0	1938
	WBR	121		122	123	123	124	0%	0%	0	26%	0%	4	28	0	28	0	0	0	32	155	0%	0%	0	0%	0%	0	155
TOTAL		4967		5,016	5,041	5,041	5092	58%	45%	90	56%	56%	16	485.00	0.00	485	169.00	0.00	169	760	5852	45%	40%	64	0%	0%	0	5916
8) NE 18th Ave / Alley (North of 163rd street) (U)	NBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	124	125	0	0	125	126	0%	0%	0	0%	0%	0	7	0	7	0	0	0	7	133	10%	0%	9	0%	0%	0	139
	NBR	7	7	0	0	7	7	0%	0%	0	0%	0%	0	0	0	0	0	0	0	7	0%	26%	22	0%	0%	0	32	
	SBL	4	4	0	0	4	4	0%	0%	0	0%	0%	0	0	0	0	0	0	0	4	0%	0%	0	0%	0%	0	7	
	SBT	150	152	0	0	152	154	0%	0%	0	0%	0%	0	6	0	6	0	0	0	6	160	0%	0%	0	0%	0%	0	157
	SBR	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBT	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBR	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	5	5	0	0	5	5	0%	0%	0	0%	0%	0	0	0	0	0	0	0	5	0%	4%	3	0%	0%	0	11	
	PHF = 0.94	WBT	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBR	8	8	0	0	8	8	0%	0%	0	0%	0%	0	0	0	0	0	0	0	8	0%	17%	11	0%	0%	0	22	
TOTAL		298	301	0	0	301	304	0%	0%	0	0%	0%	0	13.00	0.00	13	0.00	0.00	0	13	317	36%	21%	45	0%	0%	0	368
9) Alley / Driveway (U)	NBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	NBT	1	1	0	0	1	1	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1	0%	0%	0	0%	0%	0	1	
	NBR	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	80%	0%	68	10%	0%	10	90
	SBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	10%	0%	9	0%	0%	0	15
	SBT	1	1	0	0	1	1	0%	0%	0	0%	0%	0	0	0	0	0	0	0	1	0%	0%	0	0%	0%	0	1	
	SBR	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBT	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	EBR	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0
	WBL	0	0	0	0	0	0	0%	0%	0	0%	0%	0	0	0	0	0	0	0	0	0	0%	44%	29	0%	0%	0	41
	PHF =	WBT																										

Existing Conditions

HCM 6th Signalized Intersection Summary
1: NE 163rd Street & NE 19th Avenue

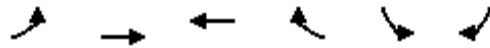
20146 Existing AM
10/22/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	268	1434	1117	165	382	279
Future Volume (veh/h)	268	1434	1117	165	382	279
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1870	1826
Adj Flow Rate, veh/h	282	1509	1176	174	402	294
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	5	2	5
Cap, veh/h	369	3489	2476	366	638	423
Arrive On Green	0.18	1.00	0.58	0.58	0.18	0.18
Sat Flow, veh/h	1711	5065	4457	635	3456	1547
Grp Volume(v), veh/h	282	1509	895	455	402	294
Grp Sat Flow(s),veh/h/ln	1711	1635	1635	1662	1728	1547
Q Serve(g_s), s	9.2	0.0	20.8	20.8	14.0	22.2
Cycle Q Clear(g_c), s	9.2	0.0	20.8	20.8	14.0	22.2
Prop In Lane	1.00			0.38	1.00	1.00
Lane Grp Cap(c), veh/h	369	3489	1885	958	638	423
V/C Ratio(X)	0.76	0.43	0.47	0.48	0.63	0.69
Avail Cap(c_a), veh/h	533	3489	1885	958	638	423
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.75	0.75	0.89	0.89	0.92	0.92
Uniform Delay (d), s/veh	12.5	0.0	16.1	16.1	48.9	42.4
Incr Delay (d2), s/veh	1.6	0.3	0.8	1.5	4.3	8.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	4.9	0.2	12.2	12.6	10.4	14.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	14.1	0.3	16.8	17.6	53.2	50.7
LnGrp LOS	B	A	B	B	D	D
Approach Vol, veh/h		1791	1350		696	
Approach Delay, s/veh		2.5	17.1		52.2	
Approach LOS		A	B		D	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	17.6	81.4			99.0	31.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	24.0	62.5			92.5	24.0
Max Q Clear Time (g_c+I1), s	11.2	22.8			2.0	24.2
Green Ext Time (p_c), s	0.3	4.1			5.5	0.0
Intersection Summary						
HCM 6th Ctrl Delay			16.6			
HCM 6th LOS			B			

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Existing AM
10/22/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	268	1434	1117	165	382	279
Future Volume (vph)	268	1434	1117	165	382	279
Confl. Peds. (#/hr)	6			6	2	5
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	5%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		31.0	11.0
Total Split (s)	30.0	99.0	69.0		31.0	30.0
Total Split (%)	23.1%	76.2%	53.1%		23.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

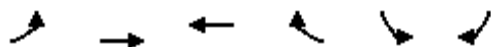
Cycle Length: 130
Actuated Cycle Length: 130
Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM 6th Signalized Intersection Summary
1: NE 163rd Street & NE 19th Avenue

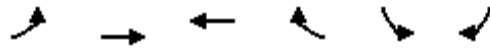
20146 Existing PM
10/22/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	288	1355	1522	281	291	304
Future Volume (veh/h)	288	1355	1522	281	291	304
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1885	1870	1870	1885	1856	1870
Adj Flow Rate, veh/h	303	1426	1602	296	306	320
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	1	3	2
Cap, veh/h	322	3864	2670	491	526	403
Arrive On Green	0.20	1.00	0.62	0.62	0.15	0.15
Sat Flow, veh/h	1795	5274	4502	796	3428	1585
Grp Volume(v), veh/h	303	1426	1256	642	306	320
Grp Sat Flow(s),veh/h/ln	1795	1702	1702	1726	1714	1585
Q Serve(g_s), s	12.7	0.0	33.7	34.1	12.4	23.0
Cycle Q Clear(g_c), s	12.7	0.0	33.7	34.1	12.4	23.0
Prop In Lane	1.00			0.46	1.00	1.00
Lane Grp Cap(c), veh/h	322	3864	2097	1063	526	403
V/C Ratio(X)	0.94	0.37	0.60	0.60	0.58	0.79
Avail Cap(c_a), veh/h	488	3864	2097	1063	526	403
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.88	0.88	0.58	0.58	0.91	0.91
Uniform Delay (d), s/veh	28.1	0.0	17.5	17.6	59.0	52.3
Incr Delay (d2), s/veh	15.1	0.2	0.7	1.5	4.2	13.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	16.4	0.2	17.8	18.5	9.5	18.4
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	43.3	0.2	18.3	19.1	63.3	66.0
LnGrp LOS	D	A	B	B	E	E
Approach Vol, veh/h		1729	1898		626	
Approach Delay, s/veh		7.8	18.5		64.7	
Approach LOS		A	B		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	21.1	98.9			120.0	30.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	29.0	78.5			113.5	23.0
Max Q Clear Time (g_c+I1), s	14.7	36.1			2.0	25.0
Green Ext Time (p_c), s	0.4	6.9			5.0	0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.0			
HCM 6th LOS			C			

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Existing PM
10/22/2020

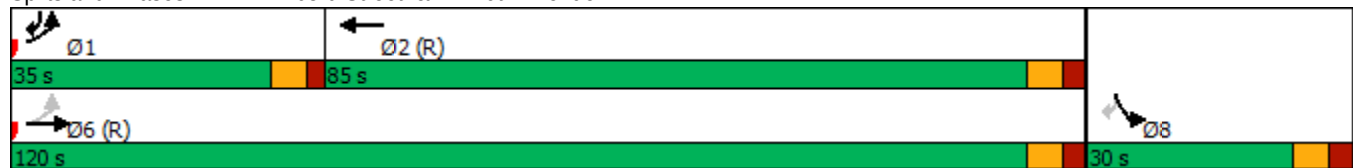


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	288	1355	1522	281	291	304
Future Volume (vph)	288	1355	1522	281	291	304
Confl. Peds. (#/hr)	1			1	6	7
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	2%	1%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		30.0	11.0
Total Split (s)	35.0	120.0	85.0		30.0	35.0
Total Split (%)	23.3%	80.0%	56.7%		20.0%	23.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 25 (17%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
Natural Cycle: 90
Control Type: Actuated-Coordinated

Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Existing AM
10/22/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	31	1568	108	8	91	1243	25	99	52	89	31
Future Volume (vph)	2	31	1568	108	8	91	1243	25	99	52	89	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		0.99	1.00	1.00	0.99
Frt		1.00	0.99			1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1804	4813			1741	4837		1587	1900	1547	1795
Flt Permitted		0.16	1.00			0.07	1.00		0.53	1.00	1.00	0.72
Satd. Flow (perm)		303	4813			123	4837		879	1900	1547	1360
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	2	34	1723	119	9	100	1366	27	109	57	98	34
RTOR Reduction (vph)	0	0	5	0	0	0	1	0	0	0	78	0
Lane Group Flow (vph)	0	36	1837	0	0	109	1392	0	109	57	20	34
Confl. Peds. (#/hr)	10	2		2	5	2		2	10		5	5
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	0%	0%	7%	0%	0%	4%	7%	0%	13%	0%	3%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		78.0	74.5			87.8	79.4		25.2	17.9	26.3	19.0
Effective Green, g (s)		78.0	74.5			87.8	79.4		25.2	17.9	26.3	19.0
Actuated g/C Ratio		0.60	0.57			0.68	0.61		0.19	0.14	0.20	0.15
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		222	2758			187	2954		210	261	312	212
v/s Ratio Prot		0.00	c0.38			c0.04	c0.29		c0.03	0.03	0.00	0.01
v/s Ratio Perm		0.09				0.36			c0.07		0.01	0.02
v/c Ratio		0.16	0.67			0.58	0.47		0.52	0.22	0.06	0.16
Uniform Delay, d1		11.0	19.2			15.7	13.8		45.6	49.8	41.9	48.3
Progression Factor		1.00	1.00			1.96	0.67		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.1	1.3			2.6	0.5		0.9	0.3	0.0	0.1
Delay (s)		11.1	20.5			33.3	9.8		46.5	50.1	41.9	48.4
Level of Service		B	C			C	A		D	D	D	D
Approach Delay (s)			20.3				11.5			45.6		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay			19.9				HCM 2000 Level of Service			B		
HCM 2000 Volume to Capacity ratio			0.65									
Actuated Cycle Length (s)			130.0				Sum of lost time (s)			25.0		
Intersection Capacity Utilization			68.2%				ICU Level of Service			C		
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Existing AM

10/22/2020



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	69	39
Future Volume (vph)	69	39
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1721	
Flt Permitted	1.00	
Satd. Flow (perm)	1721	
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	76	43
RTOR Reduction (vph)	17	0
Lane Group Flow (vph)	102	0
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	5%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	14.8	
Effective Green, g (s)	14.8	
Actuated g/C Ratio	0.11	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	195	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.52	
Uniform Delay, d1	54.3	
Progression Factor	1.00	
Incremental Delay, d2	1.9	
Delay (s)	56.2	
Level of Service	E	
Approach Delay (s)	54.5	
Approach LOS	D	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Existing AM
10/22/2020

											
Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	2	31	1568	8	91	1243	99	52	89	31	69
Future Volume (vph)	2	31	1568	8	91	1243	99	52	89	31	69
Lane Group Flow (vph)	0	36	1842	0	109	1393	109	57	98	34	119
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	71.0	14.0	14.0	71.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	10.8%	10.8%	54.6%	10.8%	10.8%	54.6%	10.0%	24.6%	10.8%	10.0%	24.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.14	0.65		0.58	0.45	0.55	0.22	0.24	0.15	0.65
Control Delay		8.5	19.8		37.8	8.9	54.7	53.2	8.2	41.3	63.3
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		8.5	19.8		37.8	8.9	54.7	53.2	8.2	41.3	63.3
Queue Length 50th (ft)		8	348		43	163	79	45	0	23	82
Queue Length 95th (ft)		22	491		112	161	128	86	43	50	142
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		290	2848		201	3130	200	362	414	247	344
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		0.12	0.65		0.54	0.45	0.55	0.16	0.24	0.14	0.35

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 109 (84%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated
 ! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street

			
Ø1	Ø2 (R)	Ø3	Ø4
14 s	71 s	13 s	32 s
			
Ø5	Ø6 (R)	Ø7	Ø8
14 s	71 s	13 s	32 s

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Existing PM

10/22/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	41	1460	77	11	83	1704	26	201	70	124	43
Future Volume (vph)	3	41	1460	77	11	83	1704	26	201	70	124	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1805	5069			1685	5074		1768	1900	1600	1805
Flt Permitted		0.09	1.00			0.12	1.00		0.55	1.00	1.00	0.71
Satd. Flow (perm)		179	5069			205	5074		1031	1900	1600	1349
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	3	42	1505	79	11	86	1757	27	207	72	128	44
RTOR Reduction (vph)	0	0	3	0	0	0	1	0	0	0	76	0
Lane Group Flow (vph)	0	45	1581	0	0	97	1783	0	207	72	52	44
Confl. Peds. (#/hr)	1	1		5		5		1	1			
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	0%	1%	9%	0%	8%	2%	0%	2%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		101.1	96.5			105.9	98.9		23.1	15.8	22.8	19.9
Effective Green, g (s)		101.1	96.5			105.9	98.9		23.1	15.8	22.8	19.9
Actuated g/C Ratio		0.67	0.64			0.71	0.66		0.15	0.11	0.15	0.13
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		170	3261			213	3345		194	200	243	196
v/s Ratio Prot		0.01	0.31			c0.02	c0.35		c0.05	0.04	0.01	0.01
v/s Ratio Perm		0.17				0.30			c0.11		0.02	0.02
v/c Ratio		0.26	0.48			0.46	0.53		1.07	0.36	0.21	0.22
Uniform Delay, d1		9.9	13.9			9.4	13.4		62.8	62.4	55.7	57.8
Progression Factor		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.3	0.5			0.6	0.6		83.5	0.8	0.2	0.2
Delay (s)		10.2	14.4			9.9	14.0		146.3	63.2	55.9	58.0
Level of Service		B	B			A	B		F	E	E	E
Approach Delay (s)			14.3				13.8			103.2		
Approach LOS			B				B			F		
Intersection Summary												
HCM 2000 Control Delay			24.9				HCM 2000 Level of Service				C	
HCM 2000 Volume to Capacity ratio			0.64									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			25.0		
Intersection Capacity Utilization			71.6%				ICU Level of Service			C		
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Existing PM

10/22/2020



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	72	33
Future Volume (vph)	72	33
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1750	
Flt Permitted	1.00	
Satd. Flow (perm)	1750	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	74	34
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	96	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	0%	9%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	14.2	
Effective Green, g (s)	14.2	
Actuated g/C Ratio	0.09	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	165	
v/s Ratio Prot	0.05	
v/s Ratio Perm		
v/c Ratio	0.58	
Uniform Delay, d1	65.1	
Progression Factor	1.00	
Incremental Delay, d2	4.3	
Delay (s)	69.4	
Level of Service	E	
Approach Delay (s)	66.1	
Approach LOS	E	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Existing PM

10/22/2020

											
Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	3	41	1460	11	83	1704	201	70	124	43	72
Future Volume (vph)	3	41	1460	11	83	1704	201	70	124	43	72
Lane Group Flow (vph)	0	45	1584	0	97	1784	207	72	128	44	108
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	91.0	14.0	14.0	91.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	9.3%	9.3%	60.7%	9.3%	9.3%	60.7%	8.7%	21.3%	9.3%	8.7%	21.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.24	0.48		0.45	0.52	1.06	0.36	0.39	0.21	0.66
Control Delay		9.5	14.3		12.8	13.8	137.4	68.0	20.5	52.0	76.3
Queue Delay		0.0	0.0		0.0	0.5	0.0	0.0	0.0	0.0	0.0
Total Delay		9.5	14.3		12.8	14.3	137.4	68.0	20.5	52.0	76.3
Queue Length 50th (ft)		11	269		24	313	~213	68	32	37	92
Queue Length 95th (ft)		25	354		47	402	#347	118	88	70	154
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		212	3304		229	3425	195	314	344	218	300
Starvation Cap Reductn		0	0		0	1027	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		0.21	0.48		0.42	0.74	1.06	0.23	0.37	0.20	0.36

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55 (37%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street



HCM 6th Signalized Intersection Summary 3: NE 19th Avenue & NE 164th Street

20146 Existing AM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	45	34	8	8	43	23	29	403	7	46	640	148
Future Volume (veh/h)	45	34	8	8	43	23	29	403	7	46	640	148
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	0.98		0.96	1.00		0.97	1.00		0.97
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	47	35	8	8	45	24	30	420	7	48	667	154
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	339	126	29	352	76	41	100	1499	26	557	1273	289
Arrive On Green	0.13	0.09	0.09	0.11	0.07	0.07	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1372	313	1810	1092	582	326	4870	83	1810	4136	939
Grp Volume(v), veh/h	47	0	43	8	0	69	167	139	152	48	547	274
Grp Sat Flow(s),veh/h/ln	1810	0	1685	1810	0	1674	1810	1662	1808	1810	1702	1670
Q Serve(g_s), s	2.8	0.0	3.1	0.5	0.0	5.2	9.1	8.2	8.2	2.5	17.2	17.7
Cycle Q Clear(g_c), s	2.8	0.0	3.1	0.5	0.0	5.2	9.1	8.2	8.2	2.5	17.2	17.7
Prop In Lane	1.00		0.19	1.00		0.35	0.18		0.05	1.00		0.56
Lane Grp Cap(c), veh/h	339	0	154	352	0	117	557	511	556	557	1047	514
V/C Ratio(X)	0.14	0.00	0.28	0.02	0.00	0.59	0.30	0.27	0.27	0.09	0.52	0.53
Avail Cap(c_a), veh/h	339	0	259	352	0	258	557	511	556	557	1047	514
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	1.00	1.00	0.00	1.00	0.48	0.48	0.48	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	55.0	43.6	0.0	58.7	34.3	34.0	34.0	32.0	37.1	37.3
Incr Delay (d2), s/veh	0.1	0.0	1.2	0.0	0.0	5.6	0.7	0.6	0.6	0.3	1.9	3.9
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(95%),veh/ln	2.3	0.0	2.5	0.4	0.0	4.3	6.5	5.5	5.9	2.0	12.0	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	0.0	56.2	43.6	0.0	64.3	35.0	34.6	34.6	32.3	39.0	41.2
LnGrp LOS	D	A	E	D	A	E	C	C	C	C	D	D
Approach Vol, veh/h	90			77			457			869		
Approach Delay, s/veh	49.0			62.1			34.7			39.3		
Approach LOS	D			E			C			D		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	46.0		22.9	15.1		46.0	20.1	17.9				
Change Period (Y+Rc), s	6.0		5.4	6.0		6.0	5.4	6.0				
Max Green Setting (Gmax), s	40.0		6.6	20.0		40.0	6.6	20.0				
Max Q Clear Time (g_c+I1), s	19.7		4.8	7.2		11.1	2.5	5.1				
Green Ext Time (p_c), s	2.1		0.0	0.2		0.9	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay	39.7											
HCM 6th LOS	D											

Timings
3: NE 19th Avenue & NE 164th Street

20146 Existing AM
10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	34	8	8	43	23	29	403	7	46	640	148
Future Volume (vph)	45	34	8	8	43	23	29	403	7	46	640	148
Confl. Peds. (#/hr)	4		2	2		4	3		1	1		3
Confl. Bikes (#/hr)			1			5			1			2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

 Ø2	 Ø6	 Ø3 (R)	 Ø4
46 s	46 s	12 s	26 s
		 Ø7 (R)	 Ø8
		12 s	26 s

HCM 6th Signalized Intersection Summary

3: NE 19th Avenue & NE 164th Street

20146 Existing PM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	115	66	16	14	64	43	17	584	5	35	575	139
Future Volume (veh/h)	115	66	16	14	64	43	17	584	5	35	575	139
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	0.98		0.97	1.00		0.97	1.00		0.97
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	120	69	17	15	67	45	18	608	5	36	599	145
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	291	178	44	298	97	65	44	1573	13	557	1260	298
Arrive On Green	0.11	0.13	0.13	0.07	0.10	0.10	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1348	332	1810	996	669	142	5111	43	1810	4094	969
Grp Volume(v), veh/h	120	0	86	15	0	112	230	191	209	36	496	248
Grp Sat Flow(s),veh/h/ln	1810	0	1680	1810	0	1664	1819	1662	1816	1810	1702	1659
Q Serve(g_s), s	7.3	0.0	6.1	0.9	0.0	8.5	13.1	11.7	11.7	1.8	15.3	15.8
Cycle Q Clear(g_c), s	7.3	0.0	6.1	0.9	0.0	8.5	13.1	11.7	11.7	1.8	15.3	15.8
Prop In Lane	1.00		0.20	1.00		0.40	0.08		0.02	1.00		0.58
Lane Grp Cap(c), veh/h	291	0	222	298	0	162	560	511	559	557	1047	510
V/C Ratio(X)	0.41	0.00	0.39	0.05	0.00	0.69	0.41	0.37	0.37	0.06	0.47	0.49
Avail Cap(c_a), veh/h	291	0	259	298	0	256	560	511	559	557	1047	510
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	1.00	1.00	0.00	1.00	0.38	0.38	0.38	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	51.6	45.2	0.0	56.8	35.7	35.2	35.2	31.8	36.5	36.6
Incr Delay (d2), s/veh	0.3	0.0	1.3	0.0	0.0	6.2	0.9	0.8	0.7	0.2	1.5	3.3
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(95%),veh/ln	5.9	0.0	4.8	0.7	0.0	6.9	8.4	7.1	7.7	1.5	10.9	11.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.8	0.0	52.9	45.2	0.0	63.0	36.5	36.0	35.9	32.0	38.0	39.9
LnGrp LOS	D	A	D	D	A	E	D	D	D	C	D	D
Approach Vol, veh/h	206				127				631			
Approach Delay, s/veh	47.6				60.9				36.2			
Approach LOS	D				E				D			
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	46.0		19.3	18.7		46.0		14.8	23.2			
Change Period (Y+Rc), s	6.0		5.4	6.0		6.0		5.4	6.0			
Max Green Setting (Gmax), s	40.0		6.6	20.0		40.0		6.6	20.0			
Max Q Clear Time (g_c+I1), s	17.8		9.3	10.5		15.1		2.9	8.1			
Green Ext Time (p_c), s	1.9		0.0	0.4		1.3		0.0	0.3			
Intersection Summary												
HCM 6th Ctrl Delay	40.3											
HCM 6th LOS	D											

Timings
3: NE 19th Avenue & NE 164th Street

20146 Existing PM

10/22/2020

Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	115	66	16	14	64	43	17	584	5	35	575	139
Future Volume (vph)	115	66	16	14	64	43	17	584	5	35	575	139
Confl. Peds. (#/hr)	6		6	6		6	1		5	5		1
Confl. Bikes (#/hr)			2			1			2			3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

Ø2 46 s		Ø6 46 s		Ø3 (R) 12 s		Ø4 26 s	
				Ø7 (R) 12 s		Ø8 26 s	

Intersection	
Intersection Delay, s/veh	8.8
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	54	33	65	125	10	40	40	28	6	41	24
Future Vol, veh/h	25	54	33	65	125	10	40	40	28	6	41	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	59	36	71	137	11	44	44	31	7	45	26
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	8.5	9.2	8.7	8.3
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	37%	100%	0%	100%	0%	8%
Vol Thru, %	37%	0%	62%	0%	93%	58%
Vol Right, %	26%	0%	38%	0%	7%	34%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	108	25	87	65	135	71
LT Vol	40	25	0	65	0	6
Through Vol	40	0	54	0	125	41
RT Vol	28	0	33	0	10	24
Lane Flow Rate	119	27	96	71	148	78
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.158	0.044	0.132	0.112	0.209	0.103
Departure Headway (Hd)	4.788	5.734	4.963	5.628	5.073	4.74
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	748	623	720	636	706	754
Service Time	2.828	3.482	2.711	3.373	2.817	2.783
HCM Lane V/C Ratio	0.159	0.043	0.133	0.112	0.21	0.103
HCM Control Delay	8.7	8.7	8.5	9.1	9.2	8.3
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.6	0.1	0.5	0.4	0.8	0.3

Intersection	
Intersection Delay, s/veh	9.4
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	129	60	68	130	18	61	28	49	5	21	21
Future Vol, veh/h	21	129	60	68	130	18	61	28	49	5	21	21
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
Heavy Vehicles, %	16	3	0	5	3	0	0	0	0	0	14	0
Mvmt Flow	22	137	64	72	138	19	65	30	52	5	22	22
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.7	9.4	9.2	8.4
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	44%	100%	0%	100%	0%	11%
Vol Thru, %	20%	0%	68%	0%	88%	45%
Vol Right, %	36%	0%	32%	0%	12%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	138	21	189	68	148	47
LT Vol	61	21	0	68	0	5
Through Vol	28	0	129	0	130	21
RT Vol	49	0	60	0	18	21
Lane Flow Rate	147	22	201	72	157	50
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.201	0.037	0.282	0.116	0.226	0.069
Departure Headway (Hd)	4.938	6.002	5.051	5.793	5.169	4.96
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	724	594	708	616	691	717
Service Time	2.992	3.76	2.809	3.551	2.927	3.028
HCM Lane V/C Ratio	0.203	0.037	0.284	0.117	0.227	0.07
HCM Control Delay	9.2	9	9.8	9.3	9.4	8.4
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.7	0.1	1.2	0.4	0.9	0.2

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1702	1384	7	0	0
Future Vol, veh/h	0	1702	1384	7	0	0
Conflicting Peds, #/hr	3	0	0	3	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	0	1891	1538	8	0	0
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	777
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	295
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	294
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		0	
HCM LOS					A	
Minor Lane/Major Mvmt	EBT		WBT		WBR SBLn1	
Capacity (veh/h)	-		-		-	
HCM Lane V/C Ratio	-		-		-	
HCM Control Delay (s)	-		-		0	
HCM Lane LOS	-		-		A	
HCM 95th %tile O(veh)	-		-		-	

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1643	1825	1	0	1
Future Vol, veh/h	0	1643	1825	1	0	1
Conflicting Peds, #/hr	3	0	0	3	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	0	1711	1901	1	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	955
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	225
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	224
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		21.1		
HCM LOS				C		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	224		
HCM Lane V/C Ratio	-	-	-	0.005		
HCM Control Delay (s)	-	-	-	21.1		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0		

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Existing AM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations	 	  		 	  			 	   			 
Traffic Volume (vph)	226	1182	289	411	1005	573	5	227	1014	480	8	445
Future Volume (vph)	226	1182	289	411	1005	573	5	227	1014	480	8	445
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3303	4940	1504	3367	5036	1582		3402	6346	1552		3369
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3303	4940	1504	3367	5036	1582		3402	6346	1552		3369
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.95	0.99	0.99	0.99	0.95	0.99
Adj. Flow (vph)	228	1194	292	415	1015	579	5	229	1024	485	8	449
RTOR Reduction (vph)	0	0	44	0	0	38	0	0	0	44	0	0
Lane Group Flow (vph)	228	1194	248	415	1015	541	0	234	1024	441	0	457
Confl. Peds. (#/hr)	2		4	4		2		4		2		2
Confl. Bikes (#/hr)			3			4				2		
Heavy Vehicles (%)	6%	5%	6%	4%	3%	1%	0%	3%	3%	3%	0%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	17.4	47.3	64.4	24.7	54.6	79.7		17.1	44.4	69.1		25.1
Effective Green, g (s)	17.4	47.3	64.4	24.7	54.6	79.7		17.1	44.4	69.1		25.1
Actuated g/C Ratio	0.10	0.28	0.38	0.15	0.32	0.47		0.10	0.26	0.41		0.15
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	338	1374	569	489	1617	741		342	1657	630		497
v/s Ratio Prot	0.07	c0.24	0.04	c0.12	0.20	c0.11		0.07	0.16	0.10		c0.14
v/s Ratio Perm			0.12			0.23				0.18		
v/c Ratio	0.67	0.87	0.44	0.85	0.63	0.73		0.68	0.62	0.70		0.92
Uniform Delay, d1	73.6	58.4	39.3	70.8	49.1	36.5		73.8	55.3	41.9		71.5
Progression Factor	1.21	0.68	0.44	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	4.2	4.8	0.4	12.9	0.7	3.7		5.6	1.7	3.5		22.0
Delay (s)	93.4	44.3	17.8	83.7	49.7	40.2		79.4	57.1	45.4		93.5
Level of Service	F	D	B	F	D	D		E	E	D		F
Approach Delay (s)		46.3			54.0				56.8			
Approach LOS		D			D				E			
Intersection Summary												
HCM 2000 Control Delay			54.7				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.85									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			28.5		
Intersection Capacity Utilization			113.1%				ICU Level of Service			H		
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
6: Biscayne Boulevard & NE 163rd Street

20146 Existing AM
10/22/2020



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1442	448
Future Volume (vph)	1442	448
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1560
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1560
Peak-hour factor, PHF	0.99	0.99
Adj. Flow (vph)	1457	453
RTOR Reduction (vph)	0	44
Lane Group Flow (vph)	1457	409
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	52.4	69.8
Effective Green, g (s)	52.4	69.8
Actuated g/C Ratio	0.31	0.41
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1994	640
v/s Ratio Prot	c0.23	0.07
v/s Ratio Perm		0.20
v/c Ratio	0.73	0.64
Uniform Delay, d1	52.5	40.0
Progression Factor	1.00	1.00
Incremental Delay, d2	2.4	2.1
Delay (s)	54.9	42.2
Level of Service	D	D
Approach Delay (s)	59.9	
Approach LOS	E	
Intersection Summary		

Timings
6: Biscayne Boulevard & NE 163rd Street

20146 Existing AM
10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	226	1182	289	411	1005	573	227	1014	480	445	1442	448
Future Volume (vph)	226	1182	289	411	1005	573	227	1014	480	445	1442	448
Lane Group Flow (vph)	228	1194	292	415	1015	579	234	1024	485	457	1457	453
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	33.0	57.0	29.0	33.0	57.0	29.0	29.0	51.0	33.0	29.0	51.0	33.0
Total Split (%)	19.4%	33.5%	17.1%	19.4%	33.5%	17.1%	17.1%	30.0%	19.4%	17.1%	30.0%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.68	0.87	0.47	0.85	0.63	0.74	0.68	0.62	0.71	0.92	0.73	0.66
Control Delay	96.9	45.7	13.0	87.1	51.1	34.4	83.8	57.3	37.6	94.6	56.2	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.9	45.7	13.0	87.1	51.1	34.4	83.8	57.3	37.6	94.6	56.2	35.4
Queue Length 50th (ft)	136	204	53	233	341	414	132	296	355	~281	436	330
Queue Length 95th (ft)	m183	349	74	297	411	600	176	336	489	#400	503	459
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	509	1432	664	518	1616	786	444	1659	692	497	1994	765
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.83	0.44	0.80	0.63	0.74	0.53	0.62	0.70	0.92	0.73	0.59

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
29 s	51 s	33 s	57 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
29 s	51 s	33 s	57 s

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Existing PM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations	 	  		 	  			 	   			 
Traffic Volume (vph)	315	1068	423	479	1302	808	19	457	1405	609	14	460
Future Volume (vph)	315	1068	423	479	1302	808	19	457	1405	609	14	460
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	325	1101	436	494	1342	833	20	471	1448	628	14	474
RTOR Reduction (vph)	0	0	41	0	0	39	0	0	0	44	0	0
Lane Group Flow (vph)	325	1101	395	494	1342	794	0	491	1448	584	0	488
Confl. Peds. (#/hr)	9		5	5		9	5	15		7	9	7
Confl. Bikes (#/hr)			3			3				7		
Heavy Vehicles (%)	0%	1%	3%	1%	2%	1%	0%	2%	1%	1%	0%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	21.4	44.9	70.8	26.1	49.6	77.3		25.9	42.8	68.9		27.7
Effective Green, g (s)	21.4	44.9	70.8	26.1	49.6	77.3		25.9	42.8	68.9		27.7
Actuated g/C Ratio	0.13	0.26	0.42	0.15	0.29	0.45		0.15	0.25	0.41		0.16
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	440	1356	645	532	1483	716		523	1629	638		565
v/s Ratio Prot	0.09	0.21	0.09	c0.14	0.26	c0.18		0.14	0.22	c0.14		0.14
v/s Ratio Perm			0.16			0.32				0.23		
v/c Ratio	0.74	0.81	0.61	0.93	0.90	1.11		0.94	0.89	0.92		0.86
Uniform Delay, d1	71.6	58.6	38.8	71.0	57.9	46.4		71.3	61.3	47.8		69.3
Progression Factor	1.20	0.71	0.51	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	5.3	3.1	1.4	22.5	8.2	67.7		24.7	7.7	17.8		12.9
Delay (s)	91.4	44.6	21.4	93.6	66.1	114.1		96.0	69.0	65.6		82.2
Level of Service	F	D	C	F	E	F		F	E	E		F
Approach Delay (s)		47.3			86.2				73.3			
Approach LOS		D			F				E			

Intersection Summary

HCM 2000 Control Delay	69.5	HCM 2000 Level of Service	E
HCM 2000 Volume to Capacity ratio	1.05		
Actuated Cycle Length (s)	170.0	Sum of lost time (s)	28.5
Intersection Capacity Utilization	131.5%	ICU Level of Service	H
Analysis Period (min)	15		

! Phase conflict between lane groups.

c Critical Lane Group

HCM Signalized Intersection Capacity Analysis
6: Biscayne Boulevard & NE 163rd Street

20146 Existing PM

10/22/2020



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1344	448
Future Volume (vph)	1344	448
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1550
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1550
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1386	462
RTOR Reduction (vph)	0	45
Lane Group Flow (vph)	1386	417
Confl. Peds. (#/hr)		15
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	44.6	66.0
Effective Green, g (s)	44.6	66.0
Actuated g/C Ratio	0.26	0.39
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1697	601
v/s Ratio Prot	0.21	0.09
v/s Ratio Perm		0.18
v/c Ratio	0.82	0.69
Uniform Delay, d1	58.9	43.5
Progression Factor	1.00	1.00
Incremental Delay, d2	4.5	3.5
Delay (s)	63.3	47.0
Level of Service	E	D
Approach Delay (s)	64.1	
Approach LOS	E	
Intersection Summary		

Queues
6: Biscayne Boulevard & NE 163rd Street

20146 Existing AM
10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Group Flow (vph)	228	1194	292	415	1015	579	234	1024	485	457	1457	453
v/c Ratio	0.68	0.87	0.47	0.85	0.63	0.74	0.68	0.62	0.71	0.92	0.73	0.66
Control Delay	96.9	45.7	13.1	87.1	51.1	34.4	83.9	57.3	37.6	94.5	56.2	35.4
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	96.9	45.7	13.1	87.1	51.1	34.4	83.9	57.3	37.6	94.5	56.2	35.4
Queue Length 50th (ft)	136	204	53	233	341	414	132	296	355	~281	436	330
Queue Length 95th (ft)	m183	349	74	297	411	600	176	336	489	#400	503	459
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	509	1432	664	518	1616	786	444	1659	692	497	1995	766
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.45	0.83	0.44	0.80	0.63	0.74	0.53	0.62	0.70	0.92	0.73	0.59

Intersection Summary

~ Volume exceeds capacity, queue is theoretically infinite.

Queue shown is maximum after two cycles.

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

Queue shown is maximum after two cycles.

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

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing AM
10/22/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	7	1418	45	8	209	1232	89	62	273	135	149
Future Volume (vph)	2	7	1418	45	8	209	1232	89	62	273	135	149
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.99		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	1.00			1.00	0.99		1.00	0.95		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1737	5051			1722	4968		1717	3249		1717
Flt Permitted		0.17	1.00			0.09	1.00		0.38	1.00		0.21
Satd. Flow (perm)		305	5051			163	4968		694	3249		371
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	7	1493	47	8	220	1297	94	65	287	142	157
RTOR Reduction (vph)	0	0	2	0	0	0	4	0	0	35	0	0
Lane Group Flow (vph)	0	9	1538	0	0	228	1387	0	65	394	0	157
Confl. Peds. (#/hr)	3			5	11	5			3		11	11
Confl. Bikes (#/hr)								1			1	
Heavy Vehicles (%)	0%	5%	2%	7%	0%	5%	3%	7%	5%	3%	7%	5%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Actuated Green, G (s)		87.5	85.4			108.0	99.9		37.1	27.9		49.3
Effective Green, g (s)		87.5	85.4			108.0	99.9		37.1	27.9		49.3
Actuated g/C Ratio		0.51	0.50			0.64	0.59		0.22	0.16		0.29
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		174	2537			255	2919		206	533		228
v/s Ratio Prot		0.00	0.30			c0.09	0.28		0.02	0.12		c0.06
v/s Ratio Perm		0.03				c0.48			0.05			c0.14
v/c Ratio		0.05	0.61			0.89	0.48		0.32	0.74		0.69
Uniform Delay, d1		20.3	30.3			38.8	20.1		54.1	67.6		48.6
Progression Factor		1.00	1.00			1.92	0.59		1.00	1.00		1.00
Incremental Delay, d2		0.0	1.1			25.5	0.4		0.3	8.9		6.7
Delay (s)		20.3	31.4			100.0	12.3		54.5	76.5		55.3
Level of Service		C	C			F	B		D	E		E
Approach Delay (s)			31.3				24.6			73.6		
Approach LOS			C				C			E		
Intersection Summary												
HCM 2000 Control Delay			38.0				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			24.8		
Intersection Capacity Utilization			89.4%				ICU Level of Service			E		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing AM
10/22/2020



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	336	66
Future Volume (vph)	336	66
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3453	
Flt Permitted	1.00	
Satd. Flow (perm)	3453	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	354	69
RTOR Reduction (vph)	9	0
Lane Group Flow (vph)	414	0
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	1%	5%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	34.0	
Effective Green, g (s)	34.0	
Actuated g/C Ratio	0.20	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	690	
v/s Ratio Prot	c0.12	
v/s Ratio Perm		
v/c Ratio	0.60	
Uniform Delay, d1	61.8	
Progression Factor	1.00	
Incremental Delay, d2	3.8	
Delay (s)	65.7	
Level of Service	E	
Approach Delay (s)	62.9	
Approach LOS	E	
Intersection Summary		

Timings
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing AM

10/23/2020



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↔↔↔		↔	↔↔↔	↔	↔↔	↔	↔↔
Traffic Volume (vph)	2	7	1418	8	209	1232	62	273	149	336
Future Volume (vph)	2	7	1418	8	209	1232	62	273	149	336
Lane Group Flow (vph)	0	9	1540	0	228	1391	65	429	157	423
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	1	1	6	5	5	2	7	4	3	8
Permitted Phases	6	6		2	2		4		8	
Detector Phase	1	1	6	5	5	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	11.0	32.0	11.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	24.0	90.0	24.0	24.0	90.0	24.0	32.0	24.0	32.0
Total Split (%)	14.1%	14.1%	52.9%	14.1%	14.1%	52.9%	14.1%	18.8%	14.1%	18.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
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
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	Max	None	Max
v/c Ratio		0.04	0.61		0.89	0.46	0.31	0.76	0.69	0.61
Control Delay		12.9	31.7		88.0	11.3	49.2	70.6	63.5	65.0
Queue Delay		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0
Total Delay		12.9	31.7		88.0	11.5	49.2	70.6	63.5	65.0
Queue Length 50th (ft)		4	449		176	156	54	222	137	222
Queue Length 95th (ft)		12	498		#304	199	96	#293	208	293
Internal Link Dist (ft)			1910			610		1033		344
Turn Bay Length (ft)		240			270		150		140	
Base Capacity (vph)		337	2538		268	3028	291	567	246	698
Starvation Cap Reductn		0	0		0	496	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.03	0.61		0.85	0.55	0.22	0.76	0.64	0.61

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 85

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

Ø1	Ø2 (R)	Ø3	Ø4
24 s	90 s	24 s	32 s
Ø5	Ø6 (R)	Ø7	Ø8
24 s	90 s	24 s	32 s

HCM Signalized Intersection Capacity Analysis

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing PM

10/23/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	145	1302	92	14	251	1784	123	132	354	174	175
Future Volume (vph)	15	145	1302	92	14	251	1784	123	132	354	174	175
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.95		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1773	5007			1788	5018		1769	3319		1751
Flt Permitted		0.05	1.00			0.11	1.00		0.21	1.00		0.14
Satd. Flow (perm)		88	5007			212	5018		396	3319		252
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	148	1329	94	14	256	1820	126	135	361	178	179
RTOR Reduction (vph)	0	0	5	0	0	0	4	0	0	35	0	0
Lane Group Flow (vph)	0	163	1418	0	0	270	1942	0	135	504	0	179
Confl. Peds. (#/hr)	4	1		6	21	6		1	4		21	21
Confl. Bikes (#/hr)				6				5			3	
Heavy Vehicles (%)	0%	2%	2%	8%	0%	1%	2%	6%	2%	1%	2%	3%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Actuated Green, G (s)		99.3	84.6			104.7	87.3		40.8	26.8		45.6
Effective Green, g (s)		99.3	84.6			104.7	87.3		40.8	26.8		45.6
Actuated g/C Ratio		0.58	0.50			0.62	0.51		0.24	0.16		0.27
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		197	2491			291	2576		208	523		212
v/s Ratio Prot		0.07	0.28			c0.09	0.39		0.05	c0.15		c0.08
v/s Ratio Perm		0.41				c0.48			0.10			0.14
v/c Ratio		0.83	0.57			0.93	0.75		0.65	0.96		0.84
Uniform Delay, d1		50.2	29.9			34.7	32.8		53.9	71.1		52.5
Progression Factor		1.00	1.00			1.90	0.54		1.00	1.00		1.00
Incremental Delay, d2		22.9	1.0			20.3	1.0		5.1	31.2		24.3
Delay (s)		73.1	30.9			86.2	18.8		59.1	102.3		76.8
Level of Service		E	C			F	B		E	F		E
Approach Delay (s)			35.2				27.1			93.6		
Approach LOS			D				C			F		
Intersection Summary												
HCM 2000 Control Delay			44.9				HCM 2000 Level of Service			D		
HCM 2000 Volume to Capacity ratio			0.94									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			24.8		
Intersection Capacity Utilization			96.4%				ICU Level of Service			F		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing PM
10/23/2020



Movement	SBT	SBR
Lane Configurations	↑↑	→
Traffic Volume (vph)	387	93
Future Volume (vph)	387	93
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	3460	
Flt Permitted	1.00	
Satd. Flow (perm)	3460	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	395	95
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	478	0
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		4
Heavy Vehicles (%)	1%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	29.2	
Effective Green, g (s)	29.2	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	594	
v/s Ratio Prot	0.14	
v/s Ratio Perm		
v/c Ratio	0.80	
Uniform Delay, d1	67.7	
Progression Factor	1.00	
Incremental Delay, d2	11.0	
Delay (s)	78.7	
Level of Service	E	
Approach Delay (s)	78.2	
Approach LOS	E	
Intersection Summary		

Timings
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Existing PM

10/23/2020



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↔↔↔		↔	↔↔↔	↔	↔↔	↔	↔↔
Traffic Volume (vph)	15	145	1302	14	251	1784	132	354	175	387
Future Volume (vph)	15	145	1302	14	251	1784	132	354	175	387
Lane Group Flow (vph)	0	163	1423	0	270	1946	135	539	179	490
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	1	1	6	5	5	2	7	4	3	8
Permitted Phases	6	6		2	2		4		8	
Detector Phase	1	1	6	5	5	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	11.0	32.0	11.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	24.0	90.0	24.0	24.0	90.0	24.0	32.0	24.0	32.0
Total Split (%)	14.1%	14.1%	52.9%	14.1%	14.1%	52.9%	14.1%	18.8%	14.1%	18.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
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
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	Max	None	Max
v/c Ratio		0.83	0.57		0.93	0.75	0.65	0.96	0.85	0.81
Control Delay		77.5	31.0		76.4	19.1	61.7	94.4	81.4	76.7
Queue Delay		0.0	0.0		0.0	1.4	0.0	0.0	0.0	0.0
Total Delay		77.5	31.0		76.4	20.5	61.7	94.4	81.4	76.7
Queue Length 50th (ft)		128	401		208	266	116	~302	158	273
Queue Length 95th (ft)		#218	449		m#273	286	180	#436	#285	#387
Internal Link Dist (ft)			1910			610		1033		344
Turn Bay Length (ft)		240			270		150		140	
Base Capacity (vph)		231	2494		296	2580	245	559	223	606
Starvation Cap Reductn		0	0		0	407	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.71	0.57		0.91	0.90	0.55	0.96	0.80	0.81

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 95

Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street



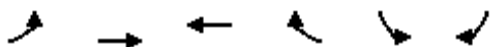
Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	108	3	0	137
Future Vol, veh/h	1	1	108	3	0	137
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	126	3	0	159
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	294	136	0	0	136	0
Stage 1	135	-	-	-	-	-
Stage 2	159	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	697	913	-	-	1448	-
Stage 1	891	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	692	906	-	-	1438	-
Mov Cap-2 Maneuver	692	-	-	-	-	-
Stage 1	885	-	-	-	-	-
Stage 2	870	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.6	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	785	1438	-	
HCM Lane V/C Ratio	-	-	0.003	-	-	
HCM Control Delay (s)	-	-	9.6	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	8	125	7	4	152
Future Vol, veh/h	5	8	125	7	4	152
Conflicting Peds, #/hr	0	1	0	1	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	0	0	0	0	33
Mvmt Flow	5	9	133	7	4	162
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	314	145	0	0	147	0
Stage 1	144	-	-	-	-	-
Stage 2	170	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	590	908	-	-	1447	-
Stage 1	778	-	-	-	-	-
Stage 2	756	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	584	901	-	-	1437	-
Mov Cap-2 Maneuver	584	-	-	-	-	-
Stage 1	773	-	-	-	-	-
Stage 2	754	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	9.9	0		0.2		
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	745	1437	-	
HCM Lane V/C Ratio	-	-	0.019	0.003	-	
HCM Control Delay (s)	-	-	9.9	7.5	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Future without Project Conditions

HCM 6th Signalized Intersection Summary
1: NE 163rd Street & NE 19th Avenue

20146 Future without Project AM
10/22/2020



Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations	↰	↑↑↑	↑↑↑		↰	↰
Traffic Volume (veh/h)	325	1512	1194	203	474	357
Future Volume (veh/h)	325	1512	1194	203	474	357
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1870	1826
Adj Flow Rate, veh/h	342	1592	1257	214	499	376
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	5	2	5
Cap, veh/h	372	3489	2326	396	638	458
Arrive On Green	0.22	1.00	0.55	0.55	0.18	0.18
Sat Flow, veh/h	1711	5065	4361	715	3456	1547
Grp Volume(v), veh/h	342	1592	979	492	499	376
Grp Sat Flow(s),veh/h/ln	1711	1635	1635	1645	1728	1547
Q Serve(g_s), s	12.1	0.0	24.8	24.8	17.9	24.0
Cycle Q Clear(g_c), s	12.1	0.0	24.8	24.8	17.9	24.0
Prop In Lane	1.00			0.43	1.00	1.00
Lane Grp Cap(c), veh/h	372	3489	1811	911	638	458
V/C Ratio(X)	0.92	0.46	0.54	0.54	0.78	0.82
Avail Cap(c_a), veh/h	497	3489	1811	911	638	458
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.52	0.52	0.81	0.81	0.86	0.86
Uniform Delay (d), s/veh	17.2	0.0	18.5	18.5	50.5	42.5
Incr Delay (d2), s/veh	9.8	0.2	0.9	1.9	8.1	13.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.3	0.1	14.0	14.4	12.9	18.3
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.0	0.2	19.4	20.3	58.6	55.8
LnGrp LOS	C	A	B	C	E	E
Approach Vol, veh/h		1934	1471		875	
Approach Delay, s/veh		5.0	19.7		57.4	
Approach LOS		A	B		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.5	78.5			99.0	31.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	24.0	62.5			92.5	24.0
Max Q Clear Time (g_c+I1), s	14.1	26.8			2.0	26.0
Green Ext Time (p_c), s	0.4	4.7			6.0	0.0

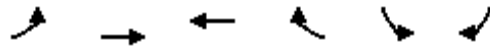
Intersection Summary

HCM 6th Ctrl Delay	20.7
HCM 6th LOS	C

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Future without Project AM

10/22/2020

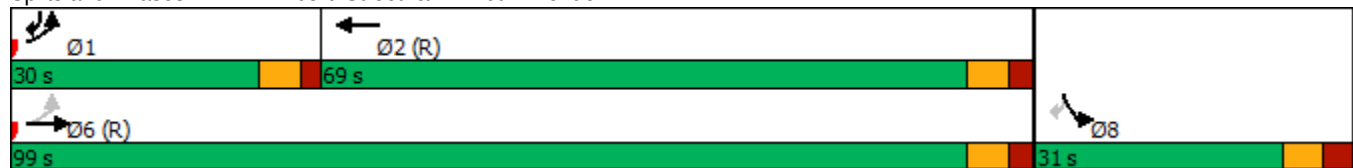


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	325	1512	1194	203	474	357
Future Volume (vph)	325	1512	1194	203	474	357
Confl. Peds. (#/hr)	6			6	2	5
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	7%	7%	7%	5%	2%	5%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		31.0	11.0
Total Split (s)	30.0	99.0	69.0		31.0	30.0
Total Split (%)	23.1%	76.2%	53.1%		23.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

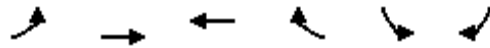
Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM 6th Signalized Intersection Summary
1: NE 163rd Street & NE 19th Avenue

20146 Future without Project PM

10/22/2020

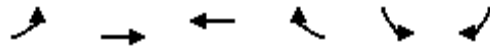


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	312	1456	1639	334	311	346
Future Volume (veh/h)	312	1456	1639	334	311	346
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1885	1870	1870	1885	1856	1870
Adj Flow Rate, veh/h	328	1533	1725	352	327	364
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	1	3	2
Cap, veh/h	346	3864	2487	501	526	454
Arrive On Green	0.27	1.00	0.58	0.58	0.15	0.15
Sat Flow, veh/h	1795	5274	4428	859	3428	1585
Grp Volume(v), veh/h	328	1533	1374	703	327	364
Grp Sat Flow(s),veh/h/ln	1795	1702	1702	1715	1714	1585
Q Serve(g_s), s	17.6	0.0	42.3	43.4	13.4	23.0
Cycle Q Clear(g_c), s	17.6	0.0	42.3	43.4	13.4	23.0
Prop In Lane	1.00			0.50	1.00	1.00
Lane Grp Cap(c), veh/h	346	3864	1987	1001	526	454
V/C Ratio(X)	0.95	0.40	0.69	0.70	0.62	0.80
Avail Cap(c_a), veh/h	454	3864	1987	1001	526	454
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.86	0.86	0.40	0.40	0.90	0.90
Uniform Delay (d), s/veh	34.1	0.0	21.8	22.0	59.4	49.6
Incr Delay (d2), s/veh	21.0	0.3	0.8	1.7	4.9	12.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.6	0.2	21.1	22.0	10.1	20.2
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	55.1	0.3	22.6	23.7	64.4	62.3
LnGrp LOS	E	A	C	C	E	E
Approach Vol, veh/h		1861	2077		691	
Approach Delay, s/veh		9.9	23.0		63.3	
Approach LOS		A	C		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	25.9	94.1			120.0	30.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	29.0	78.5			113.5	23.0
Max Q Clear Time (g_c+I1), s	19.6	45.4			2.0	25.0
Green Ext Time (p_c), s	0.4	7.9			5.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			23.7			
HCM 6th LOS			C			

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Future without Project PM

10/22/2020



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	312	1456	1639	334	311	346
Future Volume (vph)	312	1456	1639	334	311	346
Confl. Peds. (#/hr)	1			1	6	7
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Growth Factor	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	1%	2%	2%	1%	3%	2%
Bus Blockages (#/hr)	0	0	0	0	0	0
Parking (#/hr)						
Mid-Block Traffic (%)		0%	0%		0%	
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		30.0	11.0
Total Split (s)	35.0	120.0	85.0		30.0	35.0
Total Split (%)	23.3%	80.0%	56.7%		20.0%	23.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

Cycle Length: 150
 Actuated Cycle Length: 150
 Offset: 25 (17%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future without Project AM
10/22/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	31	1648	197	8	167	1321	25	163	71	144	31
Future Volume (vph)	2	31	1648	197	8	167	1321	25	163	71	144	31
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		0.99	1.00	1.00	0.99
Frt		1.00	0.98			1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1804	4791			1739	4838		1589	1900	1551	1796
Flt Permitted		0.16	1.00			0.06	1.00		0.47	1.00	1.00	0.71
Satd. Flow (perm)		302	4791			106	4838		783	1900	1551	1335
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	2	34	1811	216	9	184	1452	27	179	78	158	34
RTOR Reduction (vph)	0	0	12	0	0	0	1	0	0	0	68	0
Lane Group Flow (vph)	0	36	2015	0	0	193	1478	0	179	78	90	34
Confl. Peds. (#/hr)	10	2		2	5	2		2	10		5	5
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	0%	0%	7%	0%	0%	4%	7%	0%	13%	0%	3%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		66.5	63.0			86.6	77.1		27.5	20.2	37.8	21.3
Effective Green, g (s)		66.5	63.0			86.6	77.1		27.5	20.2	37.8	21.3
Actuated g/C Ratio		0.51	0.48			0.67	0.59		0.21	0.16	0.29	0.16
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		194	2321			291	2869		210	295	450	233
v/s Ratio Prot		0.00	c0.42			c0.09	0.31		c0.05	0.04	0.03	0.00
v/s Ratio Perm		0.09				0.35			c0.13		0.03	0.02
v/c Ratio		0.19	0.87			0.66	0.52		0.85	0.26	0.20	0.15
Uniform Delay, d1		15.9	29.8			35.4	15.5		48.7	48.4	34.7	46.3
Progression Factor		1.00	1.00			1.32	0.63		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	4.7			3.5	0.5		26.0	0.4	0.1	0.1
Delay (s)		16.0	34.5			50.3	10.4		74.6	48.7	34.8	46.4
Level of Service		B	C			D	B		E	D	C	D
Approach Delay (s)			34.2				15.0			54.6		
Approach LOS			C				B			D		
Intersection Summary												
HCM 2000 Control Delay			29.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			87.0%			ICU Level of Service			E			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future without Project AM

10/22/2020



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	95	39
Future Volume (vph)	95	39
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.96	
Flt Protected	1.00	
Satd. Flow (prot)	1739	
Flt Permitted	1.00	
Satd. Flow (perm)	1739	
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	104	43
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	135	0
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	5%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	17.1	
Effective Green, g (s)	17.1	
Actuated g/C Ratio	0.13	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	228	
v/s Ratio Prot	0.08	
v/s Ratio Perm		
v/c Ratio	0.59	
Uniform Delay, d1	53.2	
Progression Factor	1.00	
Incremental Delay, d2	3.4	
Delay (s)	56.6	
Level of Service	E	
Approach Delay (s)	54.7	
Approach LOS	D	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Future without Project AM

10/22/2020

											
Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	2	31	1648	8	167	1321	163	71	144	31	95
Future Volume (vph)	2	31	1648	8	167	1321	163	71	144	31	95
Lane Group Flow (vph)	0	36	2027	0	193	1479	179	78	158	34	147
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	71.0	14.0	14.0	71.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	10.8%	10.8%	54.6%	10.8%	10.8%	54.6%	10.0%	24.6%	10.8%	10.0%	24.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.16	0.84		0.66	0.49	0.89	0.26	0.30	0.13	0.70
Control Delay		10.3	31.6		47.2	9.5	86.9	51.7	15.4	39.0	66.8
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		10.3	31.6		47.2	9.5	86.9	51.7	15.4	39.0	66.8
Queue Length 50th (ft)		9	521		122	167	132	61	37	23	110
Queue Length 95th (ft)		24	592		#259	182	#240	107	94	49	175
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		262	2415		293	3042	202	364	532	268	343
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		0.14	0.84		0.66	0.49	0.89	0.21	0.30	0.13	0.43

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street



HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future without Project PM
10/22/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	58	1562	78	11	84	1823	71	260	78	146	43
Future Volume (vph)	3	58	1562	78	11	84	1823	71	260	78	146	43
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1805	5072			1685	5056		1768	1900	1600	1805
Flt Permitted		0.07	1.00			0.10	1.00		0.53	1.00	1.00	0.70
Satd. Flow (perm)		137	5072			176	5056		984	1900	1600	1339
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	3	60	1610	80	11	87	1879	73	268	80	151	44
RTOR Reduction (vph)	0	0	3	0	0	0	2	0	0	0	70	0
Lane Group Flow (vph)	0	63	1687	0	0	98	1950	0	268	80	81	44
Confl. Peds. (#/hr)	1	1		5		5		1	1			
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	0%	1%	9%	0%	8%	2%	0%	2%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		100.9	95.7			104.9	97.7		23.8	16.5	23.7	20.4
Effective Green, g (s)		100.9	95.7			104.9	97.7		23.8	16.5	23.7	20.4
Actuated g/C Ratio		0.67	0.64			0.70	0.65		0.16	0.11	0.16	0.14
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		149	3235			195	3293		194	209	252	199
v/s Ratio Prot		0.01	0.33			c0.02	c0.39		c0.07	0.04	0.02	0.01
v/s Ratio Perm		0.27				0.33			c0.15		0.04	0.02
v/c Ratio		0.42	0.52			0.50	0.59		1.38	0.38	0.32	0.22
Uniform Delay, d1		11.8	14.7			10.6	14.8		62.5	62.0	56.0	57.4
Progression Factor		1.00	1.00			2.22	0.48		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.7	0.6			0.5	0.5		200.4	0.9	0.3	0.2
Delay (s)		12.5	15.3			24.0	7.6		262.9	62.9	56.3	57.6
Level of Service		B	B			C	A		F	E	E	E
Approach Delay (s)			15.2				8.4			168.3		
Approach LOS			B				A			F		
Intersection Summary												
HCM 2000 Control Delay			31.0				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.75									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			25.0		
Intersection Capacity Utilization			78.1%				ICU Level of Service			D		
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future without Project PM

10/22/2020

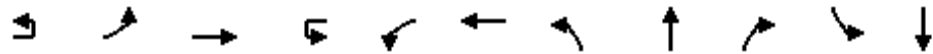


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	79	33
Future Volume (vph)	79	33
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.96	
Flt Protected	1.00	
Satd. Flow (prot)	1759	
Flt Permitted	1.00	
Satd. Flow (perm)	1759	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	81	34
RTOR Reduction (vph)	11	0
Lane Group Flow (vph)	104	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	0%	9%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	14.8	
Effective Green, g (s)	14.8	
Actuated g/C Ratio	0.10	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	173	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.60	
Uniform Delay, d1	64.8	
Progression Factor	1.00	
Incremental Delay, d2	4.9	
Delay (s)	69.7	
Level of Service	E	
Approach Delay (s)	66.3	
Approach LOS	E	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Future without Project PM

10/22/2020



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔	↑↑↑		↔	↑↑↑	↔	↑	↔	↔	↔
Traffic Volume (vph)	3	58	1562	11	84	1823	260	78	146	43	79
Future Volume (vph)	3	58	1562	11	84	1823	260	78	146	43	79
Lane Group Flow (vph)	0	63	1690	0	98	1952	268	80	151	44	115
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	91.0	14.0	14.0	91.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	9.3%	9.3%	60.7%	9.3%	9.3%	60.7%	8.7%	21.3%	9.3%	8.7%	21.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.39	0.52		0.50	0.58	1.38	0.38	0.45	0.20	0.67
Control Delay		13.7	15.4		20.4	7.5	243.4	67.9	27.4	51.3	77.2
Queue Delay		0.0	0.0		0.0	0.1	0.0	0.0	0.0	0.0	0.0
Total Delay		13.7	15.4		20.4	7.6	243.4	67.9	27.4	51.3	77.2
Queue Length 50th (ft)		15	301		16	170	~355	76	57	36	99
Queue Length 95th (ft)		33	400		m46	190	#504	128	119	70	162
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		185	3276		210	3370	194	314	346	223	301
Starvation Cap Reductn		0	0		0	368	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		0.34	0.52		0.47	0.65	1.38	0.25	0.44	0.20	0.38

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55 (37%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street

Ø1	Ø2 (R)	Ø3	Ø4
14 s	91 s	13 s	32 s
Ø5	Ø6 (R)	Ø7	Ø8
14 s	91 s	13 s	32 s

HCM 6th Signalized Intersection Summary
3: NE 19th Avenue & NE 164th Street

20146 Future without Project AM

10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			 	
Traffic Volume (veh/h)	45	34	8	8	43	23	29	443	7	46	809	149
Future Volume (veh/h)	45	34	8	8	43	23	29	443	7	46	809	149
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	0.98		0.96	1.00		0.97	1.00		0.97
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	47	35	8	8	45	24	30	461	7	48	843	155
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	339	126	29	352	76	41	92	1510	24	557	1329	243
Arrive On Green	0.13	0.09	0.09	0.11	0.07	0.07	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1372	313	1810	1092	582	299	4906	77	1810	4318	788
Grp Volume(v), veh/h	47	0	43	8	0	69	182	151	165	48	663	335
Grp Sat Flow(s),veh/h/ln	1810	0	1685	1810	0	1674	1811	1662	1810	1810	1702	1702
Q Serve(g_s), s	2.8	0.0	3.1	0.5	0.0	5.2	10.0	9.0	9.0	2.5	21.8	22.0
Cycle Q Clear(g_c), s	2.8	0.0	3.1	0.5	0.0	5.2	10.0	9.0	9.0	2.5	21.8	22.0
Prop In Lane	1.00		0.19	1.00		0.35	0.17		0.04	1.00		0.46
Lane Grp Cap(c), veh/h	339	0	154	352	0	117	557	511	557	557	1047	524
V/C Ratio(X)	0.14	0.00	0.28	0.02	0.00	0.59	0.33	0.30	0.30	0.09	0.63	0.64
Avail Cap(c_a), veh/h	339	0	259	352	0	258	557	511	557	557	1047	524
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(l)	1.00	0.00	1.00	1.00	0.00	1.00	0.27	0.27	0.27	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.3	0.0	55.0	43.6	0.0	58.7	34.6	34.3	34.3	32.0	38.7	38.8
Incr Delay (d2), s/veh	0.1	0.0	1.2	0.0	0.0	5.6	0.4	0.4	0.4	0.3	2.9	5.9
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(95%),veh/ln	2.3	0.0	2.5	0.4	0.0	4.3	6.3	5.4	5.8	2.0	14.6	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.4	0.0	56.2	43.6	0.0	64.3	35.0	34.7	34.7	32.3	41.6	44.6
LnGrp LOS	D	A	E	D	A	E	D	C	C	C	D	D
Approach Vol, veh/h		90			77			498			1046	
Approach Delay, s/veh		49.0			62.1			34.8			42.2	
Approach LOS		D			E			C			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.0	22.9	15.1		46.0	20.1	17.9				
Change Period (Y+Rc), s		6.0	5.4	6.0		6.0	5.4	6.0				
Max Green Setting (Gmax), s		40.0	6.6	20.0		40.0	6.6	20.0				
Max Q Clear Time (g_c+I1), s		24.0	4.8	7.2		12.0	2.5	5.1				
Green Ext Time (p_c), s		2.5	0.0	0.2		1.0	0.0	0.1				
Intersection Summary												
HCM 6th Ctrl Delay			41.3									
HCM 6th LOS			D									

Timings
3: NE 19th Avenue & NE 164th Street

20146 Future without Project AM

10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	45	34	8	8	43	23	29	443	7	46	809	149
Future Volume (vph)	45	34	8	8	43	23	29	443	7	46	809	149
Confl. Peds. (#/hr)	4		2	2		4	3		1	1		3
Confl. Bikes (#/hr)			1			5			1			2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

 Ø2	 Ø6	 Ø3 (R)	 Ø4
46 s	46 s	12 s	26 s
		 Ø7 (R)	 Ø8
		12 s	26 s

HCM 6th Signalized Intersection Summary
3: NE 19th Avenue & NE 164th Street

20146 Future without Project PM
10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	116	67	16	14	65	43	17	640	5	35	637	140
Future Volume (veh/h)	116	67	16	14	65	43	17	640	5	35	637	140
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	0.98		0.97	1.00		0.97	1.00		0.97
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
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	121	70	17	15	68	45	18	667	5	36	664	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	290	179	44	297	98	65	40	1578	12	557	1285	278
Arrive On Green	0.11	0.13	0.13	0.07	0.10	0.10	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1353	329	1810	1002	663	130	5129	40	1810	4175	902
Grp Volume(v), veh/h	121	0	87	15	0	113	252	209	229	36	539	271
Grp Sat Flow(s),veh/h/ln	1810	0	1681	1810	0	1666	1819	1662	1817	1810	1702	1673
Q Serve(g_s), s	7.3	0.0	6.2	0.9	0.0	8.5	14.5	13.0	13.0	1.8	16.9	17.4
Cycle Q Clear(g_c), s	7.3	0.0	6.2	0.9	0.0	8.5	14.5	13.0	13.0	1.8	16.9	17.4
Prop In Lane	1.00		0.20	1.00		0.40	0.07		0.02	1.00		0.54
Lane Grp Cap(c), veh/h	290	0	223	297	0	163	560	511	559	557	1047	515
V/C Ratio(X)	0.42	0.00	0.39	0.05	0.00	0.69	0.45	0.41	0.41	0.06	0.51	0.53
Avail Cap(c_a), veh/h	290	0	259	297	0	256	560	511	559	557	1047	515
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	1.00	1.00	0.00	1.00	0.28	0.28	0.28	1.00	1.00	1.00
Uniform Delay (d), s/veh	43.5	0.0	51.6	45.2	0.0	56.8	36.2	35.6	35.6	31.8	37.0	37.2
Incr Delay (d2), s/veh	0.4	0.0	1.3	0.0	0.0	6.2	0.7	0.7	0.6	0.2	1.8	3.8
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(95%),veh/ln	6.0	0.0	4.8	0.7	0.0	7.0	8.8	7.4	8.0	1.5	11.8	12.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	43.9	0.0	52.9	45.2	0.0	63.0	36.9	36.3	36.3	32.0	38.8	41.0
LnGrp LOS	D	A	D	D	A	E	D	D	D	C	D	D
Approach Vol, veh/h		208			128			690			846	
Approach Delay, s/veh		47.7			60.9			36.5			39.2	
Approach LOS		D			E			D			D	
Timer - Assigned Phs		2	3	4		6	7	8				
Phs Duration (G+Y+Rc), s		46.0	19.3	18.7		46.0	14.8	23.2				
Change Period (Y+Rc), s		6.0	5.4	6.0		6.0	5.4	6.0				
Max Green Setting (Gmax), s		40.0	6.6	20.0		40.0	6.6	20.0				
Max Q Clear Time (g_c+I1), s		19.4	9.3	10.5		16.5	2.9	8.2				
Green Ext Time (p_c), s		2.1	0.0	0.4		1.4	0.0	0.3				
Intersection Summary												
HCM 6th Ctrl Delay			40.6									
HCM 6th LOS			D									

Timings
3: NE 19th Avenue & NE 164th Street

20146 Future without Project PM

10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	116	67	16	14	65	43	17	640	5	35	637	140
Future Volume (vph)	116	67	16	14	65	43	17	640	5	35	637	140
Confl. Peds. (#/hr)	6		6	6		6	1		5	5		1
Confl. Bikes (#/hr)			2			1			2			3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Growth Factor	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Bus Blockages (#/hr)	0	0	0	0	0	0	0	0	0	0	0	0
Parking (#/hr)												
Mid-Block Traffic (%)		0%			0%			0%			0%	
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow
 Natural Cycle: 110
 Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

 Ø2	 Ø6	 Ø3 (R)	 Ø4
46 s	46 s	12 s	26 s
		 Ø7 (R)	 Ø8
		12 s	26 s

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	55	43	76	126	10	46	46	34	6	46	24
Future Vol, veh/h	25	55	43	76	126	10	46	46	34	6	46	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	60	47	84	138	11	51	51	37	7	51	26
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	8.7	9.3	9	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	37%	100%	0%	100%	0%	8%
Vol Thru, %	37%	0%	56%	0%	93%	61%
Vol Right, %	27%	0%	44%	0%	7%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	126	25	98	76	136	76
LT Vol	46	25	0	76	0	6
Through Vol	46	0	55	0	126	46
RT Vol	34	0	43	0	10	24
Lane Flow Rate	138	27	108	84	149	84
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.187	0.044	0.15	0.133	0.214	0.112
Departure Headway (Hd)	4.853	5.826	5.012	5.712	5.156	4.844
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	737	612	712	626	693	736
Service Time	2.901	3.584	2.769	3.464	2.908	2.9
HCM Lane V/C Ratio	0.187	0.044	0.152	0.134	0.215	0.114
HCM Control Delay	9	8.9	8.7	9.3	9.3	8.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.5	0.5	0.8	0.4

Intersection												
Intersection Delay, s/veh	9.5											
Intersection LOS	A											

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	130	64	72	131	18	63	31	52	5	21	21
Future Vol, veh/h	21	130	64	72	131	18	63	31	52	5	21	21
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
Heavy Vehicles, %	16	3	0	5	3	0	0	0	0	0	14	0
Mvmt Flow	22	138	68	77	139	19	67	33	55	5	22	22
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	9.8	9.5	9.4	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	43%	100%	0%	100%	0%	11%
Vol Thru, %	21%	0%	67%	0%	88%	45%
Vol Right, %	36%	0%	33%	0%	12%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	146	21	194	72	149	47
LT Vol	63	21	0	72	0	5
Through Vol	31	0	130	0	131	21
RT Vol	52	0	64	0	18	21
Lane Flow Rate	155	22	206	77	159	50
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.214	0.037	0.291	0.124	0.229	0.069
Departure Headway (Hd)	4.962	6.035	5.075	5.824	5.201	5.003
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	719	591	704	613	686	710
Service Time	3.02	3.797	2.837	3.586	2.962	3.077
HCM Lane V/C Ratio	0.216	0.037	0.293	0.126	0.232	0.07
HCM Control Delay	9.4	9	9.9	9.4	9.5	8.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.8	0.1	1.2	0.4	0.9	0.2

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1837	1538	7	0	0
Future Vol, veh/h	0	1837	1538	7	0	0
Conflicting Peds, #/hr	3	0	0	3	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	0	2041	1709	8	0	0
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	863
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	259
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	258
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		0		
HCM LOS					A	
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	-		
HCM Lane V/C Ratio	-	-	-	-		
HCM Control Delay (s)	-	-	-	0		
HCM Lane LOS	-	-	-	A		
HCM 95th %tile O(veh)	-	-	-	-		

Intersection						
Int Delay, s/veh	0					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1768	1962	1	0	1
Future Vol, veh/h	0	1768	1962	1	0	1
Conflicting Peds, #/hr	3	0	0	3	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	0	1842	2044	1	0	1
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1027
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	202
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	201
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		23		
HCM LOS				C		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	201		
HCM Lane V/C Ratio	-	-	-	0.005		
HCM Control Delay (s)	-	-	-	23		
HCM Lane LOS	-	-	-	C		
HCM 95th %tile Q(veh)	-	-	-	0		

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project AM

10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	379	1305	301	445	1184	586	5	250	1058	499	8	458
Future Volume (vph)	379	1305	301	445	1184	586	5	250	1058	499	8	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3303	4940	1504	3367	5036	1582		3402	6346	1553		3369
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3303	4940	1504	3367	5036	1582		3402	6346	1553		3369
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.95	0.99	0.99	0.99	0.95	0.99
Adj. Flow (vph)	383	1318	304	449	1196	592	5	253	1069	504	8	463
RTOR Reduction (vph)	0	0	43	0	0	40	0	0	0	44	0	0
Lane Group Flow (vph)	383	1318	261	449	1196	552	0	258	1069	460	0	471
Confl. Peds. (#/hr)	2		4	4		2		4		2		2
Confl. Bikes (#/hr)			3			4				2		
Heavy Vehicles (%)	6%	5%	6%	4%	3%	1%	0%	3%	3%	3%	0%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	24.4	48.8	66.8	25.4	49.8	73.3		18.0	43.8	69.2		23.5
Effective Green, g (s)	24.4	48.8	66.8	25.4	49.8	73.3		18.0	43.8	69.2		23.5
Actuated g/C Ratio	0.14	0.29	0.39	0.15	0.29	0.43		0.11	0.26	0.41		0.14
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	474	1418	590	503	1475	682		360	1635	632		465
v/s Ratio Prot	0.12	c0.27	0.05	c0.13	0.24	0.11		0.08	0.17	0.11		c0.14
v/s Ratio Perm			0.13			0.24				0.19		
v/c Ratio	0.81	0.93	0.44	0.89	0.81	0.81		0.72	0.65	0.73		1.01
Uniform Delay, d1	70.5	58.9	37.9	71.0	55.7	42.2		73.5	56.3	42.5		73.2
Progression Factor	1.20	0.80	0.50	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	6.1	7.2	0.3	17.9	3.4	7.0		6.7	2.1	4.2		45.0
Delay (s)	90.7	54.2	19.1	88.9	59.1	49.3		80.2	58.4	46.7		118.3
Level of Service	F	D	B	F	E	D		F	E	D		F
Approach Delay (s)		55.9			62.5				58.2			
Approach LOS		E			E				E			
Intersection Summary												
HCM 2000 Control Delay			62.0			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			170.0			Sum of lost time (s)			28.5			
Intersection Capacity Utilization			118.6%			ICU Level of Service			H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project AM
10/22/2020



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1457	631
Future Volume (vph)	1457	631
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1563
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1563
Peak-hour factor, PHF	0.99	0.99
Adj. Flow (vph)	1472	637
RTOR Reduction (vph)	0	42
Lane Group Flow (vph)	1472	595
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	49.3	73.7
Effective Green, g (s)	49.3	73.7
Actuated g/C Ratio	0.29	0.43
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1876	677
v/s Ratio Prot	0.23	c0.13
v/s Ratio Perm		0.25
v/c Ratio	0.78	0.88
Uniform Delay, d1	55.5	44.1
Progression Factor	1.00	1.00
Incremental Delay, d2	3.4	12.5
Delay (s)	58.8	56.5
Level of Service	E	E
Approach Delay (s)	69.1	
Approach LOS	E	
Intersection Summary		

Timings
6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project AM

10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	379	1305	301	445	1184	586	250	1058	499	458	1457	631
Future Volume (vph)	379	1305	301	445	1184	586	250	1058	499	458	1457	631
Lane Group Flow (vph)	383	1318	304	449	1196	592	258	1069	504	471	1472	637
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	33.0	57.0	29.0	33.0	57.0	29.0	29.0	51.0	33.0	29.0	51.0	33.0
Total Split (%)	19.4%	33.5%	17.1%	19.4%	33.5%	17.1%	17.1%	30.0%	19.4%	17.1%	30.0%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.81	0.93	0.47	0.89	0.81	0.81	0.72	0.65	0.74	1.01	0.78	0.88
Control Delay	93.3	55.3	13.7	91.4	61.0	42.8	84.7	58.6	39.3	114.9	59.7	50.0
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.3	55.3	13.7	91.4	61.0	42.8	84.7	58.6	39.3	114.9	59.7	50.0
Queue Length 50th (ft)	231	384	76	255	457	482	145	311	378	~298	446	536
Queue Length 95th (ft)	m274	m475	m94	#343	517	651	192	353	520	#418	509	#875
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	509	1432	677	518	1477	730	444	1635	686	465	1876	739
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.75	0.92	0.45	0.87	0.81	0.81	0.58	0.65	0.73	1.01	0.78	0.86

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
29 s	51 s	33 s	57 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
29 s	51 s	33 s	57 s

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project PM

10/22/2020

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	470	1182	438	571	1470	832	19	472	1473	637	14	487
Future Volume (vph)	470	1182	438	571	1470	832	19	472	1473	637	14	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	485	1219	452	589	1515	858	20	487	1519	657	14	502
RTOR Reduction (vph)	0	0	41	0	0	41	0	0	0	44	0	0
Lane Group Flow (vph)	485	1219	411	589	1515	817	0	507	1519	613	0	516
Confl. Peds. (#/hr)	9		5	5		9	5	15		7	9	7
Confl. Bikes (#/hr)			3			3				7		
Heavy Vehicles (%)	0%	1%	3%	1%	2%	1%	0%	2%	1%	1%	0%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	25.9	47.3	72.5	26.2	47.6	72.8		25.2	42.8	69.0		25.2
Effective Green, g (s)	25.9	47.3	72.5	26.2	47.6	72.8		25.2	42.8	69.0		25.2
Actuated g/C Ratio	0.15	0.28	0.43	0.15	0.28	0.43		0.15	0.25	0.41		0.15
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	533	1429	660	534	1423	674		509	1629	639		514
v/s Ratio Prot	0.14	0.24	0.09	c0.17	0.30	c0.18		0.15	0.23	c0.15		0.15
v/s Ratio Perm			0.17			0.34				0.24		
v/c Ratio	0.91	0.85	0.62	1.10	1.06	1.21		1.00	0.93	0.96		1.00
Uniform Delay, d1	70.9	58.1	38.1	71.9	61.2	48.6		72.4	62.2	49.1		72.4
Progression Factor	1.18	0.76	0.56	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	14.7	3.6	1.3	70.2	43.1	109.1		38.6	11.2	25.5		40.7
Delay (s)	98.3	47.6	22.6	142.1	104.3	157.7		111.0	73.3	74.7		113.1
Level of Service	F	D	C	F	F	F		F	E	E		F
Approach Delay (s)		53.8			127.3				80.8			
Approach LOS		D			F				F			
Intersection Summary												
HCM 2000 Control Delay			86.7				HCM 2000 Level of Service		F			
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)		28.5			
Intersection Capacity Utilization			138.2%				ICU Level of Service		H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project PM
10/22/2020



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1357	535
Future Volume (vph)	1357	535
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1552
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1552
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1399	552
RTOR Reduction (vph)	0	44
Lane Group Flow (vph)	1399	508
Confl. Peds. (#/hr)		15
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	42.8	68.7
Effective Green, g (s)	42.8	68.7
Actuated g/C Ratio	0.25	0.40
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1629	627
v/s Ratio Prot	0.22	0.12
v/s Ratio Perm		0.20
v/c Ratio	0.86	0.81
Uniform Delay, d1	60.7	44.9
Progression Factor	1.00	1.00
Incremental Delay, d2	6.1	7.8
Delay (s)	66.8	52.7
Level of Service	E	D
Approach Delay (s)	73.3	
Approach LOS	E	
Intersection Summary		

Timings
6: Biscayne Boulevard & NE 163rd Street

20146 Future without Project PM

10/22/2020

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	470	1182	438	571	1470	832	472	1473	637	487	1357	535
Future Volume (vph)	470	1182	438	571	1470	832	472	1473	637	487	1357	535
Lane Group Flow (vph)	485	1219	452	589	1515	858	507	1519	657	516	1399	552
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	33.0	55.0	32.0	33.0	55.0	32.0	32.0	50.0	33.0	32.0	50.0	33.0
Total Split (%)	19.4%	32.4%	18.8%	19.4%	32.4%	18.8%	18.8%	29.4%	19.4%	18.8%	29.4%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.91	0.85	0.64	1.10	1.06	1.19	1.00	0.93	0.96	1.00	0.86	0.82
Control Delay	99.8	49.0	18.6	133.7	99.8	133.5	109.7	73.2	64.7	111.1	67.1	45.9
Queue Delay	0.0	0.0	0.0	0.0	15.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	99.8	49.0	18.6	133.7	114.7	133.5	109.7	73.2	64.7	111.1	67.1	46.0
Queue Length 50th (ft)	293	328	143	~382	~682	~825	295	485	599	~302	436	443
Queue Length 95th (ft)	m#340	m403	m169	#509	#778	#1091	#421	#536	#929	#430	483	603
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	539	1429	708	534	1424	723	509	1629	686	514	1629	677
Starvation Cap Reductn	0	0	3	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	80	0	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.90	0.85	0.64	1.10	1.13	1.19	1.00	0.93	0.96	1.00	0.86	0.82

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
32 s	50 s	33 s	55 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
32 s	50 s	33 s	55 s

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future without Project AM
10/23/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	73	1509	120	8	508	1313	93	133	367	331	150
Future Volume (vph)	2	73	1509	120	8	508	1313	93	133	367	331	150
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1721	5003			1720	4969		1719	3142		1719
Flt Permitted		0.13	1.00			0.06	1.00		0.14	1.00		0.14
Satd. Flow (perm)		243	5003			114	4969		261	3142		252
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	77	1588	126	8	535	1382	98	140	386	348	158
RTOR Reduction (vph)	0	0	6	0	0	0	4	0	0	95	0	0
Lane Group Flow (vph)	0	79	1708	0	0	543	1476	0	140	639	0	158
Confl. Peds. (#/hr)	3			5	11	5			3		11	11
Confl. Bikes (#/hr)								1			1	
Heavy Vehicles (%)	0%	5%	2%	7%	0%	5%	3%	7%	5%	3%	7%	5%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Actuated Green, G (s)		91.5	84.0			108.0	94.5		42.2	27.7		44.2
Effective Green, g (s)		91.5	84.0			108.0	94.5		42.2	27.7		44.2
Actuated g/C Ratio		0.54	0.49			0.64	0.56		0.25	0.16		0.26
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		195	2472			242	2762		189	511		199
v/s Ratio Prot		0.02	0.34			c0.24	0.30		0.06	c0.20		c0.07
v/s Ratio Perm		0.20				c1.19			0.12			0.13
v/c Ratio		0.41	0.69			2.24	0.53		0.74	1.25		0.79
Uniform Delay, d1		20.0	33.0			52.8	23.9		53.8	71.2		53.2
Progression Factor		1.00	1.00			1.39	0.56		1.00	1.00		1.00
Incremental Delay, d2		0.5	1.6			567.3	0.4		12.8	128.5		18.1
Delay (s)		20.5	34.6			641.0	13.8		66.5	199.7		71.3
Level of Service		C	C			F	B		E	F		E
Approach Delay (s)			34.0				182.1			178.3		
Approach LOS			C				F			F		
Intersection Summary												
HCM 2000 Control Delay			120.6				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.94									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			24.8		
Intersection Capacity Utilization			110.7%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future without Project AM

10/23/2020

	↓	↙
Movement	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	477	67
Future Volume (vph)	477	67
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3482	
Flt Permitted	1.00	
Satd. Flow (perm)	3482	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	502	71
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	566	0
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	1%	5%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	28.7	
Effective Green, g (s)	28.7	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	587	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.96	
Uniform Delay, d1	70.1	
Progression Factor	1.00	
Incremental Delay, d2	29.4	
Delay (s)	99.6	
Level of Service	F	
Approach Delay (s)	93.5	
Approach LOS	F	
Intersection Summary		

Timings

20146 Future without Project AM

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

10/23/2020



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↔↔↔		↔	↔↔↔	↔	↔↔	↔	↔↔
Traffic Volume (vph)	2	73	1509	8	508	1313	133	367	150	477
Future Volume (vph)	2	73	1509	8	508	1313	133	367	150	477
Lane Group Flow (vph)	0	79	1714	0	543	1480	140	734	158	573
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	1	1	6	5	5	2	7	4	3	8
Permitted Phases	6	6		2	2		4		8	
Detector Phase	1	1	6	5	5	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	11.0	32.0	11.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	24.0	90.0	24.0	24.0	90.0	24.0	32.0	24.0	32.0
Total Split (%)	14.1%	14.1%	52.9%	14.1%	14.1%	52.9%	14.1%	18.8%	14.1%	18.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
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
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	Max	None	Max
v/c Ratio		0.41	0.69		2.24	0.53	0.74	1.21	0.79	0.97
Control Delay		19.3	34.7		595.2	13.8	70.2	157.4	75.5	96.8
Queue Delay		0.0	0.0		0.0	0.3	0.0	0.0	0.0	0.0
Total Delay		19.3	34.7		595.2	14.1	70.2	157.4	75.5	96.8
Queue Length 50th (ft)		32	527		~914	203	121	~482	138	335
Queue Length 95th (ft)		55	580		m#1145	221	187	#624	#232	#500
Internal Link Dist (ft)			1910			610		1033		344
Turn Bay Length (ft)		240			270		150		140	
Base Capacity (vph)		302	2477		242	2767	220	606	219	593
Starvation Cap Reductn		0	0		0	549	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.26	0.69		2.24	0.67	0.64	1.21	0.72	0.97

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street



HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future without Project PM
10/23/2020

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	250	1411	99	14	289	1914	155	194	437	343	177
Future Volume (vph)	15	250	1411	99	14	289	1914	155	194	437	343	177
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.97		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1772	5007			1788	5007		1769	3237		1752
Flt Permitted		0.05	1.00			0.09	1.00		0.15	1.00		0.15
Satd. Flow (perm)		89	5007			176	5007		278	3237		283
Peak-hour factor, PHF	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98	0.98
Adj. Flow (vph)	15	255	1440	101	14	295	1953	158	198	446	350	181
RTOR Reduction (vph)	0	0	5	0	0	0	6	0	0	83	0	0
Lane Group Flow (vph)	0	270	1536	0	0	309	2105	0	198	713	0	181
Confl. Peds. (#/hr)	4	1		6	21	6		1	4		21	21
Confl. Bikes (#/hr)				6				5			3	
Heavy Vehicles (%)	0%	2%	2%	8%	0%	1%	2%	6%	2%	1%	2%	3%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Actuated Green, G (s)		102.0	84.0			102.0	84.0		43.9	26.8		42.5
Effective Green, g (s)		102.0	84.0			102.0	84.0		43.9	26.8		42.5
Actuated g/C Ratio		0.60	0.49			0.60	0.49		0.26	0.16		0.25
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		231	2474			276	2474		221	510		212
v/s Ratio Prot		c0.12	0.31			0.12	0.42		c0.09	c0.22		0.08
v/s Ratio Perm		c0.58				0.55			0.14			0.13
v/c Ratio		1.17	0.62			1.12	0.85		0.90	1.40		0.85
Uniform Delay, d1		59.0	31.4			43.7	37.5		54.4	71.6		54.9
Progression Factor		1.00	1.00			1.56	0.55		1.00	1.00		1.00
Incremental Delay, d2		112.4	1.2			65.4	0.9		33.0	191.1		26.0
Delay (s)		171.4	32.6			133.6	21.7		87.4	262.7		80.9
Level of Service		F	C			F	C		F	F		F
Approach Delay (s)			53.3				36.0			227.8		
Approach LOS			D				D			F		
Intersection Summary												
HCM 2000 Control Delay			82.7				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.18									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			24.8		
Intersection Capacity Utilization			109.6%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future without Project PM
10/23/2020



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	460	94
Future Volume (vph)	460	94
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.97	
Flt Protected	1.00	
Satd. Flow (prot)	3474	
Flt Permitted	1.00	
Satd. Flow (perm)	3474	
Peak-hour factor, PHF	0.98	0.98
Adj. Flow (vph)	469	96
RTOR Reduction (vph)	10	0
Lane Group Flow (vph)	555	0
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		4
Heavy Vehicles (%)	1%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	26.1	
Effective Green, g (s)	26.1	
Actuated g/C Ratio	0.15	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	533	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	1.04	
Uniform Delay, d1	72.0	
Progression Factor	1.00	
Incremental Delay, d2	50.0	
Delay (s)	122.0	
Level of Service	F	
Approach Delay (s)	112.0	
Approach LOS	F	
Intersection Summary		

Timings

20146 Future without Project PM

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

10/23/2020



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↑↑↑		↔	↑↑↑	↔	↑↑	↔	↑↑
Traffic Volume (vph)	15	250	1411	14	289	1914	194	437	177	460
Future Volume (vph)	15	250	1411	14	289	1914	194	437	177	460
Lane Group Flow (vph)	0	270	1541	0	309	2111	198	796	181	565
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	1	1	6	5	5	2	7	4	3	8
Permitted Phases	6	6		2	2		4		8	
Detector Phase	1	1	6	5	5	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	11.0	32.0	11.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	24.0	90.0	24.0	24.0	90.0	24.0	32.0	24.0	32.0
Total Split (%)	14.1%	14.1%	52.9%	14.1%	14.1%	52.9%	14.1%	18.8%	14.1%	18.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
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
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	Max	None	Max
v/c Ratio		1.16	0.62		1.12	0.85	0.90	1.34	0.85	1.04
Control Delay		157.0	32.6		118.0	21.8	88.2	210.6	81.8	114.9
Queue Delay		0.0	0.0		0.0	16.5	0.0	0.0	0.0	0.0
Total Delay		157.0	32.6		118.0	38.3	88.2	210.6	81.8	114.9
Queue Length 50th (ft)		~304	450		~296	295	177	~571	160	~356
Queue Length 95th (ft)		#502	499		m#305	m290	#325	#710	#279	#486
Internal Link Dist (ft)			1910			610		1033		344
Turn Bay Length (ft)		240			270		150		140	
Base Capacity (vph)		232	2478		276	2480	226	592	224	544
Starvation Cap Reductn		0	0		0	419	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		1.16	0.62		1.12	1.02	0.88	1.34	0.81	1.04

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street



Intersection						
Int Delay, s/veh	0.1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	1	1	127	3	0	163
Future Vol, veh/h	1	1	127	3	0	163
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	1	1	148	3	0	190
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	347	158	0	0	158	0
Stage 1	157	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	650	887	-	-	1422	-
Stage 1	871	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	645	880	-	-	1413	-
Mov Cap-2 Maneuver	645	-	-	-	-	-
Stage 1	865	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.9	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	744	1413	-	
HCM Lane V/C Ratio	-	-	0.003	-	-	
HCM Control Delay (s)	-	-	9.9	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0	0	-	

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	8	133	7	4	160
Future Vol, veh/h	5	8	133	7	4	160
Conflicting Peds, #/hr	0	1	0	1	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	0	0	0	0	33
Mvmt Flow	5	9	141	7	4	170
Major/Minor	Minor1	Major1		Major2		
Conflicting Flow All	330	153	0	0	155	0
Stage 1	152	-	-	-	-	-
Stage 2	178	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	577	898	-	-	1438	-
Stage 1	771	-	-	-	-	-
Stage 2	749	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	571	891	-	-	1428	-
Mov Cap-2 Maneuver	571	-	-	-	-	-
Stage 1	766	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Approach	WB	NB		SB		
HCM Control Delay, s	10	0		0.2		
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	733	1428	-	
HCM Lane V/C Ratio	-	-	0.019	0.003	-	
HCM Control Delay (s)	-	-	10	7.5	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

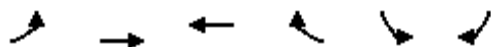
Future with Project Conditions

HCM 6th Signalized Intersection Summary

1: NE 163rd Street & NE 19th Avenue

20146 Future with Project AM

01/11/2021

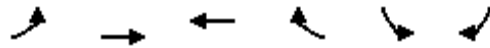


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	325	1519	1205	203	482	367
Future Volume (veh/h)	325	1519	1205	203	482	367
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			0.97	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1796	1796	1796	1826	1870	1826
Adj Flow Rate, veh/h	342	1599	1268	214	507	386
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	7	7	7	5	2	5
Cap, veh/h	370	3489	2329	393	638	458
Arrive On Green	0.22	1.00	0.55	0.55	0.18	0.18
Sat Flow, veh/h	1711	5065	4367	710	3456	1547
Grp Volume(v), veh/h	342	1599	986	496	507	386
Grp Sat Flow(s),veh/h/ln	1711	1635	1635	1646	1728	1547
Q Serve(g_s), s	12.1	0.0	25.0	25.0	18.2	24.0
Cycle Q Clear(g_c), s	12.1	0.0	25.0	25.0	18.2	24.0
Prop In Lane	1.00			0.43	1.00	1.00
Lane Grp Cap(c), veh/h	370	3489	1811	912	638	458
V/C Ratio(X)	0.93	0.46	0.54	0.54	0.79	0.84
Avail Cap(c_a), veh/h	495	3489	1811	912	638	458
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.51	0.51	0.81	0.81	0.83	0.83
Uniform Delay (d), s/veh	17.4	0.0	18.5	18.5	50.6	42.9
Incr Delay (d2), s/veh	10.2	0.2	1.0	1.9	8.3	14.5
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	9.3	0.1	14.1	14.5	13.0	18.9
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	27.6	0.2	19.5	20.4	59.0	57.4
LnGrp LOS	C	A	B	C	E	E
Approach Vol, veh/h		1941	1482		893	
Approach Delay, s/veh		5.1	19.8		58.3	
Approach LOS		A	B		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	20.5	78.5			99.0	31.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	24.0	62.5			92.5	24.0
Max Q Clear Time (g_c+I1), s	14.1	27.0			2.0	26.0
Green Ext Time (p_c), s	0.4	4.7			6.1	0.0
Intersection Summary						
HCM 6th Ctrl Delay			21.1			
HCM 6th LOS			C			

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Future with Project AM

01/11/2021

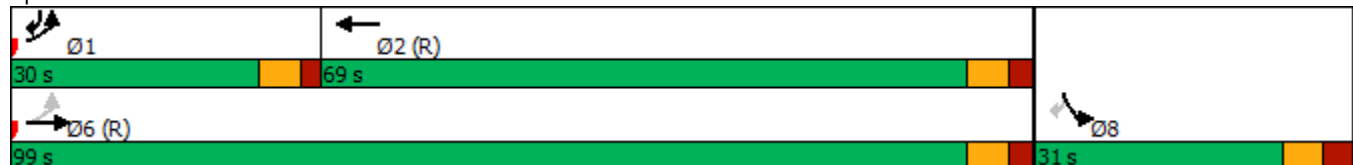


Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	325	1519	1205	203	482	367
Future Volume (vph)	325	1519	1205	203	482	367
Confl. Peds. (#/hr)	6			6	2	5
Confl. Bikes (#/hr)				2		
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	7%	7%	7%	5%	2%	5%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		31.0	11.0
Total Split (s)	30.0	99.0	69.0		31.0	30.0
Total Split (%)	23.1%	76.2%	53.1%		23.8%	23.1%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

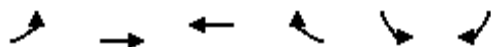
Cycle Length: 130
 Actuated Cycle Length: 130
 Offset: 92 (71%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
 Natural Cycle: 90
 Control Type: Actuated-Coordinated

Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM 6th Signalized Intersection Summary
1: NE 163rd Street & NE 19th Avenue

20146 Future with Project PM
01/11/2021

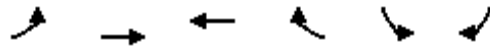


Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (veh/h)	312	1462	1673	334	317	371
Future Volume (veh/h)	312	1462	1673	334	317	371
Initial Q (Qb), veh	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00			1.00	1.00	1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No	No		No	
Adj Sat Flow, veh/h/ln	1885	1870	1870	1885	1856	1870
Adj Flow Rate, veh/h	328	1539	1761	352	334	391
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	1	2	2	1	3	2
Cap, veh/h	346	3864	2486	490	526	458
Arrive On Green	0.27	1.00	0.58	0.58	0.15	0.15
Sat Flow, veh/h	1795	5274	4446	844	3428	1585
Grp Volume(v), veh/h	328	1539	1397	716	334	391
Grp Sat Flow(s),veh/h/ln	1795	1702	1702	1718	1714	1585
Q Serve(g_s), s	18.0	0.0	43.7	45.0	13.7	23.0
Cycle Q Clear(g_c), s	18.0	0.0	43.7	45.0	13.7	23.0
Prop In Lane	1.00			0.49	1.00	1.00
Lane Grp Cap(c), veh/h	346	3864	1978	998	526	458
V/C Ratio(X)	0.95	0.40	0.71	0.72	0.64	0.85
Avail Cap(c_a), veh/h	450	3864	1978	998	526	458
HCM Platoon Ratio	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	0.85	0.85	0.38	0.38	0.89	0.89
Uniform Delay (d), s/veh	34.8	0.0	22.3	22.6	59.6	50.4
Incr Delay (d2), s/veh	21.3	0.3	0.8	1.7	5.1	16.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(95%),veh/ln	17.6	0.2	21.7	22.7	10.3	22.1
Unsig. Movement Delay, s/veh						
LnGrp Delay(d),s/veh	56.1	0.3	23.1	24.3	64.7	66.7
LnGrp LOS	E	A	C	C	E	E
Approach Vol, veh/h		1867	2113		725	
Approach Delay, s/veh		10.1	23.5		65.8	
Approach LOS		B	C		E	
Timer - Assigned Phs	1	2			6	8
Phs Duration (G+Y+Rc), s	26.3	93.7			120.0	30.0
Change Period (Y+Rc), s	6.0	6.5			6.5	7.0
Max Green Setting (Gmax), s	29.0	78.5			113.5	23.0
Max Q Clear Time (g_c+I1), s	20.0	47.0			2.0	25.0
Green Ext Time (p_c), s	0.4	8.1			5.6	0.0
Intersection Summary						
HCM 6th Ctrl Delay			24.7			
HCM 6th LOS			C			

Timings
1: NE 163rd Street & NE 19th Avenue

20146 Future with Project PM

01/11/2021



Lane Group	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Volume (vph)	312	1462	1673	334	317	371
Future Volume (vph)	312	1462	1673	334	317	371
Confl. Peds. (#/hr)	1			1	6	7
Confl. Bikes (#/hr)						2
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95
Heavy Vehicles (%)	1%	2%	2%	1%	3%	2%
Shared Lane Traffic (%)						
Turn Type	pm+pt	NA	NA		Prot	pm+ov
Protected Phases	1	6	2		8	1
Permitted Phases	6					8
Detector Phase	1	6	2		8	1
Switch Phase						
Minimum Initial (s)	5.0	7.0	7.0		7.0	5.0
Minimum Split (s)	11.0	44.5	44.5		30.0	11.0
Total Split (s)	35.0	120.0	85.0		30.0	35.0
Total Split (%)	23.3%	80.0%	56.7%		20.0%	23.3%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0
All-Red Time (s)	2.0	2.5	2.5		3.0	2.0
Lost Time Adjust (s)	0.0	0.0	0.0		0.0	0.0
Total Lost Time (s)	6.0	6.5	6.5		7.0	6.0
Lead/Lag	Lead		Lag			Lead
Lead-Lag Optimize?	Yes		Yes			Yes
Recall Mode	None	C-Max	C-Max		Max	None

Intersection Summary

Cycle Length: 150
Actuated Cycle Length: 150
Offset: 25 (17%), Referenced to phase 2:WBT and 6:EBTL, Start of 1st Green
Natural Cycle: 100
Control Type: Actuated-Coordinated

Splits and Phases: 1: NE 163rd Street & NE 19th Avenue



HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM

01/11/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Future Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		0.99	1.00	1.00	0.99
Frt		1.00	0.98			1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1804	4791			1739	4838		1589	1900	1552	1796
Flt Permitted		0.15	1.00			0.06	1.00		0.46	1.00	1.00	0.70
Satd. Flow (perm)		286	4791			105	4838		773	1900	1552	1332
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	2	42	1811	216	11	188	1468	27	179	81	158	40
RTOR Reduction (vph)	0	0	12	0	0	0	1	0	0	0	67	0
Lane Group Flow (vph)	0	44	2015	0	0	199	1494	0	179	81	91	40
Confl. Peds. (#/hr)	10	2		2	5	2		2	10		5	5
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	0%	0%	7%	0%	0%	4%	7%	0%	13%	0%	3%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		68.4	63.7			87.0	76.3		25.9	18.6	35.9	22.1
Effective Green, g (s)		68.4	63.7			87.0	76.3		25.9	18.6	35.9	22.1
Actuated g/C Ratio		0.53	0.49			0.67	0.59		0.20	0.14	0.28	0.17
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		205	2347			287	2839		199	271	428	245
v/s Ratio Prot		0.01	c0.42			c0.09	0.31		c0.05	0.04	0.03	0.01
v/s Ratio Perm		0.10				0.37			c0.13		0.03	0.02
v/c Ratio		0.21	0.86			0.69	0.53		0.90	0.30	0.21	0.16
Uniform Delay, d1		15.1	29.2			36.3	16.0		50.0	49.9	36.2	45.8
Progression Factor		1.00	1.00			1.30	0.64		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	4.4			4.6	0.6		36.1	0.5	0.1	0.1
Delay (s)		15.3	33.5			51.8	10.8		86.1	50.3	36.3	45.9
Level of Service		B	C			D	B		F	D	D	D
Approach Delay (s)			33.2				15.6			60.4		
Approach LOS			C				B			E		
Intersection Summary												
HCM 2000 Control Delay			30.0			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			87.7%			ICU Level of Service			E			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM

01/11/2021



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	99	44
Future Volume (vph)	99	44
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1735	
Flt Permitted	1.00	
Satd. Flow (perm)	1735	
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	109	48
RTOR Reduction (vph)	13	0
Lane Group Flow (vph)	144	0
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	5%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	16.7	
Effective Green, g (s)	16.7	
Actuated g/C Ratio	0.13	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	222	
v/s Ratio Prot	0.08	
v/s Ratio Perm		
v/c Ratio	0.65	
Uniform Delay, d1	53.9	
Progression Factor	1.00	
Incremental Delay, d2	5.7	
Delay (s)	59.5	
Level of Service	E	
Approach Delay (s)	56.8	
Approach LOS	E	
Intersection Summary		

Timings 2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM

01/11/2021

											
Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations											
Traffic Volume (vph)	2	38	1648	10	171	1336	163	74	144	36	99
Future Volume (vph)	2	38	1648	10	171	1336	163	74	144	36	99
Lane Group Flow (vph)	0	44	2027	0	199	1495	179	81	158	40	157
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	71.0	14.0	14.0	71.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	10.8%	10.8%	54.6%	10.8%	10.8%	54.6%	10.0%	24.6%	10.8%	10.0%	24.6%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.20	0.84		0.69	0.51	0.90	0.30	0.31	0.15	0.71
Control Delay		11.1	32.0		49.7	10.7	88.9	53.1	16.5	38.8	66.8
Queue Delay		0.0	0.0		0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay		11.1	32.0		49.7	10.7	88.9	53.1	16.5	38.8	66.8
Queue Length 50th (ft)		11	521		129	167	132	63	40	27	117
Queue Length 95th (ft)		28	592		#287	191	#234	110	97	55	184
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		254	2403		287	2928	199	362	507	275	343
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		0.17	0.84		0.69	0.51	0.90	0.22	0.31	0.15	0.46

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street



HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM

01/11/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	80	1562	78	13	87	1836	71	260	87	146	47
Future Volume (vph)	3	80	1562	78	13	87	1836	71	260	87	146	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1805	5072			1687	5056		1768	1900	1600	1805
Flt Permitted		0.07	1.00			0.10	1.00		0.51	1.00	1.00	0.70
Satd. Flow (perm)		127	5072			178	5056		945	1900	1600	1327
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	3	82	1610	80	13	90	1893	73	268	90	151	48
RTOR Reduction (vph)	0	0	3	0	0	0	2	0	0	0	68	0
Lane Group Flow (vph)	0	85	1687	0	0	103	1964	0	268	90	83	48
Confl. Peds. (#/hr)	1	1		5		5		1	1			
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	0%	1%	9%	0%	8%	2%	0%	2%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		102.2	94.8			102.4	94.9		24.3	17.0	24.5	21.1
Effective Green, g (s)		102.2	94.8			102.4	94.9		24.3	17.0	24.5	21.1
Actuated g/C Ratio		0.68	0.63			0.68	0.63		0.16	0.11	0.16	0.14
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		169	3205			196	3198		193	215	261	204
v/s Ratio Prot		0.02	0.33			c0.03	c0.39		c0.07	0.05	0.02	0.01
v/s Ratio Perm		0.32				0.33			c0.16		0.04	0.02
v/c Ratio		0.50	0.53			0.53	0.61		1.39	0.42	0.32	0.24
Uniform Delay, d1		13.7	15.2			11.2	16.5		62.3	61.9	55.4	56.9
Progression Factor		1.00	1.00			2.04	0.48		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.9	0.6			0.7	0.6		203.5	1.0	0.3	0.2
Delay (s)		14.6	15.8			23.6	8.5		265.8	62.9	55.6	57.1
Level of Service		B	B			C	A		F	E	E	E
Approach Delay (s)			15.8				9.2			167.6		
Approach LOS			B				A			F		
Intersection Summary												
HCM 2000 Control Delay			31.8				HCM 2000 Level of Service			C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			150.0				Sum of lost time (s)			25.0		
Intersection Capacity Utilization			78.8%				ICU Level of Service			D		
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM

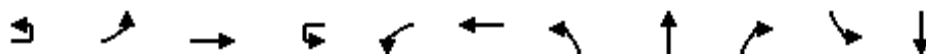
01/11/2021



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	82	37
Future Volume (vph)	82	37
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1753	
Flt Permitted	1.00	
Satd. Flow (perm)	1753	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	85	38
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	111	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	0%	9%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	15.4	
Effective Green, g (s)	15.4	
Actuated g/C Ratio	0.10	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	179	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.62	
Uniform Delay, d1	64.5	
Progression Factor	1.00	
Incremental Delay, d2	5.7	
Delay (s)	70.2	
Level of Service	E	
Approach Delay (s)	66.5	
Approach LOS	E	
Intersection Summary		

Timings 2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM
01/11/2021



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔	↑↑↑		↔	↑↑↑	↔	↑	↔	↔	↔
Traffic Volume (vph)	3	80	1562	13	87	1836	260	87	146	47	82
Future Volume (vph)	3	80	1562	13	87	1836	260	87	146	47	82
Lane Group Flow (vph)	0	85	1690	0	103	1966	268	90	151	48	123
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	91.0	14.0	14.0	91.0	13.0	32.0	14.0	13.0	32.0
Total Split (%)	9.3%	9.3%	60.7%	9.3%	9.3%	60.7%	8.7%	21.3%	9.3%	8.7%	21.3%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.50	0.52		0.52	0.61	1.39	0.42	0.44	0.22	0.69
Control Delay		20.7	16.0		21.2	8.6	245.4	68.3	27.2	51.1	77.3
Queue Delay		0.0	0.0		0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay		20.7	16.0		21.2	8.7	245.4	68.3	27.2	51.1	77.3
Queue Length 50th (ft)		21	306		16	178	~355	85	59	39	106
Queue Length 95th (ft)		60	413		m47	208	#504	139	119	75	171
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		186	3244		210	3236	193	314	353	227	301
Starvation Cap Reductn		0	0		0	373	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		0.46	0.52		0.49	0.69	1.39	0.29	0.43	0.21	0.41

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55 (37%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street

Ø1	Ø2 (R)	Ø3	Ø4
14 s	91 s	13 s	32 s
Ø5	Ø6 (R)	Ø7	Ø8
14 s	91 s	13 s	32 s

HCM 6th Signalized Intersection Summary 3: NE 19th Avenue & NE 164th Street

20146 Future with Project AM
01/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	53	58	21	11	43	23	29	443	7	46	812	149
Future Volume (veh/h)	53	58	21	11	43	23	29	443	7	46	812	149
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	0.99		0.96	1.00		0.97	1.00		0.97
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	55	60	22	11	45	24	30	461	7	48	846	155
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	339	112	41	318	77	41	92	1510	24	557	1329	242
Arrive On Green	0.13	0.09	0.09	0.11	0.07	0.07	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1213	445	1810	1092	582	299	4906	77	1810	4321	786
Grp Volume(v), veh/h	55	0	82	11	0	69	182	151	165	48	665	336
Grp Sat Flow(s),veh/h/ln	1810	0	1657	1810	0	1675	1811	1662	1810	1810	1702	1703
Q Serve(g_s), s	3.2	0.0	6.1	0.7	0.0	5.2	10.0	9.0	9.0	2.5	21.9	22.1
Cycle Q Clear(g_c), s	3.2	0.0	6.1	0.7	0.0	5.2	10.0	9.0	9.0	2.5	21.9	22.1
Prop In Lane	1.00		0.27	1.00		0.35	0.17		0.04	1.00		0.46
Lane Grp Cap(c), veh/h	339	0	153	318	0	118	557	511	557	557	1047	524
V/C Ratio(X)	0.16	0.00	0.53	0.03	0.00	0.59	0.33	0.30	0.30	0.09	0.64	0.64
Avail Cap(c_a), veh/h	339	0	255	318	0	258	557	511	557	557	1047	524
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	1.00	1.00	0.00	1.00	0.29	0.29	0.29	1.00	1.00	1.00
Uniform Delay (d), s/veh	42.5	0.0	56.3	43.8	0.0	58.6	34.6	34.3	34.3	32.0	38.7	38.8
Incr Delay (d2), s/veh	0.1	0.0	3.5	0.0	0.0	5.5	0.5	0.4	0.4	0.3	2.9	5.9
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(95%),veh/ln	2.6	0.0	4.9	0.5	0.0	4.3	6.4	5.4	5.9	2.0	14.6	15.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	42.6	0.0	59.8	43.8	0.0	64.1	35.1	34.7	34.7	32.3	41.7	44.7
LnGrp LOS	D	A	E	D	A	E	D	C	C	C	D	D
Approach Vol, veh/h	137			80			498			1049		
Approach Delay, s/veh	52.9			61.3			34.8			42.2		
Approach LOS	D			E			C			D		
Timer - Assigned Phs	2		3	4		6		7	8			
Phs Duration (G+Y+Rc), s	46.0		22.9	15.1		46.0		20.0	18.0			
Change Period (Y+Rc), s	6.0		5.4	6.0		6.0		5.4	6.0			
Max Green Setting (Gmax), s	40.0		6.6	20.0		40.0		6.6	20.0			
Max Q Clear Time (g_c+I1), s	24.1		5.2	7.2		12.0		2.7	8.1			
Green Ext Time (p_c), s	2.5		0.0	0.2		1.0		0.0	0.3			
Intersection Summary												
HCM 6th Ctrl Delay	41.8											
HCM 6th LOS	D											

Timings
3: NE 19th Avenue & NE 164th Street

20146 Future with Project AM

01/11/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	53	58	21	11	43	23	29	443	7	46	812	149
Future Volume (vph)	53	58	21	11	43	23	29	443	7	46	812	149
Confl. Peds. (#/hr)	4		2	2		4	3		1	1		3
Confl. Bikes (#/hr)			1			5			1			2
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

														
Ø2	Ø6	Ø3 (R)	Ø4	Ø7 (R)	Ø8									
46 s	46 s	12 s	26 s	12 s	26 s									

HCM 6th Signalized Intersection Summary 3: NE 19th Avenue & NE 164th Street

20146 Future with Project PM
01/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations								  			  	
Traffic Volume (veh/h)	123	87	31	23	65	43	17	640	5	35	646	140
Future Volume (veh/h)	123	87	31	23	65	43	17	640	5	35	646	140
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	0.99		0.97	1.00		0.97	1.00		0.97
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
Work Zone On Approach	No			No			No			No		
Adj Sat Flow, veh/h/ln	1900	1752	1885	1900	1811	1900	1900	1826	1900	1900	1870	1856
Adj Flow Rate, veh/h	128	91	32	24	68	45	18	667	5	36	673	146
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	0	10	1	0	6	0	0	5	0	0	2	3
Cap, veh/h	290	155	55	269	98	65	40	1578	12	557	1288	275
Arrive On Green	0.11	0.13	0.13	0.08	0.10	0.10	0.31	0.31	0.31	0.31	0.31	0.31
Sat Flow, veh/h	1810	1227	432	1810	1002	663	130	5129	40	1810	4186	893
Grp Volume(v), veh/h	128	0	123	24	0	113	252	209	229	36	545	274
Grp Sat Flow(s),veh/h/ln	1810	0	1659	1810	0	1666	1819	1662	1817	1810	1702	1675
Q Serve(g_s), s	7.8	0.0	9.1	1.4	0.0	8.5	14.5	13.0	13.0	1.8	17.2	17.6
Cycle Q Clear(g_c), s	7.8	0.0	9.1	1.4	0.0	8.5	14.5	13.0	13.0	1.8	17.2	17.6
Prop In Lane	1.00		0.26	1.00		0.40	0.07		0.02	1.00		0.53
Lane Grp Cap(c), veh/h	290	0	210	269	0	163	560	511	559	557	1047	515
V/C Ratio(X)	0.44	0.00	0.59	0.09	0.00	0.69	0.45	0.41	0.41	0.06	0.52	0.53
Avail Cap(c_a), veh/h	290	0	255	269	0	256	560	511	559	557	1047	515
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	1.00	1.00	0.00	1.00	0.28	0.28	0.28	1.00	1.00	1.00
Uniform Delay (d), s/veh	44.3	0.0	53.6	44.8	0.0	56.7	36.2	35.6	35.6	31.8	37.1	37.2
Incr Delay (d2), s/veh	0.4	0.0	3.1	0.1	0.0	6.2	0.7	0.7	0.6	0.2	1.8	3.9
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(95%),veh/ln	6.4	0.0	7.2	1.2	0.0	7.0	8.8	7.4	8.0	1.5	11.9	12.4
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	44.7	0.0	56.7	44.9	0.0	63.0	36.9	36.3	36.3	32.0	38.9	41.1
LnGrp LOS	D	A	E	D	A	E	D	D	D	C	D	D
Approach Vol, veh/h	251			137			690			855		
Approach Delay, s/veh	50.6			59.8			36.5			39.4		
Approach LOS	D			E			D			D		
Timer - Assigned Phs	2		3	4		6	7	8				
Phs Duration (G+Y+Rc), s	46.0		19.3	18.7		46.0	15.6	22.4				
Change Period (Y+Rc), s	6.0		5.4	6.0		6.0	5.4	6.0				
Max Green Setting (Gmax), s	40.0		6.6	20.0		40.0	6.6	20.0				
Max Q Clear Time (g_c+I1), s	19.6		9.8	10.5		16.5	3.4	11.1				
Green Ext Time (p_c), s	2.1		0.0	0.4		1.4	0.0	0.4				
Intersection Summary												
HCM 6th Ctrl Delay	41.2											
HCM 6th LOS	D											

Timings
3: NE 19th Avenue & NE 164th Street

20146 Future with Project PM

01/11/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	123	87	31	23	65	43	17	640	5	35	646	140
Future Volume (vph)	123	87	31	23	65	43	17	640	5	35	646	140
Confl. Peds. (#/hr)	6		6	6		6	1		5	5		1
Confl. Bikes (#/hr)			2			1			2			3
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Heavy Vehicles (%)	0%	10%	1%	0%	6%	0%	0%	5%	0%	0%	2%	3%
Shared Lane Traffic (%)												
Turn Type	pm+pt	NA		pm+pt	NA		Perm	NA		Split	NA	
Protected Phases	3	8		7	4			6		2	2	
Permitted Phases	8			4			6					
Detector Phase	3	8		7	4		6	6		2	2	
Switch Phase												
Minimum Initial (s)	5.0	7.0		5.0	7.0		7.0	7.0		7.0	7.0	
Minimum Split (s)	10.4	26.0		10.4	26.0		35.0	35.0		35.0	35.0	
Total Split (s)	12.0	26.0		12.0	26.0		46.0	46.0		46.0	46.0	
Total Split (%)	9.2%	20.0%		9.2%	20.0%		35.4%	35.4%		35.4%	35.4%	
Yellow Time (s)	3.4	4.0		3.4	4.0		4.0	4.0		4.0	4.0	
All-Red Time (s)	2.0	2.0		2.0	2.0		2.0	2.0		2.0	2.0	
Lost Time Adjust (s)	0.0	0.0		0.0	0.0			0.0		0.0	0.0	
Total Lost Time (s)	5.4	6.0		5.4	6.0			6.0		6.0	6.0	
Lead/Lag	Lead	Lag		Lead	Lag							
Lead-Lag Optimize?	Yes	Yes		Yes	Yes							
Recall Mode	C-Max	None		C-Max	None		Max	Max		Max	Max	

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 0 (0%), Referenced to phase 3:EBL and 7:WBL, Start of Yellow

Natural Cycle: 110

Control Type: Actuated-Coordinated

Splits and Phases: 3: NE 19th Avenue & NE 164th Street

			
Ø2	Ø6	Ø3 (R)	Ø4
46 s	46 s	12 s	26 s
			
		Ø7 (R)	Ø8
		12 s	26 s

Intersection	
Intersection Delay, s/veh	9
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	25	56	43	76	126	10	49	46	37	6	46	24
Future Vol, veh/h	25	56	43	76	126	10	49	46	37	6	46	24
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	27	62	47	84	138	11	54	51	41	7	51	26
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0

Approach	EB	WB	NB	SB
Opposing Approach	WB	EB	SB	NB
Opposing Lanes	2	2	1	1
Conflicting Approach Left	SB	NB	EB	WB
Conflicting Lanes Left	1	1	2	2
Conflicting Approach Right	NB	SB	WB	EB
Conflicting Lanes Right	1	1	2	2
HCM Control Delay	8.7	9.4	9.1	8.5
HCM LOS	A	A	A	A

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	37%	100%	0%	100%	0%	8%
Vol Thru, %	35%	0%	57%	0%	93%	61%
Vol Right, %	28%	0%	43%	0%	7%	32%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	132	25	99	76	136	76
LT Vol	49	25	0	76	0	6
Through Vol	46	0	56	0	126	46
RT Vol	37	0	43	0	10	24
Lane Flow Rate	145	27	109	84	149	84
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.196	0.045	0.152	0.133	0.215	0.113
Departure Headway (Hd)	4.855	5.844	5.033	5.73	5.175	4.86
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	737	610	708	623	690	733
Service Time	2.904	3.606	2.794	3.487	2.931	2.917
HCM Lane V/C Ratio	0.197	0.044	0.154	0.135	0.216	0.115
HCM Control Delay	9.1	8.9	8.7	9.4	9.4	8.5
HCM Lane LOS	A	A	A	A	A	A
HCM 95th-tile Q	0.7	0.1	0.5	0.5	0.8	0.4

Intersection	
Intersection Delay, s/veh	9.6
Intersection LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	21	133	64	72	131	18	66	31	61	5	21	21
Future Vol, veh/h	21	133	64	72	131	18	66	31	61	5	21	21
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
Heavy Vehicles, %	16	3	0	5	3	0	0	0	0	0	14	0
Mvmt Flow	22	141	68	77	139	19	70	33	65	5	22	22
Number of Lanes	1	1	0	1	1	0	0	1	0	0	1	0
Approach	EB			WB			NB			SB		
Opposing Approach	WB			EB			SB			NB		
Opposing Lanes	2			2			1			1		
Conflicting Approach Left	SB			NB			EB			WB		
Conflicting Lanes Left	1			1			2			2		
Conflicting Approach Right	NB			SB			WB			EB		
Conflicting Lanes Right	1			1			2			2		
HCM Control Delay	10			9.6			9.5			8.5		
HCM LOS	A			A			A			A		

Lane	NBLn1	EBLn1	EBLn2	WBLn1	WBLn2	SBLn1
Vol Left, %	42%	100%	0%	100%	0%	11%
Vol Thru, %	20%	0%	68%	0%	88%	45%
Vol Right, %	39%	0%	32%	0%	12%	45%
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop
Traffic Vol by Lane	158	21	197	72	149	47
LT Vol	66	21	0	72	0	5
Through Vol	31	0	133	0	131	21
RT Vol	61	0	64	0	18	21
Lane Flow Rate	168	22	210	77	159	50
Geometry Grp	2	7	7	7	7	2
Degree of Util (X)	0.231	0.038	0.298	0.125	0.231	0.07
Departure Headway (Hd)	4.953	6.068	5.112	5.862	5.238	5.033
Convergence, Y/N	Yes	Yes	Yes	Yes	Yes	Yes
Cap	719	587	698	608	680	705
Service Time	3.018	3.838	2.881	3.631	3.007	3.117
HCM Lane V/C Ratio	0.234	0.037	0.301	0.127	0.234	0.071
HCM Control Delay	9.5	9.1	10.1	9.5	9.6	8.5
HCM Lane LOS	A	A	B	A	A	A
HCM 95th-tile Q	0.9	0.1	1.2	0.4	0.9	0.2

Intersection						
Int Delay, s/veh	0.1					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1844	1538	25	0	18
Future Vol, veh/h	0	1844	1538	25	0	18
Conflicting Peds, #/hr	3	0	0	3	0	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	90	90	90	90	90	90
Heavy Vehicles, %	0	0	7	0	0	0
Mvmt Flow	0	2049	1709	28	0	20
Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	-	0	-	0	-	873
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	255
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	254
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB		WB		SB	
HCM Control Delay, s	0		0		20.4	
HCM LOS					C	
Minor Lane/Major Mvmt	EBT		WBT		WBR SBLn1	
Capacity (veh/h)	-		-		254	
HCM Lane V/C Ratio	-		-		0.079	
HCM Control Delay (s)	-		-		20.4	
HCM Lane LOS	-		-		C	
HCM 95th %tile Q(veh)	-		-		0.3	

Intersection						
Int Delay, s/veh	0.2					
Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations		↑↑↑↑	↑↑↑↑			↑↑
Traffic Vol, veh/h	0	1774	1956	63	0	22
Future Vol, veh/h	0	1774	1956	63	0	22
Conflicting Peds, #/hr	3	0	0	3	3	1
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	-	0
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	0	0	2	0	0	0
Mvmt Flow	0	1848	2038	66	0	23
Major/Minor	Major1	Major2		Minor2		
Conflicting Flow All	-	0	-	0	-	1056
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Critical Hdwy	-	-	-	-	-	7.1
Critical Hdwy Stg 1	-	-	-	-	-	-
Critical Hdwy Stg 2	-	-	-	-	-	-
Follow-up Hdwy	-	-	-	-	-	3.9
Pot Cap-1 Maneuver	0	-	-	-	0	193
Stage 1	0	-	-	-	0	-
Stage 2	0	-	-	-	0	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	-	-	-	-	-	192
Mov Cap-2 Maneuver	-	-	-	-	-	-
Stage 1	-	-	-	-	-	-
Stage 2	-	-	-	-	-	-
Approach	EB	WB		SB		
HCM Control Delay, s	0	0		26.3		
HCM LOS				D		
Minor Lane/Major Mvmt	EBT	WBT	WBR	SBLn1		
Capacity (veh/h)	-	-	-	192		
HCM Lane V/C Ratio	-	-	-	0.119		
HCM Control Delay (s)	-	-	-	26.3		
HCM Lane LOS	-	-	-	D		
HCM 95th %tile Q(veh)	-	-	-	0.4		

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project AM

01/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	385	1313	309	445	1187	586	5	253	1058	499	8	458
Future Volume (vph)	385	1313	309	445	1187	586	5	253	1058	499	8	458
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3303	4940	1504	3367	5036	1581		3402	6346	1553		3369
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3303	4940	1504	3367	5036	1581		3402	6346	1553		3369
Peak-hour factor, PHF	0.99	0.99	0.99	0.99	0.99	0.99	0.95	0.99	0.99	0.99	0.95	0.99
Adj. Flow (vph)	389	1326	312	449	1199	592	5	256	1069	504	8	463
RTOR Reduction (vph)	0	0	43	0	0	40	0	0	0	44	0	0
Lane Group Flow (vph)	389	1326	269	449	1199	552	0	261	1069	460	0	471
Confl. Peds. (#/hr)	2		4	4		2		4		2		2
Confl. Bikes (#/hr)			3			4				2		
Heavy Vehicles (%)	6%	5%	6%	4%	3%	1%	0%	3%	3%	3%	0%	4%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	24.5	49.0	67.1	25.4	49.9	73.2		18.1	43.8	69.2		23.3
Effective Green, g (s)	24.5	49.0	67.1	25.4	49.9	73.2		18.1	43.8	69.2		23.3
Actuated g/C Ratio	0.14	0.29	0.39	0.15	0.29	0.43		0.11	0.26	0.41		0.14
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	476	1423	593	503	1478	680		362	1635	632		461
v/s Ratio Prot	0.12	c0.27	0.05	c0.13	0.24	0.11		0.08	0.17	0.11		c0.14
v/s Ratio Perm			0.13			0.24				0.19		
v/c Ratio	0.82	0.93	0.45	0.89	0.81	0.81		0.72	0.65	0.73		1.02
Uniform Delay, d1	70.6	58.9	37.9	71.0	55.7	42.4		73.5	56.3	42.5		73.3
Progression Factor	1.19	0.81	0.50	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	6.4	7.3	0.3	17.9	3.4	7.3		6.9	2.1	4.2		47.5
Delay (s)	90.6	54.7	19.4	88.9	59.1	49.6		80.4	58.4	46.7		120.9
Level of Service	F	D	B	F	E	D		F	E	D		F
Approach Delay (s)		56.1			62.6				58.3			
Approach LOS		E			E				E			
Intersection Summary												
HCM 2000 Control Delay			62.4			HCM 2000 Level of Service			E			
HCM 2000 Volume to Capacity ratio			0.95									
Actuated Cycle Length (s)			170.0			Sum of lost time (s)			28.5			
Intersection Capacity Utilization			118.8%			ICU Level of Service			H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project AM
01/11/2021



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1457	633
Future Volume (vph)	1457	633
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.99
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1563
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1563
Peak-hour factor, PHF	0.99	0.99
Adj. Flow (vph)	1472	639
RTOR Reduction (vph)	0	42
Lane Group Flow (vph)	1472	597
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		5
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	49.0	73.5
Effective Green, g (s)	49.0	73.5
Actuated g/C Ratio	0.29	0.43
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1865	675
v/s Ratio Prot	0.23	0.13
v/s Ratio Perm		0.25
v/c Ratio	0.79	0.88
Uniform Delay, d1	55.7	44.3
Progression Factor	1.00	1.00
Incremental Delay, d2	3.5	13.2
Delay (s)	59.2	57.5
Level of Service	E	E
Approach Delay (s)	70.0	
Approach LOS	E	
Intersection Summary		

Timings 6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project AM
01/11/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	385	1313	309	445	1187	586	253	1058	499	458	1457	633
Future Volume (vph)	385	1313	309	445	1187	586	253	1058	499	458	1457	633
Lane Group Flow (vph)	389	1326	312	449	1199	592	261	1069	504	471	1472	639
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	56.7	11.8	11.8	56.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	33.0	57.0	29.0	33.0	57.0	29.0	29.0	51.0	33.0	29.0	51.0	33.0
Total Split (%)	19.4%	33.5%	17.1%	19.4%	33.5%	17.1%	17.1%	30.0%	19.4%	17.1%	30.0%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.82	0.93	0.48	0.89	0.81	0.81	0.72	0.65	0.74	1.02	0.79	0.89
Control Delay	93.2	55.5	14.0	91.4	61.0	42.9	84.8	58.6	39.3	117.2	60.1	50.8
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	93.2	55.5	14.0	91.4	61.0	42.9	84.8	58.6	39.3	117.2	60.1	50.8
Queue Length 50th (ft)	236	397	80	255	459	482	147	311	378	~298	447	541
Queue Length 95th (ft)	m277	m482	m99	#343	519	651	194	353	520	#418	509	#880
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	509	1432	678	518	1478	729	444	1635	686	461	1863	736
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.76	0.93	0.46	0.87	0.81	0.81	0.59	0.65	0.73	1.02	0.79	0.87

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

Ø1	Ø2 (R)	Ø3	Ø4
29 s	51 s	33 s	57 s
Ø5	Ø6 (R)	Ø7	Ø8
29 s	51 s	33 s	57 s

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project PM

01/11/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	475	1189	445	571	1479	832	19	481	1473	637	14	487
Future Volume (vph)	475	1189	445	571	1479	832	19	481	1473	637	14	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.98		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3502	5136	1549	3467	5085	1575		3436	6471	1575		3468
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	490	1226	459	589	1525	858	20	496	1519	657	14	502
RTOR Reduction (vph)	0	0	41	0	0	41	0	0	0	44	0	0
Lane Group Flow (vph)	490	1226	418	589	1525	817	0	516	1519	613	0	516
Confl. Peds. (#/hr)	9		5	5		9	5	15		7	9	7
Confl. Bikes (#/hr)			3			3				7		
Heavy Vehicles (%)	0%	1%	3%	1%	2%	1%	0%	2%	1%	1%	0%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	25.9	47.3	72.5	26.2	47.6	72.8		25.2	42.8	69.0		25.2
Effective Green, g (s)	25.9	47.3	72.5	26.2	47.6	72.8		25.2	42.8	69.0		25.2
Actuated g/C Ratio	0.15	0.28	0.43	0.15	0.28	0.43		0.15	0.25	0.41		0.15
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	533	1429	660	534	1423	674		509	1629	639		514
v/s Ratio Prot	0.14	0.24	0.09	c0.17	0.30	c0.18		0.15	0.23	c0.15		0.15
v/s Ratio Perm			0.18			0.34				0.24		
v/c Ratio	0.92	0.86	0.63	1.10	1.07	1.21		1.01	0.93	0.96		1.00
Uniform Delay, d1	71.0	58.2	38.3	71.9	61.2	48.6		72.4	62.2	49.1		72.4
Progression Factor	1.18	0.76	0.56	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	15.8	3.7	1.4	70.2	45.6	109.1		43.4	11.2	25.5		40.7
Delay (s)	99.3	48.1	23.0	142.1	106.8	157.7		115.8	73.3	74.7		113.1
Level of Service	F	D	C	F	F	F		F	E	E		F
Approach Delay (s)		54.4			128.5				81.8			
Approach LOS		D			F				F			
Intersection Summary												
HCM 2000 Control Delay			87.5			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.12									
Actuated Cycle Length (s)			170.0			Sum of lost time (s)			28.5			
Intersection Capacity Utilization			138.3%			ICU Level of Service			H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project PM

01/11/2021



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1357	542
Future Volume (vph)	1357	542
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1552
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1552
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1399	559
RTOR Reduction (vph)	0	44
Lane Group Flow (vph)	1399	515
Confl. Peds. (#/hr)		15
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	42.8	68.7
Effective Green, g (s)	42.8	68.7
Actuated g/C Ratio	0.25	0.40
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1629	627
v/s Ratio Prot	0.22	0.13
v/s Ratio Perm		0.21
v/c Ratio	0.86	0.82
Uniform Delay, d1	60.7	45.2
Progression Factor	1.00	1.00
Incremental Delay, d2	6.1	8.5
Delay (s)	66.8	53.7
Level of Service	E	D
Approach Delay (s)	73.5	
Approach LOS	E	
Intersection Summary		

Timings
6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project PM

01/11/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	1189	445	571	1479	832	481	1473	637	487	1357	542
Future Volume (vph)	475	1189	445	571	1479	832	481	1473	637	487	1357	542
Lane Group Flow (vph)	490	1226	459	589	1525	858	516	1519	657	516	1399	559
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	33.0	55.0	32.0	33.0	55.0	32.0	32.0	50.0	33.0	32.0	50.0	33.0
Total Split (%)	19.4%	32.4%	18.8%	19.4%	32.4%	18.8%	18.8%	29.4%	19.4%	18.8%	29.4%	19.4%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.92	0.86	0.65	1.10	1.07	1.19	1.01	0.93	0.96	1.00	0.86	0.83
Control Delay	100.0	49.5	19.0	133.7	102.5	134.0	113.1	73.2	64.7	111.1	67.1	46.8
Queue Delay	0.0	0.0	0.0	0.0	11.6	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	100.0	49.5	19.0	133.7	114.1	134.0	113.1	73.2	64.7	111.1	67.1	46.8
Queue Length 50th (ft)	296	336	147	~382	~690	~825	~310	485	599	~302	436	453
Queue Length 95th (ft)	m#343	m409	m172	#509	#787	#1091	#432	#536	#929	#430	483	615
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	539	1429	708	534	1422	722	509	1629	686	514	1629	677
Starvation Cap Reductn	0	0	3	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	100	0	0	0	0	0	0	1
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.91	0.86	0.65	1.10	1.15	1.19	1.01	0.93	0.96	1.00	0.86	0.83

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
32 s	50 s	33 s	55 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
32 s	50 s	33 s	55 s

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project AM
01/11/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	73	1518	125	8	508	1321	93	135	368	331	162
Future Volume (vph)	2	73	1518	125	8	508	1321	93	135	368	331	162
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	0.95		1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	0.98		1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00		1.00
Frt		1.00	0.99			1.00	0.99		1.00	0.93		1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00		0.95
Satd. Flow (prot)		1721	5000			1720	4969		1719	3142		1719
Flt Permitted		0.13	1.00			0.06	1.00		0.15	1.00		0.14
Satd. Flow (perm)		239	5000			110	4969		267	3142		253
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	2	77	1598	132	8	535	1391	98	142	387	348	171
RTOR Reduction (vph)	0	0	6	0	0	0	4	0	0	95	0	0
Lane Group Flow (vph)	0	79	1724	0	0	543	1485	0	142	640	0	171
Confl. Peds. (#/hr)	3			5	11	5			3		11	11
Confl. Bikes (#/hr)								1			1	
Heavy Vehicles (%)	0%	5%	2%	7%	0%	5%	3%	7%	5%	3%	7%	5%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Actuated Green, G (s)		91.5	84.0			108.0	94.5		41.7	27.1		44.7
Effective Green, g (s)		91.5	84.0			108.0	94.5		41.7	27.1		44.7
Actuated g/C Ratio		0.54	0.49			0.64	0.56		0.25	0.16		0.26
Clearance Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Vehicle Extension (s)		2.0	1.0			3.0	1.0		2.0	2.5		2.0
Lane Grp Cap (vph)		194	2470			240	2762		190	500		205
v/s Ratio Prot		0.02	0.34			c0.24	0.30		0.06	c0.20		c0.08
v/s Ratio Perm		0.20				c1.19			0.12			0.14
v/c Ratio		0.41	0.70			2.26	0.54		0.75	1.28		0.83
Uniform Delay, d1		20.1	33.2			53.4	23.9		54.2	71.5		53.2
Progression Factor		1.00	1.00			1.38	0.56		1.00	1.00		1.00
Incremental Delay, d2		0.5	1.7			575.7	0.4		13.1	140.7		23.3
Delay (s)		20.6	34.9			649.6	13.8		67.3	212.2		76.6
Level of Service		C	C			F	B		E	F		E
Approach Delay (s)			34.2				183.7			188.7		
Approach LOS			C				F			F		
Intersection Summary												
HCM 2000 Control Delay			123.1				HCM 2000 Level of Service			F		
HCM 2000 Volume to Capacity ratio			1.96									
Actuated Cycle Length (s)			170.0				Sum of lost time (s)			24.8		
Intersection Capacity Utilization			111.7%				ICU Level of Service			H		
Analysis Period (min)			15									
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project AM
01/11/2021



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (vph)	481	68
Future Volume (vph)	481	68
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	6.4	
Lane Util. Factor	0.95	
Frpb, ped/bikes	1.00	
Flpb, ped/bikes	1.00	
Frt	0.98	
Flt Protected	1.00	
Satd. Flow (prot)	3482	
Flt Permitted	1.00	
Satd. Flow (perm)	3482	
Peak-hour factor, PHF	0.95	0.95
Adj. Flow (vph)	506	72
RTOR Reduction (vph)	7	0
Lane Group Flow (vph)	571	0
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		1
Heavy Vehicles (%)	1%	5%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	28.6	
Effective Green, g (s)	28.6	
Actuated g/C Ratio	0.17	
Clearance Time (s)	6.4	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	585	
v/s Ratio Prot	0.16	
v/s Ratio Perm		
v/c Ratio	0.98	
Uniform Delay, d1	70.4	
Progression Factor	1.00	
Incremental Delay, d2	31.9	
Delay (s)	102.3	
Level of Service	F	
Approach Delay (s)	96.4	
Approach LOS	F	
Intersection Summary		

Timings

20146 Future with Project AM

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/11/2021



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	SBL	SBT
Lane Configurations		↔	↔↔↔		↔	↔↔↔	↔	↔↔	↔	↔↔
Traffic Volume (vph)	2	73	1518	8	508	1321	135	368	162	481
Future Volume (vph)	2	73	1518	8	508	1321	135	368	162	481
Lane Group Flow (vph)	0	79	1730	0	543	1489	142	735	171	578
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+pt	NA
Protected Phases	1	1	6	5	5	2	7	4	3	8
Permitted Phases	6	6		2	2		4		8	
Detector Phase	1	1	6	5	5	2	7	4	3	8
Switch Phase										
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	7.0
Minimum Split (s)	11.0	11.0	32.0	11.0	11.0	32.0	11.4	30.4	11.4	30.4
Total Split (s)	24.0	24.0	90.0	24.0	24.0	90.0	24.0	32.0	24.0	32.0
Total Split (%)	14.1%	14.1%	52.9%	14.1%	14.1%	52.9%	14.1%	18.8%	14.1%	18.8%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	4.4	4.4	4.4	4.4
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
Total Lost Time (s)		6.0	6.0		6.0	6.0	6.4	6.4	6.4	6.4
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	Max	None	Max
v/c Ratio		0.41	0.70		2.26	0.54	0.75	1.24	0.83	0.98
Control Delay		19.5	34.9		603.4	13.8	70.8	166.6	79.7	99.3
Queue Delay		0.0	0.0		0.0	0.3	0.0	0.0	0.0	0.0
Total Delay		19.5	34.9		603.4	14.1	70.8	166.6	79.7	99.3
Queue Length 50th (ft)		32	534		~919	206	123	~489	151	~340
Queue Length 95th (ft)		55	589		m#1148	223	189	#625	#266	#505
Internal Link Dist (ft)			1910			610		1033		344
Turn Bay Length (ft)		240			270		150		140	
Base Capacity (vph)		300	2477		240	2767	220	595	220	591
Starvation Cap Reductn		0	0		0	548	0	0	0	0
Spillback Cap Reductn		0	0		0	0	0	0	0	0
Storage Cap Reductn		0	0		0	0	0	0	0	0
Reduced v/c Ratio		0.26	0.70		2.26	0.67	0.65	1.24	0.78	0.98

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

~ 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.

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street



HCM 6th Signalized Intersection Summary
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project PM
01/11/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (veh/h)	15	250	1419	104	14	289	1938	155	200	441	343	187
Future Volume (veh/h)	15	250	1419	104	14	289	1938	155	200	441	343	187
Initial Q (Qb), veh		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		0.94	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1781		1885	1870	1811	1870	1885	1870	1856
Adj Flow Rate, veh/h		255	1448	106		295	1978	158	204	450	350	191
Peak Hour Factor		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	8		1	2	6	2	1	2	3
Cap, veh/h		283	2426	178		317	2492	198	227	284	219	223
Arrive On Green		0.08	0.50	0.50		0.20	1.00	1.00	0.10	0.15	0.15	0.10
Sat Flow, veh/h		1781	4848	355		1795	4815	382	1781	1869	1445	1767
Grp Volume(v), veh/h		255	1017	537		295	1395	741	204	431	369	191
Grp Sat Flow(s),veh/h/ln		1781	1702	1799		1795	1702	1794	1781	1791	1523	1767
Q Serve(g_s), s		11.8	36.2	36.2		14.8	0.0	0.0	16.4	25.8	25.8	15.4
Cycle Q Clear(g_c), s		11.8	36.2	36.2		14.8	0.0	0.0	16.4	25.8	25.8	15.4
Prop In Lane		1.00		0.20		1.00		0.21	1.00		0.95	1.00
Lane Grp Cap(c), veh/h		283	1704	900		317	1762	928	227	272	231	223
V/C Ratio(X)		0.90	0.60	0.60		0.93	0.79	0.80	0.90	1.59	1.60	0.86
Avail Cap(c_a), veh/h		325	1704	900		329	1762	928	227	272	231	225
HCM Platoon Ratio		1.00	1.00	1.00		2.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.90	0.90	0.90		0.09	0.09	0.09	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		22.8	30.2	30.2		25.7	0.0	0.0	55.3	72.1	72.1	55.1
Incr Delay (d2), s/veh		21.1	1.4	2.6		4.9	0.3	0.7	33.4	280.6	287.6	24.9
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
%ile BackOfQ(95%),veh/ln		10.7	21.4	22.8		7.1	0.2	0.3	14.6	50.8	44.6	13.3
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		43.9	31.6	32.9		30.6	0.3	0.7	88.7	352.7	359.7	80.0
LnGrp LOS		D	C	C		C	A	A	F	F	F	F
Approach Vol, veh/h			1809				2431			1004		
Approach Delay, s/veh			33.7				4.1			301.6		
Approach LOS			C				A			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.0	94.0	23.8	32.2	22.9	91.1	24.0	32.0				
Change Period (Y+Rc), s	6.0	6.0	6.4	6.4	6.0	6.0	6.4	6.4				
Max Green Setting (Gmax), s	18.0	84.0	17.6	25.6	18.0	84.0	17.6	25.6				
Max Q Clear Time (g_c+I1), s	13.8	2.0	17.4	27.8	16.8	38.2	18.4	27.6				
Green Ext Time (p_c), s	0.2	8.5	0.0	0.0	0.1	4.9	0.0	0.0				
Intersection Summary												
HCM 6th Ctrl Delay			79.1									
HCM 6th LOS			E									
Notes												
User approved ignoring U-Turning movement.												

HCM 6th Signalized Intersection Summary
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project PM

01/11/2021



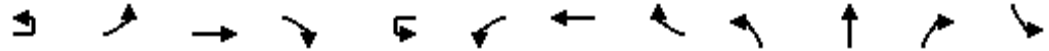
Movement	SBT	SBR
Lane Configurations	↑↑	↘
Traffic Volume (veh/h)	463	98
Future Volume (veh/h)	463	98
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.94
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1885	1900
Adj Flow Rate, veh/h	472	100
Peak Hour Factor	0.98	0.98
Percent Heavy Veh, %	1	0
Cap, veh/h	438	92
Arrive On Green	0.15	0.15
Sat Flow, veh/h	2910	611
Grp Volume(v), veh/h	289	283
Grp Sat Flow(s),veh/h/ln	1791	1730
Q Serve(g_s), s	25.6	25.6
Cycle Q Clear(g_c), s	25.6	25.6
Prop In Lane		0.35
Lane Grp Cap(c), veh/h	270	261
V/C Ratio(X)	1.07	1.09
Avail Cap(c_a), veh/h	270	261
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	72.2	72.2
Incr Delay (d2), s/veh	75.0	80.7
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	25.1	25.1
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	147.2	152.9
LnGrp LOS	F	F
Approach Vol, veh/h	763	
Approach Delay, s/veh	132.5	
Approach LOS	F	
Timer - Assigned Phs		

Timings

20146 Future with Project PM

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/11/2021



Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↑↑↑			↔	↑↑↑		↔	↑↑		↔
Traffic Volume (vph)	15	250	1419	104	14	289	1938	155	200	441	343	187
Future Volume (vph)	15	250	1419	104	14	289	1938	155	200	441	343	187
Confl. Peds. (#/hr)	4	1		6	21	6		1	4		21	21
Confl. Bikes (#/hr)				6				5			3	
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
Heavy Vehicles (%)	0%	2%	2%	8%	0%	1%	2%	6%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	270	1554	0	0	309	2136	0	204	800	0	191
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Detector Phase	1	1	6		5	5	2		7	4		3
Switch Phase												
Minimum Initial (s)	5.0	5.0	7.0		5.0	5.0	7.0		5.0	7.0		5.0
Minimum Split (s)	11.0	11.0	32.0		11.0	11.0	32.0		11.4	30.4		11.4
Total Split (s)	24.0	24.0	90.0		24.0	24.0	90.0		24.0	32.0		24.0
Total Split (%)	14.1%	14.1%	52.9%		14.1%	14.1%	52.9%		14.1%	18.8%		14.1%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.4	4.4		4.4
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
Total Lost Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes		Yes
Recall Mode	None	None	C-Max		None	None	C-Max		None	Max		None
v/c Ratio		1.16	0.63			1.13	0.86		0.91	1.37		0.88
Control Delay		157.0	32.7			114.8	21.7		91.2	222.8		85.2
Queue Delay		0.0	0.0			0.0	20.4		0.0	0.0		0.0
Total Delay		157.0	32.7			114.8	42.1		91.2	222.8		85.2
Queue Length 50th (ft)		~304	455			~300	301		183	~577		170
Queue Length 95th (ft)		#502	505			m#302	m293		#337	#716		#304
Internal Link Dist (ft)			1910				610			1033		
Turn Bay Length (ft)		240				270			150			140
Base Capacity (vph)		232	2478			274	2480		226	582		224
Starvation Cap Reductn		0	0			0	418		0	0		0
Spillback Cap Reductn		0	0			0	0		0	0		0
Storage Cap Reductn		0	0			0	0		0	0		0
Reduced v/c Ratio		1.16	0.63			1.13	1.04		0.90	1.37		0.85

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

~ 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.

Timings
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project PM

01/11/2021



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	463	98
Future Volume (vph)	463	98
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		4
Peak Hour Factor	0.98	0.98
Heavy Vehicles (%)	1%	0%
Shared Lane Traffic (%)		
Lane Group Flow (vph)	572	0
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Detector Phase	8	
Switch Phase		
Minimum Initial (s)	7.0	
Minimum Split (s)	30.4	
Total Split (s)	32.0	
Total Split (%)	18.8%	
Yellow Time (s)	4.4	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.4	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	Max	
v/c Ratio	1.06	
Control Delay	120.7	
Queue Delay	0.0	
Total Delay	120.7	
Queue Length 50th (ft)	~365	
Queue Length 95th (ft)	#495	
Internal Link Dist (ft)	344	
Turn Bay Length (ft)		
Base Capacity (vph)	539	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	1.06	
Intersection Summary		

Timings

20146 Future with Project PM

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/11/2021

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

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
24 s	90 s	24 s	32 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
24 s	90 s	24 s	32 s

Intersection						
Int Delay, s/veh	0.5					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	4	14	130	10	0	163
Future Vol, veh/h	4	14	130	10	0	163
Conflicting Peds, #/hr	0	1	0	7	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	5	16	151	12	0	190
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	354	165	0	0	170	0
Stage 1	164	-	-	-	-	-
Stage 2	190	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	644	879	-	-	1407	-
Stage 1	865	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	639	872	-	-	1398	-
Mov Cap-2 Maneuver	639	-	-	-	-	-
Stage 1	859	-	-	-	-	-
Stage 2	842	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.6	0	0			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	807	1398	-	
HCM Lane V/C Ratio	-	-	0.026	-	-	
HCM Control Delay (s)	-	-	9.6	0	-	
HCM Lane LOS	-	-	A	A	-	
HCM 95th %tile Q(veh)	-	-	0.1	0	-	

Intersection						
Int Delay, s/veh	1					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	11	22	139	32	7	157
Future Vol, veh/h	11	22	139	32	7	157
Conflicting Peds, #/hr	0	1	0	1	7	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	94	94	94	94	94	94
Heavy Vehicles, %	50	0	0	0	0	33
Mvmt Flow	12	23	148	34	7	167
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	353	173	0	0	189	0
Stage 1	172	-	-	-	-	-
Stage 2	181	-	-	-	-	-
Critical Hdwy	6.9	6.2	-	-	4.1	-
Critical Hdwy Stg 1	5.9	-	-	-	-	-
Critical Hdwy Stg 2	5.9	-	-	-	-	-
Follow-up Hdwy	3.95	3.3	-	-	2.2	-
Pot Cap-1 Maneuver	559	876	-	-	1397	-
Stage 1	754	-	-	-	-	-
Stage 2	747	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	552	869	-	-	1388	-
Mov Cap-2 Maneuver	552	-	-	-	-	-
Stage 1	749	-	-	-	-	-
Stage 2	743	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	10.2	0	0.3			
HCM LOS	B					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	729	1388	-	
HCM Lane V/C Ratio	-	-	0.048	0.005	-	
HCM Control Delay (s)	-	-	10.2	7.6	0	
HCM Lane LOS	-	-	B	A	A	
HCM 95th %tile Q(veh)	-	-	0.2	0	-	

Intersection						
Int Delay, s/veh	6.2					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	34	43	7	25	3	1
Future Vol, veh/h	34	43	7	25	3	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	36	45	7	26	3	1
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	27	20	0	0	33	0
Stage 1	20	-	-	-	-	-
Stage 2	7	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	988	1058	-	-	1579	-
Stage 1	1003	-	-	-	-	-
Stage 2	1016	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	986	1058	-	-	1579	-
Mov Cap-2 Maneuver	986	-	-	-	-	-
Stage 1	1003	-	-	-	-	-
Stage 2	1014	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	8.8	0	5.5			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	- 1025	1579	-		
HCM Lane V/C Ratio	-	- 0.079	0.002	-		
HCM Control Delay (s)	-	- 8.8	7.3	0		
HCM Lane LOS	-	- A	A	A		
HCM 95th %tile Q(veh)	-	- 0.3	0	-		

Intersection						
Int Delay, s/veh	4.6					
Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	41	44	1	90	15	1
Future Vol, veh/h	41	44	1	90	15	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	-	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	2
Mvmt Flow	43	46	1	95	16	1
Major/Minor	Minor1	Major1	Major2			
Conflicting Flow All	82	49	0	0	96	0
Stage 1	49	-	-	-	-	-
Stage 2	33	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	920	1020	-	-	1498	-
Stage 1	973	-	-	-	-	-
Stage 2	989	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	910	1020	-	-	1498	-
Mov Cap-2 Maneuver	910	-	-	-	-	-
Stage 1	973	-	-	-	-	-
Stage 2	978	-	-	-	-	-
Approach	WB	NB	SB			
HCM Control Delay, s	9.1	0	7			
HCM LOS	A					
Minor Lane/Major Mvmt	NBT	NBRWBLn1	SBL	SBT		
Capacity (veh/h)	-	-	964	1498	-	
HCM Lane V/C Ratio	-	-	0.093	0.011	-	
HCM Control Delay (s)	-	-	9.1	7.4	0	
HCM Lane LOS	-	-	A	A	A	
HCM 95th %tile Q(veh)	-	-	0.3	0	-	

**Future with Project with
Improvements Conditions**

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM with Imp

01/12/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Future Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	0.99
Frt		1.00	0.98			1.00	1.00		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1804	4791			1739	4838		1590	1900	1552	1796
Flt Permitted		0.15	1.00			0.06	1.00		0.45	1.00	1.00	0.70
Satd. Flow (perm)		290	4791			109	4838		745	1900	1552	1332
Peak-hour factor, PHF	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Adj. Flow (vph)	2	42	1811	216	11	188	1468	27	179	81	158	40
RTOR Reduction (vph)	0	0	11	0	0	0	1	0	0	0	79	0
Lane Group Flow (vph)	0	44	2016	0	0	199	1494	0	179	81	79	40
Confl. Peds. (#/hr)	10	2		2	5	2		2	10		5	5
Confl. Bikes (#/hr)								2				
Heavy Vehicles (%)	0%	0%	7%	0%	0%	4%	7%	0%	13%	0%	3%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		66.0	61.3			86.0	75.3		27.6	19.3	38.0	22.4
Effective Green, g (s)		66.0	61.3			86.0	75.3		27.6	19.3	38.0	22.4
Actuated g/C Ratio		0.51	0.47			0.66	0.58		0.21	0.15	0.29	0.17
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		201	2259			306	2802		212	282	453	249
v/s Ratio Prot		0.01	c0.42			c0.09	0.31		c0.05	0.04	0.02	0.01
v/s Ratio Perm		0.10				0.34			c0.13		0.03	0.02
v/c Ratio		0.22	0.89			0.65	0.53		0.84	0.29	0.17	0.16
Uniform Delay, d1		16.2	31.3			35.2	16.6		48.1	49.2	34.3	45.5
Progression Factor		1.00	1.00			1.25	0.75		1.00	1.00	1.00	1.00
Incremental Delay, d2		0.2	5.9			3.0	0.6		24.3	0.4	0.1	0.1
Delay (s)		16.4	37.2			47.0	13.0		72.4	49.6	34.4	45.7
Level of Service		B	D			D	B		E	D	C	D
Approach Delay (s)			36.8				17.0			53.6		
Approach LOS			D				B			D		
Intersection Summary												
HCM 2000 Control Delay			31.6			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.86									
Actuated Cycle Length (s)			130.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			87.7%			ICU Level of Service			E			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis 2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM with Imp
01/12/2021



Movement	SBT	SBR
Lane Configurations	PT	
Traffic Volume (vph)	99	44
Future Volume (vph)	99	44
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1735	
Flt Permitted	1.00	
Satd. Flow (perm)	1735	
Peak-hour factor, PHF	0.91	0.91
Adj. Flow (vph)	109	48
RTOR Reduction (vph)	14	0
Lane Group Flow (vph)	143	0
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	5%	0%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	16.7	
Effective Green, g (s)	16.7	
Actuated g/C Ratio	0.13	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	222	
v/s Ratio Prot	0.08	
v/s Ratio Perm		
v/c Ratio	0.64	
Uniform Delay, d1	53.8	
Progression Factor	1.00	
Incremental Delay, d2	5.6	
Delay (s)	59.4	
Level of Service	E	
Approach Delay (s)	56.6	
Approach LOS	E	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM with Imp

01/12/2021

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Future Volume (vph)	2	38	1648	197	10	171	1336	25	163	74	144	36
Confl. Peds. (#/hr)	10	2		2	5	2		2	10		5	5
Confl. Bikes (#/hr)								2				
Peak Hour Factor	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91	0.91
Heavy Vehicles (%)	0%	0%	7%	0%	0%	4%	7%	0%	13%	0%	3%	0%
Shared Lane Traffic (%)												
Lane Group Flow (vph)	0	44	2027	0	0	199	1495	0	179	81	158	40
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Detector Phase	1	1	6		5	5	2		7	4	5	3
Switch Phase												
Minimum Initial (s)	5.0	5.0	7.0		5.0	5.0	7.0		5.0	7.0	5.0	5.0
Minimum Split (s)	11.0	11.0	33.1		11.0	11.0	33.1		10.7	31.2	11.0	10.7
Total Split (s)	15.0	15.0	65.0		15.0	15.0	65.0		14.0	36.0	15.0	14.0
Total Split (%)	11.5%	11.5%	50.0%		11.5%	11.5%	50.0%		10.8%	27.7%	11.5%	10.8%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		3.7	4.0	4.0	3.7
All-Red Time (s)	2.0	2.0	2.1		2.0	2.0	2.1		2.0	3.2	2.0	2.0
Lost Time Adjust (s)		0.0	0.0			0.0	0.0		0.0	0.0	0.0	0.0
Total Lost Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag		Lead	Lag	Lead	Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max		None	None	C-Max		None	None	None	None
v/c Ratio		0.20	0.88			0.65	0.52		0.85	0.29	0.29	0.15
Control Delay		11.9	35.8			44.8	12.9		78.3	52.4	11.7	38.0
Queue Delay		0.0	0.0			0.0	0.0		0.0	0.0	0.0	0.0
Total Delay		11.9	35.8			44.8	12.9		78.3	52.4	11.7	38.0
Queue Length 50th (ft)		12	541			126	184		130	63	27	26
Queue Length 95th (ft)		29	653			#230	241		#223	110	77	54
Internal Link Dist (ft)			822				589			857		
Turn Bay Length (ft)		60				200					180	150
Base Capacity (vph)		264	2313			307	2891		210	420	546	288
Starvation Cap Reductn		0	0			0	0		0	0	0	0
Spillback Cap Reductn		0	0			0	0		0	0	0	0
Storage Cap Reductn		0	0			0	0		0	0	0	0
Reduced v/c Ratio		0.17	0.88			0.65	0.52		0.85	0.19	0.29	0.14

Intersection Summary

Cycle Length: 130

Actuated Cycle Length: 130

Offset: 109 (84%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 110

Control Type: Actuated-Coordinated

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

Queue shown is maximum after two cycles.

! Phase conflict between lane groups.

Timings

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project AM with Imp

01/12/2021

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street



Lane Group	SBT	SBR
Lane Configurations	↶	↷
Traffic Volume (vph)	99	44
Future Volume (vph)	99	44
Confl. Peds. (#/hr)		10
Confl. Bikes (#/hr)		2
Peak Hour Factor	0.91	0.91
Heavy Vehicles (%)	5%	0%
Shared Lane Traffic (%)		
Lane Group Flow (vph)	157	0
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Detector Phase	8	
Switch Phase		
Minimum Initial (s)	7.0	
Minimum Split (s)	31.2	
Total Split (s)	36.0	
Total Split (%)	27.7%	
Yellow Time (s)	4.0	
All-Red Time (s)	3.2	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	7.2	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	None	
v/c Ratio	0.71	
Control Delay	66.2	
Queue Delay	0.0	
Total Delay	66.2	
Queue Length 50th (ft)	116	
Queue Length 95th (ft)	183	
Internal Link Dist (ft)	327	
Turn Bay Length (ft)		
Base Capacity (vph)	397	
Starvation Cap Reductn	0	
Spillback Cap Reductn	0	
Storage Cap Reductn	0	
Reduced v/c Ratio	0.40	

Intersection Summary

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021

												
Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	3	80	1562	78	13	87	1836	71	260	87	146	47
Future Volume (vph)	3	80	1562	78	13	87	1836	71	260	87	146	47
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Lane Util. Factor		1.00	0.91			1.00	0.91		1.00	1.00	1.00	1.00
Frpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	0.99	1.00
Flpb, ped/bikes		1.00	1.00			1.00	1.00		1.00	1.00	1.00	1.00
Frt		1.00	0.99			1.00	0.99		1.00	1.00	0.85	1.00
Flt Protected		0.95	1.00			0.95	1.00		0.95	1.00	1.00	0.95
Satd. Flow (prot)		1805	5072			1687	5056		1769	1900	1600	1805
Flt Permitted		0.06	1.00			0.10	1.00		0.46	1.00	1.00	0.70
Satd. Flow (perm)		119	5072			172	5056		848	1900	1600	1327
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	3	82	1610	80	13	90	1893	73	268	90	151	48
RTOR Reduction (vph)	0	0	3	0	0	0	2	0	0	0	88	0
Lane Group Flow (vph)	0	85	1687	0	0	103	1964	0	268	90	63	48
Confl. Peds. (#/hr)	1	1		5		5		1	1			
Confl. Bikes (#/hr)				1							1	
Heavy Vehicles (%)	0%	0%	1%	9%	0%	8%	2%	0%	2%	0%	0%	0%
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA	pm+ov	pm+pt
Protected Phases	1	1	6		5!	5	2		7	4	5!	3
Permitted Phases	6	6			2!	2			4		4	8
Actuated Green, G (s)		99.2	91.4			99.2	91.4		29.4	19.1	26.9	22.2
Effective Green, g (s)		99.2	91.4			99.2	91.4		29.4	19.1	26.9	22.2
Actuated g/C Ratio		0.66	0.61			0.66	0.61		0.20	0.13	0.18	0.15
Clearance Time (s)		6.0	6.1			6.0	6.1		5.7	7.2	6.0	5.7
Vehicle Extension (s)		2.0	1.0			2.0	1.0		2.0	2.5	2.0	2.0
Lane Grp Cap (vph)		166	3090			192	3080		229	241	286	217
v/s Ratio Prot		0.03	0.33			c0.03	c0.39		c0.08	0.05	0.01	0.01
v/s Ratio Perm		0.31				0.33			c0.15		0.03	0.02
v/c Ratio		0.51	0.55			0.54	0.64		1.17	0.37	0.22	0.22
Uniform Delay, d1		15.7	17.2			12.8	18.7		59.1	60.0	52.6	55.9
Progression Factor		1.00	1.00			1.94	0.52		1.00	1.00	1.00	1.00
Incremental Delay, d2		1.1	0.7			0.9	0.6		113.2	0.7	0.1	0.2
Delay (s)		16.8	17.8			25.7	10.4		172.3	60.7	52.7	56.1
Level of Service		B	B			C	B		F	E	D	E
Approach Delay (s)			17.8				11.2			117.1		
Approach LOS			B				B			F		
Intersection Summary												
HCM 2000 Control Delay			27.8			HCM 2000 Level of Service				C		
HCM 2000 Volume to Capacity ratio			0.77									
Actuated Cycle Length (s)			150.0			Sum of lost time (s)			25.0			
Intersection Capacity Utilization			78.8%			ICU Level of Service			D			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												

HCM Signalized Intersection Capacity Analysis

2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021

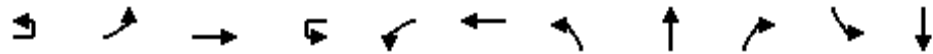


Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	82	37
Future Volume (vph)	82	37
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	
Lane Util. Factor	1.00	
Frpb, ped/bikes	0.99	
Flpb, ped/bikes	1.00	
Frt	0.95	
Flt Protected	1.00	
Satd. Flow (prot)	1753	
Flt Permitted	1.00	
Satd. Flow (perm)	1753	
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	85	38
RTOR Reduction (vph)	12	0
Lane Group Flow (vph)	111	0
Confl. Peds. (#/hr)		1
Confl. Bikes (#/hr)		2
Heavy Vehicles (%)	0%	9%
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Actuated Green, G (s)	15.5	
Effective Green, g (s)	15.5	
Actuated g/C Ratio	0.10	
Clearance Time (s)	7.2	
Vehicle Extension (s)	2.5	
Lane Grp Cap (vph)	181	
v/s Ratio Prot	0.06	
v/s Ratio Perm		
v/c Ratio	0.62	
Uniform Delay, d1	64.4	
Progression Factor	1.00	
Incremental Delay, d2	5.2	
Delay (s)	69.6	
Level of Service	E	
Approach Delay (s)	65.8	
Approach LOS	E	
Intersection Summary		

Timings
2: NE 18th Avenue & NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021



Lane Group	EBU	EBL	EBT	WBU	WBL	WBT	NBL	NBT	NBR	SBL	SBT
Lane Configurations		↔	↔↔↔		↔	↔↔↔	↔	↔	↔	↔	↔
Traffic Volume (vph)	3	80	1562	13	87	1836	260	87	146	47	82
Future Volume (vph)	3	80	1562	13	87	1836	260	87	146	47	82
Lane Group Flow (vph)	0	85	1690	0	103	1966	268	90	151	48	123
Turn Type	pm+pt	pm+pt	NA	pm+pt	pm+pt	NA	pm+pt	NA	pm+ov	pm+pt	NA
Protected Phases	1	1	6	5!	5	2	7	4	5!	3	8
Permitted Phases	6	6		2!	2		4		4	8	
Detector Phase	1	1	6	5	5	2	7	4	5	3	8
Switch Phase											
Minimum Initial (s)	5.0	5.0	7.0	5.0	5.0	7.0	5.0	7.0	5.0	5.0	7.0
Minimum Split (s)	11.0	11.0	33.1	11.0	11.0	33.1	10.7	31.2	11.0	10.7	31.2
Total Split (s)	14.0	14.0	87.0	14.0	14.0	87.0	16.0	33.0	14.0	16.0	33.0
Total Split (%)	9.3%	9.3%	58.0%	9.3%	9.3%	58.0%	10.7%	22.0%	9.3%	10.7%	22.0%
Yellow Time (s)	4.0	4.0	4.0	4.0	4.0	4.0	3.7	4.0	4.0	3.7	4.0
All-Red Time (s)	2.0	2.0	2.1	2.0	2.0	2.1	2.0	3.2	2.0	2.0	3.2
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	6.1		6.0	6.1	5.7	7.2	6.0	5.7	7.2
Lead/Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lag	Lead	Lead	Lag
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	C-Max	None	None	C-Max	None	None	None	None	None
v/c Ratio		0.51	0.54		0.53	0.63	1.19	0.37	0.39	0.21	0.69
Control Delay		23.0	17.9		23.9	10.5	167.7	65.4	18.5	48.5	77.3
Queue Delay		0.0	0.0		0.0	0.2	0.0	0.0	0.0	0.0	0.0
Total Delay		23.0	17.9		23.9	10.7	167.7	65.4	18.5	48.5	77.3
Queue Length 50th (ft)		23	326		22	195	~296	83	35	38	106
Queue Length 95th (ft)		68	440		m55	247	#482	139	94	73	171
Internal Link Dist (ft)			822			589		857			327
Turn Bay Length (ft)		60			200				180	150	
Base Capacity (vph)		182	3133		205	3121	226	326	396	263	312
Starvation Cap Reductn		0	0		0	342	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		0.47	0.54		0.50	0.71	1.19	0.28	0.38	0.18	0.39

Intersection Summary

Cycle Length: 150

Actuated Cycle Length: 150

Offset: 55 (37%), Referenced to phase 2:WBTL and 6:EBTL, Start of 1st Green

Natural Cycle: 90

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 2: NE 18th Avenue & NE 163rd Street

Ø1	Ø2 (R)	Ø3	Ø4
14 s	87 s	16 s	33 s
Ø5	Ø6 (R)	Ø7	Ø8
14 s	87 s	16 s	33 s

HCM Signalized Intersection Capacity Analysis

6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021

												
Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBU	NBL	NBT	NBR	SBU	SBL
Lane Configurations												
Traffic Volume (vph)	475	1189	445	571	1479	832	19	481	1473	637	14	487
Future Volume (vph)	475	1189	445	571	1479	832	19	481	1473	637	14	487
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Lane Util. Factor	0.97	0.91	1.00	0.97	0.91	1.00		0.97	0.86	1.00		0.97
Frpb, ped/bikes	1.00	1.00	0.99	1.00	1.00	0.99		1.00	1.00	0.99		1.00
Flpb, ped/bikes	1.00	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Frt	1.00	1.00	0.85	1.00	1.00	0.85		1.00	1.00	0.85		1.00
Flt Protected	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (prot)	3502	5136	1549	3467	5085	1575		3436	6471	1577		3468
Flt Permitted	0.95	1.00	1.00	0.95	1.00	1.00		0.95	1.00	1.00		0.95
Satd. Flow (perm)	3502	5136	1549	3467	5085	1575		3436	6471	1577		3468
Peak-hour factor, PHF	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97	0.97
Adj. Flow (vph)	490	1226	459	589	1525	858	20	496	1519	657	14	502
RTOR Reduction (vph)	0	0	41	0	0	40	0	0	0	44	0	0
Lane Group Flow (vph)	490	1226	418	589	1525	818	0	516	1519	613	0	516
Confl. Peds. (#/hr)	9		5	5		9	5	15		7	9	7
Confl. Bikes (#/hr)			3			3				7		
Heavy Vehicles (%)	0%	1%	3%	1%	2%	1%	0%	2%	1%	1%	0%	1%
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	Prot	NA	pm+ov	Prot	Prot
Protected Phases	3	8	1!	7	4	5!	1!	1	6	7	5!	5
Permitted Phases			8			4				6		
Actuated Green, G (s)	27.8	46.3	72.5	29.2	47.7	73.9		26.2	39.8	69.0		26.2
Effective Green, g (s)	27.8	46.3	72.5	29.2	47.7	73.9		26.2	39.8	69.0		26.2
Actuated g/C Ratio	0.16	0.27	0.43	0.17	0.28	0.43		0.15	0.23	0.41		0.15
Clearance Time (s)	6.8	7.7	6.8	6.8	7.7	6.8		6.8	7.2	6.8		6.8
Vehicle Extension (s)	3.0	2.5	3.0	3.0	2.5	3.0		3.0	1.0	3.0		3.0
Lane Grp Cap (vph)	572	1398	660	595	1426	684		529	1514	640		534
v/s Ratio Prot	0.14	0.24	0.10	c0.17	0.30	c0.18		0.15	c0.23	0.16		0.15
v/s Ratio Perm			0.17			0.34				0.22		
v/c Ratio	0.86	0.88	0.63	0.99	1.07	1.20		0.98	1.00	0.96		0.97
Uniform Delay, d1	69.2	59.1	38.3	70.3	61.1	48.0		71.6	65.1	49.1		71.5
Progression Factor	1.17	0.83	0.54	1.00	1.00	1.00		1.00	1.00	1.00		1.00
Incremental Delay, d2	8.6	4.5	1.4	33.9	44.8	102.0		32.6	23.9	25.2		30.2
Delay (s)	89.2	53.7	22.1	104.2	106.0	150.0		104.2	89.0	74.3		101.7
Level of Service	F	D	C	F	F	F		F	F	E		F
Approach Delay (s)		55.0			118.3				88.3			
Approach LOS		E			F				F			
Intersection Summary												
HCM 2000 Control Delay			87.0			HCM 2000 Level of Service			F			
HCM 2000 Volume to Capacity ratio			1.11									
Actuated Cycle Length (s)			170.0			Sum of lost time (s)			28.5			
Intersection Capacity Utilization			138.3%			ICU Level of Service			H			
Analysis Period (min)			15									
! Phase conflict between lane groups.												
c Critical Lane Group												



Movement	SBT	SBR
Lane Configurations	↑↑↑↑	↑
Traffic Volume (vph)	1357	542
Future Volume (vph)	1357	542
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	7.2	6.8
Lane Util. Factor	0.86	1.00
Frpb, ped/bikes	1.00	0.98
Flpb, ped/bikes	1.00	1.00
Frt	1.00	0.85
Flt Protected	1.00	1.00
Satd. Flow (prot)	6471	1554
Flt Permitted	1.00	1.00
Satd. Flow (perm)	6471	1554
Peak-hour factor, PHF	0.97	0.97
Adj. Flow (vph)	1399	559
RTOR Reduction (vph)	0	45
Lane Group Flow (vph)	1399	514
Confl. Peds. (#/hr)		15
Confl. Bikes (#/hr)		3
Heavy Vehicles (%)	1%	2%
Turn Type	NA	pm+ov
Protected Phases	2	3
Permitted Phases		2
Actuated Green, G (s)	39.8	67.6
Effective Green, g (s)	39.8	67.6
Actuated g/C Ratio	0.23	0.40
Clearance Time (s)	7.2	6.8
Vehicle Extension (s)	1.0	3.0
Lane Grp Cap (vph)	1514	617
v/s Ratio Prot	0.22	0.14
v/s Ratio Perm		0.19
v/c Ratio	0.92	0.83
Uniform Delay, d1	63.6	46.1
Progression Factor	1.00	1.00
Incremental Delay, d2	11.0	9.5
Delay (s)	74.6	55.6
Level of Service	E	E
Approach Delay (s)	75.9	
Approach LOS	E	
Intersection Summary		

Timings
6: Biscayne Boulevard & NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021

												
Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	475	1189	445	571	1479	832	481	1473	637	487	1357	542
Future Volume (vph)	475	1189	445	571	1479	832	481	1473	637	487	1357	542
Lane Group Flow (vph)	490	1226	459	589	1525	858	516	1519	657	516	1399	559
Turn Type	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov	Prot	NA	pm+ov
Protected Phases	3	8	1!	7	4	5!	1	6	7	5	2	3
Permitted Phases			8			4			6			2
Detector Phase	3	8	1	7	4	5	1	6	7	5	2	3
Switch Phase												
Minimum Initial (s)	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0	5.0	7.0	5.0
Minimum Split (s)	11.8	54.7	11.8	11.8	54.7	11.8	11.8	49.2	11.8	11.8	49.2	11.8
Total Split (s)	36.0	54.0	33.0	36.0	54.0	33.0	33.0	47.0	36.0	33.0	47.0	36.0
Total Split (%)	21.2%	31.8%	19.4%	21.2%	31.8%	19.4%	19.4%	27.6%	21.2%	19.4%	27.6%	21.2%
Yellow Time (s)	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8	4.8
All-Red Time (s)	2.0	2.9	2.0	2.0	2.9	2.0	2.0	2.4	2.0	2.0	2.4	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	0.0	0.0
Total Lost Time (s)	6.8	7.7	6.8	6.8	7.7	6.8	6.8	7.2	6.8	6.8	7.2	6.8
Lead/Lag	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead	Lead	Lag	Lead
Lead-Lag Optimize?	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Recall Mode	None	None	None	None	None	None	None	C-Max	None	None	C-Max	None
v/c Ratio	0.86	0.88	0.65	0.99	1.07	1.17	0.98	1.00	0.96	0.97	0.92	0.84
Control Delay	91.4	55.0	18.3	103.4	100.9	127.0	103.8	87.9	64.6	101.7	74.4	48.5
Queue Delay	0.0	0.0	0.0	0.0	13.5	0.0	0.0	0.0	0.0	0.0	0.0	0.1
Total Delay	91.4	55.0	18.3	103.4	114.4	127.0	103.8	87.9	64.6	101.7	74.4	48.6
Queue Length 50th (ft)	295	352	141	342	~703	~813	299	~499	599	298	447	453
Queue Length 95th (ft)	m338	m431	m167	#473	#799	#1079	#421	#586	#928	#418	495	615
Internal Link Dist (ft)		610			881			1536			1454	
Turn Bay Length (ft)	200		236	385			420		400	430		400
Base Capacity (vph)	601	1398	709	595	1427	733	529	1514	687	534	1514	678
Starvation Cap Reductn	0	0	2	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	216	0	0	0	0	0	0	3
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.82	0.88	0.65	0.99	1.26	1.17	0.98	1.00	0.96	0.97	0.92	0.83

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 77 (45%), Referenced to phase 2:SBT and 6:NBT, Start of Yellow

Natural Cycle: 150

Control Type: Actuated-Coordinated

~ 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.

! Phase conflict between lane groups.

Splits and Phases: 6: Biscayne Boulevard & NE 163rd Street

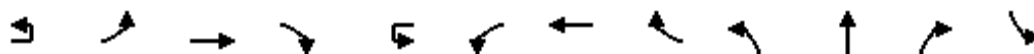
 Ø1	 Ø2 (R)	 Ø3	 Ø4
33 s	47 s	36 s	54 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
33 s	47 s	36 s	54 s

HCM 6th Signalized Intersection Summary

20146 Future with Project AM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↑↑↑			↔	↑↑↑		↔	↑↑		↔
Traffic Volume (veh/h)	2	73	1518	125	8	508	1321	93	135	368	331	162
Future Volume (veh/h)	2	73	1518	125	8	508	1321	93	135	368	331	162
Initial Q (Qb), veh		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		0.97	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1826	1870	1796		1826	1856	1796	1826	1856	1796	1826
Adj Flow Rate, veh/h		77	1598	132		535	1391	98	142	387	348	171
Peak Hour Factor		0.95	0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %		5	2	7		5	3	7	5	3	7	5
Cap, veh/h		263	2233	184		321	2701	190	198	297	256	202
Arrive On Green		0.03	0.46	0.46		0.26	1.00	1.00	0.08	0.17	0.17	0.09
Sat Flow, veh/h		1739	4805	397		1739	4825	340	1739	1763	1521	1739
Grp Volume(v), veh/h		77	1132	598		535	974	515	142	387	348	171
Grp Sat Flow(s),veh/h/ln		1739	1702	1797		1739	1689	1788	1739	1763	1521	1739
Q Serve(g_s), s		3.9	45.3	45.4		22.0	0.0	0.0	11.4	28.6	28.6	13.7
Cycle Q Clear(g_c), s		3.9	45.3	45.4		22.0	0.0	0.0	11.4	28.6	28.6	13.7
Prop In Lane		1.00		0.22		1.00		0.19	1.00		1.00	1.00
Lane Grp Cap(c), veh/h		263	1582	835		321	1890	1001	198	297	256	202
V/C Ratio(X)		0.29	0.72	0.72		1.66	0.52	0.52	0.72	1.30	1.36	0.85
Avail Cap(c_a), veh/h		428	1582	835		321	1890	1001	220	297	256	202
HCM Platoon Ratio		1.00	1.00	1.00		2.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.82	0.82	0.82		0.46	0.46	0.46	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		22.3	36.5	36.5		36.8	0.0	0.0	54.6	70.7	70.7	54.0
Incr Delay (d2), s/veh		0.2	2.3	4.3		305.3	0.5	0.9	7.5	159.6	185.1	25.8
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
%ile BackOfQ(95%),veh/ln		3.0	26.0	27.9		47.2	0.2	0.4	9.3	39.0	37.1	12.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		22.5	38.8	40.8		342.1	0.5	0.9	62.2	230.3	255.8	79.8
LnGrp LOS		C	D	D		F	A	A	E	F	F	E
Approach Vol, veh/h			1807				2024			877		
Approach Delay, s/veh			38.8				90.9			213.2		
Approach LOS			D				F			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	11.9	101.1	22.0	35.0	28.0	85.0	19.8	37.2				
Change Period (Y+Rc), s	6.0	6.0	6.4	6.4	6.0	6.0	6.4	6.4				
Max Green Setting (Gmax), s	22.0	79.0	15.6	28.6	22.0	79.0	15.6	28.6				
Max Q Clear Time (g_c+I1), s	5.9	2.0	15.7	30.6	24.0	47.4	13.4	28.9				
Green Ext Time (p_c), s	0.1	4.6	0.0	0.0	0.0	5.7	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 93.5

HCM 6th LOS F

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project AM with Imp
01/12/2021



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	481	68
Future Volume (veh/h)	481	68
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.97
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1885	1826
Adj Flow Rate, veh/h	506	72
Peak Hour Factor	0.95	0.95
Percent Heavy Veh, %	1	5
Cap, veh/h	568	80
Arrive On Green	0.18	0.18
Sat Flow, veh/h	3135	444
Grp Volume(v), veh/h	288	290
Grp Sat Flow(s),veh/h/ln	1791	1788
Q Serve(g_s), s	26.7	26.9
Cycle Q Clear(g_c), s	26.7	26.9
Prop In Lane		0.25
Lane Grp Cap(c), veh/h	324	324
V/C Ratio(X)	0.89	0.90
Avail Cap(c_a), veh/h	324	324
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	67.9	68.0
Incr Delay (d2), s/veh	28.2	29.3
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	21.1	21.4
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	96.1	97.3
LnGrp LOS	F	F
Approach Vol, veh/h	749	
Approach Delay, s/veh	92.8	
Approach LOS	F	
Timer - Assigned Phs		

Timings

20146 Future with Project AM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	2	73	1518	125	8	508	1321	93	135	368	331	162
Future Volume (vph)	2	73	1518	125	8	508	1321	93	135	368	331	162
Confl. Peds. (#/hr)	3			5	11	5			3		11	11
Confl. Bikes (#/hr)								1			1	
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
Heavy Vehicles (%)	0%	5%	2%	7%	0%	5%	3%	7%	5%	3%	7%	5%
Shared Lane Traffic (%)												
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Detector Phase	1	1	6		5	5	2		7	4		3
Switch Phase												
Minimum Initial (s)	5.0	5.0	7.0		5.0	5.0	7.0		5.0	7.0		5.0
Minimum Split (s)	11.0	11.0	32.0		11.0	11.0	32.0		11.4	30.4		11.4
Total Split (s)	28.0	28.0	85.0		28.0	28.0	85.0		22.0	35.0		22.0
Total Split (%)	16.5%	16.5%	50.0%		16.5%	16.5%	50.0%		12.9%	20.6%		12.9%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.4	4.4		4.4
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
Total Lost Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes		Yes
Recall Mode	None	None	C-Max		None	None	C-Max		None	Max		None

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 125

Control Type: Actuated-Coordinated

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
28 s	85 s	22 s	35 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
28 s	85 s	22 s	35 s

Timings

20146 Future with Project AM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021



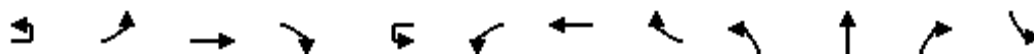
Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	481	68
Future Volume (vph)	481	68
Confl. Peds. (#/hr)		3
Confl. Bikes (#/hr)		1
Peak Hour Factor	0.95	0.95
Heavy Vehicles (%)	1%	5%
Shared Lane Traffic (%)		
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Detector Phase	8	
Switch Phase		
Minimum Initial (s)	7.0	
Minimum Split (s)	30.4	
Total Split (s)	35.0	
Total Split (%)	20.6%	
Yellow Time (s)	4.4	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.4	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	Max	
Intersection Summary		

HCM 6th Signalized Intersection Summary

20146 Future with Project PM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations		↔	↑↑↑			↔	↑↑↑		↔	↑↑		↔
Traffic Volume (veh/h)	15	250	1419	104	14	289	1938	155	200	441	343	187
Future Volume (veh/h)	15	250	1419	104	14	289	1938	155	200	441	343	187
Initial Q (Qb), veh		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		0.95	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
Work Zone On Approach		No				No				No		
Adj Sat Flow, veh/h/ln		1870	1870	1781		1885	1870	1811	1870	1885	1870	1856
Adj Flow Rate, veh/h		255	1448	106		295	1978	158	204	450	350	191
Peak Hour Factor		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	8		1	2	6	2	1	2	3
Cap, veh/h		285	2321	170		314	2392	190	232	321	248	220
Arrive On Green		0.09	0.48	0.48		0.21	0.99	0.99	0.10	0.17	0.17	0.10
Sat Flow, veh/h		1781	4848	355		1795	4815	382	1781	1873	1449	1767
Grp Volume(v), veh/h		255	1017	537		295	1395	741	204	430	370	191
Grp Sat Flow(s),veh/h/ln		1781	1702	1799		1795	1702	1793	1781	1791	1531	1767
Q Serve(g_s), s		12.4	37.7	37.7		15.4	2.6	2.7	16.0	29.1	29.1	15.1
Cycle Q Clear(g_c), s		12.4	37.7	37.7		15.4	2.6	2.7	16.0	29.1	29.1	15.1
Prop In Lane		1.00		0.20		1.00		0.21	1.00		0.95	1.00
Lane Grp Cap(c), veh/h		285	1630	861		314	1691	891	232	307	262	220
V/C Ratio(X)		0.89	0.62	0.62		0.94	0.82	0.83	0.88	1.40	1.41	0.87
Avail Cap(c_a), veh/h		342	1630	861		340	1691	891	232	307	262	225
HCM Platoon Ratio		1.00	1.00	1.00		2.00	2.00	2.00	1.00	1.00	1.00	1.00
Upstream Filter(I)		0.90	0.90	0.90		0.09	0.09	0.09	1.00	1.00	1.00	1.00
Uniform Delay (d), s/veh		23.9	32.9	32.9		26.8	0.3	0.3	53.3	70.4	70.4	53.4
Incr Delay (d2), s/veh		18.4	1.6	3.1		5.3	0.4	0.9	29.1	199.4	205.8	26.8
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
%ile BackOfQ(95%),veh/ln		10.7	22.4	23.9		6.8	0.5	0.7	14.1	45.8	40.5	13.2
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh		42.3	34.6	36.0		32.1	0.7	1.2	82.4	269.9	276.2	80.2
LnGrp LOS		D	C	D		C	A	A	F	F	F	F
Approach Vol, veh/h			1809				2431			1004		
Approach Delay, s/veh			36.1				4.7			234.1		
Approach LOS			D				A			F		
Timer - Assigned Phs	1	2	3	4	5	6	7	8				
Phs Duration (G+Y+Rc), s	20.6	90.4	23.5	35.5	23.6	87.4	24.0	35.0				
Change Period (Y+Rc), s	6.0	6.0	6.4	6.4	6.0	6.0	6.4	6.4				
Max Green Setting (Gmax), s	20.0	79.0	17.6	28.6	20.0	79.0	17.6	28.6				
Max Q Clear Time (g_c+I1), s	14.4	4.7	17.1	31.1	17.4	39.7	18.0	29.6				
Green Ext Time (p_c), s	0.2	8.5	0.0	0.0	0.2	4.9	0.0	0.0				

Intersection Summary

HCM 6th Ctrl Delay 65.3

HCM 6th LOS E

Notes

User approved ignoring U-Turning movement.

HCM 6th Signalized Intersection Summary
 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

20146 Future with Project PM with Imp

01/12/2021



Movement	SBT	SBR
Lane Configurations	↑↑	↑
Traffic Volume (veh/h)	463	98
Future Volume (veh/h)	463	98
Initial Q (Qb), veh	0	0
Ped-Bike Adj(A_pbT)		0.95
Parking Bus, Adj	1.00	1.00
Work Zone On Approach	No	
Adj Sat Flow, veh/h/ln	1885	1900
Adj Flow Rate, veh/h	472	100
Peak Hour Factor	0.98	0.98
Percent Heavy Veh, %	1	0
Cap, veh/h	490	103
Arrive On Green	0.17	0.17
Sat Flow, veh/h	2913	612
Grp Volume(v), veh/h	289	283
Grp Sat Flow(s),veh/h/ln	1791	1734
Q Serve(g_s), s	27.2	27.6
Cycle Q Clear(g_c), s	27.2	27.6
Prop In Lane		0.35
Lane Grp Cap(c), veh/h	301	292
V/C Ratio(X)	0.96	0.97
Avail Cap(c_a), veh/h	301	292
HCM Platoon Ratio	1.00	1.00
Upstream Filter(I)	1.00	1.00
Uniform Delay (d), s/veh	70.1	70.3
Incr Delay (d2), s/veh	42.2	45.9
Initial Q Delay(d3),s/veh	0.0	0.0
%ile BackOfQ(95%),veh/ln	22.6	22.6
Unsig. Movement Delay, s/veh		
LnGrp Delay(d),s/veh	112.3	116.2
LnGrp LOS	F	F
Approach Vol, veh/h	763	
Approach Delay, s/veh	105.7	
Approach LOS	F	
Timer - Assigned Phs		

Timings

20146 Future with Project PM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021

												
Lane Group	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	15	250	1419	104	14	289	1938	155	200	441	343	187
Future Volume (vph)	15	250	1419	104	14	289	1938	155	200	441	343	187
Confl. Peds. (#/hr)	4	1		6	21	6		1	4		21	21
Confl. Bikes (#/hr)				6				5			3	
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
Heavy Vehicles (%)	0%	2%	2%	8%	0%	1%	2%	6%	2%	1%	2%	3%
Shared Lane Traffic (%)												
Turn Type	pm+pt	pm+pt	NA		pm+pt	pm+pt	NA		pm+pt	NA		pm+pt
Protected Phases	1	1	6		5	5	2		7	4		3
Permitted Phases	6	6			2	2			4			8
Detector Phase	1	1	6		5	5	2		7	4		3
Switch Phase												
Minimum Initial (s)	5.0	5.0	7.0		5.0	5.0	7.0		5.0	7.0		5.0
Minimum Split (s)	11.0	11.0	32.0		11.0	11.0	32.0		11.4	30.4		11.4
Total Split (s)	26.0	26.0	85.0		26.0	26.0	85.0		24.0	35.0		24.0
Total Split (%)	15.3%	15.3%	50.0%		15.3%	15.3%	50.0%		14.1%	20.6%		14.1%
Yellow Time (s)	4.0	4.0	4.0		4.0	4.0	4.0		4.4	4.4		4.4
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
Total Lost Time (s)		6.0	6.0			6.0	6.0		6.4	6.4		6.4
Lead/Lag	Lead	Lead	Lag		Lead	Lead	Lag		Lead	Lag		Lead
Lead-Lag Optimize?	Yes	Yes	Yes		Yes	Yes	Yes		Yes	Yes		Yes
Recall Mode	None	None	C-Max		None	None	C-Max		None	Max		None

Intersection Summary

Cycle Length: 170

Actuated Cycle Length: 170

Offset: 27 (16%), Referenced to phase 2:WBTL and 6:EBTL, Start of Yellow

Natural Cycle: 115

Control Type: Actuated-Coordinated

Splits and Phases: 7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

 Ø1	 Ø2 (R)	 Ø3	 Ø4
26 s	85 s	24 s	35 s
 Ø5	 Ø6 (R)	 Ø7	 Ø8
26 s	85 s	24 s	35 s

Timings

20146 Future with Project PM with Imp

7: NE 22nd Avenue & NE 163rd Street /NE 163rd Street

01/12/2021



Lane Group	SBT	SBR
Lane Configurations	↑↑	
Traffic Volume (vph)	463	98
Future Volume (vph)	463	98
Confl. Peds. (#/hr)		4
Confl. Bikes (#/hr)		4
Peak Hour Factor	0.98	0.98
Heavy Vehicles (%)	1%	0%
Shared Lane Traffic (%)		
Turn Type	NA	
Protected Phases	8	
Permitted Phases		
Detector Phase	8	
Switch Phase		
Minimum Initial (s)	7.0	
Minimum Split (s)	30.4	
Total Split (s)	35.0	
Total Split (%)	20.6%	
Yellow Time (s)	4.4	
All-Red Time (s)	2.0	
Lost Time Adjust (s)	0.0	
Total Lost Time (s)	6.4	
Lead/Lag	Lag	
Lead-Lag Optimize?	Yes	
Recall Mode	Max	
Intersection Summary		

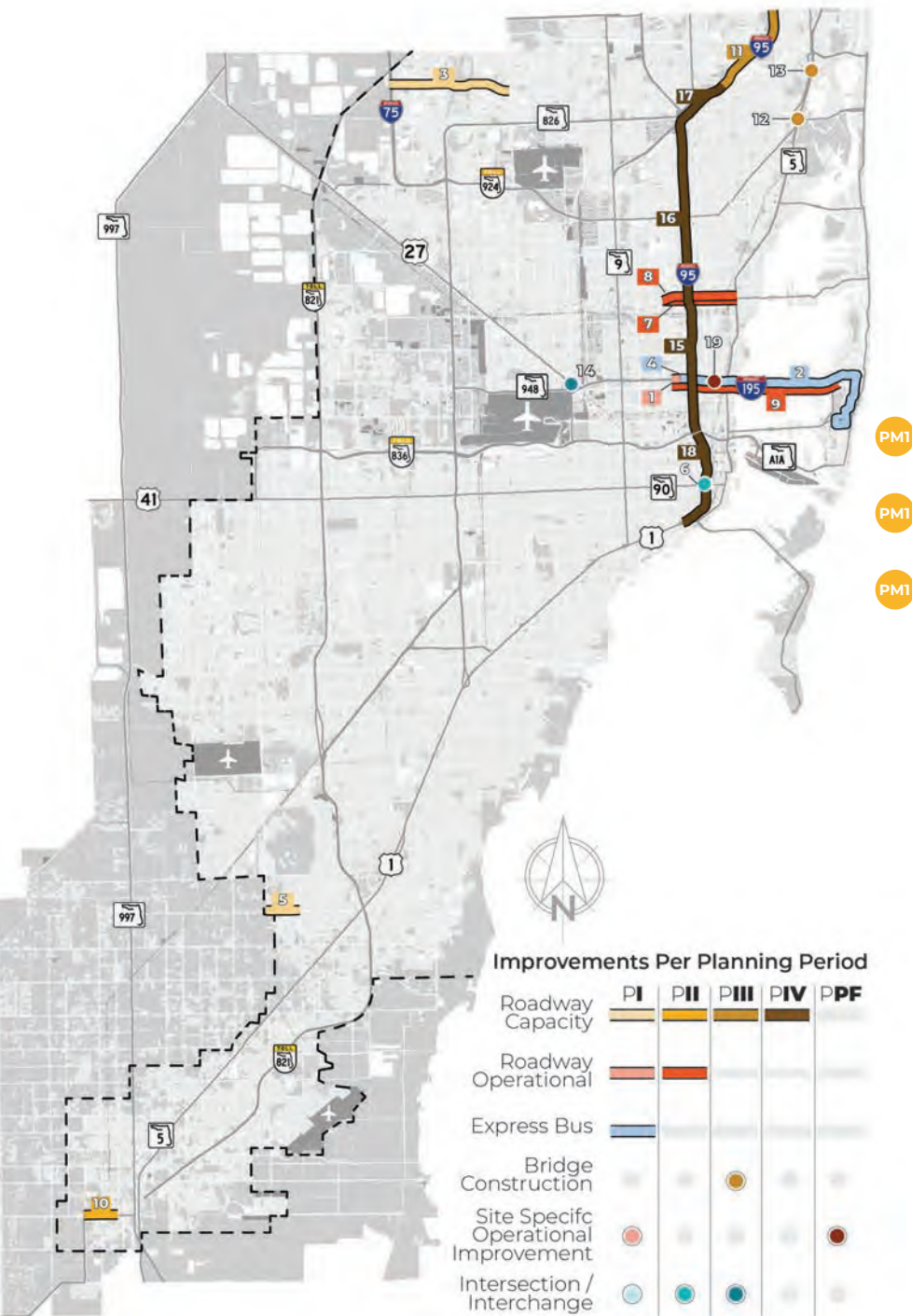
Appendix E

Committed Development Information

TABLE 7-3: FDOT OTHER ROADS PROJECTS (CONTINUED)

MAP ID	FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COSTS (2018 \$)	
PLAN PERIOD III						
11	SR 9 (I-95) Corridor	South of Miami Gardens Dr (SR 860/NW 186 St)	Broward County Line	Planning Study Segment 5		
12	SR 5 (US 1/Dixie Hwy)/Grade Separations	at NE 163 St		East/West Grade Separated Overpass (GSO) over the FEC Rail Line		
13	SR 5 (US 1/Dixie Hwy)/Grade Separations	at NE 186 St		East/West Grade Separated Overpass (GSO) over the FEC Rail Line		
14	SR 953/NW 42 Ave (LeJeune Rd) /Iron Triangle			Modify Interchange I		
PLAN PERIOD IV						
15	SR 9 (I-95) Corridor	North of I-395 (SR 836)	South of NW 62 St (Dr. Martin Luther King Jr. Blvd)	Planning Study Segment 2		
16	SR 9 (I-95) Corridor	South of NW 62 St (Dr. Martin Luther King Jr. Blvd)	South of GGI	Planning Study Segment 3		
17	SR 9 (I-95) Corridor	South of GGI	South of SR 860 (Miami Gardens Dr)	Planning Study Segment 4		
18	I-95 (SR 9) Corridor	SR 5 (US 1/Dixie Hwy)	South of I-395 (SR 836)	Planning Study Segment 1		
PARTIALLY FUNDED						
19	SR 112 (I-195) at Miami Ave Interchange Improvement	at Miami Ave		Modify (IMR)		

Values in Millions YOY \$
YOY: Year of Expenditure



Strategic Miami Area Rapid Transit (SMART) Plan

Northeast Corridor(SMART)

Type of Project: Arterial/Collector Road

DT4401901	SR 5/US 1 SIGNALIZED INTERSECTION LIGHTING		LIGHTING	45	0	0	0	0	45	A1-515
	FROM SE 1 ST	TO NE 21 ST								
4401901	FL Dept. of Transportation									
DT4402811	SR 826/NE 163 ST SIGNALIZED INTERSECTION LIGHTING		LIGHTING	665	0	0	0	0	665	A1-515
	FROM NW 2 AVE	TO NE 35 AVE								
4402811	FL Dept. of Transportation									
DT4406041	SR 922/NE 125 ST		TRAFFIC SIGNALS	76	0	0	0	0	76	A1-353
	AT NE 10 AVE	0.0								
4406041	FL Dept. of Transportation									
DT4416381	MIAMI SHORES - MULTIMODAL MOBILITY IMPROVEMENTS		SIGNING/PAVEMENT MARKINGS	79	0	0	519	0	598	A1-523
		0.0								
4416381	FL Dept. of Transportation									
DT4419671	SR 112/I 195 OVER WESTSHORE WATERWAY BRIDGE# 870314		BRIDGE-REPAIR/REHABILITATION	1,146	0	0	0	0	1,146	A1-365
		0.0								
4419671	FL Dept. of Transportation									
DT4438901	SR 970/SR 5/DOWNTOWN DISTRIBUTOR RAMPS		RIGID PAVEMENT REHABILITATION	288	0	1,413	0	0	1,701	A1-368
	FROM S MIAMI AVE	TO SE 2 AVE								
4438901	FL Dept. of Transportation									

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
FEDERALLY-FUNDED PROJECTS

MISCELLANEOUS

TPO Project No	Facility/Project Name	County	Type of Work							Federal Funding Components						5-Yr Page Ref	
Agency Project No	From / Location	To / Location	Old Item	Roadway ID	Length (miles)	Begin Point	End Point	Lanes			Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-513
								Exist	Improv	Add'l			2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	
			ALTERNATIVE CONTRACTING INCENTIVES							ACSS	0	30	0	0			
DT4401821	SR 90/SW 8 ST SIGNALIZED INTERSECTION LIGHTING	MIAMI-DADE	LIGHTING							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-513	
4401821	FROM SW 132 AVE	TO SW 70 AVE		12	6.4	0.0	0.0	0	0			0	2020 - 2021	2021 - 2022	2022 - 2023		2023 - 2024
			CONSTRUCTION							ACSS	447	0	0	0			
			CONSTRUCTION							SA	8	0	0	0			
DT4401831	SR 90/SW 8 ST SIGNALIZED INTERSECTION LIGHTING	MIAMI-DADE	LIGHTING							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-514	
4401831	FROM SW 62 AVE	TO BRICKELL AVE		12	6.5	0.0	0.0	0	0			0	2020 - 2021	2021 - 2022	2022 - 2023		2023 - 2024
			CONSTRUCTION							ACSS	334	0	0	0			
			CONSTRUCTION							SA	8	0	0	0			
DT4401901	SR 5/US 1 SIGNALIZED INTERSECTION LIGHTING	MIAMI-DADE	LIGHTING							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-515	
4401901	FROM SE 1 ST	TO NE 21 ST		6	1.7	0.0	0.0	0	0			0	2020 - 2021	2021 - 2022	2022 - 2023		2023 - 2024
			ALTERNATIVE CONTRACTING INCENTIVES							ACSS	45	0	0	0			
DT4402811	SR 826/NE 163 ST SIGNALIZED INTERSECTION LIGHTING	MIAMI-DADE	LIGHTING							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-515	
4402811	FROM NW 2 AVE	TO NE 35 AVE		6	4.5	0.0	0.0	0	0			0	2020 - 2021	2021 - 2022	2022 - 2023		2023 - 2024
			CONSTRUCTION							ACSS	602	0	0	0			

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
PRIMARY STATE HIGHWAYS AND INTERMODAL



MISCELLANEOUS

TPO Project No: **DT4442991**
LRTP Ref: 07-78
County: MIAMI-DADE
Roadway ID:
Lanes Exist:
Lanes Improved:
Lanes Added:
Project Length:
District: 6

Project Description: **SNAKE CREEK TRAIL EXTENSION TO GREYNOLDS PARK**

Type of Work: **BIKE PATH/TRAIL**

SIS or Non-SIS: **No**

Extra Description:

		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2021	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	>2025	All Years
PRELIMINARY ENGINEERING	LF	0	0	139	0	0	0	0	139
	SA	0	0	5	0	0	0	0	5
	Total	0	0	144	0	0	0	0	144
CONSTRUCTION	LF	0	0	0	0	229	0	0	229
	SA	0	0	0	0	5	0	0	5
	TALU	0	0	0	0	403	0	0	403
	Total	0	0	0	0	637	0	0	637

RESPONSIBLE AGENCY: **FDOT**

Item Number: **444299**

Item Segment TOTAL ALL Years ALL Phases: **\$781**

Item TOTAL ALL Years ALL Phases ALL Segments: **\$781**

TPO Project No: **DT4444371**
LRTP Ref: 06-10
County: DIST/ST-WIDE
Roadway ID:
Lanes Exist:
Lanes Improved:
Lanes Added:
Project Length:
District: 6

Project Description: **DISTRICTWIDE TRAFFIC OPERATIONS - STUDIES CONSULTANT**

Type of Work: **SAFETY PROJECT**

SIS or Non-SIS: **No**

Extra Description:

		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2021	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	>2025	All Years
PRELIMINARY ENGINEERING	DS	0	0	0	0	350	0	0	350
	Total	0	0	0	0	350	0	0	350

RESPONSIBLE AGENCY: **FDOT**

Item Number: **444437**

Item Segment TOTAL ALL Years ALL Phases: **\$350**

Item TOTAL ALL Years ALL Phases ALL Segments: **\$350**

Strategic Miami Area Rapid Transit (SMART) Plan

Northeast Corridor(SMART)

Type of Project: Pedestrian/Bicycle

TPO Project No.	Facility/Project Name		Type of Work	Proposed Funding (\$000s)						TIP Page Ref
	From/Location	To/Location		Length (Miles)	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	
Agency Project No.	Responsible Agency		Project Comments							
DT4442961	SAFE ROUTES TO SCHOOL - OJUS ELEMENTARY		PEDESTRIAN SAFETY IMPROVEMENT	103	0	439	0	0	542	A1-536
		0.0								
4442961	FL Dept. of Transportation									
DT4442991	SNAKE CREEK TRAIL EXTENSION TO GREYNOLDS PARK		BIKE PATH/TRAIL	0	144	0	637	0	781	A1-537
		0.0								
4442991	FL Dept. of Transportation									
DT4460541	MIAMI SHORES - SR 915 / NE 6 AVE PEDESTRIAN PROMENADE		BIKE LANE/SIDEWALK	0	0	72	0	432	504	A1-553
		0.7								
4460541	FL Dept. of Transportation									

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
FEDERALLY-FUNDED PROJECTS

MISCELLANEOUS

TPO Project No	Facility/Project Name	County	Type of Work							Federal Funding Components				5-Yr Page Ref			
Agency Project No	From / Location	To / Location	Old Item	Roadway ID	Length (miles)	Begin Point	End Point	Lanes			Activity /Phase	Funding Source	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	
								Exist	Improv	Add'l							
DT4442961	SAFE ROUTES TO SCHOOL - OJUS ELEMENTARY	MIAMI-DADE	PEDESTRIAN SAFETY IMPROVEMENT							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-536	
4442961			6	0.0	0.0	0.0	0	0	0			103	0	0	0		
			PRELIMINARY ENGINEERING							SA	103	0	0	0			
DT4442991	SNAKE CREEK TRAIL EXTENSION TO GREYNOLDS PARK	MIAMI-DADE	BIKE PATH/TRAIL							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-537	
4442991			18	0.0	0.0	0.0	0	0	0			0	5	0	0		
			PRELIMINARY ENGINEERING							SA	0	5	0	0			
			CONSTRUCTION							SA	0	0	0	5			
			CONSTRUCTION							TALU	0	0	0	403			
DT4448251	DISTRICT 6 - SCHOOL ZONE IMPLEMENTATION PLAN	DIST/ST-WIDE	TRAFFIC CONTROL DEVICES/SYSTEM							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-539	
4448251			6	0.0	0.0	0.0	0	0	0			1,060	1,060	0	0		
			CAPITAL							RED	1,060	1,060	0	0			
DT4451541	SAFE ROUTES TO SCHOOL - WEST MIAMI MIDDLE SCHOOL	MIAMI-DADE	PEDESTRIAN SAFETY IMPROVEMENT							Activity /Phase	Funding Source	Proposed Funding (\$000s)				A1-539	
4451541			12	0.0	0.0	0.0	0	0	0			0	36	0	0		
			PRELIMINARY ENGINEERING							SA	0	36	0	0			
			CONSTRUCTION							SU	0	0	0	193			

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
PRIMARY STATE HIGHWAYS AND INTERMODAL



MISCELLANEOUS

TPO Project No: **DT4442991**
LRTP Ref: 07-78
County: MIAMI-DADE
Roadway ID:
Lanes Exist:
Lanes Improved:
Lanes Added:
Project Length:
District: 6

Project Description: **SNAKE CREEK TRAIL EXTENSION TO GREYNOLDS PARK**

Type of Work: **BIKE PATH/TRAIL**

SIS or Non-SIS: **No**

Extra Description:

		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2021	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	>2025	All Years
PRELIMINARY ENGINEERING	LF	0	0	139	0	0	0	0	139
	SA	0	0	5	0	0	0	0	5
	Total	0	0	144	0	0	0	0	144
CONSTRUCTION	LF	0	0	0	0	229	0	0	229
	SA	0	0	0	0	5	0	0	5
	TALU	0	0	0	0	403	0	0	403
	Total	0	0	0	0	637	0	0	637

RESPONSIBLE AGENCY: **FDOT**

Item Number: **444299**

Item Segment TOTAL ALL Years ALL Phases: **\$781**

Item TOTAL ALL Years ALL Phases ALL Segments: **\$781**

TPO Project No: **DT4444371**
LRTP Ref: 06-10
County: DIST/ST-WIDE
Roadway ID:
Lanes Exist:
Lanes Improved:
Lanes Added:
Project Length:
District: 6

Project Description: **DISTRICTWIDE TRAFFIC OPERATIONS - STUDIES CONSULTANT**

Type of Work: **SAFETY PROJECT**

SIS or Non-SIS: **No**

Extra Description:

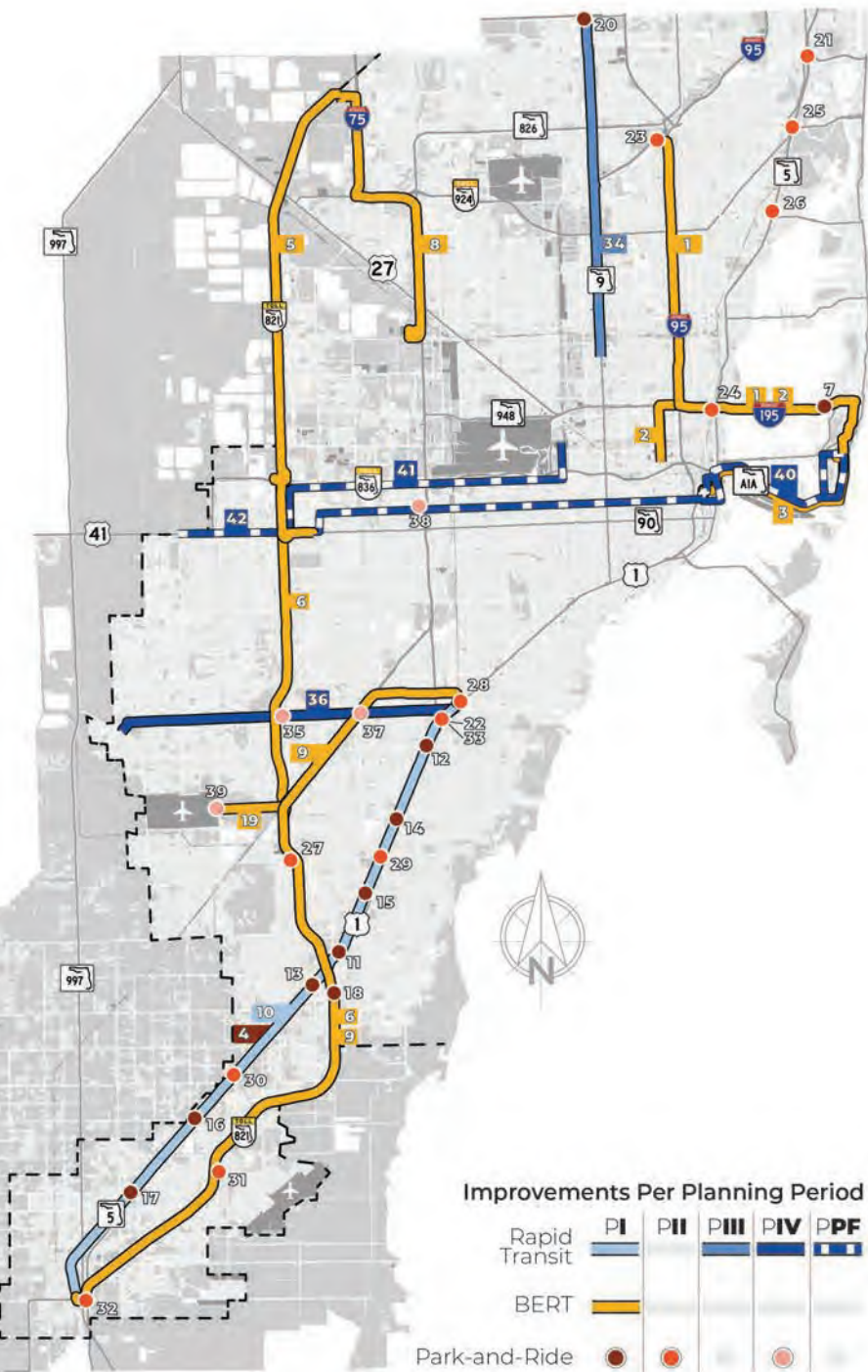
		Proposed Funding (in \$000s)							
PHASE :	Funding Source	<2021	2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	>2025	All Years
PRELIMINARY ENGINEERING	DS	0	0	0	0	350	0	0	350
	Total	0	0	0	0	350	0	0	350

RESPONSIBLE AGENCY: **FDOT**

Item Number: **444437**

Item Segment TOTAL ALL Years ALL Phases: **\$350**

Item TOTAL ALL Years ALL Phases ALL Segments: **\$350**

**TABLE 7-1: TRANSIT PROJECTS (CONTINUED)**

MAP ID	FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COSTS (2018 \$)	
PLAN PERIOD I (CONTINUED)						
20	Unity Station (TOD) - SMART Terminal	SR 852 (NW 215 St) & NW 27 Ave	SR 852 (NW 215 St) & NW 27 Ave	Construct terminal for North Corridor Rapid Transit with 350 parking spaces and transit oriented development (TOD) opportunities	\$5.000	
PLAN PERIOD II						
21	Aventura Terminal - SMART Terminal	US 1 (Biscayne Blvd/SR 5) & NE 197 St	US 1 (Biscayne Blvd/SR 5) & NE 197 St	Construct park-and-ride with 100 surface parking spaces	\$16.100	
22	Dadeland South Intermodal Station - Ramps	Dadeland South Metrorail Station	Dadeland South Metrorail Station	Construct direct ramps to/from elevated Bus Rapid Transit (BRT) platform, improvements and refurbishment of existing Metrorail station	\$50.500	
23	Golden Glades Multimodal Transportation Facility (GGMTF) - ITS Components - SMART Terminal	Golden Glades Interchange	Golden Glades Interchange	Construction/implementation technological components for the GGMTF	\$10.000	
24	Midtown Station - SMART Terminal	US 1 (Biscayne Blvd/SR 5) & NE 39 St	US 1 (Biscayne Blvd/SR 5) & NE 39 St	Construct park-and-ride/transit terminal with 100 surface parking spaces		
25	North Miami Beach Station	US 1 (Biscayne Blvd/SR 5) & NE 163 St	US 1 (Biscayne Blvd/SR 5) & NE 163 St	Construct park-and-ride/transit terminal with 100 surface parking spaces		
26	North Miami Station	US 1 (Biscayne Blvd/SR 5) & NE 125 St	US 1 (Biscayne Blvd/SR 5) & NE 125 St	Construct park-and-ride/transit terminal with 100 surface parking spaces		
27	South Dade Park-and-Ride/Terminal at SW 152 St (Coral Reef Dr) & SR 821 (HEFT)	SW 152 St (Coral Reef Dr) /SR 821 (HEFT)	SW 152 St (Coral Reef Dr) /SR 821 (HEFT)	Expand existing park-and-ride, construct new parking garage with 500 parking spaces and four bus bays	\$14.250	

Values in Millions YOY \$
YOY: Year of Expenditure

PROJECT	LIMITS FROM	LIMITS TO	DESCRIPTION	PURPOSE AND NEED STATEMENT
North Miami Beach Station	Biscayne Blvd	NE 163 St	Construct Park-and-Ride/Transit Terminal facility with 100 surface parking spaces	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services. Increase quality, accessibility, comfort and convenience Support proposed Transit service.
North Miami Station	Biscayne Blvd	NE 125 St	Construct Park-and-Ride/Transit Terminal facility with 100 surface parking spaces	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services. Increase quality, accessibility, comfort and convenience Support proposed Transit service.
Park-and-Ride/Transit Terminal at SW 152 St & HEFT - SMART Terminal	SW 152 St/HEFT	SW 152 St/HEFT	Expand the existing 2 bay/200 space Park-and-Ride facility. Construct parking garage with 500 parking spaces with four bus bays.	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.
South Dade Park-and-Ride - SMART Terminal	HEFT	SW 288 St	Purchase land for future Park-and-Ride facility	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.
Expand overcapacity Park-and-Ride lot at Dadeland North - SMART Terminal	Dadeland North Metrorail Station	Hwy US 1	Construct a new parking garage with ground-floor retail and office space (existing 1,963 spaces)	Increase capacity, quality, accessibility, comfort Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services .
Transitway Park-and-Ride at SW 152 St (152 St Station) - SMART Terminal	Transitway	SW 152 St	DTPW is proposing to upgrade the existing Park-and-Ride facility in two phases Phase 1 includes reconstruction of the existing facility to improve operations, bringing the total number of leased spaces to 196 Phase 2 includes a modernized 511 space parking garage with enhanced amenities	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.
Transitway Park-and-Ride at SW 244 St (244 St Station) - SMART Terminal	Transitway	SW 244 St	Reconstruction of the existing facility to improve operations and increase the number of leased parking spaces from 101 spaces to 111 spaces	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.
South Dade Park-and-Ride - SMART Terminal	HEFT	SW 288 St	Purchase land for future park-and-ride facility	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.
Transitway Park-and-Ride at SW 344 St (344 St Station) - SMART Terminal	Transitway	SW 344 St	DTPW has identified a need to expand the existing end-of-the-line transit terminal/Park-and-Ride facility at SW 344 St in order to meet future demand for parking along the South Miami-Dade Transitway The necessary right-of-way acquisition for this project is funded, but the design and construction costs are unfunded	Improve access to and convenience of transit. Provide park-and-ride capacity for existing and new customers. Help reduce traffic congestion and support economic vitality. Support new SMART Plan BERT and proposed Express Bus services.

TABLE 7-9: BICYCLE AND PEDESTRIAN PROJECTS (CONTINUED)

FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COSTS (MILLIONS 2018 \$)
UNFUNDED PROJECTS (CONTINUED)				
Franjo Rd	Gulfstream Rd	Old Cutler Rd	Off-Road Bicycle and Pedestrian Facility Improvement	\$429.901
SW 97 Ave/Gulfstream Rd	SW 184 St (Eureka Dr)	Montego Bay Dr	Off-Road Bicycle and Pedestrian Facility Improvement	\$620.101
De Soto Blvd	Andalusia Ave	Coral Way (SR 972)	Off-Road Bicycle and Pedestrian Facility Improvement	\$31.878
Miccosukee Link	SR 997 (Krome Ave)	Florida International University	Off-Road Bicycle and Pedestrian Facility Improvement	\$3,172.124
Columbus Blvd	Anastasia Ave	South Greenway Dr	On-Road Bicycle Facility Improvement	\$19.303
Riviera Dr	SW 42 Ave	South Dixie Hwy	Protected On-Road Bicycle Facility Improvement	\$1,123.258
SMART Terminal Connector - SW 128 St	SR 825/SW 137 Ave	SW 122 Ave	Protected On-Road Bicycle Facility and Pedestrian Improvements	\$1,295.918
NE 183 St	Snake Creek Trail	NE 19 Ave	Dedicated On-Road Bicycle Facility Improvement	\$677.724
SW 97 Ave/Franjo Rd	SW 184 St (Eureka Dr)	US 1 (South Dixie Hwy/SR 5)	Dedicated On-Road Bicycle Facility Improvement	\$357.042
Canal	SW 57 (Red Rd)	SW 62 Ave	Off-Road Bicycle and Pedestrian Facility Improvement	\$187.231
SW 58 Ave	Canal	SW 87 St	Off-Road Bicycle and Pedestrian Facility Improvement	\$13.295
SW 64 Ave	SW 85 St	SW 84 St	Off-Road Bicycle and Pedestrian Facility Improvement	\$18.775
SW 160 St	SW 90 Ave	SW 77 Ct	Pedestrian Facility Enhancement or Expansion	\$145.936
NE 18 Ave	West Dixie Hwy (SR 909)	SR 826 (Palmetto Expy)/NE 163 St	Dedicated On-Road Bicycle Facility Improvement	\$526.192

TABLE 7-9: BICYCLE AND PEDESTRIAN PROJECTS (CONTINUED)

FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COSTS (MILLIONS 2018 \$)
UNFUNDED PROJECTS (CONTINUED)				
SW 62 Ave	Miller Dr (SW 56 St)	SW 50 St	Pedestrian Facility Enhancement or Expansion	\$44.723
SW 80 St	SW 63 Pl	SW 65 Ave	Pedestrian Facility Enhancement or Expansion	\$18.164
SR 997 (South Krome Ave)	SW 177 Ct	US 1 (South Dixie Hwy/SR 5)	Off-Road Bicycle and Pedestrian Facility Improvement	\$164.406
SW 132 St	US 1 (South Dixie Hwy/SR 5)	SW 34 Ave	Pedestrian Facility Enhancement or Expansion	\$15.272
SW 120 St	US 1 (South Dixie Hwy/SR 5)	SW 57 (Red Rd)	Dedicated On-Road Bicycle Facility Improvement	\$1,856.404
Princeton Trail	SR 997 (Krome Ave)	Moody Rd Eastern Terminus	Off-Road Bicycle and Pedestrian Facility Improvement	\$17,577.394
SR 826 (Palmetto Expy)	US 1 (South Dixie Hwy/SR 5)	Biscayne Bay Bridge	Bicycle Facility Improvement	\$1,043.682
NE 159 St	NE 8 Ave	NE 18 Ave	Dedicated On-Road Bicycle Facility Improvement	\$879.397
NE 19 Ave	SR 826 (Palmetto Expy)/NE 163 St	Snake Creek Canal	Dedicated On-Road Bicycle Facility Improvement	\$120.012
NW 13 Ave	NW 135 Dr	NW 175 St	Dedicated On-Road Bicycle Facility Improvement	\$798.771
Allison Park	Beachwalk	SR A1A (Collins Ave)	Off-Road Bicycle and Pedestrian Facility Improvement	\$25.581
SR 907 (Alton Rd)	North Bay Rd	NW 34 St	Off-Road Bicycle and Pedestrian Facility Improvement	\$22.353
West 41 St	SR A1A (Indian Creek Dr)	Pine Tree Dr	Off-Road Bicycle and Pedestrian Facility Improvement	\$57.965
North Michigan Ave	SR 907 (Alton Rd)	West 47 St	On-Road Bicycle Facility Improvement	\$18.206

MIAMI-DADE TRANSPORTATION PLANNING ORGANIZATION
TRANSPORTATION IMPROVEMENT PROGRAM
ROAD IMPACT FEE (RIF)

Road Impact Fee District: **District 3**

Municipalities: *Aventura / Bal Harbour / Bay Harbor Islands / Golden Beach / Hialeah / Indian Creek / Miami Lakes / Opa-Locka / Miami Gardens / North Miami / North Miami Beach / Sunny Isles Beach / Surfside / Uninc. Miami-Dade County*

TPO Project No.	Facility/Project Name		Bicycle Accom	Type of Work		Project Cost (\$000s)	Prior Years' Funding (\$000s)	
	From /Location	To /Location	Length (miles)					
Agency Project No.	Detailed Project Description					LRTP Ref		
	Status		Remarks					

PW0001134	NE 159 Street			Widen from 3 to 5 lanes				Funding (in \$000s)				
	NE 6 Avenue	W Dixie Highway	2.0									
0001134	Widen from 3 to 5 lanes. Prior Years' Funding as follows: \$1,424,000 for PE, \$12,561,000 for CST.				\$13,985	\$13,985	Activity /Phase	Proposed		Tentative 3-Year Program		
			07-46	2020 - 2021				2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025	

PW000764	W Dixie Highway		Bike Lane	Widen from 2 to 4 lanes				Funding (in \$000s)				
	NE 163 Street	NE 175 Street	0.8									
764	Widen from 2 to 4 lanes. Prior Years' Funding as follows: \$1,092,000 for PE, \$8,776,000 for CST.				\$9,868	\$9,868	Activity /Phase	Proposed		Tentative 3-Year Program		
	Under design			06-09				2020 - 2021	2021 - 2022	2022 - 2023	2023 - 2024	2024 - 2025

BOND - Capital Asset Acquisition Special Obligation Bonds
B.R. - Repayment of Capital Asset Acquisition Special Obligation Bonds
CIGP - County Incentive Grant Program
L RTP - Subject to Long Range Plan Amendment

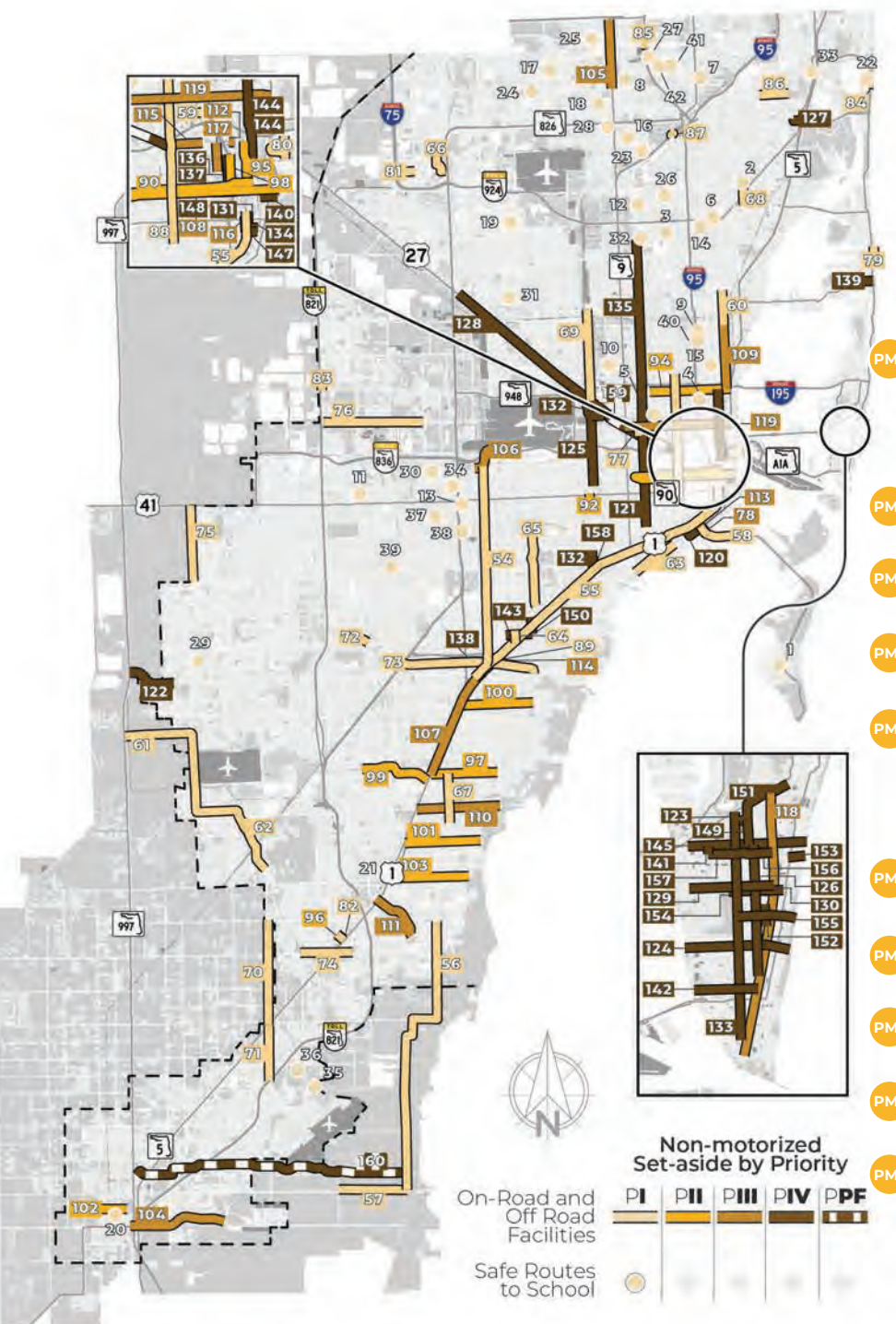
PE Preliminary Engineering
CST Construction
CEI Construction Engineering Inspection
COMB Combined Funding in Prior Years

Totals reflect expenditures based on latest budgetary information of anticipated revenues, and may differ from actual amounts received.

TABLE 7-9: BICYCLE AND PEDESTRIAN PROJECTS (CONTINUED)

MAP ID	FACILITY	LIMITS FROM	LIMITS TO	DESCRIPTION	TOTAL PROJECT COST (2018 \$)
PLAN PERIOD IV (CONTINUED)					
126	Pennsylvania Ave	Washington Ave	17 St	On-Road Bicycle Facility Improvement	\$28,811
127	SMART Trails - NE 21 Ave/NE 164 St	Snake Creek Greenway	NE 23 Ave	Off-Road Bicycle and Pedestrian Facility Improvement	\$242,136
128	West Okeechobee Rd	NW 103 St	West 18 Ave	Pedestrian Facility Enhancement or Expansion	\$648,518
129	15 St	Washington Avenue	SR 907/ Alton Road	On-Road Bicycle Facility Improvement	\$18,376
130	15 St	SR 907/ Alton Road	Bay Road	On-Road Bicycle Facility Improvement	\$3,168
131	6 St	Washington Ave	West Ave	On-Road Bicycle Facility Improvement	\$13,759
132	SMART Trails - NW 25 St - Route B	NW 37 Ave	NW South River Dr	Off-Road Bicycle and Pedestrian Facility Improvement	\$399,040
133	Meridian Ave	1 St	16 St	On-Road Bicycle Facility Improvement	\$36,552
134	SW 10 St	Brickell Plaza	SW 1 Ave	On-Road Bicycle Facility Improvement	\$4,604
135	NW 22 Ave	NW 36 St (SR 948/ Doral Blvd)	NW 111 St	Dedicated On-Road Bicycle Facility Improvement	\$3,093,894
136	SR 925/NW 3 Ct	NW 1 St	NW 8 St	Dedicated On-Road Bicycle Facility Improvement	\$331,658
137	NW 3 Ct	NW 2 St	NW 8 St	Pedestrian Facility Enhancement or Expansion	\$45,094

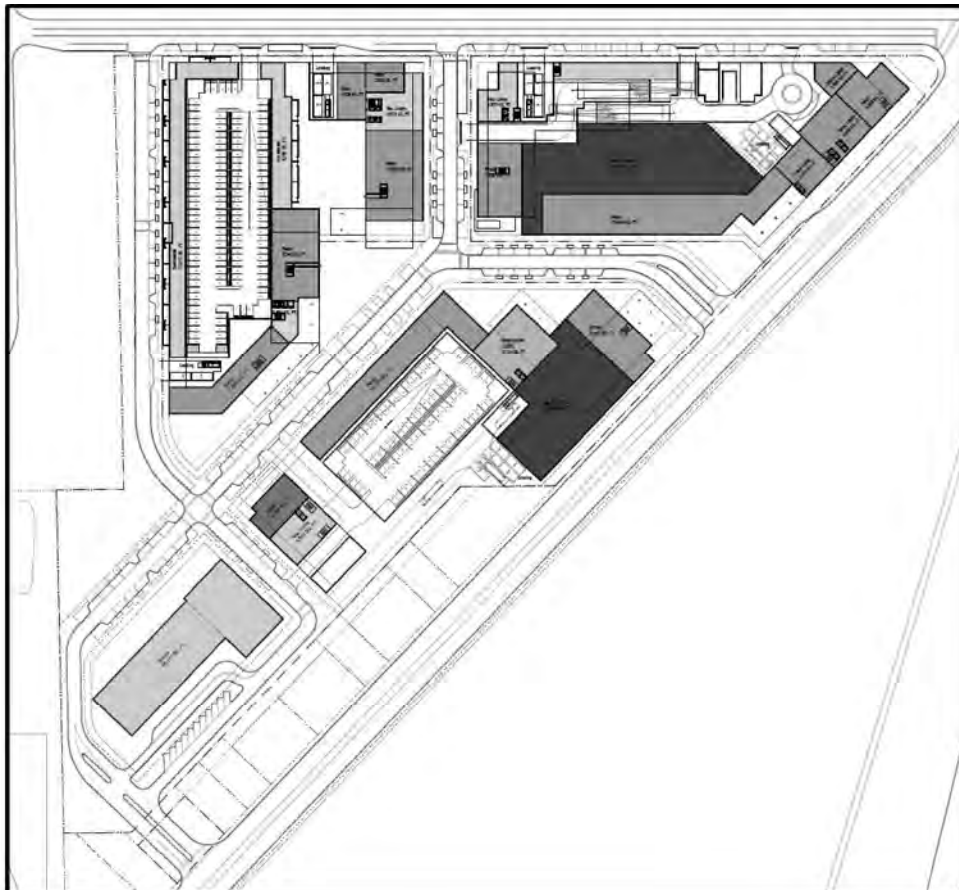
Values in Thousands YOY \$
YOY: Year of Expenditure





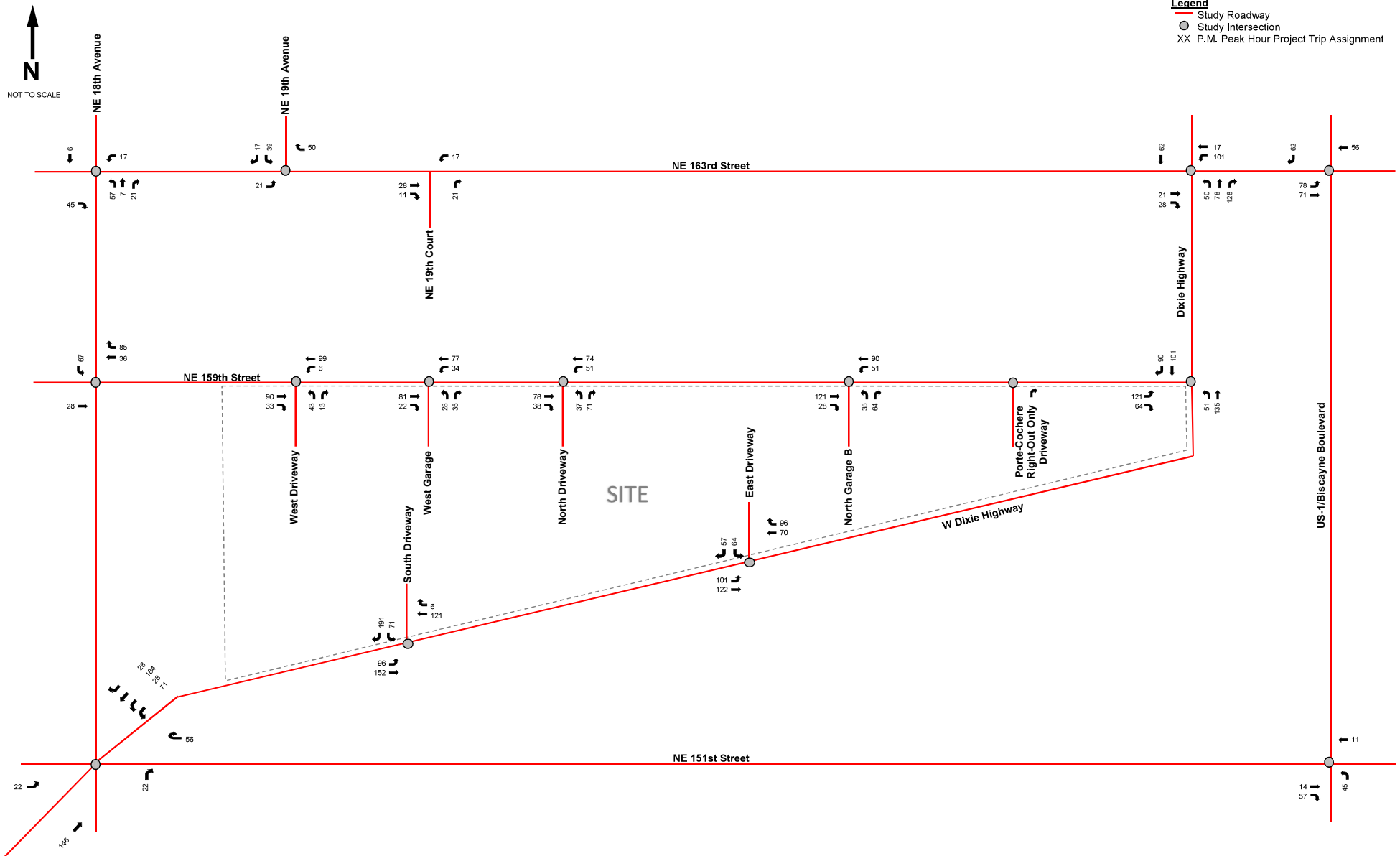
*Traffic Impact Analysis for
Submittal to the
City of North Miami Beach*

15780 West Dixie Highway
North Miami Beach, Florida



Kimley»Horn

© 2018 Kimley-Horn and Associates, Inc.
Revised May 2018
March 2018
043932000





Traffic Impact Analysis

Uptown Biscayne North Miami Beach, Florida



Kimley»Horn

© 2017 Kimley-Horn and Associates, Inc.
Updated October 2017
043745000

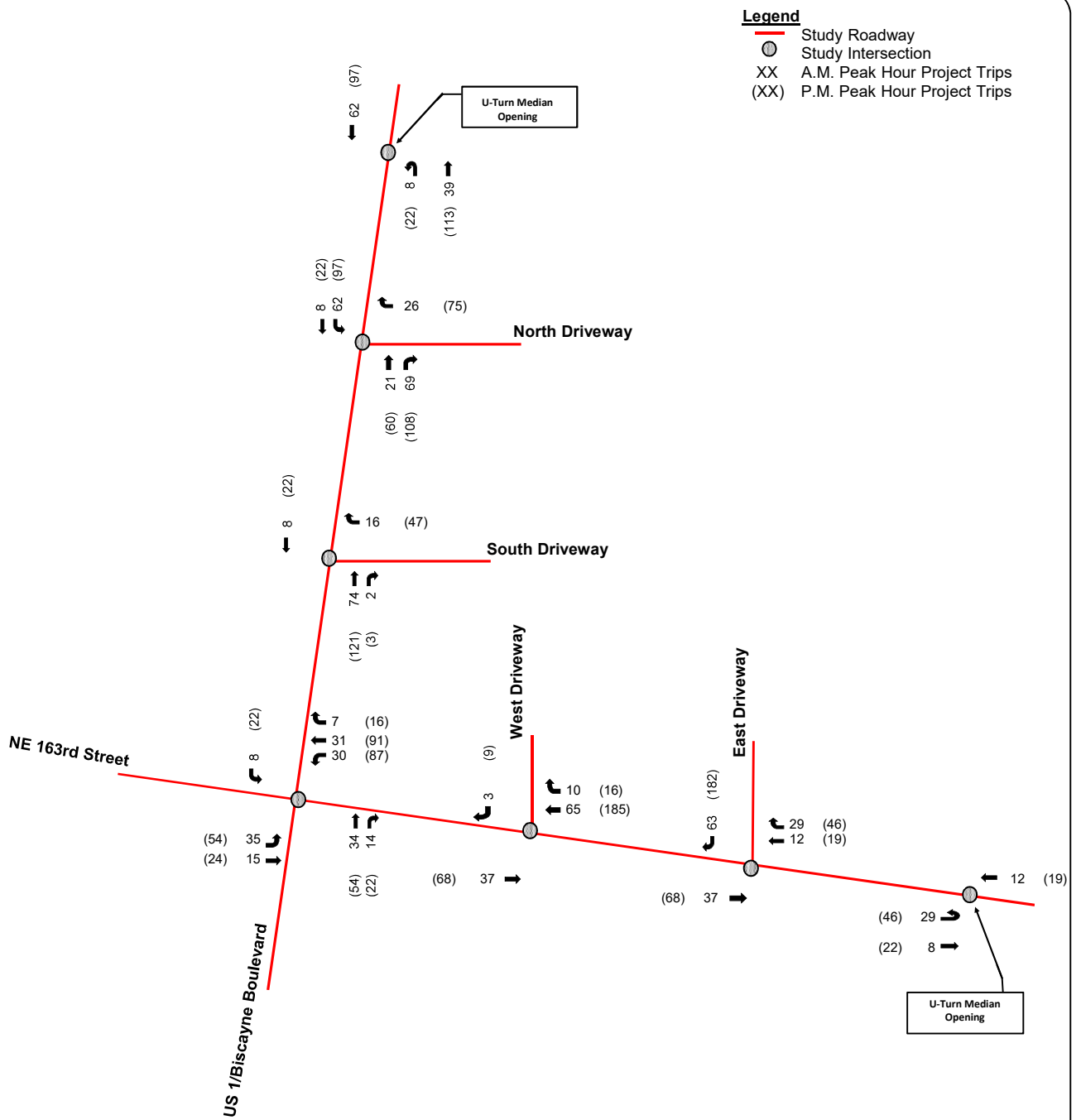


Figure 13
 Project Trip Assignment - Scenario 3
 A.M. and P.M. Peak Hours
 Uptown Biscayne
 North Miami Beach, Florida

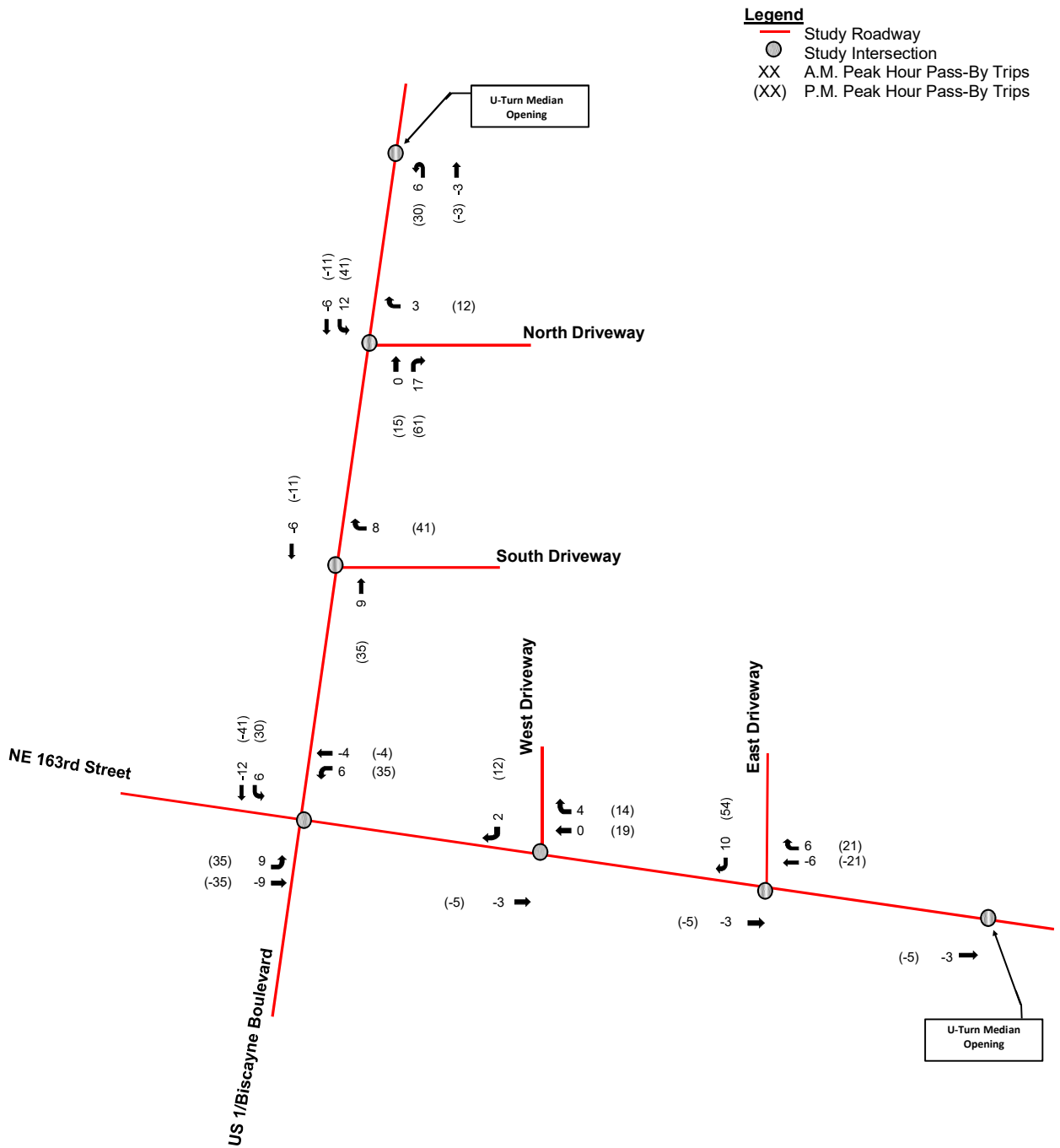
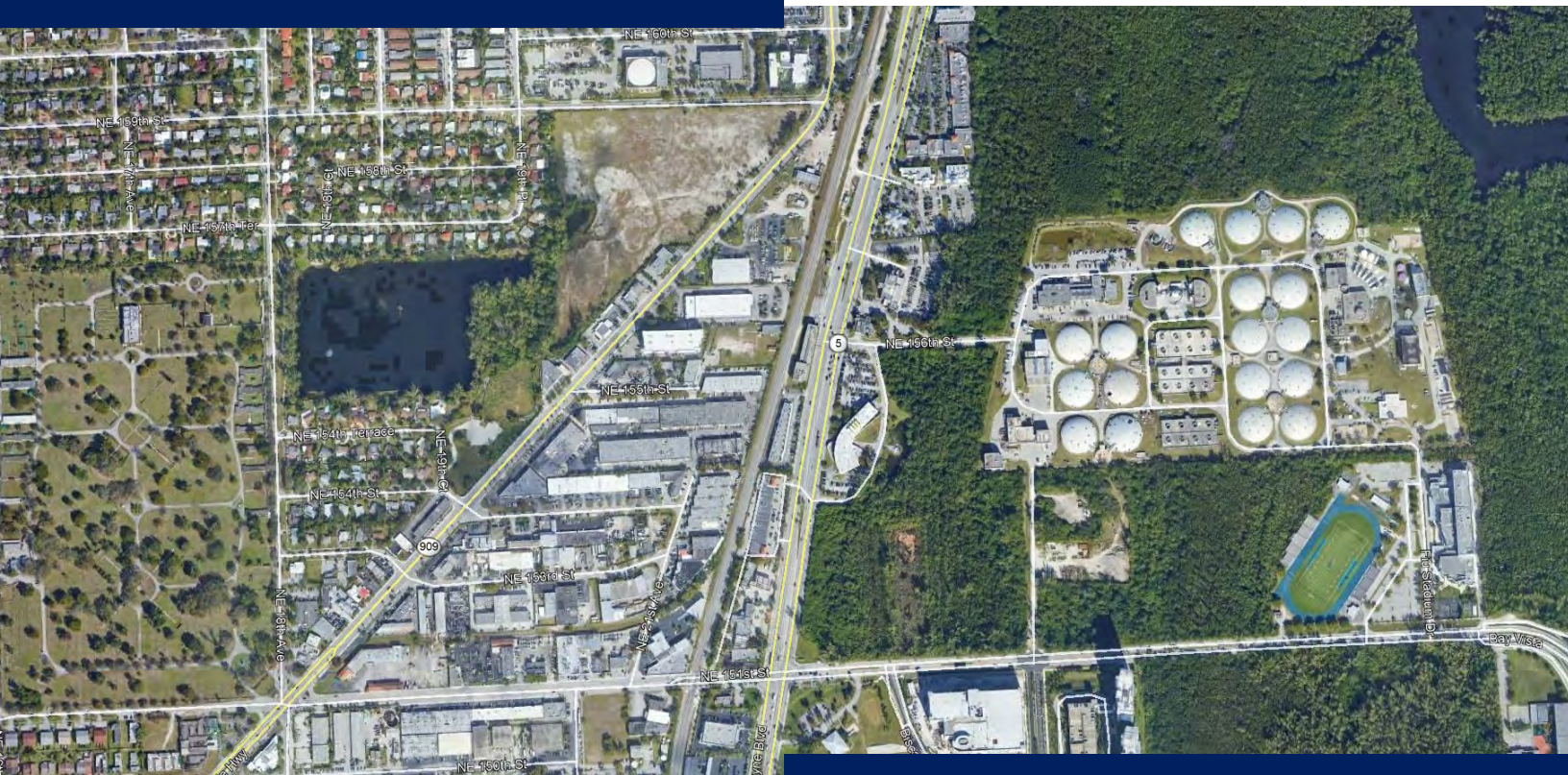


Figure 15
Pass-By Trip Assignment - Scenario 3
A.M. and P.M. Peak Hours
Uptown Biscayne
North Miami Beach, Florida

September 2019



Traffic Impact Statement

15699 West Dixie Highway

PREPARED FOR A PROJECT WITHIN



PREPARED BY

MARLIN Engineering, Inc.

1700 NW 66th Avenue, Suite 106

Plantation, FL 33313

954.870.5070 | www.marlinengineering.com

MARLIN

September 25, 2019

Mr. Yury Gnesin
15699 W. Dixie Hwy, LLC
17070 Collins Avenue, #255
Sunny Isles, Florida 33160
Y9173703030@gmail.com

RE: Self-Storage Facility for 15699 West Dixie Highway Traffic Impact Statement

Dear Mr. Gnesin,

We have completed the trip generation, distribution and assignment analysis for the subject project. This evaluation was done in coordination with the City of North Miami Beach's Planning and Zoning Department, as well as Miami-Dade County (MDC) requirements. The proposed project will be located at 15699 West Dixie Highway in the City of North Miami Beach, Florida as shown in Figure 1. The project proposes a new self-storage facility with 170,600 square-feet, comprised of a seven-story building. Access to the site will be provided via a full access driveway located at NE 155th Street along West Dixie Highway. The proposed site plan is included in Attachment 1.

Upon a detailed review of the *Trip Generation Manual, 10th Edition* published by the Institute of Transportation Engineers (ITE), it was revealed that the most suitable land use for the subject project is Mini-Warehouse with Land Use Code (LUC) 151. The proposed project trip generation was calculated based on the rates included in the Manual. Trips established as shown below in Table 1 are based on gross trip generation rates. Trip generation calculations were performed for a typical weekday, as well as (morning and afternoon) AM and PM peak hour scenarios.

Figure 1 - Location Map



Upon review of the Miami-Dade County transit service information, no routes were found serving the vicinity of the study area. Also based on the nature of the land use of the subject project, no trip reduction factors are proposed. Therefore, the gross trips information project in Table 1 is proposed to be the net trip generation for the respective time period of the day.

Based on project size of 170,600 square feet as shown in provided site plan, the trip estimates for two-way AM, PM and daily trips are 17, 29 and 258 trips, respectively. This information is summarized in Table 1 below and supporting documents are provided in Attachment 2.

Table 1 - Development Trip Generation

Project Use	Uses and ITE LUC	Units of Development	Timeframe	Gross Trip	Trips In	Trips Out
Self-Storage Facility	Mini-Warehouse, 151	170,600 SF	AM Peak Hour	17	10	7
			PM Peak Hour	29	14	15
			Daily	258	129	129

The Miami-Dade Long Range Transportation Plan (LRTP) Update to the Year 2040 revealed that the subject project lies within the Traffic Analysis Zone (TAZ) 182. The trip distribution percentages for the proposed project were obtained from the updated Directional Trip Distribution Report from the 2040 LRTP by Miami-Dade County Transportation Planning Organization (TPO) per the approved transportation model. This was achieved through interpolation for the Build-out Year 2020 using years 2010 and 2040. For the cardinal directions for the trip assignment, consideration was also given to conditions such as the roadway network accessed by the project traffic, roadways available to travel in the desired direction, and attractiveness of traveling on a specific roadway. Project trip distributions for the proposed project are shown in Figure 2.

Since West Dixie Highway/SR 909 (a state-maintained road) is the only roadway available to access the County and other City roads from the project site, all of the trips are distributed on this roadway in two directions. Hence, 55.6% and 44.4% of the two-way trips are distributed in the north and south directions respectively, along West Dixie Highway as shown in Figures 3 and 4.

These distributions were further converted into trip assignments to determine entering and exiting movements along NE 155th Street (a city-maintained road), which forms the project driveway. Figures 3 and 4 also show the trip assignments, entering and exiting movements along the project driveway for the morning and afternoon peak hours.

Figure 2 - Cardinal Trip Distribution for Study Traffic Analysis Zone

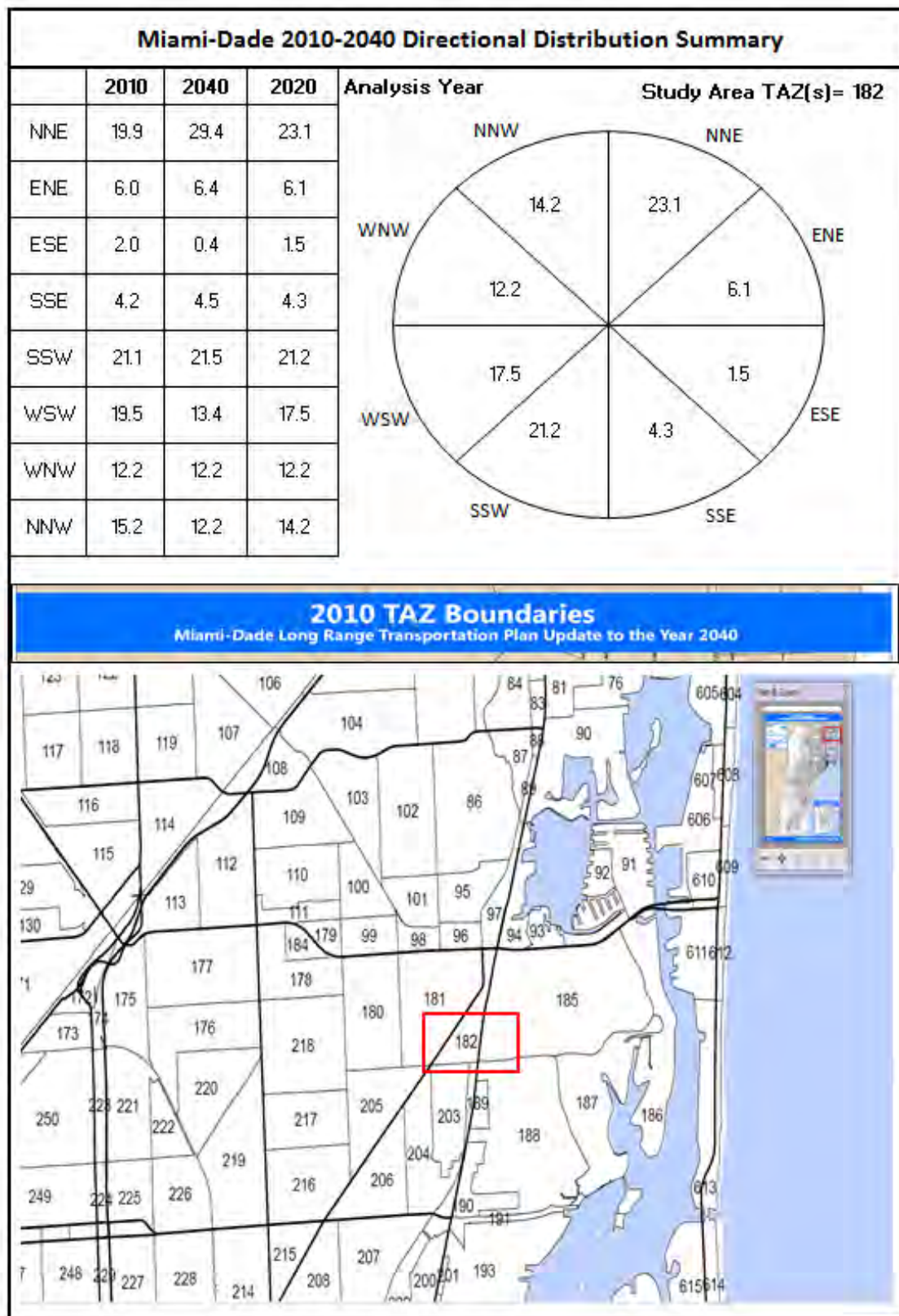


Figure 3 - Distribution Percentages and AM Trip Assignments

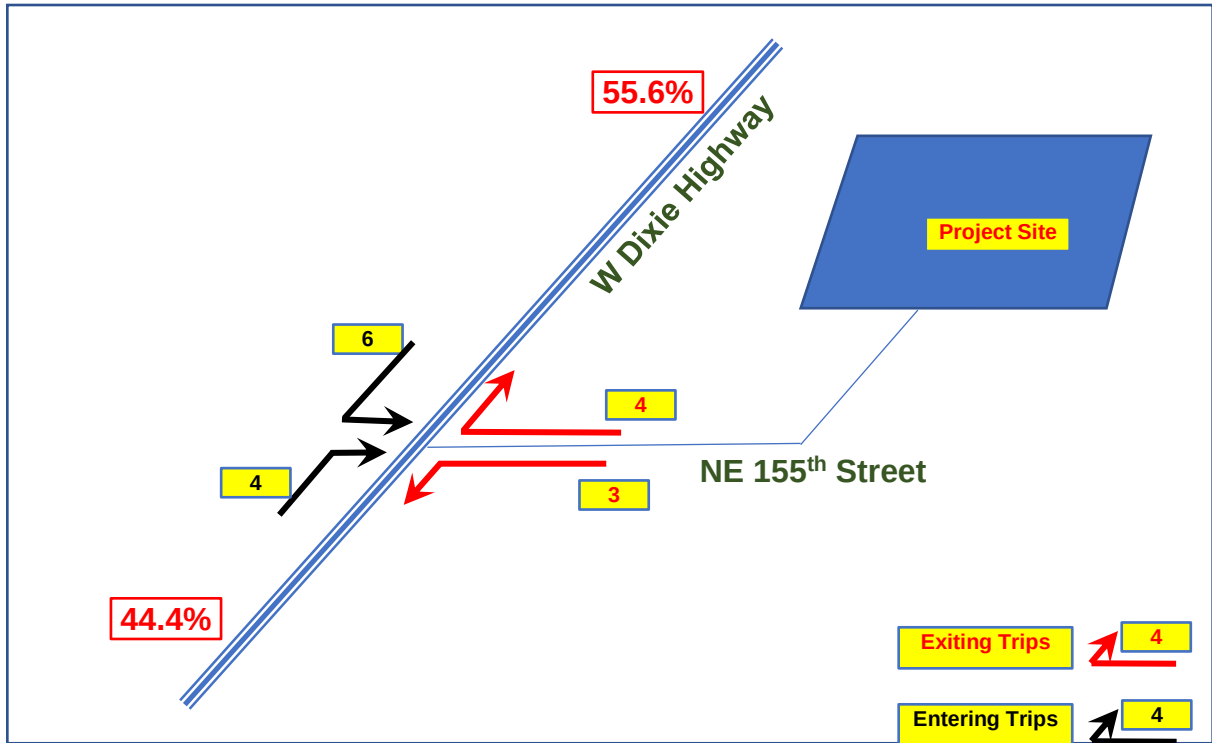
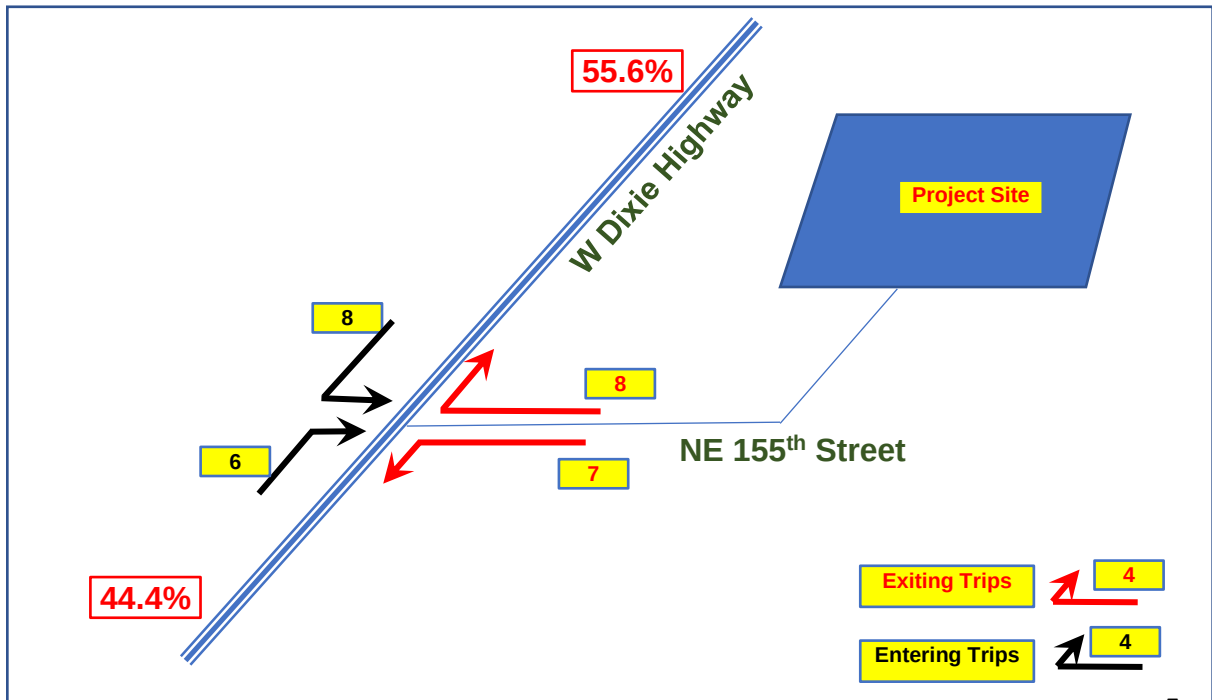


Figure 4 - Distribution Percentages and PM Trip Assignments



According to the ITE Transportation Impact Analyses, the suggested threshold for determining the need for further traffic analysis is 100 trips during the adjacent roadways' peak hour. As the proposed project does not exceed 100 trips during the peak hours, we request a waiver from completing a full traffic study.

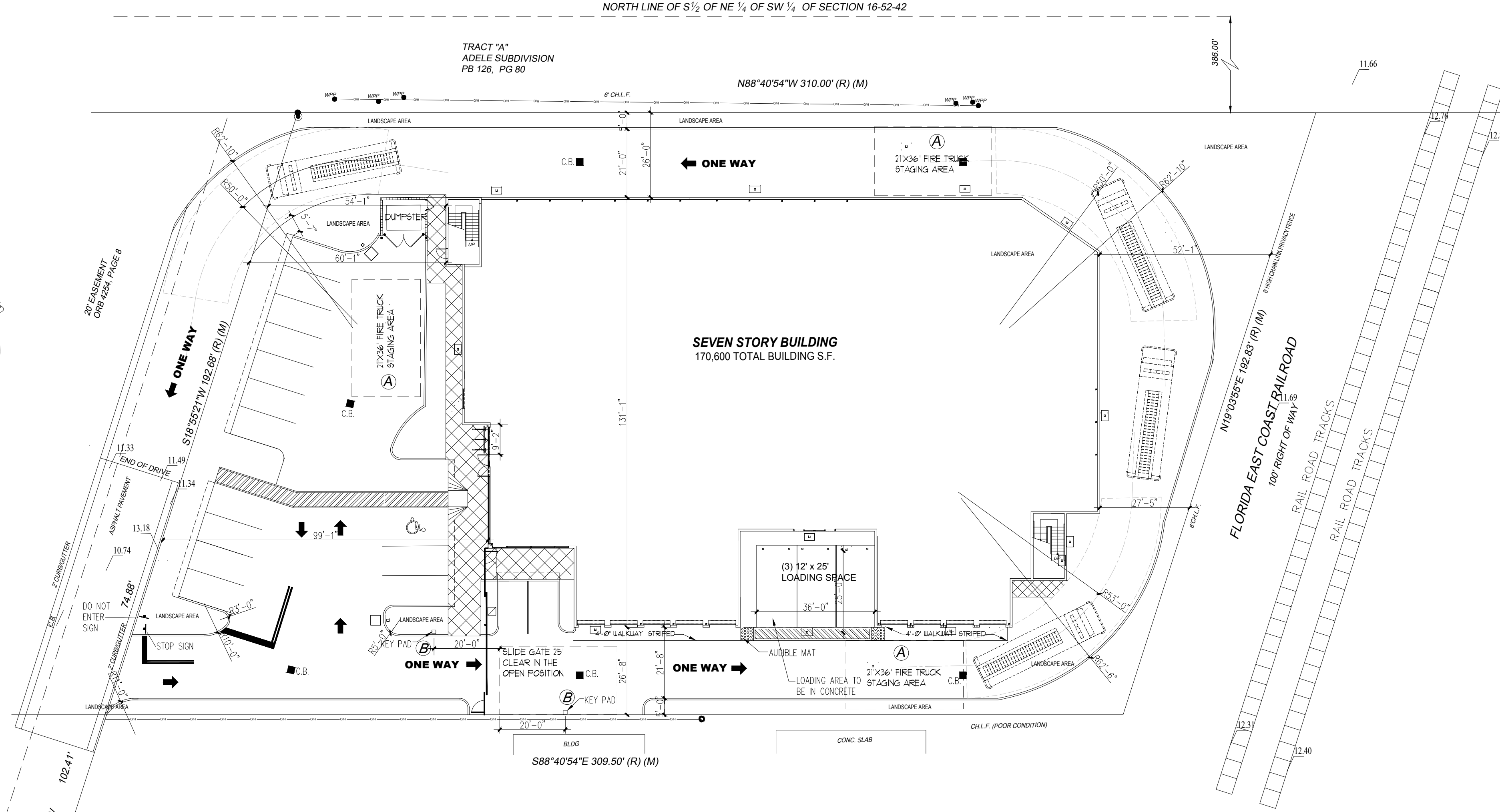
Please let us know if we can provide any other information needed in order to receive the necessary approvals from the City on this proposed project. Should you have any questions or comments, please call me at (954) 870-5059.

Sincerely,

Myra E. Patino, PE, PMP
Assistant Traffic Division Manager

Attachment 1

Site Plan



An aerial photograph of an industrial area. A large, rectangular, vacant lot is outlined with a thick black border and labeled "SUBJECT SITE" in the center. To the left of the subject site is a large white industrial building with a red pin on its roof labeled "15888 W Dixie Hwy". Below this building is a parking lot filled with various vehicles. To the right of the subject site is another large industrial building with a grey roof. The area is surrounded by other industrial structures, parking lots, and some trees. A road with multiple lanes is visible on the left side of the image.

SITE CRITERIA			
ZONING	MU/C	MIXED USE/EMPLOYMENT CENTER	
	REQUIRED	PROPOSED	Percentage
Lot Area	56,941.30	56,941.30	100.00%
Lot Coverage		22,500.00	39.51%
Pervious Landscape Area	5,694.13	12,326.00	21.65%
Impervious Area		22,115.30	38.84%
Minimum Lot Width	192.68 FT.	192.68 FT.	
Minimum Lot Depth	309.50 FT.	309.50 FT.	
Building Height	255 FT	83'4"	
Square Footage Breakdown			
Ground Floor	22,500.020	S.F.	
Second Floor	22,500.020	S.F.	
Third Floor	23,732.039	S.F.	
Fourth Floor	23,732.039	S.F.	
Fifth Floor	23,732.039	S.F.	
Sixth Floor	23,732.039		
Seventh Floor	23,732.039		
Total Gross Building	163,660.24	S.F.	
OFFICE AREA (Included in Ground Floor Sq. Ft)	1,200.00	S.F.	
Setbacks			
	Required	Provided	
North Side	15'-0"	26'-0"	
South Side	15'-0"	26'-8"	
East Side	25'-0"	60'-99'-1"	
West Side	25'-0"	27'-5" - 52'-1"	
Parking - 1 per 10,000 S.F.			
Manicap	1	1	12x20' + 5' Access Isle
Standard (9x18)	16	16	
Total Parking	17	17	
Loading Space (12x30)			
	3	3	

A circular professional seal for a licensed architect in the State of Florida. The outer ring of the seal contains the text "STATE OF FLORIDA" at the top and "PROFESSIONAL ARCHITECT" at the bottom, separated by small dots. Inside this ring, the name "M. A. SCAVUZZO" is written in a curved path. In the center of the seal, the word "No." is positioned above the license number "004956". Below the license number, the word "LICENSED" is written in a curved path, mirroring the bottom of the outer ring.

Sheet No.
A-1.0
COMMISSION NUMBER
I-08-19

Attachment 2

ITE Trip Generation Results

Land Use: 151

Mini-Warehouse

Description

A mini-warehouse is a building in which a number of storage units or vaults are rented for the storage of goods. They are typically referred to as “self-storage” facilities. Each unit is physically separated from other units, and access is usually provided through an overhead door or other common access point.

Additional Data

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 10:30 and 11:30 a.m. and 1:15 and 2:15 p.m., respectively.

The sites were surveyed in the 1980s, the 1990s, the 2000s, and the 2010s in California, Colorado, Massachusetts, Minnesota, New Jersey, Texas, and Utah.

Source Numbers

212, 403, 551, 568, 642, 708, 724, 850, 868, 876



ITE TripGen Web-based App

Graph Look Up

Technical Support

Add Users

Comments

ADD-ONS

Try OTISS Pro

ITE TripGen Web-based App

Help, STEVEN SCHINDLER, Sign out



Graph Look Up

Query Filter

DATA SOURCE:

Trip Generation Manual, 10th Ed

SEARCH BY LAND USE CODE:

151

LAND USE CATEGORY:

(100-199) Industrial

LAND USE:

151 - Mini-Warehouse

INDEPENDENT VARIABLE (IV):

1000 Sq. Ft. GFA

TIME PERIOD:

Weekday

SETTING/LOCATION:

General Urban/Suburban

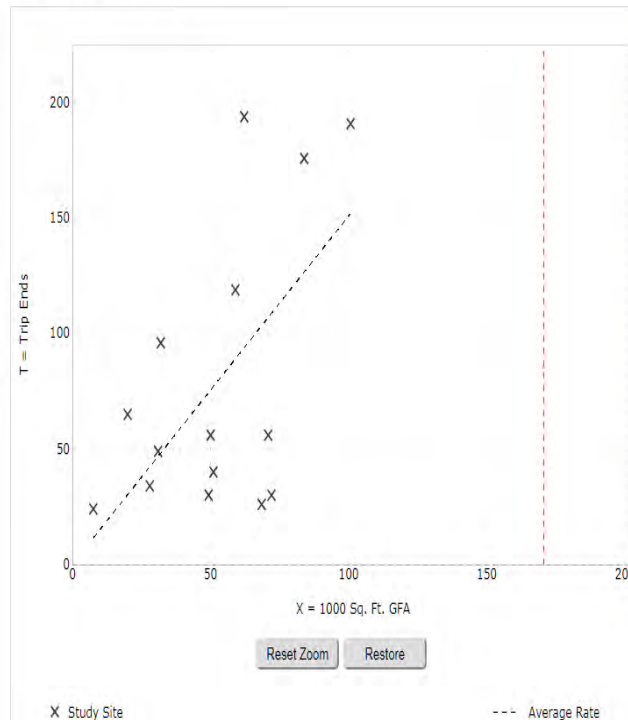
TRIP TYPE:

Vehicle

ENTER IV VALUE TO CALCULATE TRIPS:

170.6 Calculate

Data Plot and Equation



Use the mouse wheel to Zoom Out or Zoom In.
Hover the mouse pointer on data points to view X and T values.

DATA STATISTICS

Land Use:

Mini-Warehouse (151) [Click for more details](#)

Independent Variable:

1000 Sq. Ft. GFA

Time Period:

Weekday

Setting/Location:

General Urban/Suburban

Trip Type:

Vehicle

Number of Studies:

15

Avg. 1000 Sq. Ft. GFA:

52

Average Rate:

1.51

Range of Rates:

0.38 - 3.25

Standard Deviation:

0.95

Fitted Curve Equation:

Not Given

R²:

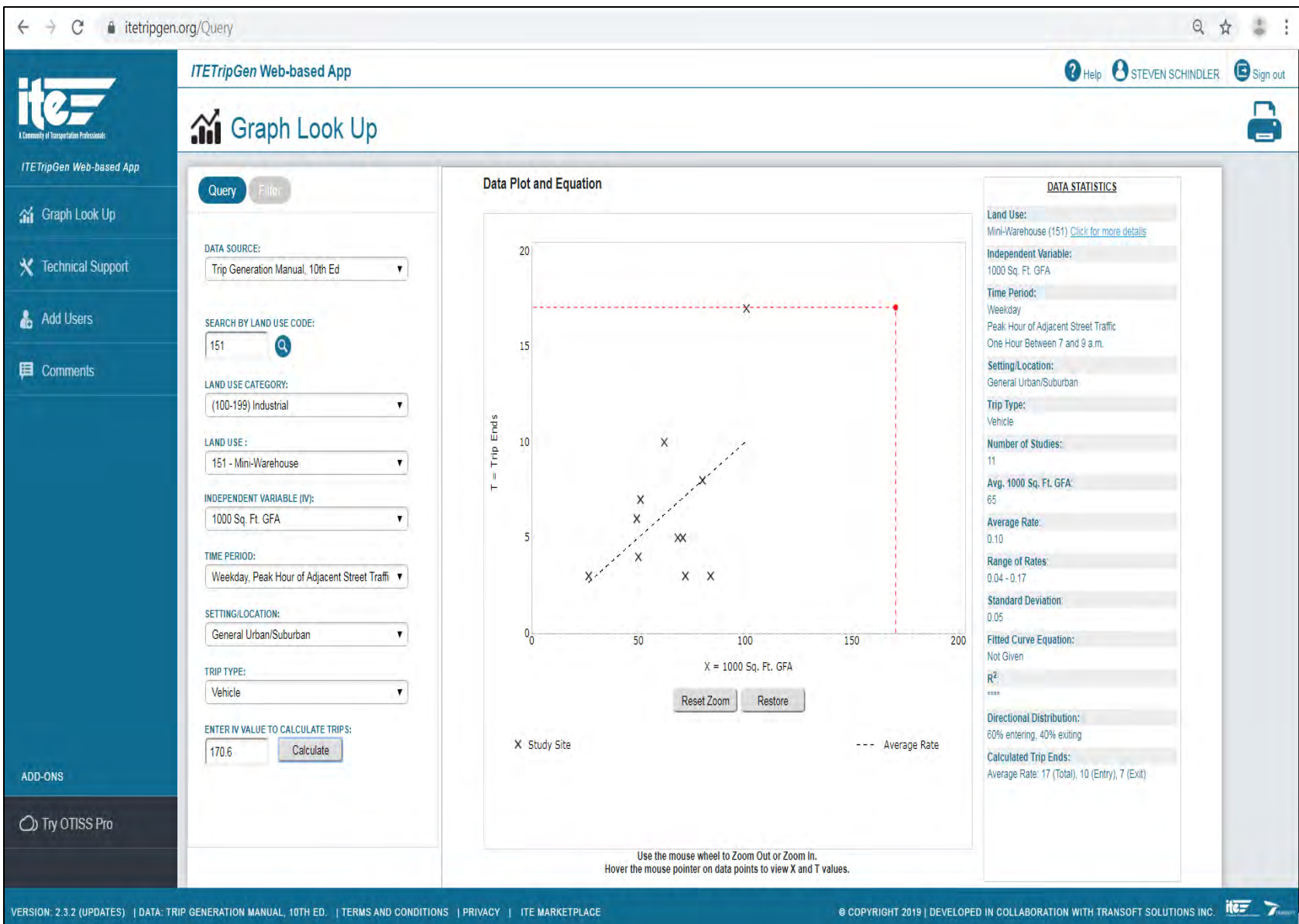
0.000

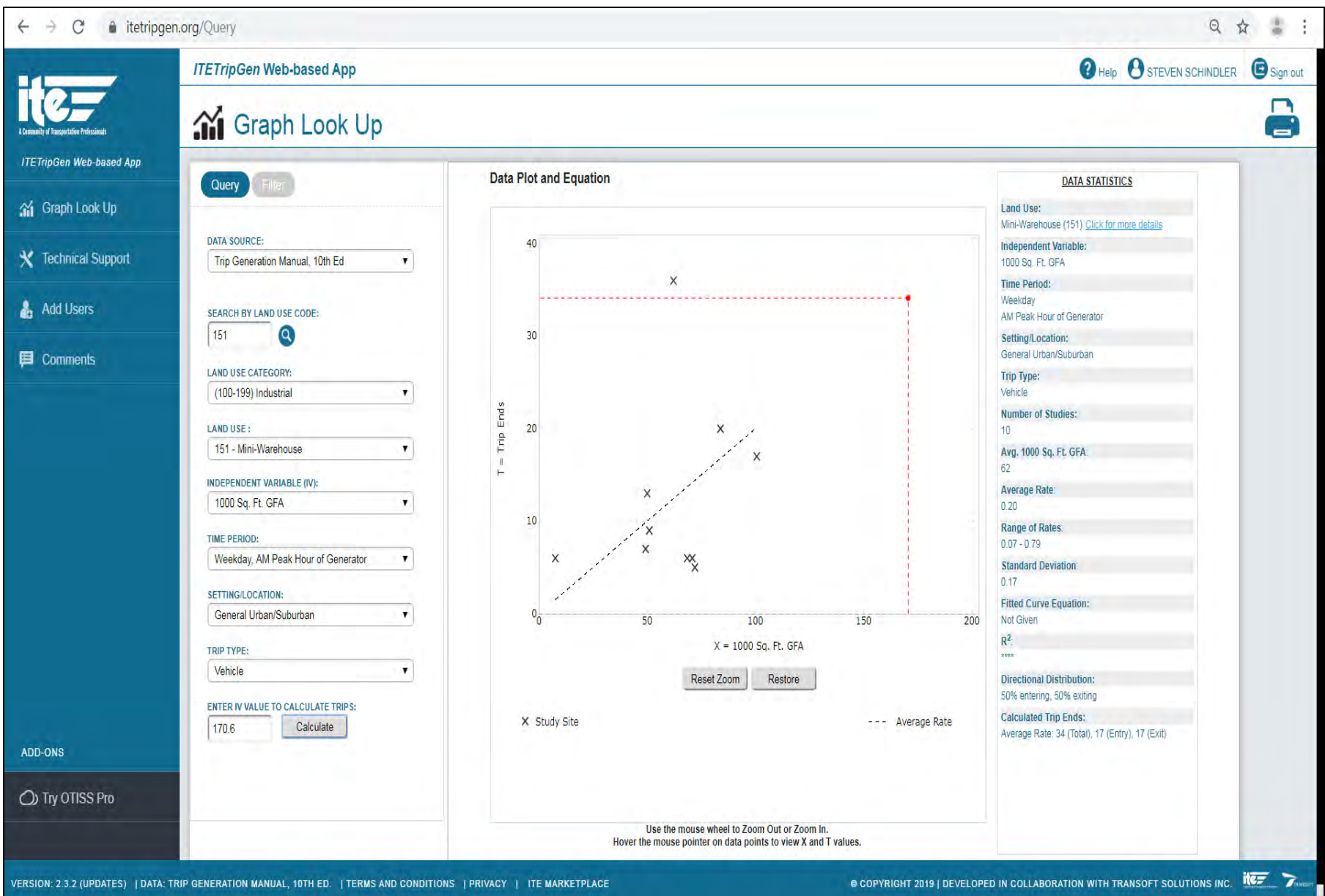
Directional Distribution:

50% entering, 50% exiting

Calculated Trip Ends:

Average Rate: 258 (Total), 129 (Entry), 129 (Exit)





Attachment 3

Miami-Dade MPO

Long Range Transportation Planning Data



MIAMI-DADE 2040

Long Range Transportation Plan

Directional Trip Distribution Report

October 23, 2014



MIAMI-DADE METROPOLITAN
PLANNING ORGANIZATION

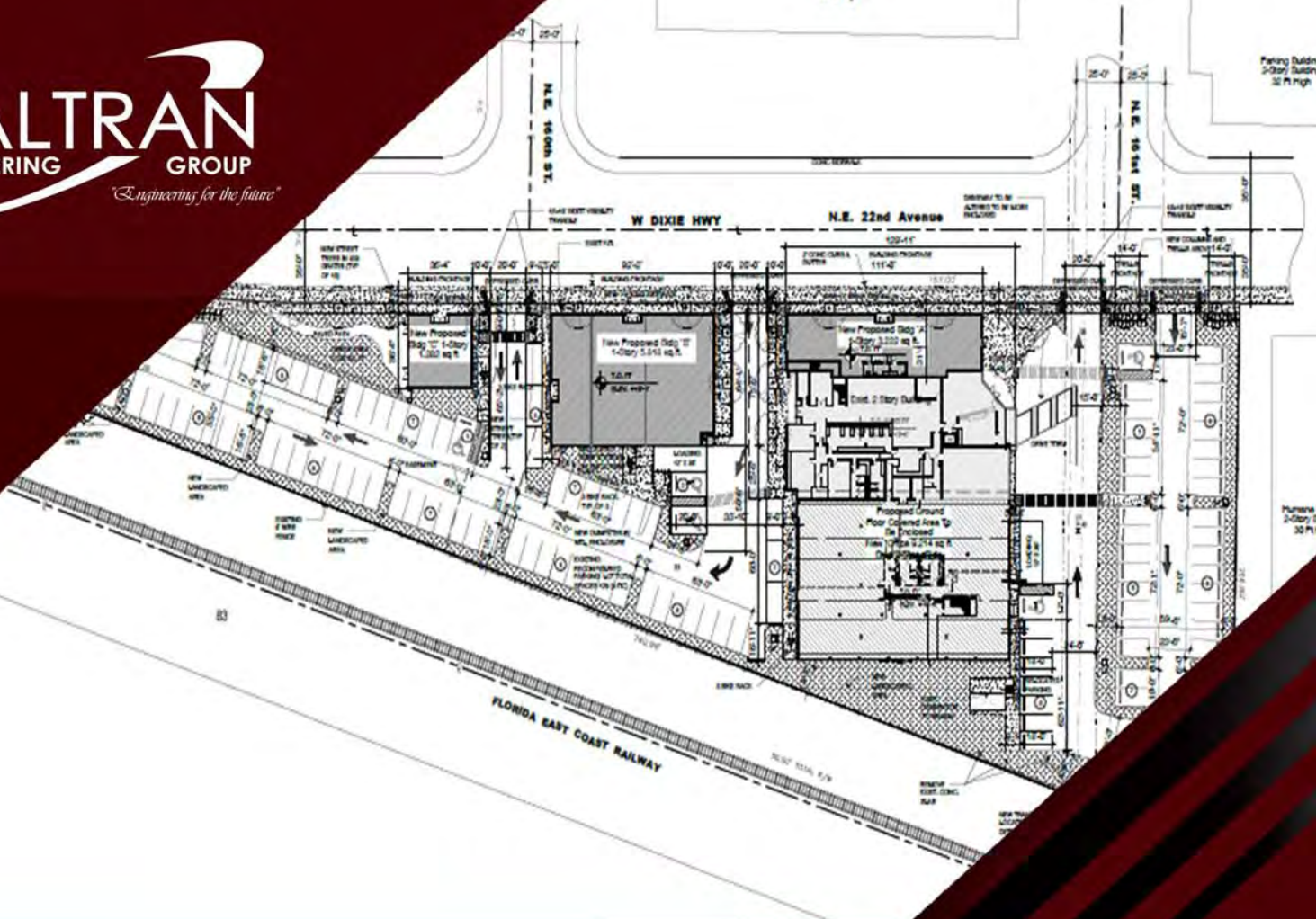


Photo by Asad Gilani

Miami-Dade 2010 Directional Distribution Summary											
Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
165	3065	TRIPS	201	179	195	209	277	139	70	133	1,403
165	3065	PERCENT	14.3	12.8	13.9	14.9	19.7	9.9	5.0	9.5	
166	3066	TRIPS	615	451	405	493	187	272	381	720	3,524
166	3066	PERCENT	17.5	12.8	11.5	14.0	5.3	7.7	10.8	20.4	
167	3067	TRIPS	621	524	308	532	601	320	354	569	3,829
167	3067	PERCENT	16.2	13.7	8.0	13.9	15.7	8.4	9.3	14.9	
168	3068	TRIPS	285	346	209	308	507	370	327	440	2,792
168	3068	PERCENT	10.2	12.4	7.5	11.0	18.2	13.3	11.7	15.8	
169	3069	TRIPS	212	308	112	269	325	405	306	364	2,301
169	3069	PERCENT	9.2	13.4	4.9	11.7	14.1	17.6	13.3	15.8	
170	3070	TRIPS	141	67	35	125	95	43	72	86	664
170	3070	PERCENT	21.2	10.1	5.3	18.8	14.3	6.5	10.8	13.0	
171	3071	TRIPS	951	751	389	536	668	630	838	801	5,564
171	3071	PERCENT	17.1	13.5	7.0	9.6	12.0	11.3	15.1	14.4	
172	3072	TRIPS	90	130	70	160	70	200	270	70	1,060
172	3072	PERCENT	8.5	12.3	6.6	15.1	6.6	18.9	25.5	6.6	
173	3073	TRIPS	711	685	358	697	767	315	296	519	4,348
173	3073	PERCENT	16.4	15.8	8.2	16.0	17.6	7.2	6.8	11.9	
174	3074	TRIPS	84	28	45	29	67	63	16	26	358
174	3074	PERCENT	23.5	7.8	12.6	8.1	18.7	17.6	4.5	7.3	
175	3075	TRIPS	839	727	396	496	721	458	288	512	4,437
175	3075	PERCENT	18.9	16.4	8.9	11.2	16.3	10.3	6.5	11.5	
176	3076	TRIPS	323	551	179	387	439	357	204	411	2,851
176	3076	PERCENT	11.3	19.3	6.3	13.6	15.4	12.5	7.2	14.4	
177	3077	TRIPS	776	883	502	1,005	1,002	724	572	847	6,311
177	3077	PERCENT	12.3	14.0	8.0	15.9	15.9	11.5	9.1	13.4	
178	3078	TRIPS	473	611	114	498	606	511	300	464	3,577
178	3078	PERCENT	13.2	17.1	3.2	13.9	16.9	14.3	8.4	13.0	
179	3079	TRIPS	205	129	65	99	219	222	168	135	1,242
179	3079	PERCENT	16.5	10.4	5.2	8.0	17.6	17.9	13.5	10.9	
180	3080	TRIPS	981	289	168	542	846	651	548	671	4,696
180	3080	PERCENT	20.9	6.2	3.6	11.5	18.0	13.9	11.7	14.3	
181	3081	TRIPS	932	505	41	440	1,401	853	742	866	5,780
181	3081	PERCENT	16.1	8.7	0.7	7.6	24.2	14.8	12.8	15.0	
182	3082	TRIPS	488	147	48	103	517	478	299	374	2,454
182	3082	PERCENT	19.9	6.0	2.0	4.2	21.1	19.5	12.2	15.2	
183	3083	TRIPS	619	892	1,255	1,289	711	53	57	153	5,029
183	3083	PERCENT	12.3	17.7	25.0	25.6	14.1	1.1	1.1	3.0	
184	3084	TRIPS	254	473	122	272	538	368	383	454	2,864
184	3084	PERCENT	8.9	16.5	4.3	9.5	18.8	12.9	13.4	15.9	
185	3085	TRIPS	562	420	0	89	464	470	638	465	3,108

Miami-Dade 2040 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
165	3065	TRIPS	181	221	151	271	200	152	97	144	1,417
165	3065	PERCENT	12.8	15.6	10.7	19.1	14.1	10.7	6.9	10.2	
166	3066	TRIPS	637	526	491	585	350	547	543	461	4,140
166	3066	PERCENT	15.4	12.7	11.9	14.1	8.5	13.2	13.1	11.1	
167	3067	TRIPS	1,440	925	470	961	1,081	524	736	856	6,993
167	3067	PERCENT	20.6	13.2	6.7	13.7	15.5	7.5	10.5	12.2	
168	3068	TRIPS	573	713	337	782	757	550	395	837	4,944
168	3068	PERCENT	11.6	14.4	6.8	15.8	15.3	11.1	8.0	16.9	
169	3069	TRIPS	292	247	97	362	411	403	267	582	2,661
169	3069	PERCENT	11.0	9.3	3.7	13.6	15.5	15.1	10.0	21.9	
170	3070	TRIPS	105	107	49	95	112	105	75	122	770
170	3070	PERCENT	13.6	13.9	6.4	12.3	14.6	13.6	9.7	15.8	
171	3071	TRIPS	1,334	785	329	990	899	824	1,062	1,170	7,393
171	3071	PERCENT	18.0	10.6	4.5	13.4	12.2	11.2	14.4	15.8	
172	3072	TRIPS	80	152	88	76	48	168	276	72	960
172	3072	PERCENT	8.3	15.8	9.2	7.9	5.0	17.5	28.8	7.5	
173	3073	TRIPS	876	854	307	883	740	531	459	527	5,177
173	3073	PERCENT	16.9	16.5	5.9	17.1	14.3	10.3	8.9	10.2	
174	3074	TRIPS	178	206	93	147	162	95	80	113	1,074
174	3074	PERCENT	16.6	19.2	8.7	13.7	15.1	8.9	7.5	10.5	
175	3075	TRIPS	971	972	468	871	1,028	738	518	783	6,349
175	3075	PERCENT	15.3	15.3	7.4	13.7	16.2	11.6	8.2	12.3	
176	3076	TRIPS	512	822	288	536	684	407	390	661	4,300
176	3076	PERCENT	11.9	19.1	6.7	12.5	15.9	9.5	9.1	15.4	
177	3077	TRIPS	1,074	1,463	424	1,339	1,247	912	773	1,106	8,338
177	3077	PERCENT	12.9	17.6	5.1	16.1	15.0	10.9	9.3	13.3	
178	3078	TRIPS	529	698	198	530	633	457	546	505	4,096
178	3078	PERCENT	12.9	17.0	4.8	12.9	15.5	11.2	13.3	12.3	
179	3079	TRIPS	376	332	379	211	550	362	415	398	3,023
179	3079	PERCENT	12.4	11.0	12.5	7.0	18.2	12.0	13.7	13.2	
180	3080	TRIPS	1,111	561	136	607	1,077	719	740	938	5,889
180	3080	PERCENT	18.9	9.5	2.3	10.3	18.3	12.2	12.6	15.9	
181	3081	TRIPS	1,489	892	67	610	1,661	909	1,078	1,018	7,724
181	3081	PERCENT	19.3	11.6	0.9	7.9	21.5	11.8	14.0	13.2	
182	3082	TRIPS	1,021	223	14	156	748	466	425	424	3,477
182	3082	PERCENT	29.4	6.4	0.4	4.5	21.5	13.4	12.2	12.2	
183	3083	TRIPS	1,294	1,144	1,710	1,802	1,181	14	122	450	7,717
183	3083	PERCENT	16.8	14.8	22.2	23.4	15.3	0.2	1.6	5.8	
184	3084	TRIPS	523	888	253	382	716	508	637	680	4,587
184	3084	PERCENT	11.4	19.4	5.5	8.3	15.6	11.1	13.9	14.8	
185	3085	TRIPS	5,270	1,463	4	1,248	5,328	3,213	3,103	2,845	22,474



16051 West Dixie Highway *Trip Generation Memorandum*

March 2020

Caltran Engineering Group, Inc.
790 NW 107 Avenue, Suite 200
Miami, FL 33172
Phone: 786-456-7700
Fax: 786-513-0711

Engineer's Certification

I, Juan S. Calderon, certify that I currently hold an active Professional Engineer's License in the State of Florida and I am competent through education and experience to provide engineering services in the civil and traffic engineering disciplines contained in this report. I further certify that this report was prepared by me, or under my responsible charge, as required by Chapter 61G15-18. F.A.C. and that all statements, conclusions and recommendations made herein are true and correct to the best of my knowledge and ability.

Project: 16051 West Dixie Highway Renovations
Location: Miami-Dade County, Florida
Client: Luigi Vitalini
Vitalini Corazzini Architects
300 Aragon Avenue, Suite 300
Coral Gables, FL 33134
Report Prepared by: Caltran Engineering Group, Inc.
790 NW 109th Avenue
Miami, FL 33172

I acknowledge that the procedures and references used to develop the results contained in this report are standards to the professional practice of transportation engineering as applied through professional judgement and experience.



THIS ITEM HAS BEEN DIGITALLY SIGNED
AND SEALED BY

ON THE DATE ADJACENT TO THE SEAL

PRINTED COPIES OF THIS DOCUMENT ARE
NOT CONSIDERED SIGNED AND SEALED
AND THE SIGNATURE MUST BE VERIFIED ON
ANY ELECTRONIC COPIES.

CALTRAN ENGINEERING GROUP
790 NW 107 AVENUE, Suite 200
MIAMI, FL 33172
CERTIFICATE OF AUTHORIZATION 29379
JUAN S. CALDERON, P.E. NO. 58569

MEMORANDUM

DATE: March 18th, 2020

TO: Miami-Dade County
Department of Public Works
(DTPW) –
Traffic Engineering Division

SUBJECT: 16051 W. Dixie Highway – Office Space Renovation/Addition

CALTRAN Engineering Group, Inc. (CALTRAN) was retained by *Vitalini Corazzini Architects, Inc.* to generate a trip generation memorandum for the proposed renovation that includes the addition of office space as part of a re-development that is located as follows:

- 16051 West Dixie Highway, North Miami Beach, FL 33160

The existing site consists of a single building totaling 21,433 sq. ft. that include a drive-in bank service (ITE Land Use Code 912, area of 6,646 sq. ft.) and a vocational education facility (ITE Land Use Code 550, area of 14,787 sq. ft). The total existing lot area is 107,422 sq. ft. Renovations to the site are being proposed as follows:

- The existing land uses and areas will remain unchanged.
- Addition of Office Space (Modification to existing covered area) of 9,214 sq. ft. (Land Use 710)
- Addition of Retail A (expansion of existing building) of 3,222 sq. ft. (Land Use 820)
- Retail B (new proposed 1 story building “B”) of 5,818 sq. ft. (Land Use 820)
- Restaurant (proposed 1 story building “C”) of 1,282 sq. ft. (Land Use 932)

The site provides access through three driveways along West Dixie Highway. The proposed renovations include adding two (2) new structures while expanding and enclosing the existing covered area of the existing two story building. The proposed build out year is 2020. **Figure 1** shows a location map of the proposed development.

Architectural site plan and area calculations are found in **Appendix A**.

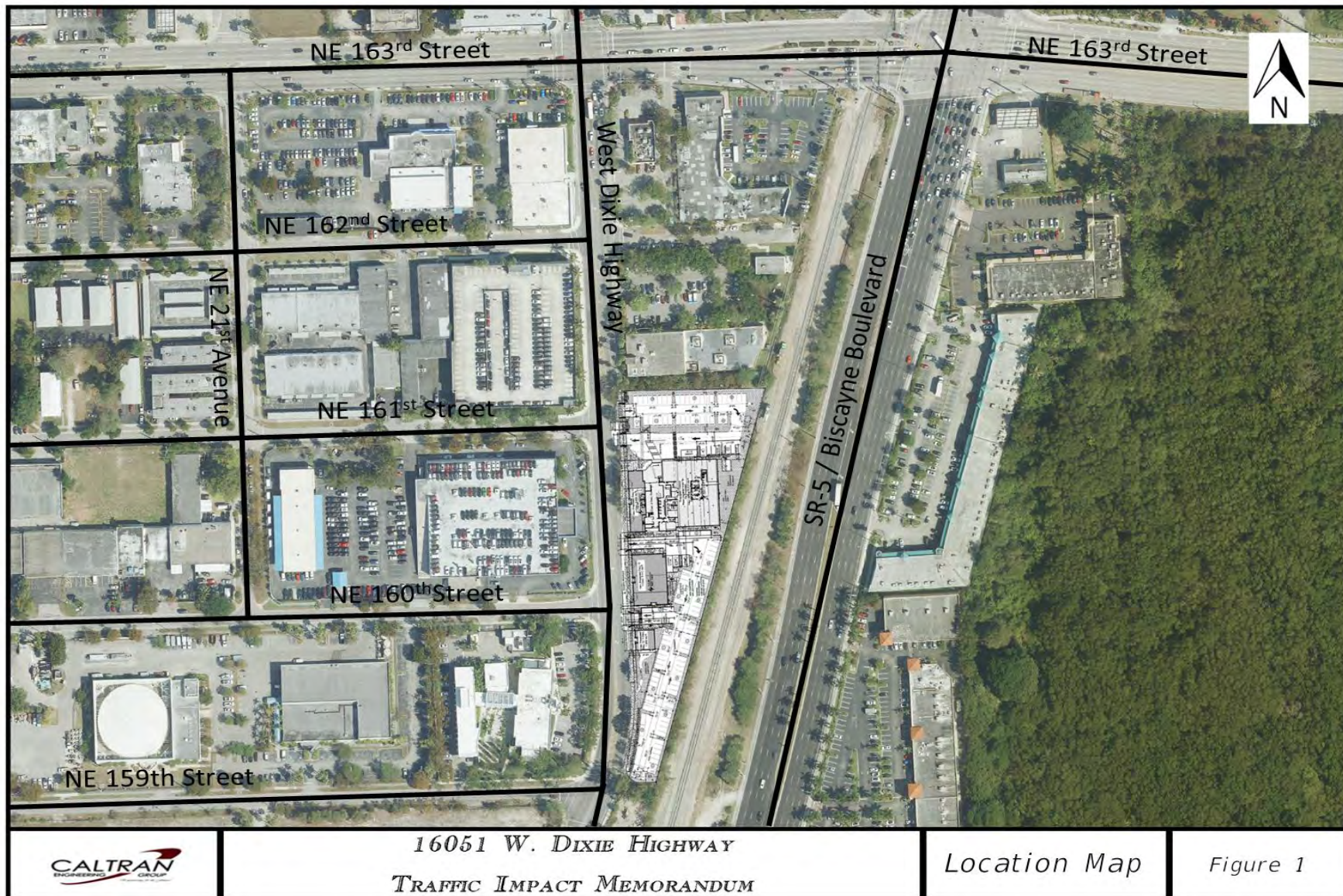


Figure 1: Project Location Map

1.0 TRIP GENERATION

Trip Generation Analysis was performed under the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 10th Edition* through the Online Traffic Study Software (OTISS). The trip generation analysis was performed under the following land uses:

Table 1: ITE Land Uses

Land Use Code	Land Use	Variable
710	General Office Building	1000 Sq. Ft. GFA
912	Drive-in Bank	1000 Sq. Ft. GFA
550	University / College	Students
932	High-Turnover (Sit-Down) Restaurant	1000 Sq. Ft. GFA
820	Retail – Shopping Center	1000 Sq. Ft. GFA

The adjacent road of West Dixie Highway / State Road 5 is a two-lane, two-way undivided highway with auxiliary lane and is classified as an urban minor arterial. The segment has sidewalk on both sides of the road and is maintained by Florida Department of Transportation as an Active On-System facility with the Roadway ID 87190000.

The following are the typical section characteristics for West Dixie Highway / SR-5:

Posted Speed Limit: 45 MPH

Lane width: 4 lanes, 2-10 feet lane per each direction with auxiliary lane.

Outside Shoulder: 2 feet curb and gutter on each side of the roadway.

Sidewalks: Present at both sides of the roadway segment.

Table 2 presents the forecasted trip generation for the existing and additional uses as well as the expected future re-development trips.

Table 2: ITE Trip Generation for proposed renovations and addition.

Land Use	ITE Land Use Code	Size	Weekday		Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.		Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	
			Entry	Exit	Entry	Exit	Entry	Exit
Existing Commercial (Bank)	912- Drive-in Bank	6.65 x 1000 Sq. Ft. GFA	334	334	37	26	68	68
Ground Floor (General Urban/Suburban)			0	0	11	7	24	24
Pass-by			334	334	26	19	44	44
Non-pass-by								
Existing Educational (General Urban/Suburban)	550 – University/ College	122 Students	95	95	14	4	6	12
Non-pass-by			95	95	14	4	6	12
Proposed Office Space (General Urban/Suburban)	710 – General Office Building	9.21 x1000 Sq. Ft. GFA	53	52	30	5	2	10
Internal			0	0	3	3	1	2
Non-pass-by			53	52	27	2	1	8
Proposed Restaurant (General Urban/Suburban)	932- High Turnover (Sit-Down) Restaurant	1.28 x 1000 Sq. Ft. GFA	72	72	7	6	8	5
Internal			0	0	6	3	2	2
Pass-by			0	0	0	0	3	1
Non-pass-by			72	72	1	3	3	2
Proposed Retail A + Retail B	820- Shopping Center	9.04 x 1000 Sq. Ft. GLA	171	170	97	59	44	48
Internal			0	0	2	5	4	3
Pass-by			0	0	0	0	14	15
Non-pass-by			171	170	95	54	26	30
Total Existing			429	429	40	23	50	56
Total Proposed			296	294	123	59	30	40
Total Future Trips			725	723	163	82	80	96

Note: Includes internal captures.

It is important to note that the proposed development is expected to be a mixed-use development, which enables potential for interaction among the different land uses (also known as “internal capture trips”). According to the latest site plan there is proposed pedestrian connectivity (crosswalk and sidewalks) between the different land uses. In addition, all land use share common parking spaces. The internal capture rate used to balance internal capture trips are consistent of that in **Table 6.1 and Table 6.2** of the Trip Generation Handbook 3rd Edition. Below is an excerpt from those tables:

Table 3: Internal trip capture on mixed-use developments.

		Weekday	
		AM Peak Hour	PM Peak Hour
From Office	To Retail	28%	20%
	To Restaurant	63%	4%
From Retail	To Office	29%	2%
	To Restaurant	13%	29%
From Restaurant	To Office	31%	3%
	To Retail	14%	41%
To Office	From Retail	4%	31%
	From Restaurant	14%	30%
To Retail	From Office	32%	8%
	From Restaurant	8%	50%
To Restaurant	From Office	23%	2%
	From Retail	50%	29%

Source: Trip Generation Handbook 3rd Edition.

Trip generation and related information is documented in **Appendix B**.

2.0 TRIP DISTRIBUTION

Trip distribution is a function of the origin and destination of the site users and the available roadway system. The trip distribution of the traffic generated by the proposed renovations was determined based on an interpolation between the 2010-2040 Miami-Dade Long Range Transportation Plan traffic analysis zones (TAZ 182) cardinal distribution (CD) patterns, as well as, knowledge of traffic flow patterns and the roadway system in the area. **Table 4** illustrates the interpolated trip distribution for the proposed development renovation.

For further information on TAZ percentages and trip distribution related information please refer to **Appendix C**.

Table 4: Cardinal Trip Distribution

	Year	Trip Movement	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	Total Trips
TAZ 182	2010	Trips	488	147	48	103	517	478	299	374	2,454
	2040	Trips	1,021	223	14	156	748	466	425	424	3,477
	Year	Trip Movement	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	Total Trips
Interpolated Trips	2020	Trips	666	172	37	121	594	474	341	391	2,795
		Percentage	23.8%	6.2%	1.3%	4.3%	21.3%	17.0%	12.2%	14.0%	100%
	Period	Trip Movement	NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	Total Trips
Trip Assignment	AM	Entry	29	8	2	5	26	21	15	17	123
		Exit	14	4	1	3	13	10	7	8	59
	PM	Entry	7	2	0	2	6	5	4	4	30
		Exit	10	2	1	2	9	7	5	6	40

Per **Table 4**, the trips generated by the development will have multiple entry/exit points. Based on the Miami Dade County 2040 Long Range Transportation plan the following trip distribution was estimated as shown in **Table 5**:

Table 5: Entry and Exit Trip Distribution

Direction / Movement	Percentage	Assigned To
Entry		
NNE	23.8%	Biscayne Boulevard Southbound Right and Left on West Dixie Highway.
ENE	6.2%	NE 163 rd Street Westbound Through and Left on West Dixie Highway.
ESE	1.3%	
SSE	4.3%	Split into Biscayne Boulevard Northbound Left and West Dixie Highway Northbound Through.
SSW	21.3%	
WSW	17.0%	Split into NE 162 nd , 161 st and 160 th Streets through movements.
WNW	12.2%	
NNW	14%	Split between NE 163 rd Street Eastbound and West Dixie Highway Southbound.
Exit		
Top Driveway	15%	Right into West Dixie Highway Northbound
	5%	Through into NE 161 st Street Westbound
	10%	Left into West Dixie Highway Southbound
Bottom Driveway	30%	Right into West Dixie Highway Northbound
	25%	Through into NE 160 th Street Westbound
	15%	Left into West Dixie Highway Southbound

Figure 2 shows the cardinal trip distribution in percentages and **Figure 3** shows the peak hour (AM/PM) trip assignment volumes. Lastly, **Figure 4** presents an overlay of the assigned traffic on top of the proposed site plan.

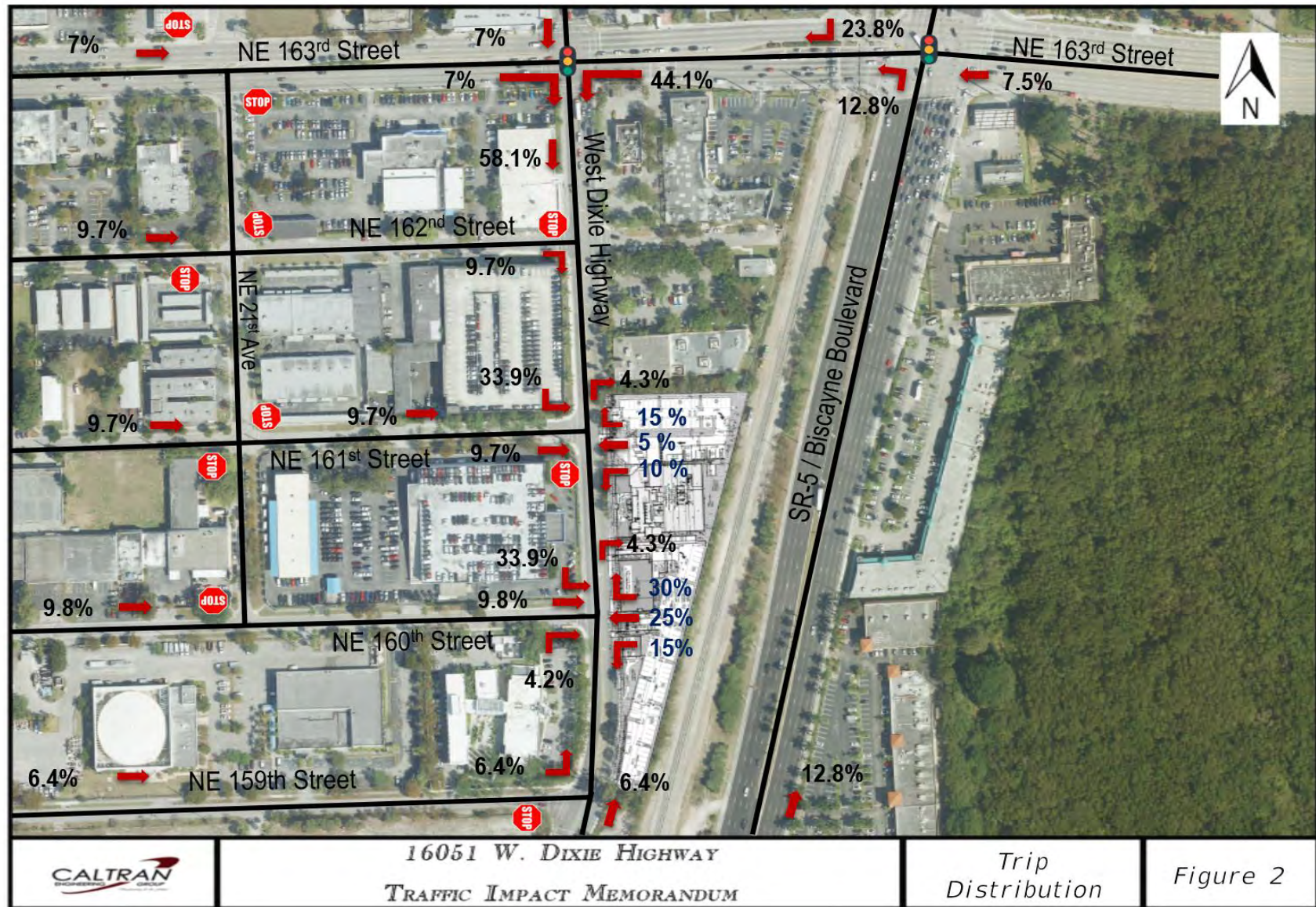


Figure 2: Trip Distribution for the Proposed Re-Development.

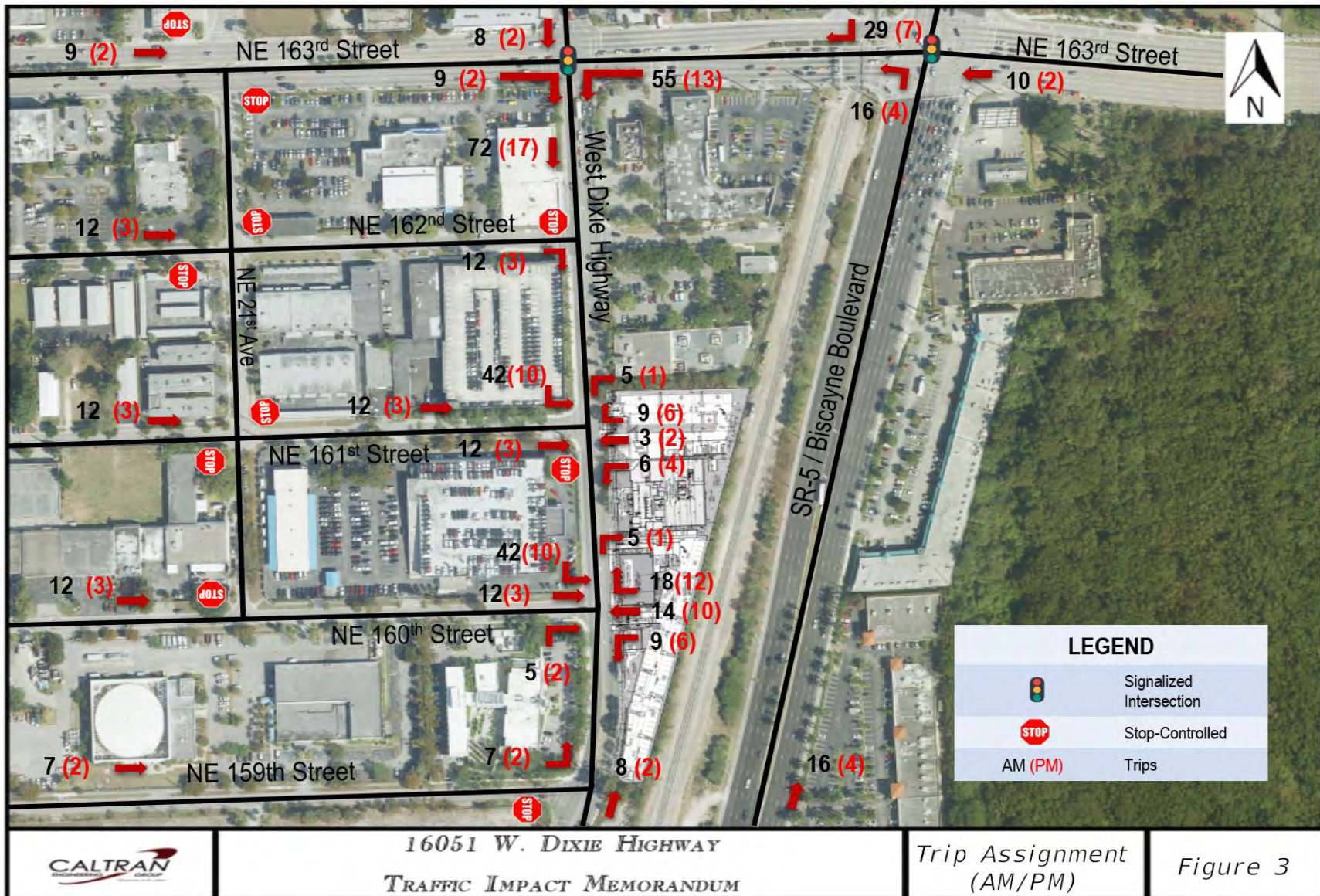


Figure 3: AM and PM Peak Hour Future Trips Demand from proposed Re-development.

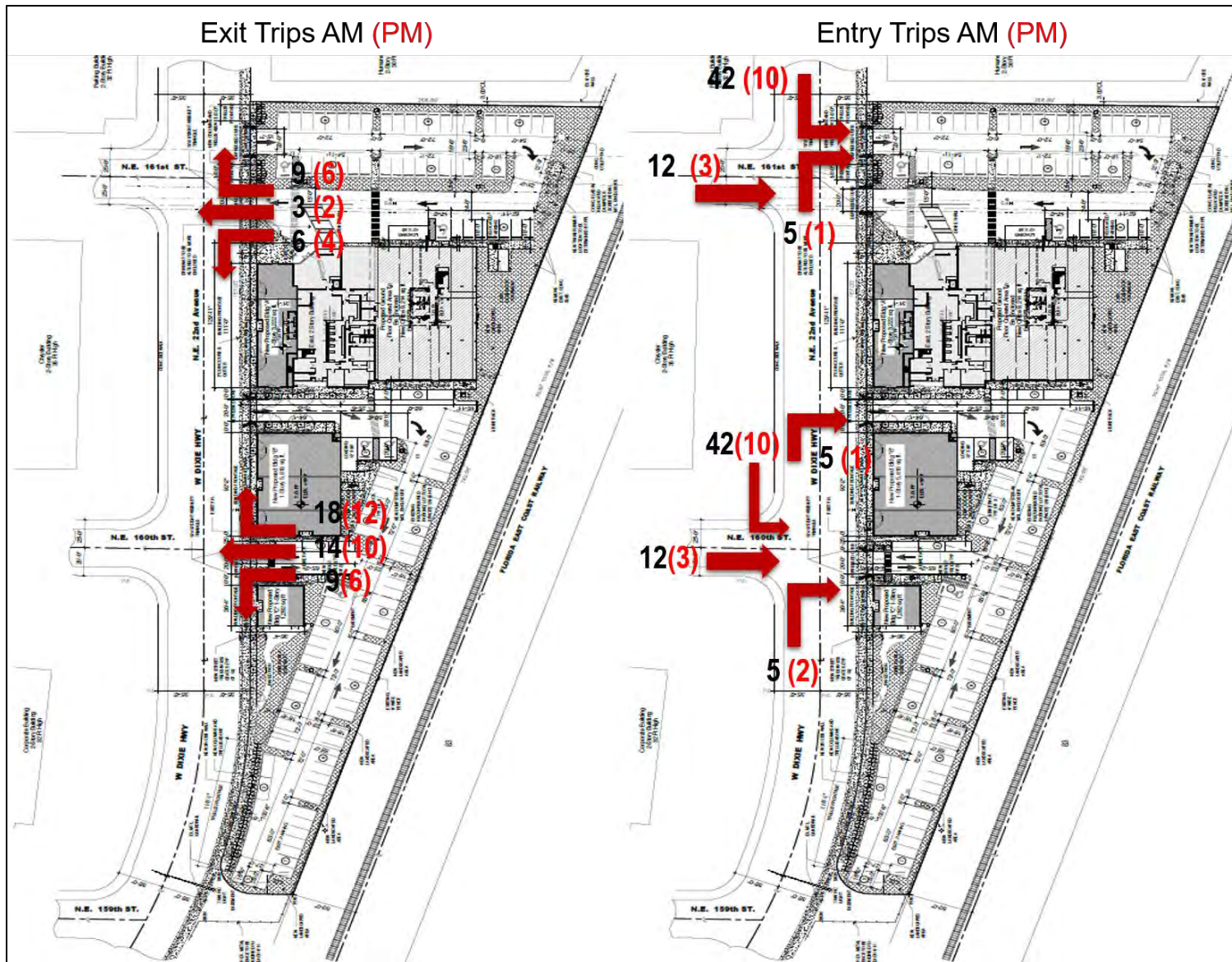


Figure 4: AM and PM Peak Hour Future Driveways Trips.

3.0 CONCURRENCY ANALYSIS

Pursuant to the Miami-Dade County Concurrency Management System, the study area traffic count station on the roadway adjacent to the proposed site has to be operating at an acceptable level of service, during the peak hour period of the proposed development. Available capacity and acceptable level of service needs are to be maintained for the adjacent roads, and the study area of influence should meet the traffic concurrency standards from the Miami-Dade County.

Capacity is defined as the maximum number of vehicles that can reasonably be expected to traverse over a specific section of roadway, in one direction, during a given time period and under the prevailing conditions.

Table 6: Segments Capacity Analysis as per the FDOT Generalized Tables

Roadway	Capacity (at LOS E)	Existing Trips	Current Available Trips	Future Trips with Dev	Current LOS	Adopted LOS	Future LOS With Dev
West Dixie Highway (AM)	3,580	1,265	2,308	1,447	C	E	C
West Dixie Highway (PM)	3,580	1,265	2,308	1,335	C	E	C

The concurrency analysis concluded that the West Dixie Highway segment will be able to sustain the future traffic demands while operating at acceptable level of service, as documented above.

See **Appendix D** for information regarding the concurrency analysis.

4.0 CONCLUSION

This memorandum analyzes and evaluates the net trip generation produced by the proposed re-development renovations located at 16051 West Dixie Highway, North Miami Beach, FL 33160, that will be consisting of new office space, a restaurant and retail space. The existing lot area is **107,422 sq. ft.** and will remain the same through the renovations. The existing building gross area is **21,433 sq.ft.** and a total of **19,536 sq. ft.** of new building area will be added during the renovation process.

For the proposed re-development, trip generation analysis contemplated the most conservative scenario of trip generation forecast rates. The trip generation analysis was performed under the following Land Uses:

- 710 – General Office Building
- 912 – Drive-in Bank
- 550 – University / College
- 932 – High-Turnover (Sit-down Restaurant)
- 820 – Retail – Shopping Center

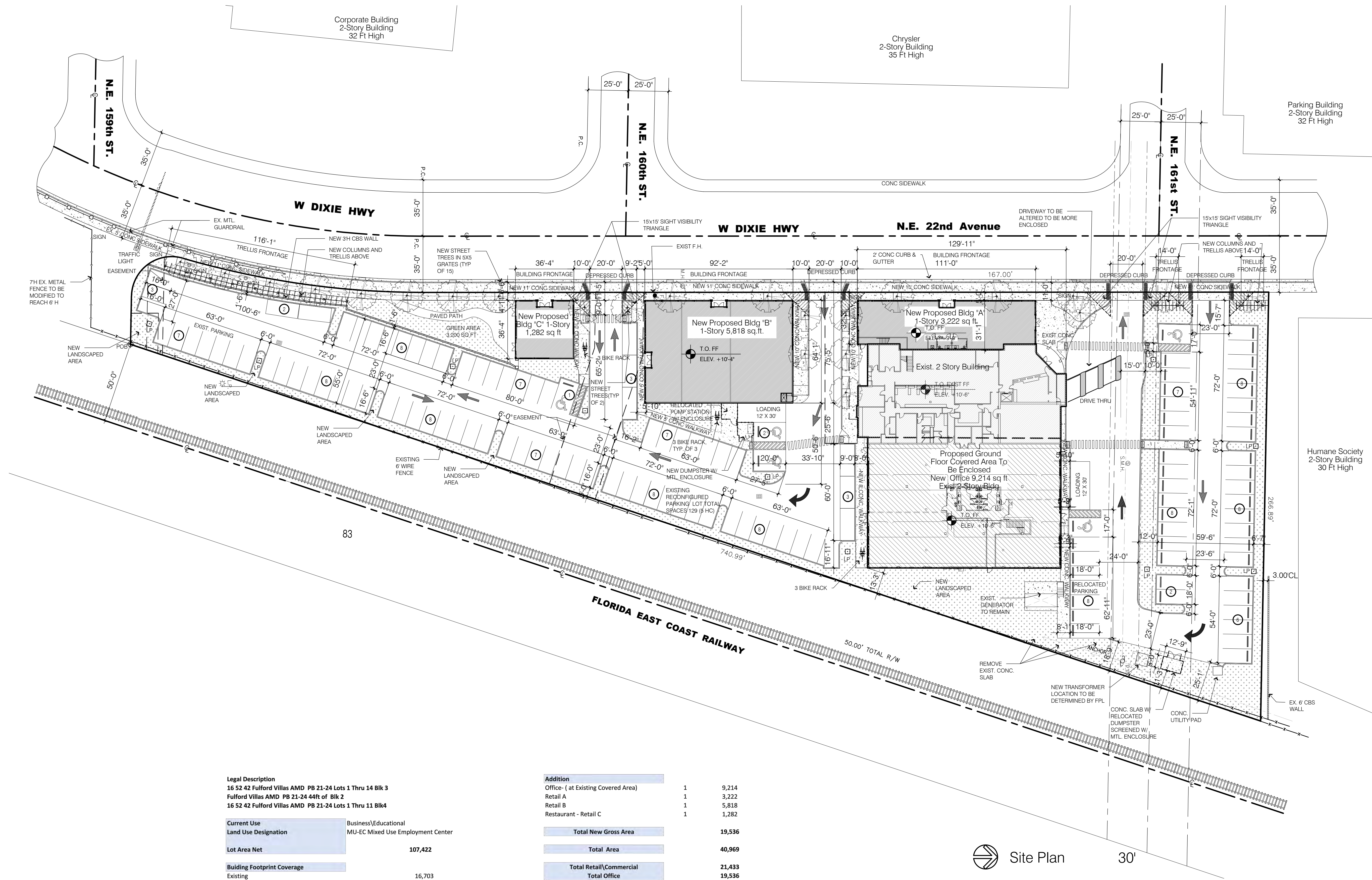
Based on the expected future traffic demands at the driveways of this re-development there is no need to provide exclusive right turn lanes; however, for vehicles turning left will require a repainting of the painted median on South Dixie Highway to include a left turn lane for such vehicles.

It is expected that the proposed redevelopment will generate a total of 590 net non-pass-by daily-trips during the weekday analysis period with 182 and 70 trips during the AM and PM peak, respectively.

According to the City's code, this development lies within the area of CRA (Community Redevelopment Area). Considering Code section 24-161 paragraph (3-D) this property is exempt from adequacy determination under the basis of not causing a significant increase in public facility usage since less than 10% (7.8%) of the available capacity is estimated to be generated by the proposed site.

Appendix A

Architectural Site Plan



A-101

Appendix B

OTISS Trip Generation Report

Project Information	
Project Name:	Vitalini - Supplemental
No:	
Date:	1/10/2020
City:	North Miami Beach
State/Province:	
Zip/Postal Code:	
Country:	
Client Name:	
Analyst's Name:	Smiley U
Edition:	Trip Generation Manual, 10th Ed

Land Use	ITE Land Use Code	Size	Weekday		Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.		Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	
			Entry	Exit	Entry	Exit	Entry	Exit
Existing Commercial (Bank) Ground Floor (General Urban/Suburban)		6.65 x 1000 Sq. Ft. GFA	334	334	37	26	68	68
Pass-by			0	0	11	7	24	24
Non-pass-by			334	334	26	19	44	44
Existing Educational (General Urban/Suburban)		122 Students	95	95	14	4	6	12
Non-pass-by			95	95	14	4	6	12
Proposed Office Space (General Urban/Suburban)		9.21 x1000 Sq. Ft. GFA	53	52	30	5	2	10
Internal			0	0	3	3	1	2
Non-pass-by			53	52	27	2	1	8
Proposed Restaurant (General Urban/Suburban)		1.28 x 1000 Sq. Ft. GFA	72	72	7	6	8	5
Internal			0	0	6	3	2	2
Pass-by			0	0	0	0	3	1
Non-pass-by			72	72	1	3	3	2
Proposed Retail A + Retail B		9.04 x 1000 Sq. Ft. GLA	587	586	97	59	44	48
Internal			0	0	2	5	4	3
Pass-by			0	0	0	0	14	15
Non-pass-by			587	586	95	54	26	30
Total Existing			429	429	40	23	50	56
Total Proposed			712	710	123	59	30	40
Total Trips			1141	1139	163	82	80	96

Appendix C

Trip Distribution and TAZ Tables

Miami-Dade 2010 Directional Distribution Summary											
Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
165	3065	TRIPS	201	179	195	209	277	139	70	133	1,403
165	3065	PERCENT	14.3	12.8	13.9	14.9	19.7	9.9	5.0	9.5	
166	3066	TRIPS	615	451	405	493	187	272	381	720	3,524
166	3066	PERCENT	17.5	12.8	11.5	14.0	5.3	7.7	10.8	20.4	
167	3067	TRIPS	621	524	308	532	601	320	354	569	3,829
167	3067	PERCENT	16.2	13.7	8.0	13.9	15.7	8.4	9.3	14.9	
168	3068	TRIPS	285	346	209	308	507	370	327	440	2,792
168	3068	PERCENT	10.2	12.4	7.5	11.0	18.2	13.3	11.7	15.8	
169	3069	TRIPS	212	308	112	269	325	405	306	364	2,301
169	3069	PERCENT	9.2	13.4	4.9	11.7	14.1	17.6	13.3	15.8	
170	3070	TRIPS	141	67	35	125	95	43	72	86	664
170	3070	PERCENT	21.2	10.1	5.3	18.8	14.3	6.5	10.8	13.0	
171	3071	TRIPS	951	751	389	536	668	630	838	801	5,564
171	3071	PERCENT	17.1	13.5	7.0	9.6	12.0	11.3	15.1	14.4	
172	3072	TRIPS	90	130	70	160	70	200	270	70	1,060
172	3072	PERCENT	8.5	12.3	6.6	15.1	6.6	18.9	25.5	6.6	
173	3073	TRIPS	711	685	358	697	767	315	296	519	4,348
173	3073	PERCENT	16.4	15.8	8.2	16.0	17.6	7.2	6.8	11.9	
174	3074	TRIPS	84	28	45	29	67	63	16	26	358
174	3074	PERCENT	23.5	7.8	12.6	8.1	18.7	17.6	4.5	7.3	
175	3075	TRIPS	839	727	396	496	721	458	288	512	4,437
175	3075	PERCENT	18.9	16.4	8.9	11.2	16.3	10.3	6.5	11.5	
176	3076	TRIPS	323	551	179	387	439	357	204	411	2,851
176	3076	PERCENT	11.3	19.3	6.3	13.6	15.4	12.5	7.2	14.4	
177	3077	TRIPS	776	883	502	1,005	1,002	724	572	847	6,311
177	3077	PERCENT	12.3	14.0	8.0	15.9	15.9	11.5	9.1	13.4	
178	3078	TRIPS	473	611	114	498	606	511	300	464	3,577
178	3078	PERCENT	13.2	17.1	3.2	13.9	16.9	14.3	8.4	13.0	
179	3079	TRIPS	205	129	65	99	219	222	168	135	1,242
179	3079	PERCENT	16.5	10.4	5.2	8.0	17.6	17.9	13.5	10.9	
180	3080	TRIPS	981	289	168	542	846	651	548	671	4,696
180	3080	PERCENT	20.9	6.2	3.6	11.5	18.0	13.9	11.7	14.3	
181	3081	TRIPS	932	505	41	440	1,401	853	742	866	5,780
181	3081	PERCENT	16.1	8.7	0.7	7.6	24.2	14.8	12.8	15.0	
182	3082	TRIPS	488	147	48	103	517	478	299	374	2,454
182	3082	PERCENT	19.9	6.0	2.0	4.2	21.1	19.5	12.2	15.2	
183	3083	TRIPS	619	892	1,255	1,289	711	53	57	153	5,029
183	3083	PERCENT	12.3	17.7	25.0	25.6	14.1	1.1	1.1	3.0	
184	3084	TRIPS	254	473	122	272	538	368	383	454	2,864
184	3084	PERCENT	8.9	16.5	4.3	9.5	18.8	12.9	13.4	15.9	
185	3085	TRIPS	562	420	0	89	464	470	638	465	3,108

Miami-Dade 2040 Directional Distribution Summary

Origin TAZ			Cardinal Directions								Total
County TAZ	Regional TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
165	3065	TRIPS	181	221	151	271	200	152	97	144	1,417
165	3065	PERCENT	12.8	15.6	10.7	19.1	14.1	10.7	6.9	10.2	
166	3066	TRIPS	637	526	491	585	350	547	543	461	4,140
166	3066	PERCENT	15.4	12.7	11.9	14.1	8.5	13.2	13.1	11.1	
167	3067	TRIPS	1,440	925	470	961	1,081	524	736	856	6,993
167	3067	PERCENT	20.6	13.2	6.7	13.7	15.5	7.5	10.5	12.2	
168	3068	TRIPS	573	713	337	782	757	550	395	837	4,944
168	3068	PERCENT	11.6	14.4	6.8	15.8	15.3	11.1	8.0	16.9	
169	3069	TRIPS	292	247	97	362	411	403	267	582	2,661
169	3069	PERCENT	11.0	9.3	3.7	13.6	15.5	15.1	10.0	21.9	
170	3070	TRIPS	105	107	49	95	112	105	75	122	770
170	3070	PERCENT	13.6	13.9	6.4	12.3	14.6	13.6	9.7	15.8	
171	3071	TRIPS	1,334	785	329	990	899	824	1,062	1,170	7,393
171	3071	PERCENT	18.0	10.6	4.5	13.4	12.2	11.2	14.4	15.8	
172	3072	TRIPS	80	152	88	76	48	168	276	72	960
172	3072	PERCENT	8.3	15.8	9.2	7.9	5.0	17.5	28.8	7.5	
173	3073	TRIPS	876	854	307	883	740	531	459	527	5,177
173	3073	PERCENT	16.9	16.5	5.9	17.1	14.3	10.3	8.9	10.2	
174	3074	TRIPS	178	206	93	147	162	95	80	113	1,074
174	3074	PERCENT	16.6	19.2	8.7	13.7	15.1	8.9	7.5	10.5	
175	3075	TRIPS	971	972	468	871	1,028	738	518	783	6,349
175	3075	PERCENT	15.3	15.3	7.4	13.7	16.2	11.6	8.2	12.3	
176	3076	TRIPS	512	822	288	536	684	407	390	661	4,300
176	3076	PERCENT	11.9	19.1	6.7	12.5	15.9	9.5	9.1	15.4	
177	3077	TRIPS	1,074	1,463	424	1,339	1,247	912	773	1,106	8,338
177	3077	PERCENT	12.9	17.6	5.1	16.1	15.0	10.9	9.3	13.3	
178	3078	TRIPS	529	698	198	530	633	457	546	505	4,096
178	3078	PERCENT	12.9	17.0	4.8	12.9	15.5	11.2	13.3	12.3	
179	3079	TRIPS	376	332	379	211	550	362	415	398	3,023
179	3079	PERCENT	12.4	11.0	12.5	7.0	18.2	12.0	13.7	13.2	
180	3080	TRIPS	1,111	561	136	607	1,077	719	740	938	5,889
180	3080	PERCENT	18.9	9.5	2.3	10.3	18.3	12.2	12.6	15.9	
181	3081	TRIPS	1,489	892	67	610	1,661	909	1,078	1,018	7,724
181	3081	PERCENT	19.3	11.6	0.9	7.9	21.5	11.8	14.0	13.2	
182	3082	TRIPS	1,021	223	14	156	748	466	425	424	3,477
182	3082	PERCENT	29.4	6.4	0.4	4.5	21.5	13.4	12.2	12.2	
183	3083	TRIPS	1,294	1,144	1,710	1,802	1,181	14	122	450	7,717
183	3083	PERCENT	16.8	14.8	22.2	23.4	15.3	0.2	1.6	5.8	
184	3084	TRIPS	523	888	253	382	716	508	637	680	4,587
184	3084	PERCENT	11.4	19.4	5.5	8.3	15.6	11.1	13.9	14.8	
185	3085	TRIPS	5,270	1,463	4	1,248	5,328	3,213	3,103	2,845	22,474

Cardinal Trip Distribution by TAZ Zone 182

Year	TAZ		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	
2010	182		488	147	48	103	517	478	299	374	2454
			19.9%	6.0%	2.0%	4.2%	21.1%	19.5%	12.2%	15.2%	
2040	182		1021	223	14	156	748	466	425	424	3477
			29.4%	6.4%	0.4%	4.5%	21.5%	13.4%	12.2%	12.2%	
2020	182		666	172	37	121	594	474	341	391	2795
			23.8%	6.2%	1.3%	4.3%	21.3%	17.0%	12.2%	14.0%	

Trip Movement		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	AM Total Trips
AM	Entry	29	8	2	5	26	21	15	17	123
	Exit	14	4	1	3	13	10	7	8	59
Trip Movement		NNE	ENE	ESE	SSE	SSW	WSW	WNW	NNW	PM Total Trips
PM	Entry	7	2	0	1	6	5	4	4	30
	Exit	10	2	1	2	9	7	5	6	40

Appendix D

Concurrency Tables and Station Information

141	SR 916/NW 138 ST/ONE-WAY PAIR WB	200' W NW 7 AV	A 3	1610	1058	552	0	552	0	0	A	E	A
142	SR 934/NW/NE 79 ST	350' WEST OF PELICAN HARBOUR D	A 6	3504	3080	424	0	424	0	0	F	E+20	E+5
144	SR 916/NE 135 ST	240' W OF W DIXIE HWY/SR 909	A 4	3580	1707	1873	16	1857	0	0	C	E	C
146	SR 860/MIAMI GARDEN DR	200' E OF NW 14 AV/W OF FL	A 6	5400	2608	2792	0	2792	0	0	D	EE	D
148	SR 860/MIAMI GARDENS DR	275' W OF NW 10 CT/E FLA	A 6	5400	2671	2729	6	2723	0	0	D	EE	D
150	SR 860/MIAMI GARDENS DR	200' E W DIXIE HWY	A 4	4296	2391	1905	189	1716	0	0	C	EE	C
151	SR 9336/INGRAHAM HWY	300' E EVERGLADES PARK ENT	2	1600	126	1474	1	1473	0	0	C	D	C
152	SR 856/NE 192 ST	200' E SR 5/US-1	A 6	6468	2402	4066	0	4066	0	0	C	E+20	C
158	SR 852/COUNTY LINE RD	400' W SR 7/NW 2 AV	A 4	3580	2972	608	49	559	0	0	C	SUMA	C
164	SR 5/US-1	200' S DAVIS ST/SW 80 ST	A 6	8085	5600	2485	134	2351	0	0	F	E+50	E+6
166	NE 6 AVE (SR 915)	N/O NE 167 ST TO NE 135 ST	A 4	4296	1746	2550	0	2550	0	0	C	E+20	C
168	SR 915/NE 6 AV	200' S NE 170 ST	A 4	4296	1789	2507	40	2467	0	0	C	E+20	C
183	SR 5/US-1	200' S SR 860/NE 186 ST	A 6	10815	4560	6255	0	6255	0	0	C	E+50	C
235	SR 7/US-441/SW/NW 7 AV	200' N NW 95 ST	A 4	6750	2225	4525	21	4504	0	0	D	E+50	D
266	SW 8 ST/TAMIAMI TRAIL	E/O SW 147 AVE, FROM SW 147 AVE TO SW 137 AVE	A 6	4680	3866	814	227	587	0	0	D	D	D
268	SR 5/US-1	200' S MIAMI-DADE/BROWARD CO LINE	A 6	6468	4684	1784	18	1766	0	0	C	E+20	C
269	SR A1A/COLLINS AV	300' N NE 172 ST	A 6	5400	4519	881	0	881	0	0	F	E+20	E+1
323	NW 27 AVE (SR 9)	S/O NW 36 ST TO SR 836	A 6	6468	3222	3246	0	3246	0	0	C	E+20	C
324	SR 823/RED RD	200' N SR 934/W 21 ST (HIALEAH)	A 4	3580	1672	1908	0	1908	0	0	C	E	C
332	SR 5/US-1	200' S CORAL REEF DR/SW 152 ST	A 6	6468	4509	1959	0	1959	0	0	C	EE	C
346	SR 5/US-1	100' N ALLAPATTAH RD/SW 112 AV	A 6	6468	3473	2995	114	2881	0	0	C	EE	C
360	SR 823/RED RD	200' S SR 916/NW 138 ST	A 4	3580	3229	351	0	351	0	1	C	E	C
361	SR 997/KROME AV	200' N SILVER PALM DR/SW 232 ST	A 2	1510	1348	162	5	157	0	0	C	C	C
365	SR 7/US-441/NW 2 AV	200' N IVES DAIRY RD/NW 199 ST	A 6	5390	4098	1292	6	1286	0	0	C	SUMA	C
366	SR 826/NE 167 ST	200' E N MIAMI AV	A 6	6750	4069	2681	12	2669	0	0	D	E+50	D
377	SR 90/SW 8 ST	200' E KROME AV/SR 997	4	1510	1349	161	48	113	0	1	C	C	C
405	SR 826/PALMETTO EXPWY	1100' E NW 57 AV/SR 823	8	13390	8834	4556	0	4556	0	0	C	D	C
417	SR 9/NW 27 AV	200' N SR 112/AIRPORT EXPWY	A 4	4380	2422	1958	66	1892	0	0	D	E+50	D
431	SR 9/SW/NW 27 AV	100' S NW 103 ST	A 4	4380	2825	1555	10	1545	0	0	D	E+50	D
436	SR 7/US-441/SW/NW 7 AV	200' N NW 147 ST	A 6	8085	2124	5961	21	5940	0	0	C	E+50	C
518	SR 997/KROME AV	400' NW SR 5/US-1	A 2	1330	285	1045	0	1045	0	0	C	D	C
522	SR 5/US-1	200' S NE 6 AV/SR 915	A 4	4380	3020	1360	106	1254	0	0	F	E+50	E+7
524	SR 5/US-1	450' S NE 123 ST/SR 922	A 4	4380	2996	1384	72	1312	0	0	F	E+50	E+5
527	SR 90/US-41/SW 8 ST	200' W RED RD/SW 57 AV	A 4	5370	2525	2845	1	2844	0	0	C	E+50	C
528	SR 25/US-27/OKEECHOBEE RD	200' SE SR 826	A 6	5080	3577	1503	0	1503	0	0	A	E	A
531	SR 909/W DIXIE HWY	200' N NE 151 ST	A 4	3580	1265	2315	7	2308	0	0	C	E	C
533	SR 934/N BAY CSWY	450' EAST OF ADVENTURE AVE	A 6	5400	2716	2684	0	2684	0	0	D	E+20	D
537	SR 934/NW 79 ST/E 21 ST	500' E SR 953/LEJEUNE RD	A 4	5370	1705	3665	308	3357	0	0	C	E+50	C
538	SR 934/NW 79 ST	400' W NW 27 AV	A 4	5370	2100	3270	212	3058	0	0	C	E+50	C
540	SR A1A/COLLINS AV	200' S END BRIDG/NCL BAL HARB	A 6	5400	3706	1694	0	1694	0	0	D	E+20	D

Generalized **Peak Hour Two-Way** Volumes for Florida's
Urbanized Areas¹

TABLE 4

12/18/12

INTERRUPTED FLOW FACILITIES						UNINTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS						FREEWAYS					
Class I (40 mph or higher posted speed limit)						Lanes	B	C	D	E	
Lanes	Median	B	C	D	E	4	4,120	5,540	6,700	7,190	
2	Undivided	*	1,510	1,600	**	6	6,130	8,370	10,060	11,100	
4	Divided	*	3,420	3,580	**	8	8,230	11,100	13,390	15,010	
6	Divided	*	5,250	5,390	**	10	10,330	14,040	16,840	18,930	
8	Divided	*	7,090	7,210	**	12	14,450	18,880	22,030	22,860	
Class II (35 mph or slower posted speed limit)						Freeway Adjustments					
Lanes	Median	B	C	D	E	Auxiliary Lanes			Ramp		
2	Undivided	*	660	1,330	1,410	Present in Both Directions			Metering		
4	Divided	*	1,310	2,920	3,040	+ 1,800			+ 5%		
6	Divided	*	2,090	4,500	4,590						
8	Divided	*	2,880	6,060	6,130						
Non-State Signalized Roadway Adjustments											
(Alter corresponding state volumes by the indicated percent.)											
Non-State Signalized Roadways - 10%											
Median & Turn Lane Adjustments						UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors		Lanes	Median	B	C	D	E
2	Divided	Yes	No	+5%		2	Undivided	770	1,530	2,170	2,990
2	Undivided	No	No	-20%		4	Divided	3,300	4,660	5,900	6,530
Multi	Undivided	Yes	No	-5%		6	Divided	4,950	6,990	8,840	9,790
Multi	Undivided	No	No	-25%							
-	-	-	Yes	+ 5%							
One-Way Facility Adjustment						Uninterrupted Flow Highway Adjustments					
Multiply the corresponding two-directional volumes in this table by 0.6						Lanes	Median	Exclusive left lanes	Adjustment factors		
						2	Divided	Yes	+5%		
						Multi	Undivided	Yes	-5%		
						Multi	Undivided	No	-25%		
BICYCLE MODE ²						¹Values shown are presented as peak hour two-way volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual. ² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility. ³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow. * Cannot be achieved using table input value defaults. ** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.					
(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Paved Shoulder/Bicycle											
Lane Coverage	B	C	D	E							
0-49%	*	260	680	1,770							
50-84%	190	600	1,770	>1,770							
85-100%	830	1,770	>1,770	**							
PEDESTRIAN MODE ²											
(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)											
Sidewalk Coverage	B	C	D	E							
0-49%	*	*	250	850							
50-84%	*	150	780	1,420							
85-100%	340	960	1,560	>1,770							
BUS MODE (Scheduled Fixed Route) ³											
(Buses in peak hour in peak direction)											
Sidewalk Coverage	B	C	D	E							
0-84%	> 5	≥ 4	≥ 3	≥ 2							
85-100%	> 4	≥ 3	≥ 2	≥ 1							
Source: Florida Department of Transportation Systems Planning Office www.dot.state.fl.us/planning/systems/sm/los/default.shtm											

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

Appendix F

Project Trip Generation

AM Peak Hour Trip Generation and Internalization

SkyGarden Miami

Multifamily High-Rise Land Use 222 372 DU		Retail Land Use 820 16,000 SF		
In	Out	In	Out	
26	82	7	5	120 ITE Trips
UNBALANCED INTERNALIZATION				
2% 1	1% 1	17% 1	14% 1	
1		1		
Multifamily High-Rise		Retail		
In	Out	In	Out	
26	82	7	5	120 Vehicle Trips
BALANCED INTERNALIZATION				
-1	-1	-1	-1	
25	81	6	4	
	1.9%		16.7%	
-3	-8	-1	0	
22	73	5	4	
0	0	0	0	
22	73	5	4	
				-4 Internal
				116 External Trips
				3.3% % Internal
				-12 10.0% Transit/Pedestrian
				104
				0 0.0% Pass-By (Retail)
				0 0.0% Pass-By (Retail)
				104 Net New External Trips

PM Peak Hour Trip Generation and Internalization

SkyGarden Miami

Multifamily High-Rise Land Use 222 372 DU		Retail Land Use 820 16,000 SF		
In	Out	In	Out	
76	49	56	61	242 ITE Trips
UNBALANCED INTERNALIZATION				
42% 21 46% 35		10% 6 26% 16		
	6			
	16			
Multifamily High-Rise		Retail		
In	Out	In	Out	
76	49	56	61	242 Vehicle Trips
BALANCED INTERNALIZATION				
-6 -16		-6 -16		
-16	-6	-6	-16	-44 Internal
60	43	50	45	198 External Trips
	17.6%		18.8%	18.2% % Internal
-6	-4	-5	-5	-20 10% Transit/Pedestrian
54	39	45	40	178
0	0			0 0.0% Pass-By
		-14	-14	-28 34.0% Pass-By (Retail)
54	39	31	26	150 Net New External Trips

Scenario - 2

Scenario Name: Proposed - Jan 2021

User Group:

Dev. phase: 1

No. of Years to

Project Traffic : 0

Analyst Note:

Warning: The time periods among the land uses do not appear to match.

VEHICLE TRIPS BEFORE REDUCTION

Land Use & Data Source	Location	IV	Size	Time Period	Method	Entry	Exit	Total
					Rate/Equation	Split%	Split%	
222 - Multifamily Housing (High-Rise)	General	Dwelling Units	341	Weekday	Best Fit (LIN)	778	778	1556
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				$T = 3.94(X) + 211.81$	50%	50%	
820 - Shopping Center	General	1000 Sq. Ft. GLA	12.64	Weekday	Best Fit (LOG)	737	737	1474
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.68\ln(X) + 5.57$	50%	50%	
222(1) - Multifamily Housing (High-Rise)	General	Dwelling Units	341	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Best Fit (LIN)	26	82	108
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				$T = 0.28(X) + 12.86$	24%	76%	
820(1) - Shopping Center	General	1000 Sq. Ft. GLA	12.64	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 7 and 9 a.m.	Average	7	5	12
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				0.94	62%	38%	
222(2) - Multifamily Housing (High-Rise)	General	Dwelling Units	341	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LIN)	76	49	125
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				$T = 0.34(X) + 8.56$	61%	39%	
820(2) - Shopping Center	General	1000 Sq. Ft. GLA	12.64	Weekday, Peak Hour of Adjacent Street Traffic, One Hour Between 4 and 6 p.m.	Best Fit (LOG)	56	61	117
Data Source: Trip Gen Manual, 10th Ed	Urban/Suburban				$\ln(T) = 0.74\ln(X) + 2.89$	48%	52%	



Sex of Workers by Means of Transportation to Work

Table

Map

Distribution

[Download data](#)

Table B08006

[Change](#)

Add data for more places below; visualize or download this data with controls at right.

Selected geographies

Census Tract 2.19, Miami-Dade, FL

Add a geography

Add all census tracts in ...

[Miami-Dade County, FL](#)
[Florida](#)
[United States](#)

Divide Census Tract 2.19, Miami-Dade, FL into ...

[block groups](#)

ACS 2018 5-year

Table universe: Workers 16 Years and Over

[Switch to totals](#)

Click a row to highlight

Column	Census Tract 2.19, Miami-Dade	
Car, truck, or van:	73.9%	±4.5%
Drove alone	62.8%	±6.4%
Carpooled:	11.1%	±4.2%
In 2-person carpool	9.1%	±4%
In 3-person carpool	1.6%	±1.8%
In 4-or-more-person carpool	0.4%	±1%
Public transportation (excluding taxicab):	14%	±6.4%
Bus or trolley bus	14%	±6.4%
Streetcar or trolley car (carro publico in Puerto ...	0%	±0.8%
Subway or elevated	0%	±0.8%
Railroad	0%	±0.8%
Ferryboat	0%	±0.8%
Bicycle	0%	±0.8%
Walked	8.7%	±6.3%
Taxicab, motorcycle, or other means	1.8%	±1.9%
Worked at home	1.6%	±1.4%
Male:	53.4%	±9.5%
Car, truck, or van:	40.7%	±8.5%
Drove alone	35.7%	±8.2%
Carpooled:	5%	±2.9%
In 2-person carpool	4.5%	±2.9%
In 3-person carpool	0%	±0.8%
In 4-or-more-person carpool	0.4%	±1%
Public transportation (excluding taxicab):	7.2%	±5.8%
Bus or trolley bus	7.2%	±5.8%
Streetcar or trolley car (carro publico in Puerto ...	0%	±0.8%
Subway or elevated	0%	±0.8%
Railroad	0%	±0.8%
Ferryboat	0%	±0.8%
Bicycle	0%	±0.8%

Citation: U.S. Census Bureau (2014–2018). *Sex of Workers by Means of Transportation to Work American Community Survey 5-year estimates*. Retrieved from <<https://censusreporter.org>>

 [Census terms & definitions](#)

 [Help & feedback](#)

 [Email us](#)

 [Census Reporter on GitHub](#)

 [@CensusReporter](#)

 [Census Reporter blog](#)



OFFICE OF THE PROPERTY APPRAISER

Summary Report

Generated On : 10/20/2020

Property Information	
Folio:	07-2216-001-0640
Property Address:	16300 NE 19 AVE North Miami Beach, FL 33162-4883
Owner	163 ST EXECUTIVE CENTER LLC
Mailing Address	2020 NE 163RD ST STE 300 N MIAMI BEACH, FL 33162-4927
PA Primary Zone	6400 COMMERCIAL - CENTRAL
Primary Land Use	1081 VACANT LAND - COMMERCIAL : VACANT LAND
Beds / Baths / Half	0 / 0 / 0
Floors	0
Living Units	0
Actual Area	0 Sq.Ft
Living Area	0 Sq.Ft
Adjusted Area	0 Sq.Ft
Lot Size	37,500 Sq.Ft
Year Built	0

Assessment Information			
Year	2020	2019	2018
Land Value	\$1,312,500	\$1,125,000	\$1,312,500
Building Value	\$0	\$0	\$1,587,500
XF Value	\$0	\$0	\$0
Market Value	\$1,312,500	\$1,125,000	\$2,900,000
Assessed Value	\$1,237,500	\$1,125,000	\$1,730,300

Benefits Information				
Benefit	Type	2020	2019	2018
Non-Homestead Cap	Assessment Reduction	\$75,000		\$1,169,700
Note: Not all benefits are applicable to all Taxable Values (i.e. County, School Board, City, Regional).				

Short Legal Description
FULFORD BY THE SEA SEC F PB 8-64 LOTS 9 THRU 14 INC BLK 83 LOT SIZE 37500 SQ FT OR 17416-1399 1196 1 COC 24398-4057 03 2006 1



Taxable Value Information			
	2020	2019	2018
County			
Exemption Value	\$0	\$0	\$0
Taxable Value	\$1,237,500	\$1,125,000	\$1,730,300
School Board			
Exemption Value	\$0	\$0	\$0
Taxable Value	\$1,312,500	\$1,125,000	\$2,900,000
City			
Exemption Value	\$0	\$0	\$0
Taxable Value	\$1,237,500	\$1,125,000	\$1,730,300
Regional			
Exemption Value	\$0	\$0	\$0
Taxable Value	\$1,237,500	\$1,125,000	\$1,730,300

Sales Information			
Previous Sale	Price	OR Book-Page	Qualification Description
12/28/2012	\$2,282,500	28589-2062	Financial inst or "In Lieu of Foreclosure" stated
03/01/2006	\$5,500,000	24398-4057	Sales which are qualified
09/01/2003	\$2,866,667	21962-1785	Other disqualified
11/01/1996	\$1,325,000	17416-1399	Sales which are qualified

The Office of the Property Appraiser is continually editing and updating the tax roll. This website may not reflect the most current information on record. The Property Appraiser and Miami-Dade County assumes no liability, see full disclaimer and User Agreement at <http://www.miamidade.gov/info/disclaimer.asp>

Version:

Appendix G

Policy 1.1.2 and 1.1.3



II. Transportation Element

Goals, Objectives, and Policies

Goal 1

To maintain a financially feasible, multimodal, urban transportation system that meets the mobility needs of the residents in a safe, convenient and efficient manner and that operates in harmony with the existing and future land use pattern and the environment.

Objective 1.1 Level of Service (LOS)

The City will ensure that the impact on the traffic circulation system from new development and redevelopment occurring within the City is minimized through the implementation of the Smart Growth North Miami Beach Vision, transportation concurrency, the capital improvement program, and programs that reduce automobile demand and support alternative modes of transportation to the automobile.

Policy 1.1.1

Consistent with the Capital Improvements Element and Transportation Element of the Miami-Dade Comprehensive Development Master Plan (CDMP), as amended, the City designates the area within its corporate boundaries east of I-95 as the Urban Infill Area (UIA) and transportation concurrency exception area. The City has amended its Future Land Use Map to reflect these boundaries and has added a consistency policy to its Future Land Use Element.

Policy 1.1.1

Consistent with the Capital Improvements Element and Transportation Element of the Miami-Dade Comprehensive Development Master Plan (CDMP), as amended, the City designates the area within its corporate boundaries east of I-95 as the Urban Infill Area (UIA) and transportation concurrency exception area. The City has amended its Future Land Use Map to reflect these boundaries and has added a consistency policy to its Future Land Use Element.

Policy 1.1.2

The City hereby adopts traffic circulation level of service standards based on peak period conditions consistent with those standards established in the Miami-Dade CDMP for arterials and collectors. Peak period means the average of the two highest consecutive hours of traffic volume during a weekday.



1. **Florida Intrastate Highway System (FIHS)** – Limited access State highways shall operate at LOS D or better. Where exclusive through lanes exist, such as high occupancy vehicle (HOV) lanes, roadways may operate at LOS E.
2. **Arterials and Collectors** – Within the UIA:
 - (a) Where no public mass transit service exists, roadways shall operate at or above LOS E;
 - (b) Where mass transit service having headways of 20 minutes or less is provided within $\frac{1}{2}$ mile distance, roadways shall operate at no greater than 120 percent of their capacity;
 - (c) Roadways parallel to and within $\frac{1}{2}$ mile distance of I-95/Tri-Rail, US 1, or any other corridors where extraordinary transit service such as commuter rail or express bus service exists, shall operate at no greater than 150 percent of their capacity.
3. **Local Roads** – Within the City limits, local roads shall operate at LOS D.

Policy 1.1.3

No development shall be approved if the projected impacts of the development (including redevelopment) would reduce service levels of any roadway on the traffic circulation system below the standards in Policy 1.1.2, unless the development qualifies for a transportation concurrency exception. In order to qualify for a transportation concurrency exception, the development must be located within the Community Redevelopment Area and designated Mixed-Use, MU/TC Mixed Use Town Center, MU/EC Mixed-Use Employment Center or MU/NC Mixed-Use Neighborhood Center, subject to FLUE Policy 1.8.1, and/or located within $\frac{1}{4}$ mile of either an MDTA transit center, or an MDTA or city circulator bus stop with existing, or planned and funded, peak hour headway service of 20 minutes or less, or express bus service, and shall comply with one of the following alternative requirements:

- a. the additional peak travel hour trips generated by the development do not exceed one-quarter of one percent (0.25 percent) of the peak travel hour capacity of any SIS facility, adjacent to the city, at the adopted LOS standard; or
- b. the development shall incorporate, on or off-site, a premium transit shelter; or the development shall accommodate and provide for alternative modes of transportation, or transportation demand management, as follows, provided that the city shall determine the acceptability of alternatives proposed for any given development.
 - i. Incorporate secure bicycle storage.
 - ii. Ensure that a complete sidewalk network is available for pedestrian access no later than issuance of a certificate of occupancy, such that

**Generalized Peak Hour Directional Volumes for Florida's
Urbanized Areas¹**

12/18/12

INTERRUPTED FLOW FACILITIES					
STATE SIGNALIZED ARTERIALS					
Class I (40 mph or higher posted speed limit)					
Lanes	Median	B	C	D	E
1	Undivided	*	830	880	**
2	Divided	*	1,910	2,000	**
3	Divided	*	2,940	3,020	**
4	Divided	*	3,970	4,040	**
Class II (35 mph or slower posted speed limit)					
Lanes	Median	B	C	D	E
1	Undivided	*	370	750	800
2	Divided	*	730	1,630	1,700
3	Divided	*	1,170	2,520	2,560
4	Divided	*	1,610	3,390	3,420
Non-State Signalized Roadway Adjustments					
(Alter corresponding state volumes by the indicated percent.)					
Non-State Signalized Roadways - 10%					
Median & Turn Lane Adjustments					
Lanes	Median	Exclusive Left Lanes	Exclusive Right Lanes	Adjustment Factors	
1	Divided	Yes	No	+5%	
1	Undivided	No	No	-20%	
Multi	Undivided	Yes	No	-5%	
Multi	Undivided	No	No	-25%	
-	-	-	Yes	+ 5%	
One-Way Facility Adjustment					
Multiply the corresponding directional volumes in this table by 1.2					

UNINTERRUPTED FLOW FACILITIES					
FREEWAYS					
Lanes	B	C	D	E	
2	2,260	3,020	3,660	3,940	
3	3,360	4,580	5,500	6,080	
4	4,500	6,080	7,320	8,220	
5	5,660	7,680	9,220	10,360	
6	7,900	10,320	12,060	12,500	
Freeway Adjustments					
Auxiliary Lane + 1,000			Ramp Metering + 5%		

UNINTERRUPTED FLOW HIGHWAYS					
Lanes	Median	B	C	D	E
1	Undivided	420	840	1,190	1,640
2	Divided	1,810	2,560	3,240	3,590
3	Divided	2,720	3,840	4,860	5,380
Uninterrupted Flow Highway Adjustments					
Lanes	Median	Exclusive left lanes	Adjustment factors		
1	Divided	Yes	+5%		
Multi	Undivided	Yes	-5%		
Multi	Undivided	No	-25%		

BICYCLE MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Paved Shoulder/Bicycle Lane Coverage	B	C	D	E
0-49%	*	150	390	1,000
50-84%	110	340	1,000	>1,000
85-100%	470	1,000	>1,000	**

PEDESTRIAN MODE²

(Multiply motorized vehicle volumes shown below by number of directional roadway lanes to determine two-way maximum service volumes.)

Sidewalk Coverage	B	C	D	E
0-49%	*	*	140	480
50-84%	*	80	440	800
85-100%	200	540	880	>1,000

BUS MODE (Scheduled Fixed Route)³

(Buses in peak hour in peak direction)

Sidewalk Coverage	B	C	D	E
0-84%	> 5	≥ 4	≥ 3	≥ 2
85-100%	> 4	≥ 3	≥ 2	≥ 1

¹Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

¹Values shown are presented as peak hour directional volumes for levels of service and are for the automobile/truck modes unless specifically stated. This table does not constitute a standard and should be used only for general planning applications. The computer models from which this table is derived should be used for more specific planning applications. The table and deriving computer models should not be used for corridor or intersection design, where more refined techniques exist. Calculations are based on planning applications of the Highway Capacity Manual and the Transit Capacity and Quality of Service Manual.

² Level of service for the bicycle and pedestrian modes in this table is based on number of motorized vehicles, not number of bicyclists or pedestrians using the facility.

³ Buses per hour shown are only for the peak hour in the single direction of the higher traffic flow.

* Cannot be achieved using table input value defaults.

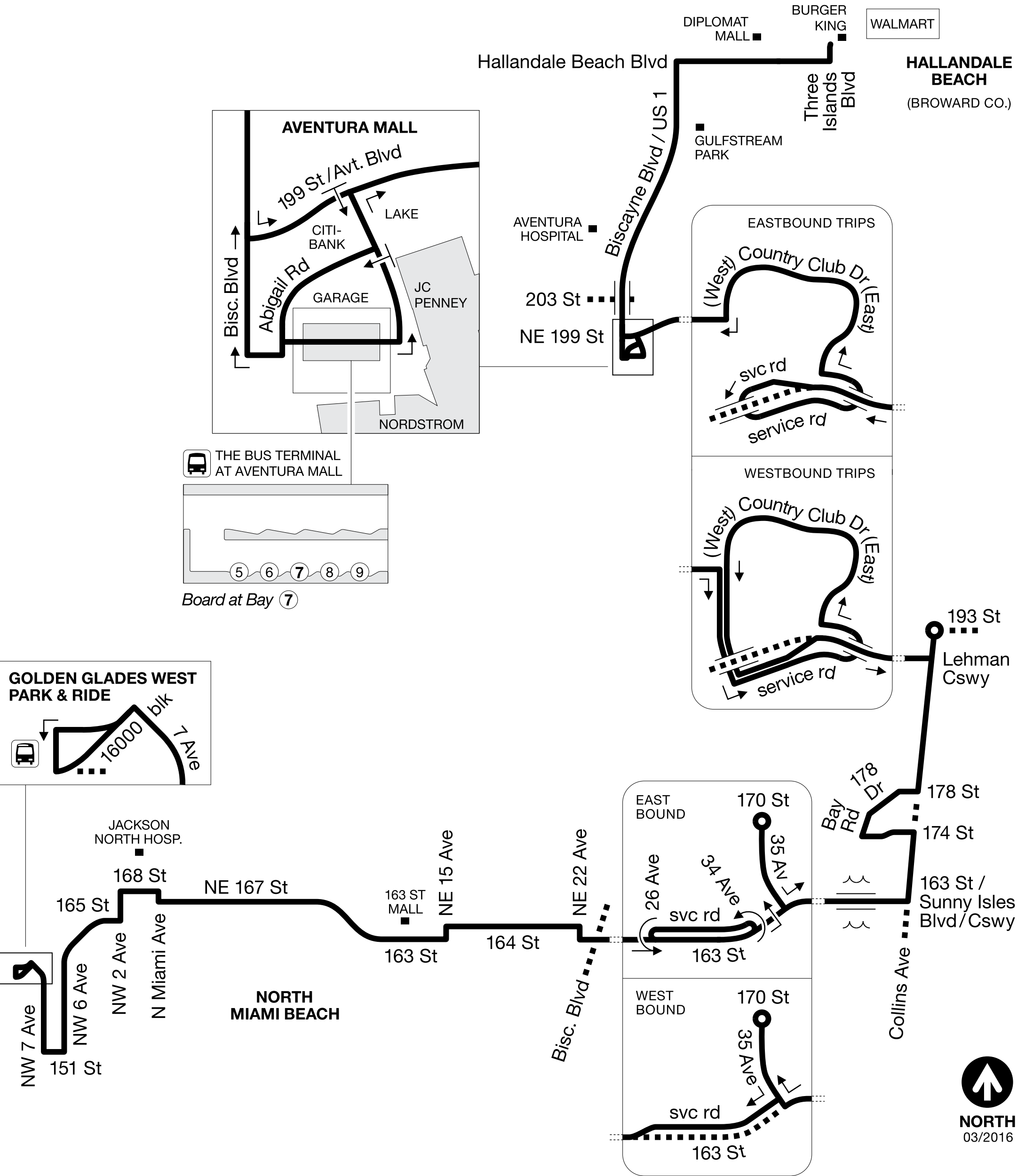
** Not applicable for that level of service letter grade. For the automobile mode, volumes greater than level of service D become F because intersection capacities have been reached. For the bicycle mode, the level of service letter grade (including F) is not achievable because there is no maximum vehicle volume threshold using table input value defaults.

Source:
Florida Department of Transportation
Systems Planning Office
www.dot.state.fl.us/planning/systems/sm/los/default.shtm

Appendix H

Transit Information

Route E





Schedule



105 Route E
- Weekday (Westbound)
NE 164 ST NE 19 AV

6:36 AM
Dest: E - Golden Glades

7:06 AM
Dest: E - Golden Glades

7:36 AM
Dest: E - Golden Glades

8:09 AM
Dest: E - Golden Glades

8:49 AM
Dest: E - Golden Glades

9:34 AM
Dest: E - Golden Glades

10:24 AM
Dest: E - Golden Glades

11:09 AM
Dest: E - Golden Glades

11:59 AM (20 min)
Dest: E - Golden Glades

12:44 PM
Dest: E - Golden Glades

1:34 PM
Dest: E - Golden Glades

2:29 PM
Dest: E - Golden Glades

3:05 PM
Dest: E - Golden Glades

3:45 PM
Dest: E - Golden Glades

4:15 PM
Dest: E - Golden Glades

4:45 PM
Dest: E - Golden Glades

5:15 PM
Dest: E - Golden Glades

5:45 PM
Dest: E - Golden Glades

6:15 PM
Dest: E - Golden Glades

6:47 PM
Dest: E - Golden Glades

7:23 PM
Dest: E - Golden Glades

7:53 PM
Dest: E - Golden Glades

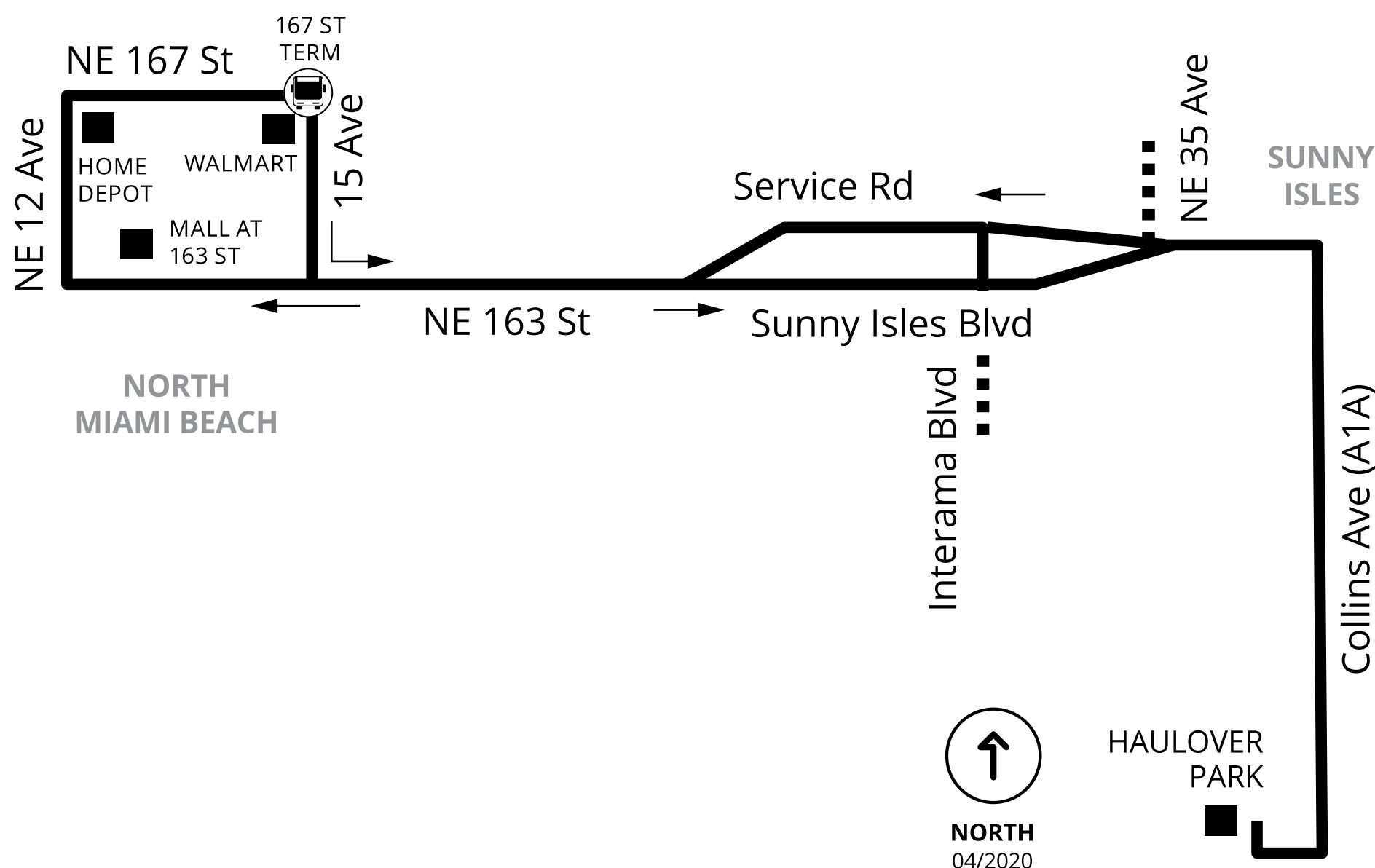
8:38 PM
Dest: E - Golden Glades

9:28 PM
Dest: E - Golden Glades

10:23 PM
Dest: E - Golden Glades



view full web site



@GoMiamiDade



GO Miami-Dade Transit



WEEKDAYS / DIAS LABORABLES / LASEMÈN																																							
NORTHBOUND RUMBO NORTE / DIREKSYON NÒ		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:40	6:10	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	3:45	4:15	4:45	5:15	5:45	6:15	6:45	7:15	7:45	8:15	8:45	9:15	9:50	10:20	10:50	11:20	12:00	12:30
Collins Ave & Atlantic Ave		5:45	6:15	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:20	10:50	11:20	11:50	12:20	12:50	1:20	1:50	2:20	2:50	3:20	3:50	4:20	4:50	5:20	5:50	6:20	6:50	7:20	7:50	8:20	8:50	9:20	9:55	10:25	10:55	11:25	12:05	12:35
NE 167 St & 15 Ave		5:59	6:33	7:11	7:41	8:11	8:41	9:12	9:42	10:12	10:42	11:12	11:42	12:13	12:43	1:13	1:43	2:13	2:43	3:13	3:43	4:13	4:43	5:13	5:43	6:13	6:43	7:13	7:39	8:09	8:36	9:06	9:36	10:11	10:41	11:11	11:41	12:19	12:49
SOUTHBOUND RUMBO SUR / DIREKSYON SID		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:13	5:42	6:12	6:39	7:06	7:36	8:04	8:34	9:04	9:34	10:04	10:34	11:04	11:34	12:04	12:34	1:04	1:34	2:04	2:34	3:04	3:34	4:04	4:34	5:04	5:34	6:04	6:34	7:08	7:38	8:15	8:45	9:20	9:50	10:20	10:50	11:30	12:02
Collins Ave & 163 St		5:28	5:57	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	10:57	11:27	11:57	12:27	12:57	1:27	1:57	2:27	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:27	6:57	7:27	7:57	8:32	9:02	9:37	10:07	10:37	11:07	11:47	12:17
Haulover Club Parking Lot		5:33	6:02	6:32	7:02	7:32	8:02	8:32	9:02	9:32	10:02	10:32	11:02	11:32	12:02	12:32	1:02	1:32	2:02	2:32	3:02	3:32	4:02	4:32	5:02	5:32	6:02	6:32	7:02	7:32	8:02	8:37	9:07	9:42	10:12	10:42	11:12	11:52	12:22
SATURDAY / SABADO / SAMDI																																							
NORTHBOUND RUMBO NORTE / DIREKSYON NÒ		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:40	6:10	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	3:45	4:15	4:45	5:15	5:45	6:15	6:40	7:10	7:40	8:10	8:40	9:10	9:50	10:20	10:50	11:20	12:00	12:30
Collins Ave & Atlantic Ave		5:45	6:15	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:20	10:50	11:20	11:50	12:20	12:50	1:20	1:50	2:20	2:50	3:20	3:50	4:20	4:50	5:20	5:50	6:20	6:45	7:15	7:45	8:15	8:45	9:15	9:55	10:25	10:55	11:25	12:05	12:35
NE 167 St & 15 Ave		5:59	6:32	7:10	7:40	8:10	8:40	9:12	9:42	10:12	10:42	11:12	11:42	12:12	12:42	1:12	1:42	2:12	2:42	3:12	3:42	4:13	4:43	5:13	5:43	6:13	6:43	7:08	7:34	8:04	8:31	9:01	9:31	10:11	10:41	11:11	11:41	12:19	12:49
SOUTHBOUND RUMBO SUR / DIREKSYON SID		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:13	5:42	6:10	6:40	7:08	7:38	8:08	8:38	9:05	9:35	10:05	10:35	11:05	11:35	12:04	12:34	1:04	1:34	2:04	2:34	3:04	3:34	4:04	4:34	5:04	5:34	6:04	6:34	7:08	7:38	8:10	8:40	9:20	9:50	10:20	10:50	11:30	12:02
Collins Ave & 163 St		5:28	5:57	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	10:57	11:27	11:57	12:27	12:57	1:27	1:57	2:27	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:27	6:57	7:27	7:57	8:27	8:57	9:37	10:07	10:37	11:07	11:47	12:17
Haulover Club Parking Lot		5:33	6:02	6:32	7:02	7:32	8:02	8:32	9:02	9:32	10:02	10:32	11:02	11:32	12:02	12:32	1:02	1:32	2:02	2:32	3:02	3:32	4:02	4:32	5:02	5:32	6:02	6:32	7:02	7:32	8:02	8:32	9:02	9:42	10:12	10:42	11:12	11:52	12:22
SUNDAY / DOMINGO / DIMANCH																																							
NORTHBOUND RUMBO NORTE / DIREKSYON NÒ		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:40	6:10	6:45	7:15	7:45	8:15	8:45	9:15	9:45	10:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	3:45	4:15	4:45	5:15	5:45	6:15	6:40	7:10	7:40	8:10	8:40	9:10	9:50	10:20	10:50	11:20	12:00	12:30
Collins Ave & Atlantic Ave		5:45	6:15	6:50	7:20	7:50	8:20	8:50	9:20	9:50	10:20	10:50	11:20	11:50	12:20	12:50	1:20	1:50	2:20	2:50	3:20	3:50	4:20	4:50	5:20	5:50	6:20	6:45	7:15	7:45	8:15	8:45	9:15	9:55	10:25	10:55	11:25	12:05	12:35
NE 167 St & 15 Ave		5:59	6:31	7:08	7:38	8:08	8:38	9:10	9:40	10:10	10:40	11:10	11:40	12:12	12:42	1:12	1:42	2:12	2:42	3:12	3:42	4:12	4:42	5:12	5:42	6:12	6:42	7:07	7:34	8:04	8:31	9:01	9:31	10:11	10:41	11:11	11:41	12:19	12:49
SOUTHBOUND RUMBO SUR / DIREKSYON SID		MORNING / MAÑANA / MATEN												AM	PM	AFTERNOON & EVENING / TARDE Y NOCHE / APREMIDI, CHAK ASWÈ																							
		5:15	5:44	6:10	6:40	7:10	7:40	8:10	8:40	9:09	9:39	10:09	10:39	11:09	11:39	12:09	12:39	1:09	1:39	2:09	2:39	3:09	3:39	4:06	4:36	5:06	5:36	6:10	6:40	7:10	7:40	8:11	8:41	9:21	9:51	10:21	10:51	11:31	12:04
Collins Ave & 163 St		5:28	5:57	6:27	6:57	7:27	7:57	8:27	8:57	9:27	9:57	10:27	10:57	11:27	11:57	12:27	12:57	1:27	1:57	2:27	2:57	3:27	3:57	4:27	4:57	5:27	5:57	6:27	6:57	7:27	7:57	8:27	8:57	9:37	10:07	10:37	11:07	11:47	12:17
Haulover Club Parking Lot		5:33	6:02	6:32	7:02	7:32	8:02	8:32	9:02	9:32	10:02	10:32	11:02	11:32	12:02	12:32	1:02	1:32	2:02	2:32	3:02	3:32	4:02	4:32	5:02	5:32	6:02	6:32	7:02	7:32	8:02	8:32	9:02	9:42	10:12	10:42	11:12	11:52	12:22

Scheduled times are approximate. Actual arrival and departure times may vary depending on traffic and road conditions. Las horas publicadas son aproximadas, pues dependen del trafico y otras condiciones de las vias. Ore yo apwoksimatif. Vre le bis yo ap rive oswa deplase ka varye selon kondisyon siklasyon sou wout yo.



Schedule



108 Route H
- Weekday (Northbound)
NE 163 ST NE 19 AV

5:54 AM
Dest: H - 163 St Mall

6:27 AM
Dest: H - 163 St Mall

7:03 AM
Dest: H - 163 St Mall

7:33 AM
Dest: H - 163 St Mall

8:03 AM
Dest: H - 163 St Mall

8:33 AM
Dest: H - 163 St Mall

9:04 AM
Dest: H - 163 St Mall

9:34 AM
Dest: H - 163 St Mall

10:04 AM
Dest: H - 163 St Mall

10:34 AM
Dest: H - 163 St Mall

11:04 AM
Dest: H - 163 St Mall

11:34 AM
Dest: H - 163 St Mall

12:05 PM
Dest: H - 163 St Mall

12:35 PM (22 min)
Dest: H - 163 St Mall

1:05 PM
Dest: H - 163 St Mall

1:35 PM
Dest: H - 163 St Mall

2:05 PM
Dest: H - 163 St Mall

2:35 PM
Dest: H - 163 St Mall

3:05 PM
Dest: H - 163 St Mall

3:35 PM
Dest: H - 163 St Mall

4:05 PM
Dest: H - 163 St Mall

4:35 PM
Dest: H - 163 St Mall

5:05 PM
Dest: H - 163 St Mall

5:35 PM
Dest: H - 163 St Mall

6:05 PM
Dest: H - 163 St Mall

6:35 PM
Dest: H - 163 St Mall

7:05 PM
Dest: H - 163 St Mall

7:32 PM
Dest: H - 163 St Mall

8:02 PM
Dest: H - 163 St Mall

8:30 PM
Dest: H - 163 St Mall

9:00 PM
Dest: H - 163 St Mall

9:30 PM
Dest: H - 163 St Mall

10:05 PM
Dest: H - 163 St Mall

10:35 PM
Dest: H - 163 St Mall

11:05 PM
Dest: H - 163 St Mall

11:35 PM
Dest: H - 163 St Mall



210

SKYLAKE
CIRCULATOR



I-95

NE 191 St

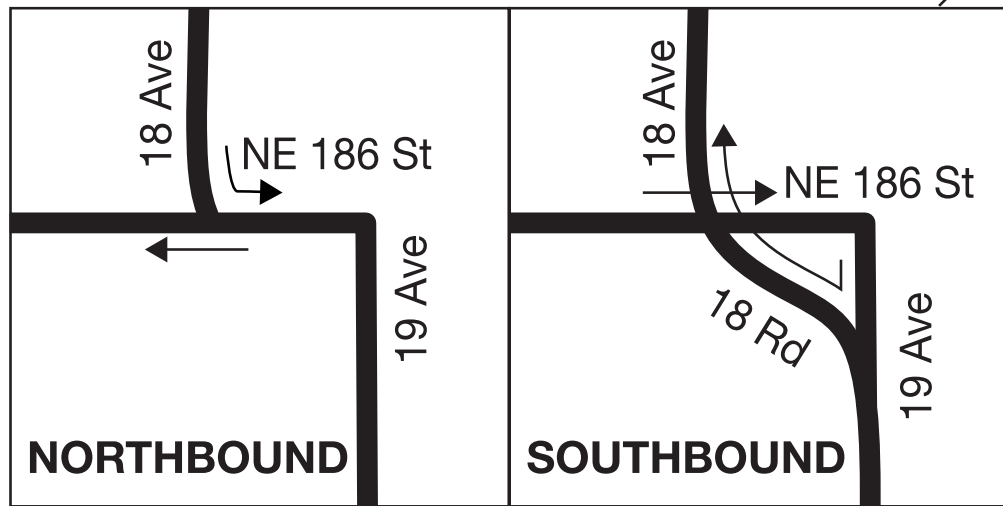
NE 14 Ave

NE 18 Ave

Miami Gardens Dr

NE 186 St

SHOPS AT
SKYLAKE



NE 19 Ave



NORTH
08/2017

NE 167 St

WALMART

163 ST
MALL

NE 15 Ave

NORTH
MIAMI
BEACH

NE 163 St

www.miamidade.gov/transit

☎ 311 OR 305.468.5900 TTY: 305.468.5402



@GoMiamiDade



MDT TRACKER | EASY PAY MIAMI | MDT TRANSIT WATCH



08.2017

WEEKDAYS / DIAS LABORABLES / LACÈMEN

SOUTHBOUND RUMBO SUR DIREKSYON SID		MORNING / MAÑANA / MATIN														AFTERNOON & EVENING TARDE Y NOCHE APREMIDI CHAK ASWE													
		5:42	6:35	7:35	8:34	9:04	9:34	10:04	10:34	11:04	11:34	12:04	12:34	1:04	1:34	2:04	2:34	3:04	3:34	4:04	4:34	5:34	6:34	7:39	8:40	9:40	10:40	11:40	
NE 185 St & 18 Ave		5:47	6:41	7:41	8:40	9:10	9:40	10:10	10:40	11:10	11:40	12:10	12:40	1:10	1:40	2:10	2:40	3:10	3:40	4:10	4:40	5:40	6:40	7:44	8:45	9:45	10:45	11:45	
 NE 167 St Term		5:59	6:59	7:59	8:59	9:29	9:59	10:29	10:59	11:29	11:59	12:29	12:59	1:29	1:59	2:29	2:59	3:29	3:59	4:29	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59	

NORTHBOUND RUMBO NORTE DIREKSYON NÒ		MORNING / MAÑANA / MATIN														AFTERNOON & EVENING TARDE Y NOCHE APREMIDI CHAK ASWE														
		5:00	6:00	7:00	8:00	8:30	9:00	9:30	10:00	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	2:30	3:00	3:30	4:00	4:30	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
	NE 167 St Term	5:10	6:12	7:13	8:13	8:43	9:15	9:45	10:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	3:45	4:16	4:46	5:16	6:16	7:13	8:12	9:12	10:12	11:12	12:10
	NE 191 St Circle	5:10	6:12	7:13	8:13	8:43	9:15	9:45	10:15	10:45	11:15	11:45	12:15	12:45	1:15	1:45	2:15	2:45	3:15	3:45	4:16	4:46	5:16	6:16	7:13	8:12	9:12	10:12	11:12	12:10
	NE 185 St & 18 Ave	5:15	6:18	7:19	8:19	8:49	9:21	9:51	10:21	10:51	11:21	11:51	12:21	12:51	1:21	1:51	2:21	2:51	3:21	3:51	4:22	4:52	5:22	6:22	7:19	8:18	9:18	10:18	11:18	12:15

WEEKENDS / FINES DE SEMANA / WIKENN

SOUTHBOUND RUMBO SUR DIREKSYON SID	MORNING / MAÑANA / MATIN							AFTERNOON & EVENING TARDE Y NOCHE / APREMIDI CHAK ASWE											
	5:42	6:39	7:37	8:35	9:35	10:35	11:35	12:35	1:35	2:35	3:35	4:34	5:34	6:34	7:39	8:40	9:40	10:40	11:40
NE 185 St & 18 Ave																			
NE 191 St Circle	5:47	6:45	7:43	8:41	9:41	10:41	11:41	12:41	1:41	2:41	3:41	4:40	5:40	6:40	7:44	8:45	9:45	10:45	11:45
 NE 167 St Term	5:59	6:59	7:59	8:59	9:59	10:59	11:59	12:59	1:59	2:59	3:59	4:59	5:59	6:59	7:59	8:59	9:59	10:59	11:59

NORTHBOUND RUMBO NORTE DIREKSYON NÒ	MORNING / MAÑANA / MATIN										AFTERNOON & EVENING TARDE Y NOCHE / APREMIDI CHAK ASWE									
	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00	1:00	2:00	3:00	4:00	5:00	6:00	7:00	8:00	9:00	10:00	11:00	12:00
 NE 167 St Term	5:10	6:12	7:12	8:13	9:13	10:13	11:13	12:14	1:14	2:14	3:14	4:14	5:14	6:14	7:13	8:12	9:12	10:12	11:12	12:10
NE 191 St Circle	5:15	6:18	7:18	8:19	9:19	10:19	11:19	12:20	1:20	2:20	3:20	4:20	5:20	6:20	7:19	8:18	9:18	10:18	11:18	12:15



Schedule



210 Skylake Circulator
- Weekday (Northbound)
NE 163 ST NE 18 CT

5:02 AM
Dest: Skylake

6:02 AM
Dest: Skylake

7:03 AM
Dest: Skylake

8:03 AM
Dest: Skylake

8:33 AM
Dest: Skylake

9:03 AM
Dest: Skylake

9:33 AM
Dest: Skylake

10:03 AM
Dest: Skylake

10:33 AM
Dest: Skylake

11:03 AM
Dest: Skylake

11:33 AM
Dest: Skylake

12:03 PM
Dest: Skylake

12:33 PM (8 min)
Dest: Skylake

1:03 PM
Dest: Skylake

1:33 PM
Dest: Skylake

2:03 PM
Dest: Skylake

2:33 PM
Dest: Skylake

3:03 PM
Dest: Skylake

3:33 PM
Dest: Skylake

4:03 PM
Dest: Skylake

4:33 PM
Dest: Skylake

5:03 PM
Dest: Skylake

6:03 PM
Dest: Skylake

7:03 PM
Dest: Skylake

8:02 PM
Dest: Skylake

9:02 PM
Dest: Skylake

10:02 PM
Dest: Skylake

11:02 PM
Dest: Skylake

12:02 AM
Dest: Skylake



[view full web site](#)



Schedule



3

- Weekday (Northbound)

NE 163 ST NE 18 AV

6:01 AM

Dest: Aventura Mall

6:24 AM

Dest: Aventura Mall

6:49 AM

Dest: Aventura Mall

7:12 AM

Dest: Aventura Mall

7:34 AM

Dest: Aventura Mall

7:56 AM

Dest: Aventura Mall

8:15 AM

Dest: Aventura Mall

8:35 AM

Dest: Aventura Mall

8:54 AM

Dest: Aventura Mall

9:13 AM

Dest: Aventura Mall

9:31 AM

Dest: Aventura Mall

9:49 AM

Dest: Aventura Mall

10:06 AM

Dest: Aventura Mall

10:36 AM

Dest: Aventura Mall

11:08 AM

Dest: Aventura Mall

11:38 AM (1 min)

Dest: Aventura Mall

12:09 PM

Dest: Aventura Mall

12:39 PM

Dest: Aventura Mall

1:10 PM

Dest: Aventura Mall

1:41 PM

Dest: Aventura Mall

2:11 PM

Dest: Aventura Mall

2:41 PM

Dest: Aventura Mall

3:12 PM

Dest: Aventura Mall

3:42 PM

Dest: Aventura Mall

4:14 PM

Dest: Aventura Mall

4:32 PM

Dest: Aventura Mall

4:51 PM

Dest: Aventura Mall

5:10 PM

Dest: Aventura Mall

5:28 PM

Dest: Aventura Mall

5:46 PM

Dest: Aventura Mall

6:04 PM

Dest: Aventura Mall

6:21 PM

Dest: Aventura Mall

6:39 PM

Dest: Aventura Mall

6:56 PM

Dest: Aventura Mall

7:11 PM

Dest: Aventura Mall

7:26 PM

Dest: Aventura Mall

Back

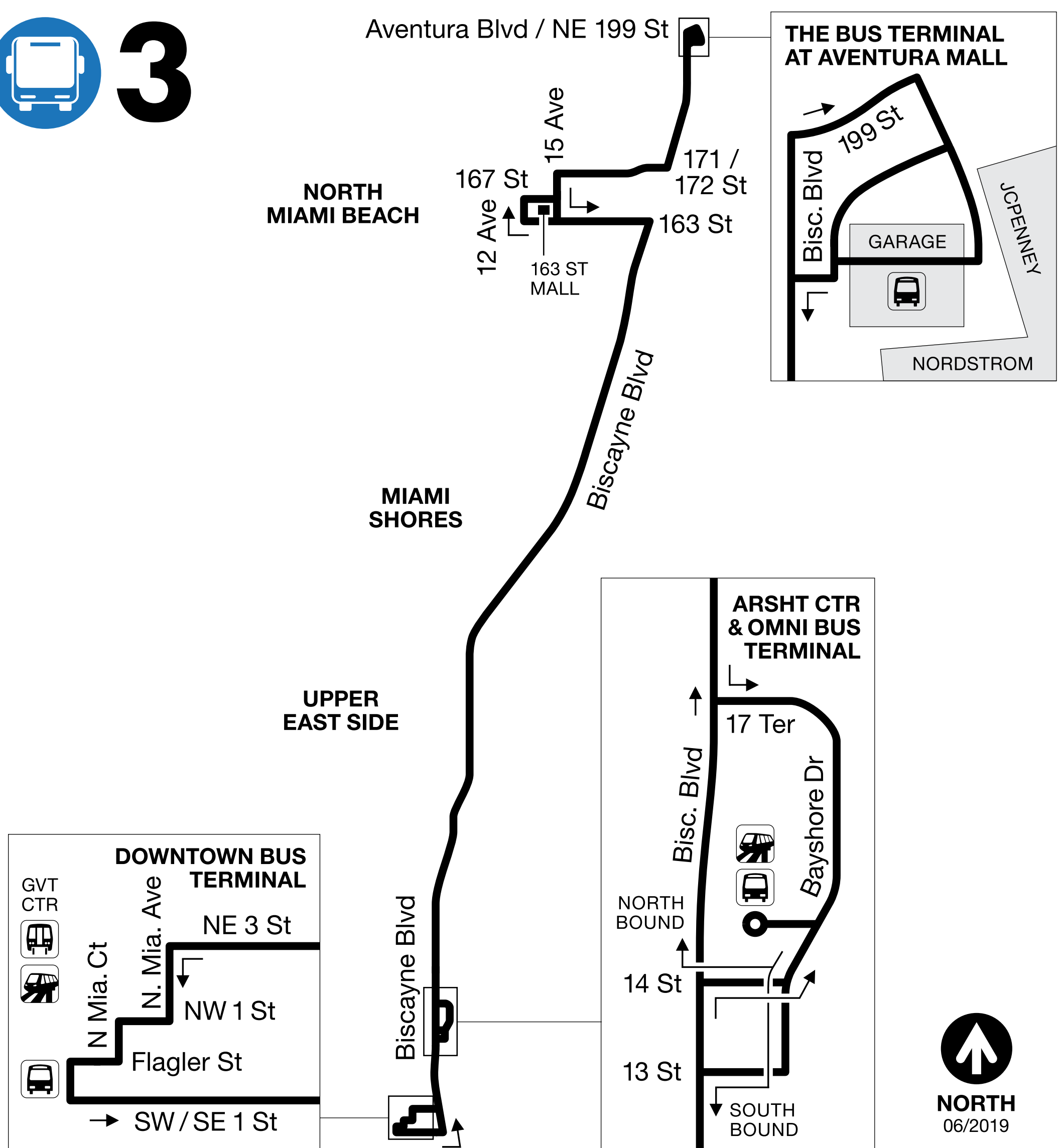
Schedule



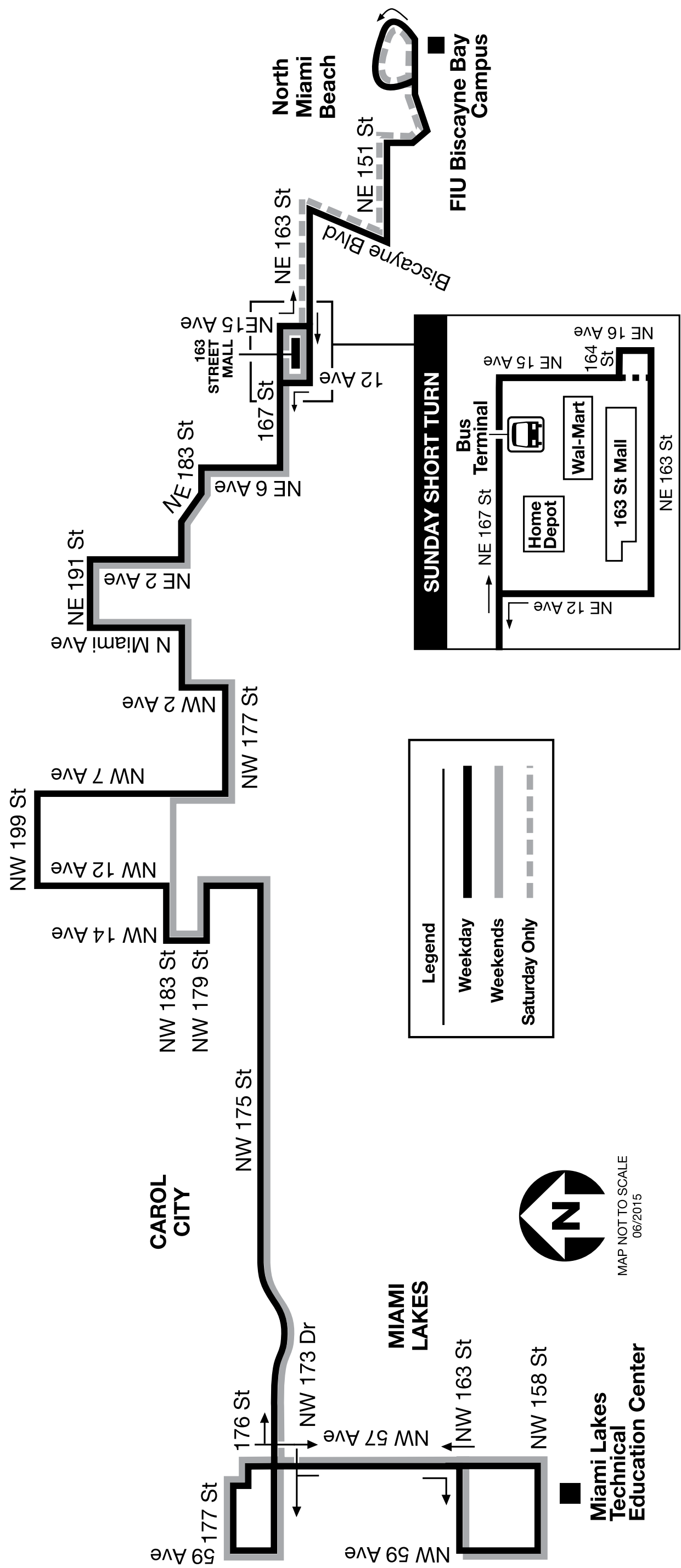
7:55 PM
Dest: Aventura Mall
8:12 PM
Dest: Aventura Mall
8:30 PM
Dest: Aventura Mall
8:46 PM
Dest: Aventura Mall
9:06 PM
Dest: Aventura Mall
9:36 PM
Dest: Aventura Mall
10:06 PM
Dest: Aventura Mall
10:36 PM
Dest: Aventura Mall
11:05 PM
Dest: Aventura Mall
11:32 PM
Dest: Aventura Mall
11:59 PM
Dest: Aventura Mall
12:29 AM
Dest: Aventura Mall
12:59 AM
Dest: Aventura Mall
1:29 AM
Dest: Aventura Mall
1:59 AM
Dest: Aventura Mall
2:59 AM
Dest: Aventura Mall
3:55 AM
Dest: Aventura Mall
4:55 AM
Dest: Aventura Mall



[view full web site](#)



Route 75





75
- Weekday (Westbound)
NE 163 ST NE 19 AV

5:29 AM
Dest: Miami Lakes Edu Ctr

5:58 AM
Dest: Miami Lakes Edu Ctr

6:28 AM
Dest: Miami Lakes Edu Ctr

6:58 AM
Dest: Miami Lakes Edu Ctr

7:33 AM
Dest: Miami Lakes Edu Ctr

8:03 AM
Dest: Miami Lakes Edu Ctr

8:33 AM
Dest: Miami Lakes Edu Ctr

9:03 AM
Dest: Miami Lakes Edu Ctr

9:38 AM
Dest: Miami Lakes Edu Ctr

10:08 AM
Dest: Miami Lakes Edu Ctr

10:48 AM
Dest: Miami Lakes Edu Ctr

11:18 AM
Dest: Miami Lakes Edu Ctr

11:48 AM
Dest: Miami Lakes Edu Ctr

12:18 PM (17 min)
Dest: Miami Lakes Edu Ctr

12:48 PM
Dest: Miami Lakes Edu Ctr

1:18 PM
Dest: Miami Lakes Edu Ctr

1:48 PM
Dest: Miami Lakes Edu Ctr

2:18 PM
Dest: Miami Lakes Edu Ctr

2:48 PM
Dest: Miami Lakes Edu Ctr

3:18 PM
Dest: Miami Lakes Edu Ctr

3:48 PM
Dest: Miami Lakes Edu Ctr

4:18 PM
Dest: Miami Lakes Edu Ctr

4:48 PM
Dest: Miami Lakes Edu Ctr

5:18 PM
Dest: Miami Lakes Edu Ctr

5:48 PM
Dest: Miami Lakes Edu Ctr

6:18 PM
Dest: Miami Lakes Edu Ctr

6:48 PM
Dest: Miami Lakes Edu Ctr

7:38 PM
Dest: Miami Lakes Edu Ctr

8:38 PM
Dest: Miami Lakes Edu Ctr

9:38 PM
Dest: Miami Lakes Edu Ctr

10:38 PM
Dest: Miami Lakes Edu Ctr



view full web site



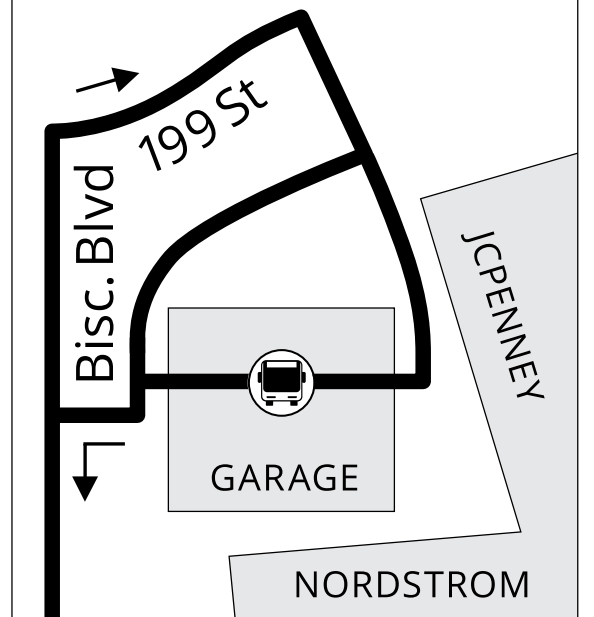
93

BISCAYNE MAX

Aventura Blvd / NE 199 St

MAKES ALL
LOCAL STOPS
NORTH OF 163 ST

**THE BUS TERMINAL
AT AVENTURA MALL**



Biscayne Blvd

163 ST

151 ST

146 ST

**NORTH
MIAMI**

135 ST

123 ST

SANS SOUCI BLVD

**MIAMI
SHORES**

107 ST

96 ST

91 ST

79 ST

70 ST (NORTHBOUND)

71 ST (SOUTHBOUND)

62 ST

54 ST

**UPPER
EAST SIDE**

36 ST

29 ST

19 ST

EDGEWATER

MAKES ALL
LOCAL STOPS
SOUTH OF 19 ST



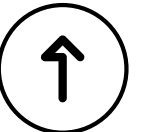
Metrobus Terminal



Metrorail Station

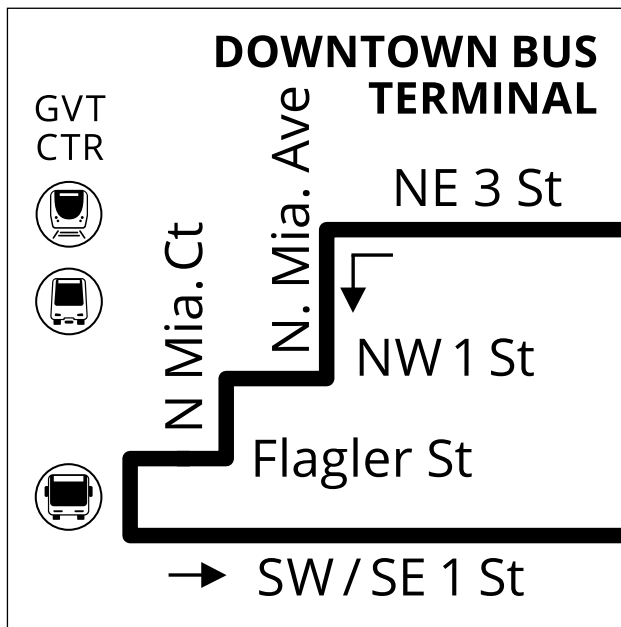


Metromover Station



NORTH
10/2019

LIMITED STOPS
19 St to 163 St



@GoMiamiDade



Download on the
App Store



GET IT ON
Google Play

GO Miami-Dade Transit

06.2020

miamidade.gov/transit



311 or 305.468.5900 TTY/Fla Relay: 711



WEEKDAYS / DIAS LABORABLES / LASEMÈN																		
NORTHBOUND RUMBO NORTE / DIREKSYON NÒ		MORNING / MAÑANA / MATEN	EVERY CADA/CHAK		MORNING / MAÑANA / MATEN			AFTERNOON / TARDE / APRÈ MIDI			EVERY CADA/CHAK		EVENING / NOCHE / CHAK ASWÈ					
			FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A					
	DOWNTOWN TERMINAL	5:24	5:44	10:06	10:30	11:00	11:30	12:00	12:30	1:00	1:30	2:00	6:45	7:05	7:25			
	BISCAYNE BLVD & NE 15 ST	5:32	5:52	10:19	10:43	11:13	11:43	12:13	12:43	1:13	1:43	2:14	6:59	7:17	7:37			
	BISCAYNE BLVD & NE 36 ST	5:37	5:57	10:26	10:50	11:20	11:50	12:20	12:50	1:21	1:51	2:22	7:07	7:24	7:44			
	BISCAYNE BLVD & NE 79 ST	5:45	6:05	10:34	10:58	11:28	11:58	12:29	12:59	1:30	2:00	2:31	7:16	7:33	7:53			
	BISCAYNE BLVD & NE 123 ST	5:53	6:14	10:44	11:09	11:39	12:09	12:40	1:10	1:41	2:12	2:43	7:26	7:43	8:03			
	BISCAYNE BLVD & NE 163 ST	6:02	6:23	10:53	11:19	11:49	12:20	12:51	1:21	1:52	2:23	2:54	7:34	7:51	8:11			
	TERMINAL AVENTURA MALL	6:14	6:35	11:07	11:33	12:04	12:35	1:07	1:37	2:08	2:39	3:11	7:46	8:03	8:22			
SOUTHBOUND RUMBO SUR / DIREKSYON SID		EVERY CADA/CHAK		MORNING / MAÑANA / MATEN											EVERY CADA/CHAK		EVENING / NOCHE / CHAK ASWÈ	
		FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A	15 min	FROM DESDE/DE	TO HASTA/A			
	TERMINAL AVENTURA MALL	5:45	8:56	9:20	9:49	10:20	10:49	11:18	11:47	12:16	12:46	5:32	5:53	6:15				
	BISCAYNE BLVD & NE 163 ST	5:55	9:10	9:34	10:03	10:34	11:04	11:33	12:02	12:31	1:01	5:49	6:10	6:30				
	BISCAYNE BLVD & NE 123 ST	6:02	9:18	9:42	10:12	10:43	11:13	11:42	12:12	12:41	1:11	6:00	6:20	6:40				
	BISCAYNE BLVD & NE 79 ST	6:12	9:29	9:53	10:24	10:55	11:25	11:54	12:24	12:53	1:23	6:11	6:31	6:51				
	BISCAYNE BLVD & NE 36 ST	6:21	9:39	10:03	10:33	11:04	11:34	12:03	12:33	1:03	1:33	6:20	6:40	7:00				
	BISCAYNE BLVD & NE 15 ST	6:26	9:44	10:08	10:38	11:09	11:39	12:09	12:39	1:09	1:39	6:25	6:45	7:05				
	DOWNTOWN TERMINAL	6:37	9:56	10:20	10:50	11:20	11:50	12:20	12:50	1:20	1:50	6:35	6:55	7:15				

NMBLIN

City Of North Miami Beach B-line

MDT

Coronavirus Updates

All public transit changes due to Coronavirus (COVID-19) are updated in the app.
For more details [Scan QR Code](#) to download the app



NMBLIN bus Schedule

NMBLIN bus route operates on weekdays. Regular schedule hours: 7:30 AM - 6:30 PM

Day	Operating Hours
Sunday	Not Operational
Monday	7:30 AM - 6:30 PM
Tuesday	7:30 AM - 6:30 PM
Wednesday	7:30 AM - 6:30 PM
Thursday	7:30 AM - 6:30 PM
Friday	7:30 AM - 6:30 PM
Saturday	Not Operational

[View full schedule](#)

NMBLIN bus Route Map



[Download PDF: NMBLIN schedule, stops and map](#)

[View PDF: NMBLIN schedule, stops and map](#)

NMBLIN bus Route Map



NMBLIN bus Route Schedule and Stops

NMBLIN bus Schedule

NMBLIN bus route operates on weekdays. Regular schedule hours: 7:30 AM - 6:30 PM

Day	Operating Hours
Sunday	Not Operational
Monday	7:30 AM - 6:30 PM
Tuesday	7:30 AM - 6:30 PM
Wednesday	7:30 AM - 6:30 PM
Thursday	7:30 AM - 6:30 PM
Friday	7:30 AM - 6:30 PM
Saturday	Not Operational

Appendix I

AutoTURN Analysis

THESE DESIGN AND DRAWINGS ARE THE PROPERTY OF PENNLY ARCHITECTURAL, NINTH FLOOR AND PLANNING, INC. AND MAY NOT BE REPRODUCED WITHOUT WRITTEN CONSENT OF THE ARCHITECT. THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS OF THE JOB AND BE RESPONSIBLE FOR MAKING ANY NECESSARY ADJUSTMENTS TO THE DRAWINGS BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

16300 NE 19TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

PIM Construction LLC

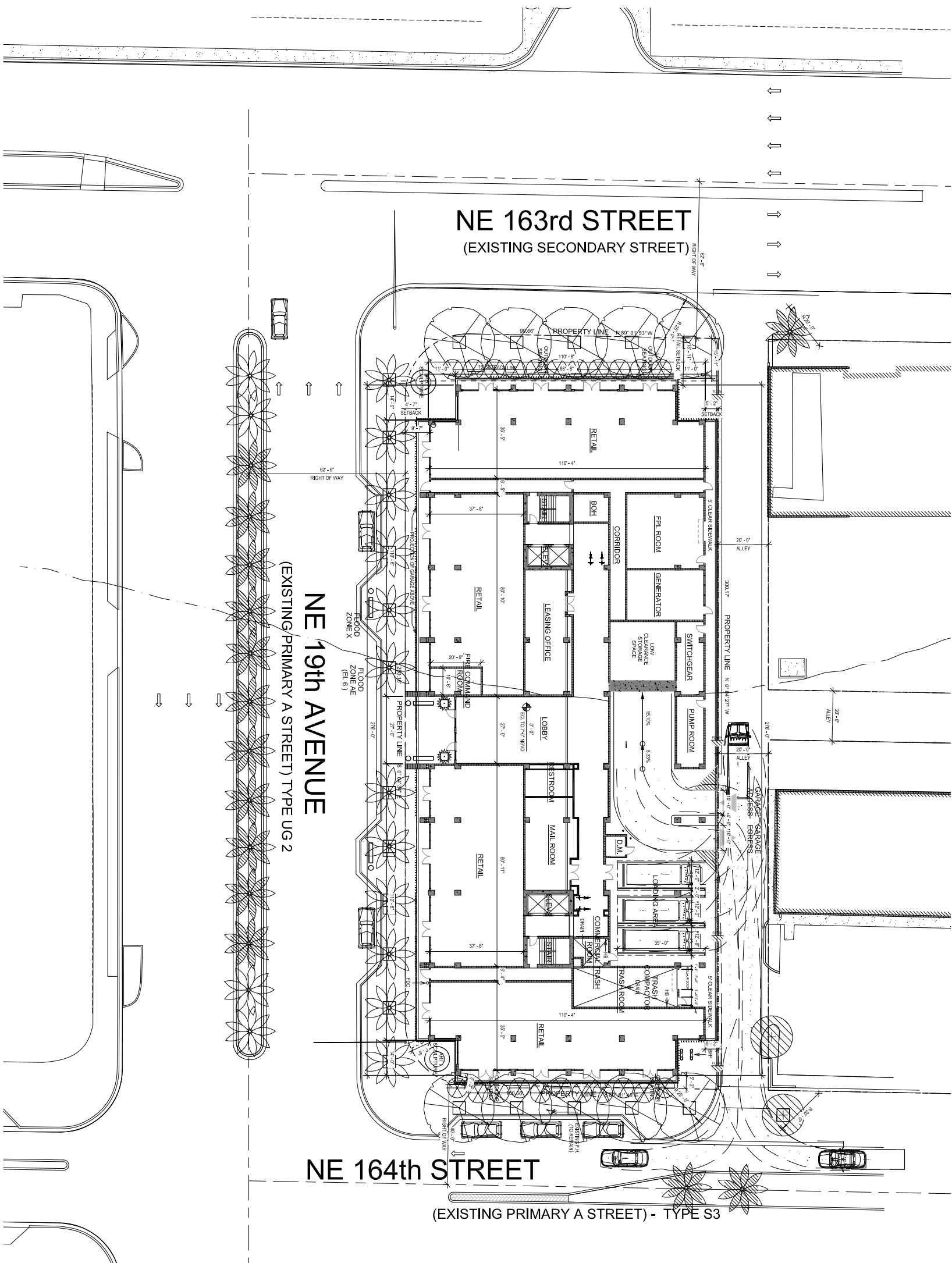
[illegible]

2025

GROUND FLOOR PLAN

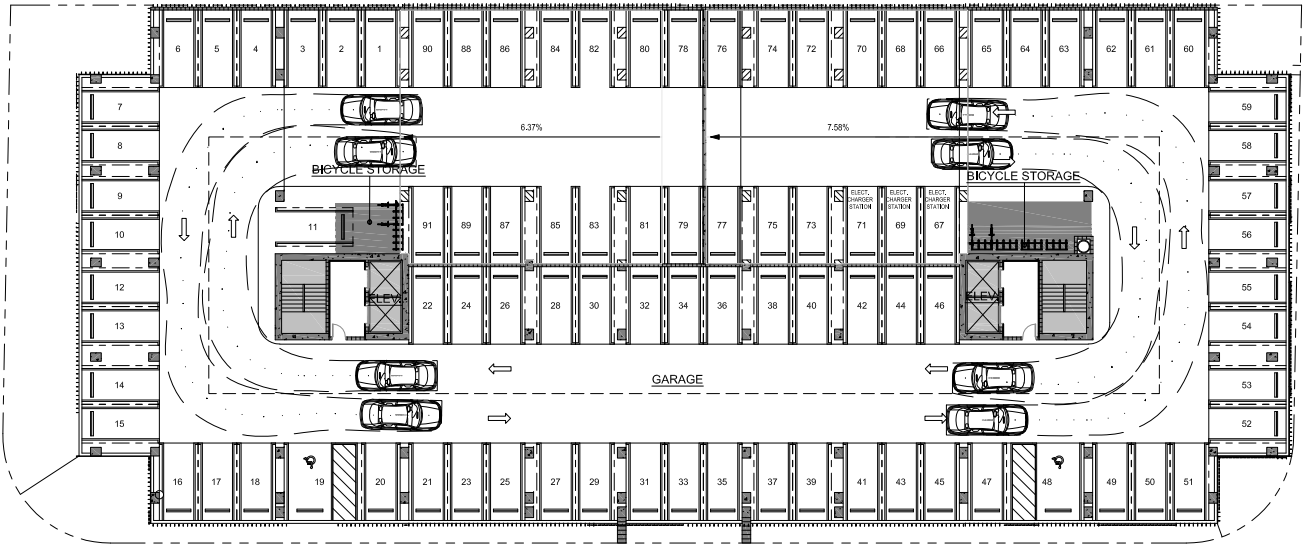
SHEET NO.

A-1.00



1st Level

$$\frac{1}{A-1.00}$$

TYP. PARKING LEVELS (3rd-4th)

$$1/16'' = 1'-0''$$


PARKING SCHEDULE

Level	Count
2nd Level	91
3rd Level	91
4th Level	91
5th Level	132

Grand total: 405

SKYGARDEN MIAMI
9TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

16300 NE 19TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

PJM Construction LLC

[illegible]

SUBJECT NO.

2025

1/08/21

LET INDEX

PHYSICAL PARKING LEVEL

 $16'' = 1'-0''$

SHEET NO.

A-1.02

Appendix J

Queuing Analysis

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

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

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

where:

M = queue length which is exceeded p percent of the time

N = number of service channels (drive-in positions)

Q = service rate per channel (vehicles per hour)

$p = \frac{\text{demand rate}}{\text{service rate}} = \frac{q}{NQ}$ = utilization factor

q = demand rate on the system (vehicles per hour)

Q_M = tabled values of the relationship between queue length, number of channels, and utilization factor (see Table 8.11)

TABLE 8-11
Table of Q_M Values

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

$$p = \frac{q}{NQ} = \frac{\text{arrival rate, total}}{(\text{number of channels})(\text{service rate per channel})}$$

N = number of channels (service positions)

Solution

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

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

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

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

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

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

$$= 24.38 - 1 = 23.38, \text{ say } 23 \text{ vehicles.}$$

Grand Beach Hotel

Date: July 20,2011
Observer: J. Espinosa (DPA)

Vehicle	In	Out	Type	Arrival Time	Processing Time	Notes
1		X	Car	8:34 AM	0:00:37	Valet Return
2		X	Car	8:35 AM	0:01:06	Valet Return
3		X	Car	8:36 AM	0:00:25	Valet Return
4		X	Car	8:36 AM	0:00:38	Pick Up (Personal)
5	X		Car	8:41 AM	0:00:18	Guest In
6		X	Car	8:45 AM	0:00:30	Valet Return
7	X		Car	8:52 AM	0:01:17	Check In
8		X	Car	9:02 AM	0:01:46	Check Out
9	X		Car	9:04 AM	0:01:01	Check In
10	X		Car	9:05 AM	0:00:51	Check In
11		X	Van	9:06 AM	0:00:32	Tour
12		X	Taxi	9:09 AM	0:00:26	Guest Out
13	X		Car	9:09 AM	0:02:34	Check In
14		X	Car	9:10 AM	0:00:26	Valet Return
15		X	Car	9:11 AM	0:00:37	Valet Return
16	X		Car	9:14 AM	0:00:28	Guest In
17		X	Car	9:14 AM	0:00:22	Valet Return
18	X		Car	9:18 AM	0:01:02	Check In
19		X	Car	9:18 AM	0:00:36	Valet Return
20		X	Taxi	9:21 AM	0:00:22	Guest Out
21		X	Car	9:21 AM	0:01:26	Check Out
22		X	Car	9:22 AM	0:00:44	Valet Return
23	X		Car	9:25 AM	0:01:21	Check In
24		X	Car	9:25 AM	0:01:06	Valet Return
25		X	Car	9:26 AM	0:00:23	Valet Return
26		X	Car	9:28 AM	0:00:25	Valet Return
27		X	Car	9:29 AM	0:00:22	Valet Return
28		X	Car	9:29 AM	0:00:21	Valet Return
29		X	Car	9:34 AM	0:00:46	Valet Return
30	X		Car	9:38 AM	0:01:04	Check In
31		X	Car	9:38 AM	0:00:36	Valet Return
32		X	Car	9:39 AM	0:00:21	Valet Return
33		X	Car	9:41 AM	0:00:34	Guest Out
34		X	Car	9:43 AM	0:00:14	Valet Return
35		X	Car	9:45 AM	0:02:04	Check Out
36	X		Car	9:45 AM	0:01:20	Check In
37		X	Taxi	9:48 AM	0:00:48	Check Out
38		X	Car	9:49 AM	0:00:26	Guest Out
39		X	Car	9:49 AM	0:00:48	Valet Return
40	X		Car	9:51 AM	0:00:37	Check In
41		X	Car	9:51 AM	0:00:30	Valet Return
42		X	Car	9:57 AM	0:00:28	Valet Return
43		X	Car	9:58 AM	0:01:22	Check Out
44		X	Car	10:02 AM	0:00:32	Valet Return
45		X	Car	10:03 AM	0:00:35	Valet Return
46		X	Van	10:04 AM	0:00:46	Valet Return
47	X		Car	10:06 AM	0:00:39	Check In
48		X	Car	10:08 AM	0:01:58	Check Out
49		X	Taxi	10:08 AM	0:01:48	Check Out
50		X	Car	10:09 AM	0:00:41	Valet Return
51		X	Car	10:10 AM	0:00:44	Valet Return
52		X	Car	10:12 AM	0:00:26	Valet Return
53	X		Taxi	10:13 AM	0:00:42	Check In
54		X	Taxi	10:14 AM	0:02:21	Check Out
55			Taxi	10:16 AM	0:01:48	Check Out
56		X	Car	10:18 AM	0:00:37	Valet Return
57		X	Car	10:18 AM	0:00:56	Valet Return
58	X		Car	10:20 AM	0:00:40	Guest In
59		X	Car	10:24 AM	0:00:57	Valet Return

Total Processing Time: 0:50:10
Average Processing Time: 0:00:51

THESE DESIGNS AND DRAWINGS ARE THE PROPERTY OF PENNLY ARCHITECTURAL, NINTH FLOOR AND PLANNING, INC. AND MAY NOT BE REPRODUCED EXCEPT WITH SPECIFIC WRITTEN CONSENT OF THE ARCHITECT. THE CONTRACTOR MUST CHECK AND VERIFY ALL DIMENSIONS OF THE JOB AND BE RESPONSIBLE FOR MAKING ANY NECESSARY ADJUSTMENTS TO THE DRAWINGS BEFORE COMMENCING WORK. DRAWINGS ARE NOT TO BE SCALED.

16300 NE 19TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

PIM Construction LLC

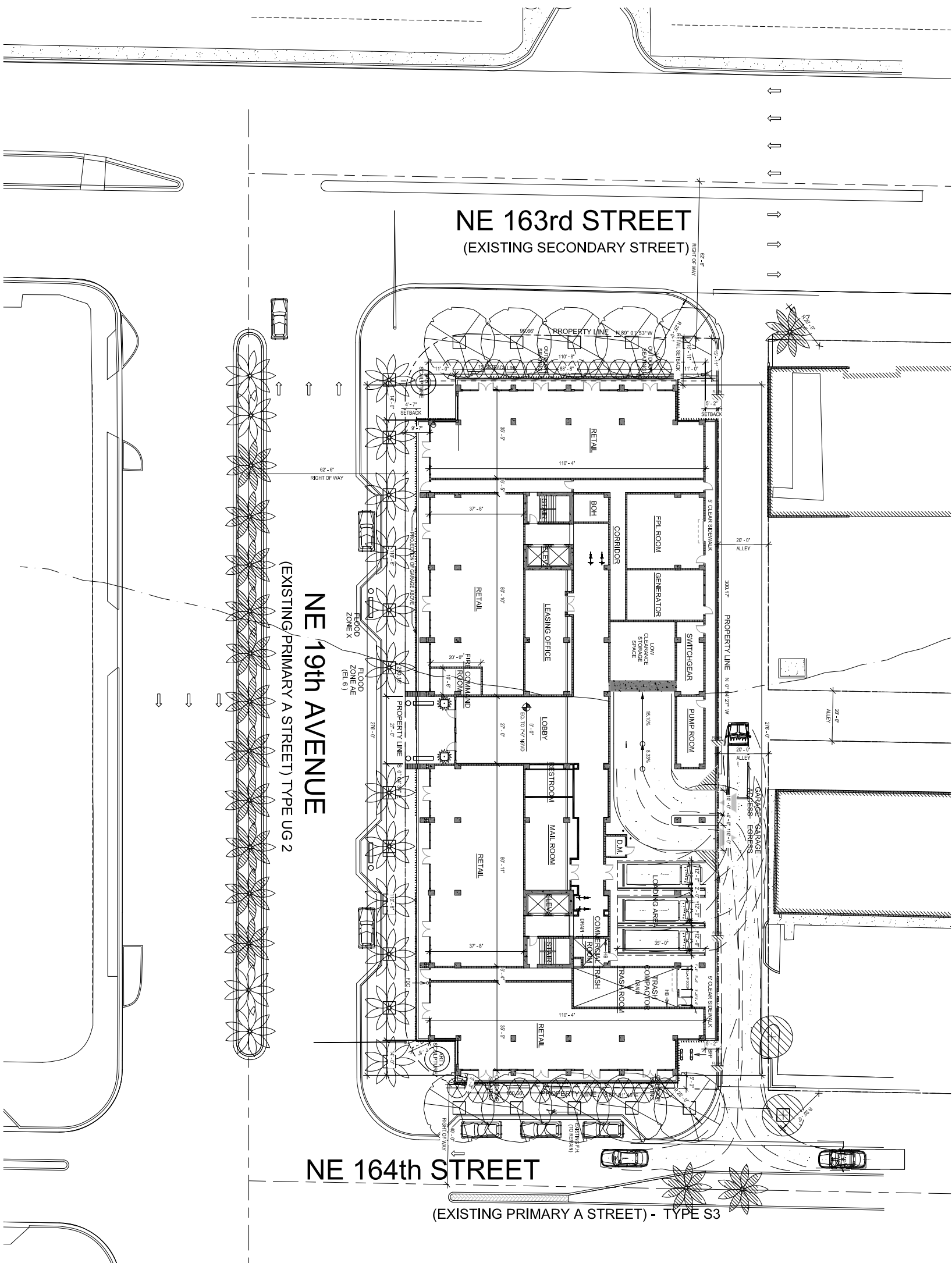
[illegible]

2025

GROUND FLOOR PLAN

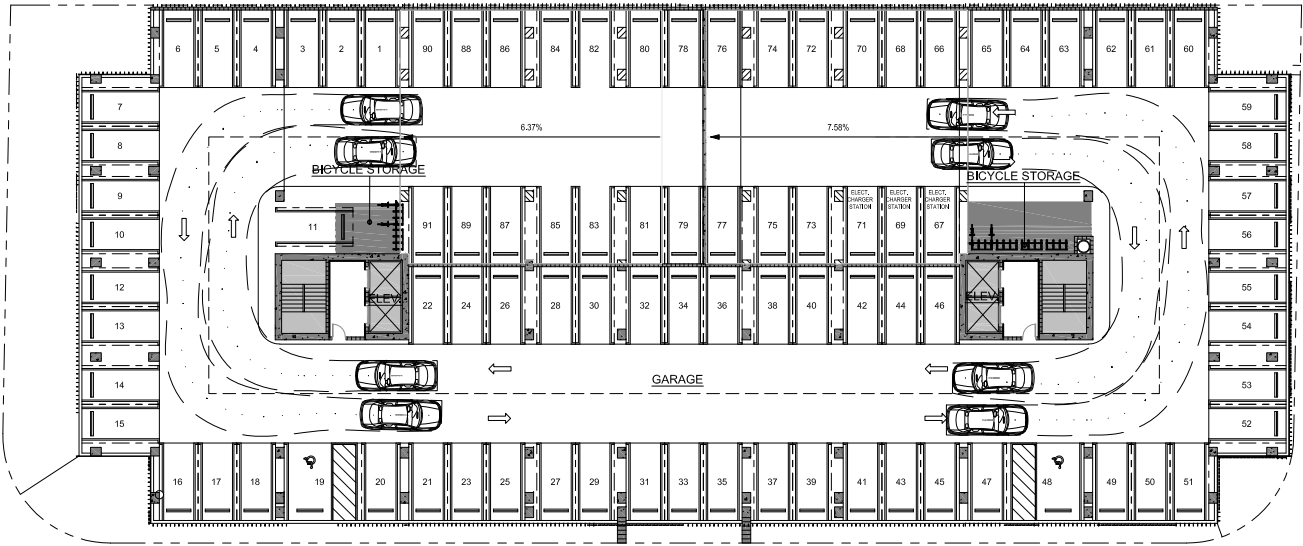
SHEET NO.

A-1.00



1st Level

$$\frac{1}{A-1.00}$$

1
A-1.02

TYP. PARKING LEVELS (3rd-4th)

$$1/16'' = 1'-0''$$


PARKING SCHEDULE

Level	Count
2nd Level	91
3rd Level	91
4th Level	91
5th Level	132

Grand total: 405

SKYGARDEN MIAMI
9TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

16300 NE 19TH AVENUE, NORTH MIAMI BEACH, FLORIDA 33162

PJM Construction LLC

[illegible]

SUBJECT NO.

2025

1/08/21

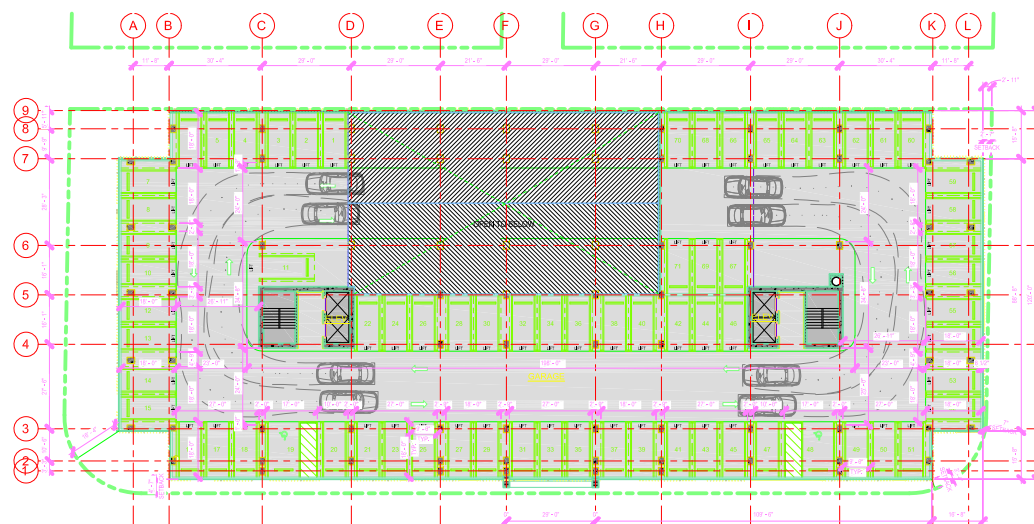
LET INDEX

PHYSICAL PARKING LEVEL

 $16'' = 1'-0''$

SHEET NO.

A-1.02



5th LEVEL -PARKING LEVEL



PARKING SCHEDULE	
Level	Count
2nd Level	91
3rd Level	91
4th Level	91
5th Level	132

[illegible]

PROJECT 12 2025

DATE: 01/08/21

SHEET 00302
5th FLOOR - PARKING
LEVEL

$$1/16^m = 1/16$$

SHEET NO. 2

A-1.03