PROJECT TRAFFIC FORECASTING MEMORANDUM

SR 826/Palmetto Expressway Express Lanes
Project Development and Environment (PD&E) Study

FDOT Financial Project Identification Number: 432639-1-22-02
Efficient Transportation and Decision Making (ETDM) Number: 14308

Project Study Limits:
From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
Miami-Dade County, Florida

Prepared for:

FDOT District Six
1000 NW 111th Avenue
Miami, Florida 33172

Prepared by:
The Corradino Group
4055 NW 97th Avenue
Miami, FL 33178

MAY 2019

FINAL

TABLE OF CONTENTS

1.0 Introduction 1
2.0 Selected Travel Demand Model 3
3.0 Project Traffic Forecast Development Methodology 3
3.1 Diurnal Factors 5
4.0 Validation Procedures 8
4.1 Model Trip Length Distribution 19
5.0 Alternatives Network Development 20
6.0 2040 Model Run Review and Results Discussion 21
6.1 Systemwide Results 22
6.2 Link-Level Model Results 23
7.0 Traffic Factors 25
8.0 Post Processing Approach and AADT/DDHV Development 26
9.0 Reasonableness Checks 87
9.1 Historic Trend Line Forecasts 87
9.2 Compound Growth Factors 87
9.3 Comparison between Traffic Factors and Diurnal Factors 88
9.4 Comparison between No-build and Build forecasts 89

LIST OF FIGURES

Figure 1.1 – Project Location Map 2
Figure 3.1 – Travel Demand Forecasting Methodology Flowchart 4
Figure 3.2 – SR 826 Mainline Peak-Hour Diurnal Factors of 2016 6
Figure 3.3 – SR 826 Mainline Peak-Hour Diurnal Factors of 2017 7
Figure 4.1 – Model Subarea Boundary 10
Figure 4.2 – Model Tight Subarea Boundary 12
Figure 4.3 – Tight Subarea Trip Length Frequency Distribution (TLFD) 19
Figure 8.1 - 2045 No-Build AADT Volumes 28
Figure 8.2 - 2045 No-Build DDHV Volumes 33

Figure 8.3 - 2045 No-Build Intersection Turning Movement Volumes 38
Figure 8.4 - 2045 Build 1 AADT Volumes 43
Figure 8.5 - 2045 Build 1 DDHV Volumes 48
Figure 8.6 - 2045 Build 1 Intersection Turning Movement Volumes 53
Figure 8.7 - 2045 Build 2 AADT Volumes 58
Figure 8.8 - 2045 Build 2 DDHV Volumes 63
Figure 8.9 - 2045 Build 2 Intersection Turning Movement Volumes 68
Figure 8.10 - 2045 Build 3 AADT Volumes 73
Figure 8.11 - 2045 Build 3 DDHV Volumes 78
Figure 8.12 - 2045 Build 3 Intersection Turning Movement Volumes 83

LIST OF TABLES

Table 3.1 – Peak-Hour Diurnal Factors for SR 826 Mainline 6
Table 3.2 – Peak Hour Diurnal Factors for SR 836 and SR 874 Mainlines 7
Table 3.3 – Comparison of Diurnal Factors 7
Table 4.1 – Regional Model RMSE and Volume/Count by Volume Group 8
Table 4.2 – AM Model Subarea Assignment - RMSE by Volume Group 14
Table 4.3 – PM Model Subarea Assignment - RMSE by Volume Group 14
Table 4.4 – Daily Model Subarea Assignment - RMSE and Volume/Count by Volume Group 15
Table 4.5 – Link-Level Volume-to-Count Ratio from the Subarea Analyst Assignment for the Mainline 16
Table 4.6 – Link-Level Volume-to-Count Ratio from the Tight Subarea Analyst Assignment for the Mainline 16
Table 4.7 – Link-Level Volume-to-Count Ratio from the Subarea Analyst Assignment for the Arterials 17
Table 4.8 – Link-Level Volume-to-Count Ratio from the Tight Subarea Analyst Assignment for the Arterials 18
Table 4.9 – SR 826 Corridor: Average Trip Length Frequency Distribution (TLFD) 19
Table 6.1 – Comparison of 2017 and 2040 Systems Performance 22
Table 6.2 – Comparison of 2017, 2040 No-Build and 2040 Build Tight Subarea VMT by Facility Type 23

Table 6.3 – Comparison of 2017, 2040 No-Build and 2040 Build Tight Subarea VHT by Facility Type 23
Table 6.4 – Model Growth Rate between 2017 and 2040 No-Build Volumes 24
Table 6.5 – Tight Subarea VMT Based Growth Rate 24
Table 7.1 – FDOT Standard K Factors 25
Table 7.2 – FDOT Recommended D_{30} Factor Ranges 25
Table 9.1 – Comparison between 2017, 2045 No-Build, 2045 Build Volumes and 2045 Historic Trendline 87
Table 9.2 – Comparison of 2017, 2045 No-Build and Build Volumes to 2045 Compound Growth Rate Method 88
Table 9.3 – Comparison between Traffic Factors and Diurnal Factors 89
Table 9.4 - Mainline Growth between 2017 and 2045 No-Build Volumes 89
Table 9.5 – Mainline 2045 Volumes comparison between No-Build and Build 90
Table 9.6 – Mainline 2045 Volumes comparison between No-Build and Build 91
Table 9.7 – Express Lanes 2045 Volumes comparison between Build Alternatives 92
Table 9.8 – Arterial Growth between 2017 Counts and 2045 No-Build Volumes 94
Table 9.9 – Arterial 2045 Volumes comparison between No-Build and Build Scenarios ..95

LIST OF APPENDICES

Appendix A - Methodology Letter of Understanding (MLOU)
Appendix B - Development of Diurnal Factors
Appendix C - SERPM Network Corrections and/or Updates
Appendix D - 2040 LRTP Amended Projects
Appendix E - Alternatives Line-Diagram
Appendix F - Historic Trend Line Forecasts

1.0 INTRODUCTION

The Florida Department of Transportation (FDOT) District Six has recently started a Project Development and Environmental (PD&E) Study for SR 826 (Palmetto Expressway) from US 1/SR 5 to SR 836 (Dolphin Expressway), a distance of approximately seven miles (see ***Figure 1.1***). The PD&E Study is proposing corridor improvements that will add highway and interchange capacity with the implementation of an express lanes system and interchange improvements. The project is located in Miami-Dade County, Florida and is contained within unincorporated Miami-Dade.

The PD&E Study will evaluate the following potential types of improvements:

- Implementation of dynamically priced express lanes.
- Access and ramp connections to and from the express lanes (ingress and egress access points).
- Interchange improvements – Modification of existing entrance and exit ramps serving the interchanges within the project limits.
- Intersection improvements – Widening and turn lane modifications along the cross streets to facilitate the ramp modifications and improve the access and operation of the corridors upstream and downstream from the interchanges.

SR 826, between US 1 and SR 874, consists primarily of six travel lanes (three lanes in each direction). Between SR 874 and SR 836, the corridor consists primarily of ten travel lanes (five lanes in each direction) and two undesignated High Occupancy Vehicle (HOV) lanes (one in each direction). This segment of SR 826 is functionally classified as an Urban Other Freeway/Expressway and has a posted speed limit of 55 miles per hour. The access management classification for this corridor is Class 1.2, Freeway in an existing urbanized area with limited access.

There are ten existing interchanges within the project limits. Eight of the ten interchanges provide connection to arterial/collector facilities. Two major system-to-system interchanges within the project limits are SR 826 with SR 874 and SR 826 with SR 836. These system-to-system interchanges provide a connection between major expressways, which services and distributes traffic originating from or destined to the north, south, east, and west portions of Miami-Dade County.

Figure 1.1 – Project Location Map

The purpose of this report is to present the travel demand modeling and forecasting results for the PD&E process. The objective of this report is to clearly describe the model calibration methods specific to the study, model forecasting procedures and modeling results. This report documents the subarea model validation process, the process of developing the study area Annual Average Daily Traffic (AADT) and Directional Design Hourly Volumes (DDHV). The travel demand model used for this study was the Southeast Florida Regional Planning Model Version (SERPM) 7.071. Traffic projections were developed to establish the basic design requirements for the No-Build and proposed roadway typical sections.

2.0 Selected Travel Demand Model

SERPM Version 7.071 was used to develop the travel demand forecasting for this study. The SERPM model is based on the CT-RAMP (Coordinated Travel Regional Activity Based Modeling Platform). The SERPM 7.071 model is an activity-based time of day model that is capable of forecasting traffic into future years for various highway and transit scenarios. The SERPM model was used to develop the recent 2040 Long Range Transportation Plan (LRTP) for the Transportation Planning Organization (TPO). The SERPM 7.071 is the official model for the FDOT District Six region with a 2010 base year and 2040 horizon year. The 2040 horizon year scenario in this model has the TPO approved 2040 Cost Feasible LRTP network, population and employment forecasts. The five periods that are modeled in SERPM are as follows:

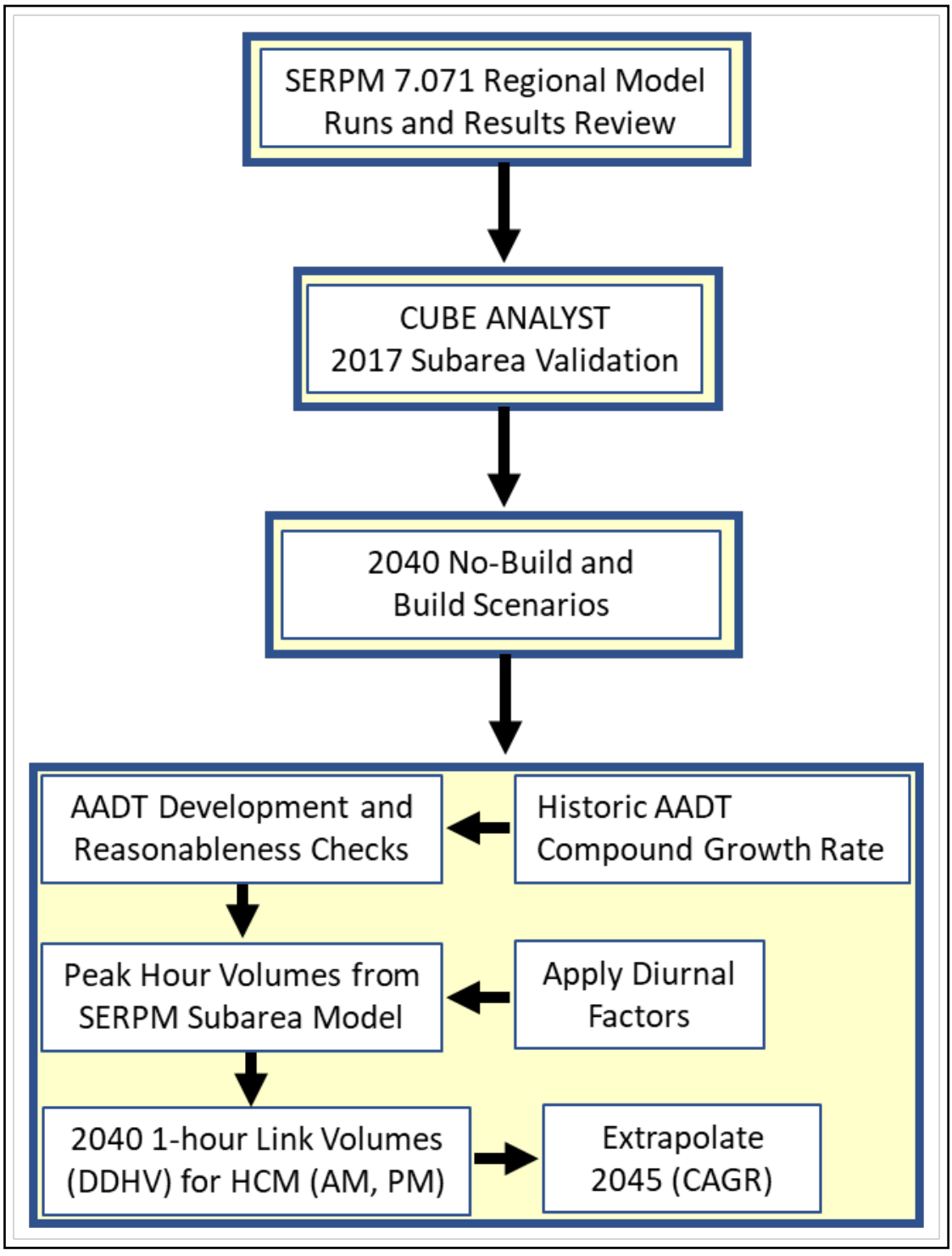
1. Early AM Period (10:00 PM – 5:59 AM)
2. AM-Peak Period (6:00 AM – 8:59 AM)
3. Midday Period (9:00 AM – 2:59 PM)
4. PM-Peak Period (3:00 PM – 6:59 PM)
5. Evening Period (7:00 PM – 9:59 PM)

The results of the time of day assignments were combined to forecast the daily traffic. The SERPM model was validated to the year 2010 AADT. Therefore, no adjustment factors were necessary to forecast the AADT volumes.

3.0 Project Traffic Forecast Development Methodology

A detailed travel demand forecasting methodology was developed and approved, as documented in the *Florida Department of Transportation Interchange Access Request Methodology Letter of Understanding (MLOU)* dated July 2018, a

companion document to this study (see ***Appendix A***). ***Figure 3.1*** depicts the Travel Demand Forecasting Methodology Flowchart.



Note: CAGR – Compound Annual Growth Rate

Figure 3.1 – Travel Demand Forecasting Methodology Flowchart

3.1 Diurnal Factors

The SERPM model is a time-of-day model that reports five time periods. It includes 3-hour AM peak volumes, 4-hour PM peak volumes, 6-hour Midday (off-peak) volumes, 3-hour Evening (off-peak) volumes and 8-hour Early AM (off-peak) volumes.

Diurnal factors convert the 3-hour AM period volumes to 1-hour AM peak-hour volumes and the 4-hour PM period volumes to the 1-hour PM peak-hour volumes. The DDHV volumes were developed based on diurnal factors that convert the peak period volume to peak-hour. The advantage of this method is that it uses the model's time-of-day feature efficiently, and forecasts more realistic design traffic. Selection of AM and PM peak periods was aimed to be consistent with the regional model's peak periods.

The diurnal factors are the peak period to peak-hour conversion factors and are determined based on the traffic data collected. The diurnal factors were compared against the values used in the previous planning study. The corridor traffic count profile by hour was examined within the peak periods as well as the diurnal factors for the various SR 826 mainline stations by direction. An average of the factors was considered in the development of the design traffic. Typically, the variation in diurnal factors in an urban area is not significant from one station to the other. However, the factors for SR 826, SR 874 and SR 836 were separately examined. Hourly traffic counts were obtained from FDOT. The directional hourly traffic counts were presented in 15-minute increments. The peak-hour is chosen from the respective analysis period. An individual peak-hour is chosen for each location, direction, and analysis period (i.e. SR 826 north of Kendall Drive, Northbound, AM period).

Table 3.1 shows the peak-hour diurnal factors for SR 826 within the study area. In addition, ***Figures 3.2*** and ***3.3*** depict the SR 826 mainline peak-hour diurnal factors for years 2016 and 2017, respectively. ***Table 3.2*** shows the peak-hour diurnal factors for SR 836, and SR 874 within the study area; and ***Table 3.3*** shows the comparison of diurnal factors. As the differences in SR 826, SR 874 and SR 836 diurnal factors are not significantly different from each other, the factors developed for SR 826 were used for this project.

Table 3.1 – Peak-Hour Diurnal Factors for SR 826 Mainline

COSITE	Location	2017		2016	
		AM Factor	PM Factor	AM Factor	PM Factor
870014	US 1, S of Killian Dr	0.3737	0.2694	0.3556	0.2701
870110	US 1, S of Palmetto Expy	0.3792	0.2716	0.3804	0.2637
870562	SR 826, N of US 1	0.4138	0.2849	-no data-	-no data-
870563	SR 826, N of SW 88th St	0.4105	0.2737	0.3992	0.2674
870564	SR 826, N of SW 72nd St	0.3731	0.275	0.3705	0.2697
870565	SR 826, N of SW 56th St	0.3667	0.2747	0.3935	0.2641
870566	SR 826, N of SW 40th St	0.3856	0.2621	0.4155	0.2706
870567	SR 826, N of SW 24th St	0.3869	0.262	0.3893	0.266
870568	SR 826, N of SW 8th St	0.3907	0.2645	0.3902	0.2642
870569	SR 826, N of W Flagler St	0.4029	0.2626	0.3665	0.2916
870570	SR 826, N of SR 836	0.3962	0.2843	0.3544	0.2749
872525	SR 826, N of NW 25th St	0.3772	0.2985	0.3365	0.2916
Corridor Average		**0.388**	**0.2736**	**0.3774**	**0.2722**

Note: COSITE – FTI Count Station /Site Number

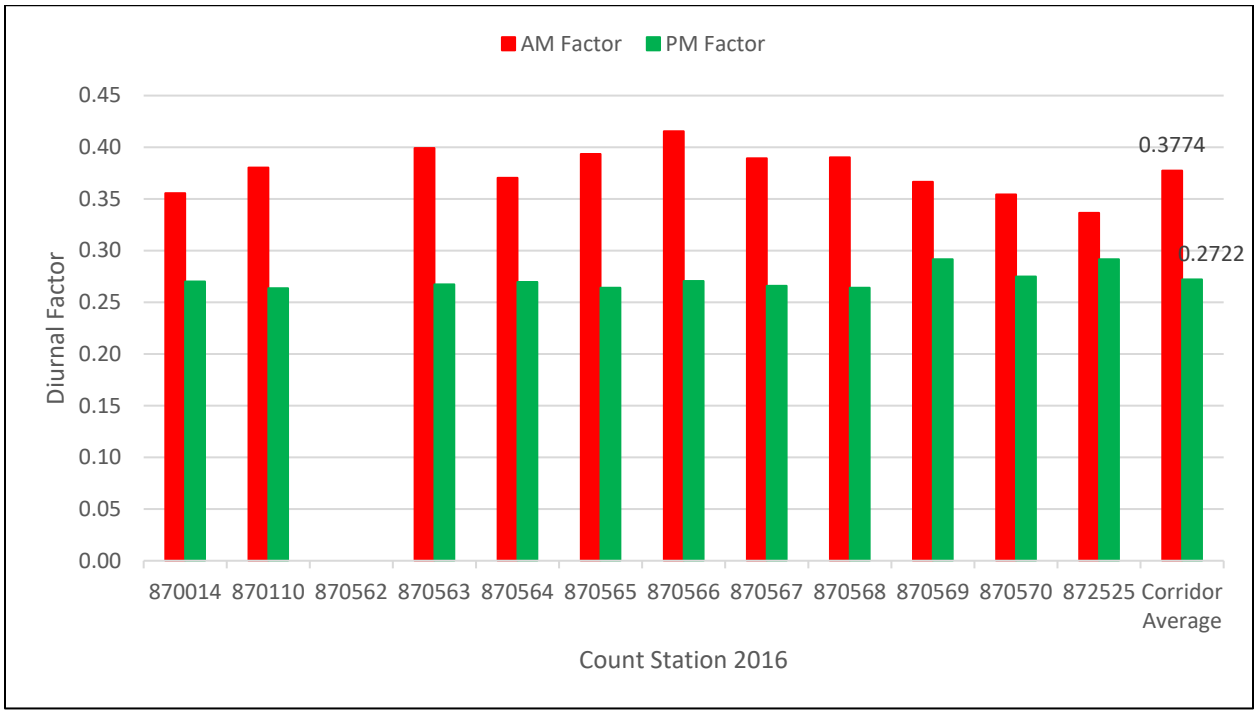


Figure 3.2 – SR 826 Mainline Peak-Hour Diurnal Factors of 2016

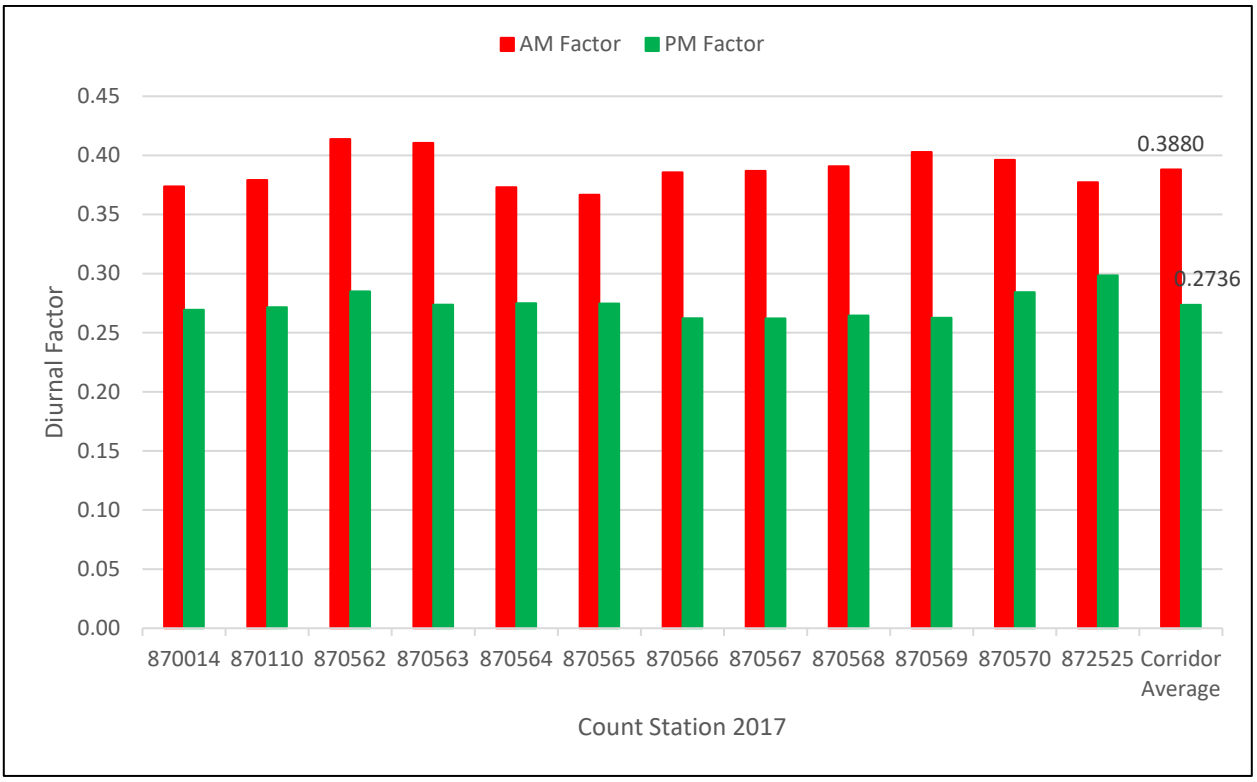


Figure 3.3 – SR 826 Mainline Peak-Hour Diurnal Factors of 2017

Table 3.2 – Peak Hour Diurnal Factors for SR 836 and SR 874 Mainlines

COSITE	Location	AM Factor	PM Factor
872193	SR 836, W of NW 87 Ave	0.3832	0.2741
872188	SR 836, E of SR 826	0.3959	0.2693
872244	SR 836, E of NW 87 Ave	0.4182	0.3046
SR 836 Average		**0.3991**	**0.2827**
872278	SR 874, W of SR 826	**0.3594**	**0.2737**

Table 3.3 – Comparison of Diurnal Factors

	2017 FDOT	2016 FTI	2015 CPS
AM Factor	0.388	0.377	0.36
PM Factor	0.274	0.272	0.27

Note: CPS – Corridor Planning Study

For this study 0.388 and 0.274 were used as the AM and PM diurnal factors, respectively (see ***Appendix B***).

4.0 VALIDATION PROCEDURES

The regional Root Mean Square Error (RMSE) statistics of the regional model by volume group are presented in ***Table 4.1***. The model RMSE statistics were compared with the maximum allowable RMSE standards that the regional model development team developed. The comparison indicated that the regional model's performance in some volume groups was not within the maximum allowable ranges. Therefore, further subarea validation was required.

Table 4.1 – Regional Model RMSE and Volume/Count by Volume Group

Volume Group	Count Range	Model RMSE (%)	Allowable RMSE Range	Volume	Count	Volume /Count	No. of Links
1	1- 5,000	95.0%	45 - 55%	6,184,541	4,902,605	1.26	1,582
2	5,000-10,000	56.9%	35 - 45%	14,255,757	12,927,265	1.10	1,746
3	10,000-20,000	34.2%	27 - 35%	31,776,015	30,917,103	1.03	2,093
4	20,000-30,000	24.6%	24 - 27%	20,812,762	21,537,035	0.97	898
5	30,000-40,000	23.6%	22 - 24%	6,255,296	6,099,327	1.03	180
6	40,000-50,000	21.6%	20 - 22%	2,665,512	2,769,095	0.96	61
7	50,000-60,000	12.1%	18 - 20%	1,219,601	1,212,303	1.01	22
8	60,000-70,000	18.2%	17 - 18%	2,404,895	2,368,020	1.02	36
9	70,000-80,000	19.3%	16 - 17%	4,112,869	4,093,369	1.00	54
10	80,000-90,000	23.5%	15 - 16%	4,257,333	4,194,300	1.02	50
11	90,000-100,000	20.6%	14 - 15%	2,155,281	2,275,971	0.95	24
12	100,000-500,000	9.3%	LT 14 %	4,127,459	4,121,058	1.00	38
ALL	**1-500,000**	**37.4%**	**32 - 39%**	**100,227,321**	**97,417,451**	**1.03**	**6,784**

Since the regional model was originally validated for 2010 conditions, and because of issues in traditional trip distribution models, it's recommended as a best practice to verify the origin-destination tables of the existing conditions when performing area-wide studies.

Validation is the process by which the travel demand model is refined until it closely replicates observed travel patterns (both speeds and counts/ridership). A 2-mile

radius subarea was defined as part of this task. The subarea development process ensured major competing roadways were included in the analysis. To this effect, the subarea was extended up to the Homestead Extension of Florida's Turnpike (HEFT) to the west and Red Road/SW 57th Avenue to the east. The northern limits of the SR 826 subarea were extended up to the I-75/SR 826/SR 924 Interchange. North of NW 36th Street, only SR 826, SR 924 and I-75 mainline network segments were included in the subarea to balance the subarea size. The SR 826, SR 924 and I-75 mainline segments were included in the subarea to ensure the major movements of freeway and express lane volumes coming from the north were captured.

A 2017 SERPM model scenario was developed using 2017 networks and socioeconomic data. The 2017 socioeconomic data was developed by interpolating between the 2010 and 2040 socioeconomic data sets. The 2017 networks were developed by desktop review of the 2010 network and updating it to 2017 conditions. In addition, prior to this PD&E Study, FDOT conducted a planning study along this section of the corridor, in which a 2015 base scenario was modeled. The network changes adopted in the 2015 planning study networks were also transferred to the 2017 SERPM network development. As part of the planning study, a subarea extraction process and CUBE Analyst origin-destination estimation process were also implemented. However, this setup was based on the earlier version of the SERPM 7 model. Therefore, the subarea application was transferred to the latest version of the SERPM 7 model, as part of this study.

Figure 4.1 depicts the model subarea boundary. The 2017 model input Traffic Analysis Zone (TAZ) datasets were developed by interpolation. The network corrections to the base year are documented in ***Appendix C.***

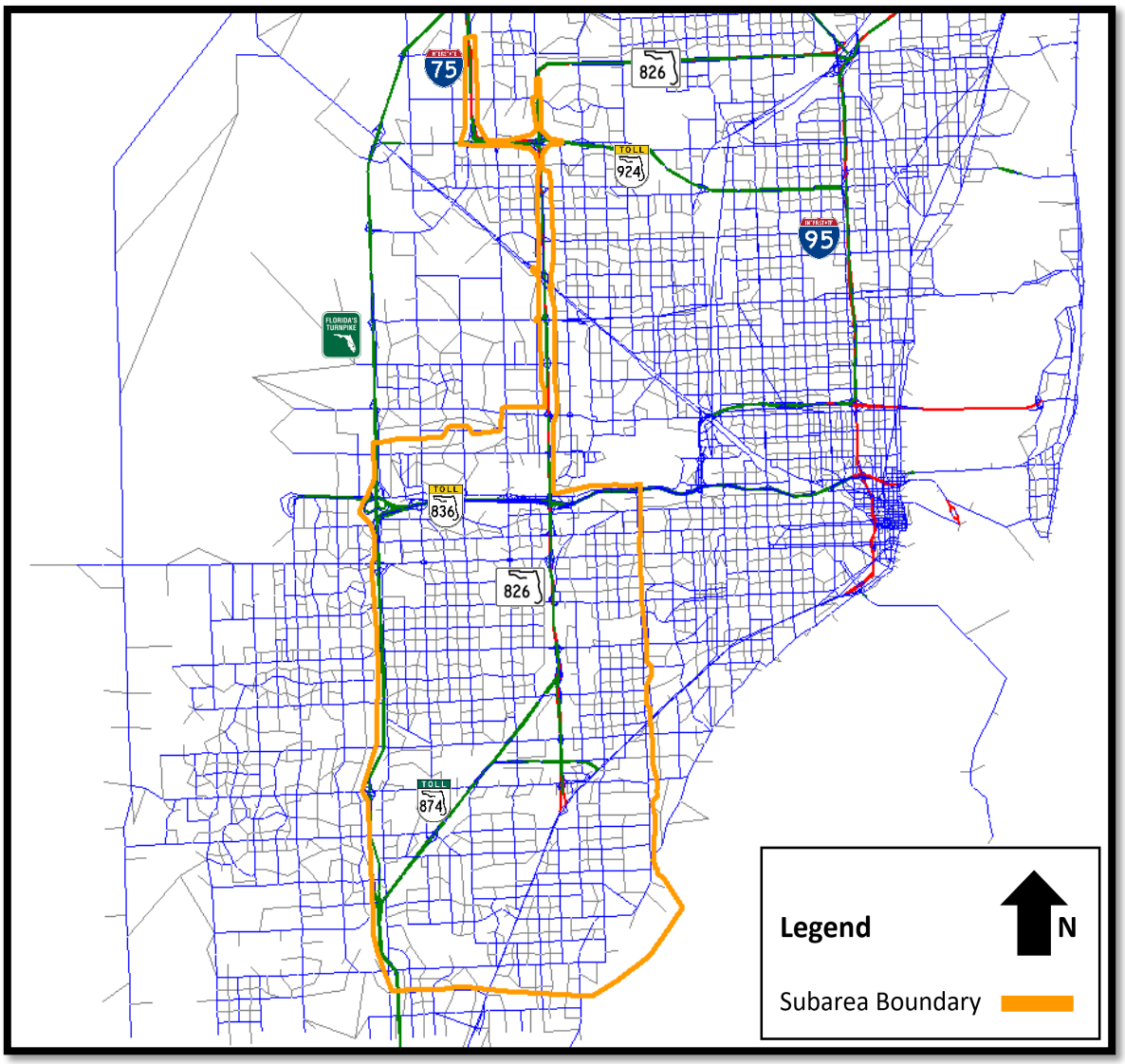


Figure 4.1 – Model Subarea Boundary

Time of day traffic counts were coded into the 2017 network for the 2-mile radius study area. Within the corridor limits, the PD&E Study's 2017 traffic count data were coded into the network. Outside the corridor, but within the 2-mile radius limits, the traffic counts from 2016 were obtained and coded into the network.

Various model network attributes, within the subarea, were reviewed and corrected. These attributes included facility types, number of lanes, area types, posted speed, tolls for tolled lanes, geometric connections, turn penalties, centroid location and connections. All the subarea network changes were propagated to the future year network. In addition, 2040 LRTP amended project were coded (see ***Appendix D***).

An iterative subarea model validation using the CUBE Analyst origin-destination estimation process was conducted as part of this task. The process used the SERPM 2017 subarea origin-destination matrix and the time of day traffic counts as inputs. The origin-destination estimation process was conducted separately for each of the 5-time periods. The resulting origin-destination matrix was assigned back to the highway networks to verify a satisfactory output of results. RMSE and Volume-to-count ratio targets were used to evaluate the model validation outputs in accordance with the Florida Standard Urban Transportation Model Structure (FSUTMS) CUBE Framework Phase 2. In addition to the subarea RMSE and Volume-to-count ratio measures, the Screenline/Cutline measures were used in evaluating the model validation. The average trip lengths and trip length frequency distributions of the origin-destination matrix were compared against the Bluetooth Survey to ensure a reasonable match.

A CUBE Analyst trip table adjustment process was implemented using the subarea network developed for the study. The trip table adjustment process used the time-of-day traffic counts and the prior trip tables from the model as inputs. The traffic assignment results from this procedure were closely validated to traffic counts. While the subarea validation provided better model validation statistics the accuracy of model validation of certain corridor links was outside acceptable margin of error. The probable causes were assumed to be:

1. Large size of the subarea.
2. The input count inconsistencies of using a combination of 2016 and 2017 counts.

CUBE Analyst did not improve validation of some of the segments within the project area. Therefore, to further improve the model validation statistics, instead of using the Big Subarea, the validation was implemented on a subarea that is tightly drawn covering the study corridor and its cross-street intersections. This is called the Tight Subarea validation hereinafter. The benefit of using the Tight Subarea is that it uses consistent, balanced traffic counts as inputs, and thereby enhancing the base year validation measures. Secondly, due to the smaller area, CUBE Analyst was able to achieve better, acceptable validation measures. ***Figure 4.2*** presents the Tight Subarea boundary.

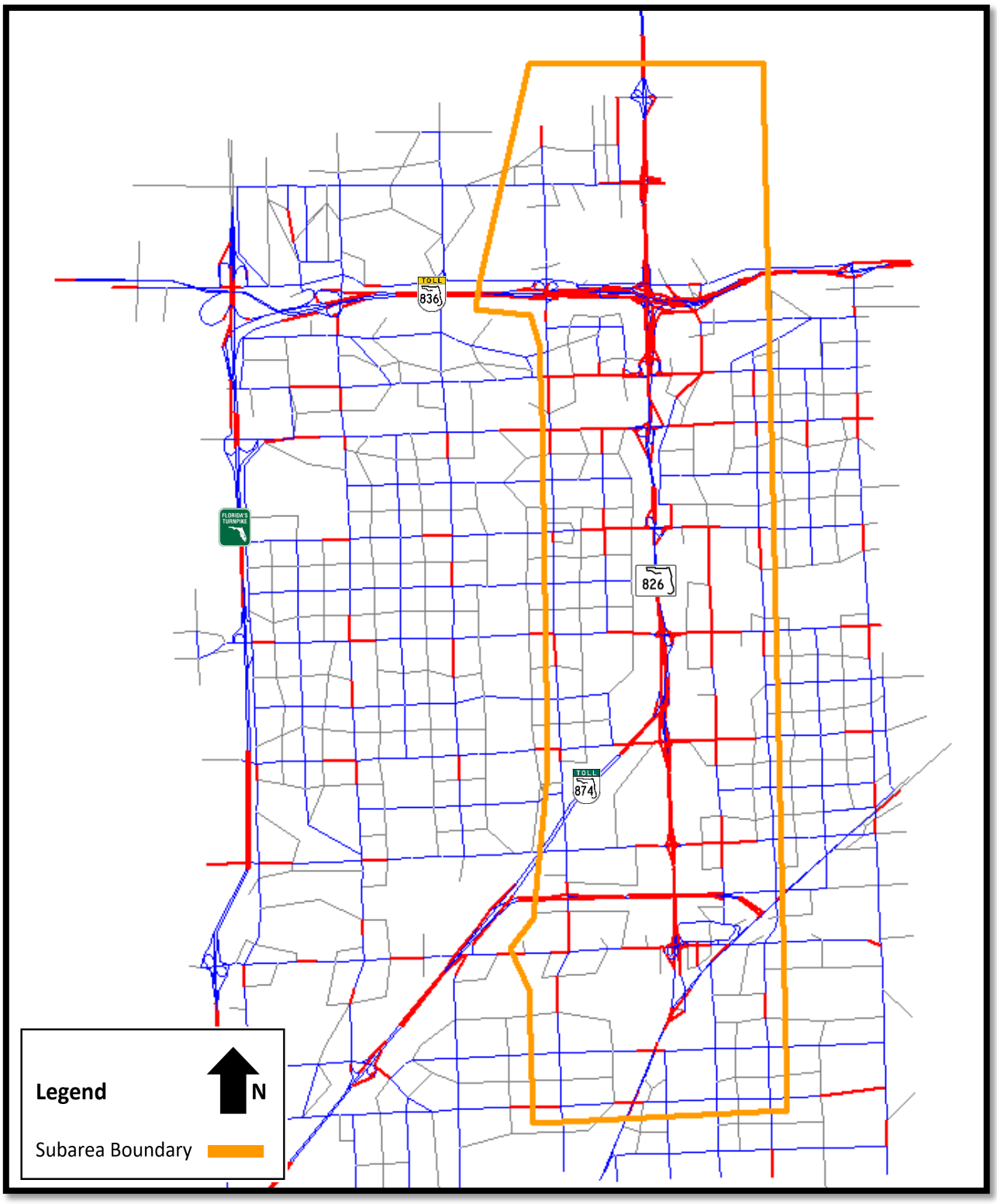


Figure 4.2 – Model Tight Subarea Boundary

The Tight Subarea Analyst process is described below:

- 2017 balanced peak hour volumes were converted to peak period using diurnal factors.
- 2017 balanced peak period volumes coded on to the 2017 model network. A tight subarea comprising of SR 826 mainline segments, ramp merge/diverge junctions and the adjacent intersections were extracted.
- The tight subarea was used as input to create the Tight Subarea Origin and Destination (O-D) matrices for AM, PM and Off-Peak periods. The Tight Subarea O-D matrices have origins and destinations at ramp merge/diverge junctions and ramp terminal locations.
- The Tight Subarea O-D matrices and the Tight Subarea networks with 2017 base traffic counts were used as inputs to the CUBE Analyst 2017 model.
- The CUBE Analyst 2017 model produced the corrected O-D matrices that closely reflected the 2017 base counts.
- The O-D matrices were verified for logicalities and assigned to tight subarea networks. AM, PM and Off-Peak assignments were performed.
- During the assignment step, model's turning movements were saved at all the intersections of interest.
- The link-specific time-of-day volumes and the model turns were compared against the 2017 base counts. Iterative adjustments of network O-D links and turn prohibitory files were performed, upon reviewing the results. This process resulted in better model validation statistics than using the big subarea network.
- The polygon file used to extract the subarea network was saved for the use in all future year scenarios.
- The future year matrix corrections were performed based on growth experienced from original base (2017) to original future (2040).
- The growth was added to the 2017 Analyst matrix to obtain future year corrected matrices.

The FDOT's *FSUTMS-CUBE Framework Phase 2 Model Calibration and Validation Standards* were used as reference to validate the model. The tight subarea assignment validation RMSE and volume-to-count ratio statistics were used to evaluate the model validation (see ***Tables 4.2 – 4.4***).

Table 4.2 – AM Model Subarea Assignment - RMSE by Volume Group

Volume Group	Count Range	Allowable RMSE Range	No. of Links	Before Subarea Validation RMSE (%)	After Subarea Validation RMSE (%)
1	1 - 5,000	45 - 55%	330	69.7%	21.7%
2	5,000 - 10,000	35 - 45%	74	45.4%	11.6%
3	10,000 - 20,000	27 - 35%	29	62.4%	8.7%
4	20,000 - 30,000	24 - 27%	13	55.7%	5.2%
13	1 - 500,000	32 - 39%	446	83.0%	14.7%

Table 4.3 – PM Model Subarea Assignment - RMSE by Volume Group

Volume Group	Count Range	Allowable RMSE Range	No. of Links	Before Subarea Validation RMSE (%)	After Subarea Validation RMSE (%)
1	1- 5,000	45 - 55%	242	73.9%	31.0%
2	5,000- 10,000	35 - 45%	142	39.0%	12.8%
3	10,000- 20,000	27 - 35%	34	46.7%	8.7%
4	20,000- 30,000	24 - 27%	24	41.6%	5.1%
5	30,000- 40,000	22 - 24%	4	52.2%	4.8%
13	1-500,000	32 - 39%	446	61.4%	14.1%

Table 4.4 – Daily Model Subarea Assignment - RMSE and Volume/Count by Volume Group

Volume Group	Count Range	Allowable RMSE Range	No. of Links	Count	Before Subarea Validation			After Subarea Validation		
					Volume	Volume / Count	RMSE (%)	Volume	Volume / Count	RMSE (%)
1	1-5,000	45 - 55%	53	172,846	230,286	1.33	75.098%	202,812	1.17	54.85%
2	5,000-10,000	35 - 45%	88	658,267	765,311	1.16	47.923%	692,094	1.05	25.88%
3	10,000-20,000	27 - 35%	104	1,558,587	1,697,750	1.09	38.587%	1,517,295	0.97	22.95%
4	20,000-30,000	24 - 27%	102	2,515,293	2,536,411	1.01	26.535%	2,388,744	0.95	16.62%
5	30,000-40,000	22 - 24%	46	1,588,407	1,559,094	0.98	21.775%	1,507,879	0.95	18.02%
6	40,000-50,000	20 - 22%	10	460,000	450,368	0.98	16.871%	435,172	0.95	15.83%
7	50,000-60,000	18 - 20%	8	436,000	509,428	1.17	19.783%	435,866	1	0.93%
8	60,000-70,000	17 - 18%	6	400,600	468,106	1.17	22.168%	389,004	0.97	6.58%
9	70,000-80,000	16 - 17%	6	449,000	432,049	0.96	24.140%	433,817	0.97	5.67%
10	80,000-90,000	15 - 16%	2	176,000	217,122	1.23	33.149%	175,813	1	0.27%
11	90,000-100,000	14 - 15%	3	278,000	342,034	1.23	32.968%	276,001	0.99	3.42%
12	100,000-500,000	LT 14 %	25	2,962,000	3,452,576	1.17	19.519%	2,995,856	1.01	3.29%
ALL	1-500,000	32 - 39%	453	11,655,000	12,660,535	1.09	32.384%	11,450,353	0.98	14.40%

Tables 4.2 – 4.4 show that the Tight Subarea model assignment RMSE percentages were less than the maximum allowable RMSE guideline used in SERPM. The Tight Subarea validation show that the link-level comparison between 2017 model volumes and 2017 traffic counts had an acceptable match within a percent range of +/- 15% (see ***Table 4.6***). ***Tables 4.5 - 4.6*** shows the link-level comparisons between the 2017 model volumes and 2017 count for SR 826 mainline.

Tables 4.7 – 4.8 shows the link-level comparisons between the 2017 model volumes and 2017 count for the arterials. The highlighted cells have higher percent differences greater than -/+ 20%. In the development of 2045 forecasts, the link level validation was verified. For example, if a 2017 link volume has underloaded compared to the count, the corresponding difference has been added to the 2045 forecast. In addition, the turning movement forecasts were verified for reasonable growth against the base year conditions. If a negative growth or unreasonable

growth was identified, a compound annual growth rate (CAGR) of 0.5% was applied to forecast the individual turning movements.

Table 4.5 – Link-Level Volume-to-Count Ratio from the Subarea Analyst Assignment for the Mainline

Location South of	2017 Count					2017 Volume					Percent Difference				
	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT
	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
NW 25th St	8,512	8,443	9,997	6,218	261,000	8,706	9,131	10,425	5,902	261,000	2.3%	8.1%	4.3%	-5.1%	0.0%
SR 836	3,559	5,579	5,170	2,881	146,000	3,859	5,566	5,805	3,055	141,000	8.4%	-0.2%	12.3%	6.0%	-3.4%
Flagler St	5,865	7,411	8,999	6,737	237,000	5,572	8,156	9,999	6,515	228,000	-5.0%	10.1%	11.1%	-3.3%	-3.8%
SW 8th St	7,604	9,589	8,420	7,179	257,000	7,748	10,438	9,630	6,991	264,000	1.9%	8.9%	14.4%	-2.6%	2.7%
SW 24th St	7,219	8,936	8,384	7,317	251,000	7,320	9,713	9,621	7,270	253,000	1.4%	8.7%	14.7%	-0.6%	0.8%
SW 40th St	5,165	6,480	7,001	6,314	200,000	4,865	6,878	8,090	6,140	191,000	-5.8%	6.1%	15.5%	-2.8%	-4.5%
SW 56th St	4,465	4,964	4,691	4,881	140,000	4,709	5,437	4,959	4,711	143,000	5.5%	9.5%	5.7%	-3.5%	2.1%
SW 72nd St	3,635	4,208	4,177	3,935	111,000	3,724	4,476	4,179	3,668	112,000	2.4%	6.4%	0.1%	-6.8%	0.9%
SW 88th St	2,136	2,679	2,882	2,097	69,000	2,098	2,882	2,997	1,959	69,000	-1.8%	7.6%	4.0%	-6.6%	0.0%

Table 4.6 – Link-Level Volume-to-Count Ratio from the Tight Subarea Analyst Assignment for the Mainline

Location South of	2017 Count					2017 Volume					Percent Difference				
	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT
	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
NW 25th St	8,512	8,443	9,997	6,218	261,000	8,203	9,435	10,236	6,275	270,000	-3.6%	11.7%	2.4%	0.9%	3.4%
SR 836	3,559	5,579	5,170	2,881	146,000	3,841	5,532	5,304	3,150	143,000	7.9%	-0.8%	2.6%	9.3%	-2.1%
Flagler St	5,865	7,411	8,999	6,737	237,000	6,059	7,822	9,682	7,129	246,000	3.3%	5.5%	7.6%	5.8%	3.8%
SW 8th St	7,604	9,589	8,420	7,179	257,000	7,898	10,117	9,189	7,440	269,000	3.9%	5.5%	9.1%	3.6%	4.7%
SW 24th St	7,219	8,936	8,384	7,317	251,000	7,478	9,484	9,202	7,573	262,000	3.6%	6.1%	9.8%	3.5%	4.4%
SW 40th St	5,165	6,480	7,001	6,314	200,000	5,360	6,908	7,786	6,499	205,000	3.8%	6.6%	11.2%	2.9%	2.5%
SW 56th St	4,465	4,964	4,691	4,881	140,000	4,697	5,272	4,943	5,059	147,000	5.2%	6.2%	5.4%	3.6%	5.0%
SW 72nd St	3,635	4,208	4,177	3,935	111,000	3,839	4,321	4,309	3,917	115,000	5.6%	2.7%	3.2%	-0.5%	3.6%
SW 88th St	2,136	2,679	2,882	2,097	69,000	2,175	2,736	2,941	2,074	68,000	1.8%	2.1%	2.0%	-1.1%	-1.4%

*Note: Acceptable threshold (-/+)15%

Table 4.7 – Link-Level Volume-to-Count Ratio from the Subarea Analyst Assignment for the Arterials

Arterial	Location		2017 Count					2017 Volume					Percent Difference				
			Eastbound		Westbound		AADT	Eastbound		Westbound		AADT	Eastbound		Westbound		AADT
	East of	West of	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
Flagler St		NW 82nd Ave	1,926	1,540	1,192	1,961	53,000	1,698	1,207	1,271	2,100	48,000	-11.84%	**-21.62%**	6.63%	7.09%	-9.43%
		NW 79th Ave	1,946	1,484	1,241	2,158	56,000	1,611	1,008	1,168	1,934	43,000	-17.21%	**-32.08%**	-5.88%	-10.38%	**-23.21%**
		SB Ramp Terminal	2,381	2,037	1,675	2,410	47,000	2,358	1,816	1,529	2,576	47,000	-0.97%	-10.85%	-8.72%	6.89%	0.00%
	NB Ramp Terminal		2,050	1,575	1,794	2,460	62,000	1,988	1,583	1,710	2,275	53,000	-3.02%	0.51%	-4.68%	-7.52%	-14.52%
	NW 74th Ave		2,206	1,816	1,445	2,234	54,000	1,892	1,462	1,158	2,229	49,000	-14.23%	-19.49%	-19.86%	-0.22%	-9.26%
	NW 72nd Ave		1,661	1,666	1,399	1,569	48,000	1,921	1,906	1,672	1,970	52,000	15.65%	14.41%	19.51%	**25.56%**	8.33%
SW 8th St		SW 82nd Ave	1,800	1,904	1,747	2,814	59,000	1,703	1,785	1,597	2,210	55,000	-5.39%	-6.25%	-8.59%	**-21.46%**	-6.78%
		SB Ramp Terminal	2,355	2,118	1,840	3,092	74,000	2,510	2,169	1,919	2,819	69,000	6.58%	2.41%	4.29%	-8.83%	-6.76%
	NB Ramp Terminal		2,303	1,623	1,955	2,529	61,000	2,534	1,973	2,432	2,321	71,000	10.03%	**21.57%**	**24.40%**	-8.22%	16.39%
	SW 74th Ave		1,887	1,357	1,538	2,296	47,000	1,892	1,535	1,660	1,754	50,000	0.26%	13.12%	7.93%	**-23.61%**	6.38%
SW 24th St		SW 82nd Ave	1,057	1,415	1,361	1,845	54,000	1,208	1,217	1,427	1,953	44,000	14.29%	-13.99%	4.85%	5.85%	-18.52%
		SW 79th Ave	1,257	1,517	1,354	2,090	57,000	1,473	1,441	1,552	2,324	53,000	17.18%	-5.01%	14.62%	11.20%	-7.02%
		SB Ramp Terminal	1,795	1,695	1,513	2,693	67,000	2,029	1,577	1,612	2,884	64,000	13.04%	-6.96%	6.54%	7.09%	-4.48%
	NB Ramp Terminal		2,263	2,077	1,538	2,251	61,000	2,462	2,140	1,627	2,442	58,000	8.79%	3.03%	5.79%	8.49%	-4.92%
	SW 75th Ave		2,008	1,769	1,229	1,692	50,000	2,056	1,788	1,277	1,768	46,000	2.39%	1.07%	3.91%	4.49%	-8.00%
	SW 74th Ave		1,826	1,757	1,270	1,702	48,000	1,896	1,691	1,296	1,682	43,000	3.83%	-3.76%	2.05%	-1.18%	-10.42%
SW 40th St		SW 79th Ave	1,727	1,397	1,313	2,352	62,000	2,005	1,515	1,135	2,586	61,000	16.10%	8.45%	-13.56%	9.95%	-1.61%
		SB Ramp Terminal	2,373	1,728	1,477	2,801	73,000	2,458	1,688	1,329	2,953	72,000	3.58%	-2.31%	-10.02%	5.43%	-1.37%
	NB Ramp Terminal		3,443	2,277	2,176	3,247	91,000	3,651	2,396	2,292	3,340	85,000	6.04%	5.23%	5.33%	2.86%	-6.59%
	SW 74th Ave		3,338	2,136	1,848	2,719	73,000	3,138	2,166	2,005	2,627	73,000	-5.99%	1.40%	8.50%	-3.38%	0.00%
	SW 72nd Ave		3,408	2,198	2,011	2,226	73,000	3,316	2,282	2,274	2,511	74,000	-2.70%	3.82%	13.08%	12.80%	1.37%
SW 56th St		SW 77th CT	1,204	1,031	975	2,380	33,000	1,483	1,073	1,047	2,071	37,000	**23.17%**	4.07%	7.38%	-12.98%	12.12%
		SB Ramp Terminal	1,433	1,045	997	2,456	36,000	1,562	1,098	1,077	2,424	39,000	9.00%	5.07%	8.02%	-1.30%	8.33%
	NB Ramp Terminal		1,629	911	814	1,972	48,000	1,557	1,038	931	2,130	39,000	-4.42%	13.94%	14.37%	8.01%	-18.75%
	SW 72nd Ave		1,203	911	860	1,442	35,000	1,266	1,003	998	1,560	37,000	5.24%	10.10%	16.05%	8.18%	5.71%
SW 72nd St		SB Ramp Terminal	1,553	1,150	1,226	1,791	42,000	1,556	1,105	1,187	1,820	41,000	0.19%	-3.91%	-3.18%	1.62%	-2.38%
	NB Ramp Terminal		1,693	1,112	1,050	1,943	37,000	1,699	1,195	1,124	1,992	39,000	0.35%	7.46%	7.05%	2.52%	5.41%
	SW 72nd Ave		1,381	841	837	1,830	43,000	1,527	981	930	1,756	35,000	10.57%	16.65%	11.11%	-4.04%	-18.60%
SW 88th St		SW 79th Ave	2,174	1,604	1,151	1,950	57,000	1,599	1,295	1,179	1,768	48,000	**-26.45%**	-19.26%	2.43%	-9.33%	-15.79%
		SW 77th Ave	2,458	1,752	1,313	2,155	56,000	1,720	1,417	1,311	1,781	51,000	**-30.02%**	-19.12%	-0.15%	-17.35%	-8.93%
		SB Ramp Terminal	2,827	2,121	1,390	2,314	71,000	2,032	2,043	2,179	2,019	64,000	**-28.12%**	-3.68%	**56.76%**	-12.75%	-9.86%
	NB Ramp Terminal		2,607	1,863	1,045	2,430	69,000	2,063	2,050	1,698	2,377	66,000	**-20.87%**	10.04%	**62.49%**	-2.18%	-4.35%
	SW 73rd Pl		1,863	1,471	926	1,923	49,000	1,598	1,537	1,365	1,726	49,000	-14.22%	4.49%	**47.41%**	-10.24%	0.00%
	Dadeland Blvd		1,284	1,337	799	1,370	37,000	1,063	1,056	691	1,219	28,000	-17.21%	**-21.02%**	-13.52%	-11.02%	**-24.32%**

Table 4.8 – Link-Level Volume-to-Count Ratio from the Tight Subarea Analyst Assignment for the Arterials

Arterial	Location		2017 Count					2017 Volume					Percent Difference				
			Eastbound		Westbound		AADT	Eastbound		Westbound		AADT	Eastbound		Westbound		AADT
	East of	West of	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
Flagler St		NW 82nd Ave	1,926	1,540	1,192	1,961	53,000	1,760	1,583	1,396	2,239	53,000	-8.62%	2.79%	17.11%	14.18%	0.00%
		NW 79th Ave	1,946	1,484	1,241	2,158	56,000	1,736	1,442	1,349	2,184	50,000	-10.79%	-2.83%	8.70%	1.20%	-10.71%
		SB Ramp Terminal	2,381	2,037	1,675	2,410	47,000	2,409	2,100	1,878	2,661	56,000	1.18%	3.09%	12.12%	10.41%	19.15%
	NB Ramp Terminal		2,050	1,575	1,794	2,460	62,000	1,805	1,663	1,840	2,419	53,000	-11.95%	5.59%	2.56%	-1.67%	-14.52%
	NW 74th Ave		2,206	1,816	1,445	2,234	54,000	1,873	1,605	1,427	2,379	51,000	-15.10%	-11.62%	-1.25%	6.49%	-5.56%
	NW 72nd Ave		1,661	1,666	1,399	1,569	48,000	1,678	1,891	1,572	1,943	53,000	1.02%	13.51%	12.37%	**23.84%**	10.42%
SW 8th St		SW 82nd Ave	1,800	1,904	1,747	2,814	59,000	1,841	1,854	1,577	2,340	56,000	2.28%	-2.63%	-9.73%	-16.84%	-5.08%
		SB Ramp Terminal	2,355	2,118	1,840	3,092	74,000	2,450	2,181	1,928	2,942	71,000	4.03%	2.97%	4.78%	-4.85%	-4.05%
	NB Ramp Terminal		2,303	1,623	1,955	2,529	61,000	2,336	1,806	2,209	2,299	72,000	1.43%	11.28%	12.99%	-9.09%	18.03%
	SW 74th Ave		1,887	1,357	1,538	2,296	47,000	1,879	1,529	1,656	1,859	50,000	-0.42%	12.68%	7.67%	-19.03%	6.38%
SW 24th St		SW 82nd Ave	1,057	1,415	1,361	1,845	54,000	1,271	1,403	1,407	1,929	45,000	**20.25%**	-0.85%	3.38%	4.55%	-16.67%
		SW 79th Ave	1,257	1,517	1,354	2,090	57,000	1,436	1,532	1,488	2,262	52,000	14.24%	0.99%	9.90%	8.23%	-8.77%
		SB Ramp Terminal	1,795	1,695	1,513	2,693	67,000	1,963	1,722	1,580	2,880	61,000	9.36%	1.59%	4.43%	6.94%	-8.96%
	NB Ramp Terminal		2,263	2,077	1,538	2,251	61,000	2,355	2,026	1,540	2,418	57,000	4.07%	-2.46%	0.13%	7.42%	-6.56%
	SW 75th Ave		2,008	1,769	1,229	1,692	50,000	2,019	1,718	1,269	1,786	46,000	0.55%	-2.88%	3.25%	5.56%	-8.00%
	SW 74th Ave		1,826	1,757	1,270	1,702	48,000	1,846	1,615	1,275	1,677	42,000	1.10%	-8.08%	0.39%	-1.47%	-12.50%
SW 40th St		SW 79th Ave	1,727	1,397	1,313	2,352	62,000	2,009	1,690	1,325	2,628	61,000	16.33%	**20.97%**	0.91%	11.73%	-1.61%
		SB Ramp Terminal	2,373	1,728	1,477	2,801	73,000	2,440	1,881	1,566	2,972	74,000	2.82%	8.85%	6.03%	6.10%	1.37%
	NB Ramp Terminal		3,443	2,277	2,176	3,247	91,000	3,690	2,368	2,243	3,396	84,000	7.17%	4.00%	3.08%	4.59%	-7.69%
	SW 74th Ave		3,338	2,136	1,848	2,719	73,000	3,130	2,053	1,965	2,633	70,000	-6.23%	-3.89%	6.33%	-3.16%	-4.11%
	SW 72nd Ave		3,408	2,198	2,011	2,226	73,000	3,303	2,263	2,224	2,582	72,000	-3.08%	2.96%	10.59%	15.99%	-1.37%
SW 56th St		SW 77th CT	1,204	1,031	975	2,380	33,000	1,386	1,089	1,038	2,048	36,000	15.12%	5.63%	6.46%	-13.95%	9.09%
		SB Ramp Terminal	1,433	1,045	997	2,456	36,000	1,475	1,124	1,089	2,273	38,000	2.93%	7.56%	9.23%	-7.45%	5.56%
	NB Ramp Terminal		1,629	911	814	1,972	48,000	1,637	1,000	839	2,073	39,000	0.49%	9.77%	3.07%	5.12%	-18.75%
	SW 72nd Ave		1,203	911	860	1,442	35,000	1,361	954	919	1,515	36,000	13.13%	4.72%	6.86%	5.06%	2.86%
SW 72nd St		SB Ramp Terminal	1,553	1,150	1,226	1,791	42,000	1,530	1,150	1,162	1,745	41,000	-1.48%	0.00%	-5.22%	-2.57%	-2.38%
	NB Ramp Terminal		1,693	1,112	1,050	1,943	37,000	1,712	1,189	1,120	1,976	39,000	1.12%	6.92%	6.67%	1.70%	5.41%
	SW 72nd Ave		1,381	841	837	1,830	43,000	1,551	1,019	927	1,751	35,000	12.31%	**21.17%**	10.75%	-4.32%	-18.60%
SW 88th St		SW 79th Ave	2,174	1,604	1,151	1,950	57,000	2,176	1,567	1,318	2,165	58,000	0.09%	-2.31%	14.51%	11.03%	1.75%
		SW 77th Ave	2,458	1,752	1,313	2,155	56,000	2,338	1,698	1,436	2,281	62,000	-4.88%	-3.08%	9.37%	5.85%	10.71%
		SB Ramp Terminal	2,827	2,121	1,390	2,314	71,000	2,656	2,139	2,363	2,434	71,000	-6.05%	0.85%	**70.00%**	5.19%	0.00%
	NB Ramp Terminal		2,607	1,863	1,045	2,430	69,000	2,427	2,026	1,737	2,742	71,000	-6.90%	8.75%	**66.22%**	12.84%	2.90%
	SW 73rd Pl		1,863	1,471	926	1,923	49,000	1,688	1,434	1,199	1,822	49,000	-9.39%	-2.52%	**29.48%**	-5.25%	0.00%
	Dadeland Blvd		1,284	1,337	799	1,370	37,000	1,258	1,099	877	1,266	38,000	-2.02%	-17.80%	9.76%	-7.59%	2.70%

4.1 Model Trip Length Distribution

The Tight Subarea trip tables were further evaluated for reasonable average trip length and trip length frequency distribution (TLFD) parameters.

The highway skim and subarea trip matrices were used to determine the average trip length and the TLFD for the Tight Subarea model. The Tight Subarea Model TLFD is shown in ***Figure 4.3***.

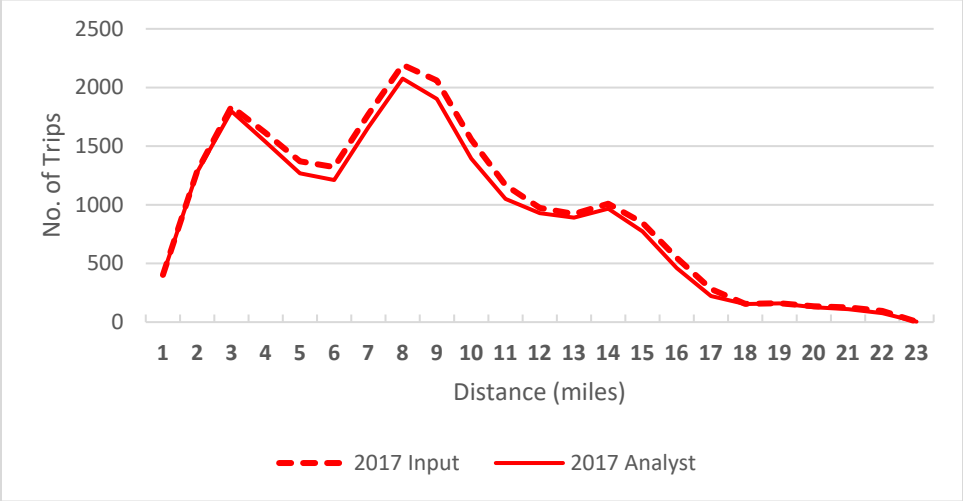


Figure 4.3 – Tight Subarea Trip Length Frequency Distribution (TLFD)

Table 4.9 compares average trip length before and after analyst procedure on daily basis. The TLFD statistics are similar. Note that the geographic origin destination locations of the Tight Subarea Model do not exactly match with those of the Bluetooth survey. The model Tight Subarea includes two adjacent intersections on either side of the ramp terminals. The BT study area does not include any arterials. It might be the reason for Bluetooth average trip lengths are consistently lower than the model average trip lengths.

Table 4.9 – SR 826 Corridor: Average Trip Length Frequency Distribution (TLFD)

Time of Day	Average Distance (Miles)		Average Time (min.)		
	Input	Analyst	Input	Analyst	Raw Bluetooth
Daily	10.67	10.01	13.4	12.76	-
AM	10.96	10.2	13.81	12.99	7.59
PM	10.35	9.47	12.97	12.11	8.21

5.0 Alternatives Network Development

As part of this PD&E Study, a 2040 No-Build and three 2040 Build networks were developed during the modeling process. The following model network runs were developed:

- Model Base Year: 2017
- Model Design Year: 2040 No-Build and Build Scenarios
    - Extrapolated Design Year Forecast: 2045

The networks were developed using the assumptions described below:

- **Model Base Year 2017:** The 2010 base year network from SERPM7 was used as basis for this effort. This network was compared with the existing conditions and supplemented with additional coding of the missing projects between the years 2010-2017 (see ***Appendix C***).

- **2040 No-Build:** The 2040 cost feasible regional LRTP network was used as the basis for this effort. This network incorporates the I-75, HEFT, SR 924 and SR 826 future improvements, matching the latest designs (see ***Appendix D***).

- **2040 Build Scenarios:** The no-build network was used to develop three build scenarios. The following are the definition of the three build scenarios (see ***Appendix E***):

    - **Build 1** network includes one express lane in each direction between SW 56th Street and SR 874 and two express lanes in each direction between SR 874 and SR 836.

    - **Build 2** network includes one express lane in each direction between SW 72nd Street and SR 874 and two express lanes in each direction between SR 874 and SR 836. In addition, buses will have exclusive express lane access to and from US 1 to north of SW 72nd Street.

    - **Build 3** network includes one express lane in each direction between SW 72nd Street and SR 836 and one elevated express lane in each direction between SR 874 and SR 836. In addition, buses will have exclusive express lane access to and from US 1 to north of SW 72nd Street.

- **Extrapolated Design Year Forecast 2045:** Using the 2017 balanced traffic counts and 2040 balanced volumes, the 2045 design traffic volumes were extrapolated.

The assumption during the MLOU was that MDX will evaluate express lanes along SR 836 as one of the build alternatives. The reversible express lanes were evaluated during the Feasibility Planning Study to tie to a SR 836 express lane facility, like I-75 and I-595 in Broward County. However, during early coordination with MDX, FDOT was told that SR 836 will no longer be considered a candidate for express lanes. Therefore, there was no system along SR 836 to tie to the reversible express lanes.

The reversible lanes concept initial design included three reversible express lanes in the peak direction, with no express lanes along the off-peak direction. The overall two-way express lanes AADT volumes were found lower than the other build alternatives. The reversible express lanes demand was similar to the demand of the other build alternatives. However, the construction and operating costs were too high when compared to other build alternatives. Therefore, the reversible express lanes concept was no longer considered a viable alternative. FDOT decided to evaluate instead the two-way express lanes elevated concept as Alternative 3.

6.0 2040 Model Run Review and Results Discussion

The 2040 SERPM7 No-Build model run was performed using a 25% sample of CT-RAMP. The tight subarea network was extracted, and the subarea matrix extraction procedure was performed. Using the 2017 CUBE Analyst Tight Subarea trip tables as the baseline and the model-generated trip table growth, the final adjusted 2040 trip table was developed. This trip table was assigned to the tight subarea network using the equilibrium assignment. Similarly, the 2040 SERPM7 Build model run was performed using Alternative 2. The same regional OD matrices were used for all the build alternatives using locked trip tables.

Toll rates from the I-95 express lanes in Miami-Dade County were used to develop express lane toll curves that specify express lanes tolls for various V/C ratios. This process was incorporated into the SERPM 7 regional model. The model results are discussed in the following sections.

6.1 SYSTEMWIDE RESULTS

This section summarizes the model's system wide performance at different geographic resolution - regional, county, subarea and tight subarea level. ***Table 6.1*** compares the Vehicle-Miles Traveled (VMT), Vehicle Hour Traveled (VHT), and the Average Daily Congested Speed statistics for 2017, 2040 No-Build and Build conditions.

Table 6.1 – Comparison of 2017 and 2040 Systems Performance

Scale	Year	VMT	VHT	Congested Speed (MPH)
Regional	**2017**	117,196,883	3,230,130	36.28
	2040 No-build	142,343,429	4,149,490	34.30
	2040 Build 2	142,353,020	4,149,734	34.30
Miami-Dade	**2017**	46,174,389	1,487,550	31.04
	2040 No-build	56,112,402	1,897,604	29.57
	2040 Build 2	56,115,675	1,897,566	29.57
Subarea	**2017**	13,645,523	394,739	34.57
	2040 No-build	17,743,672	536,982	33.04
	2040 Build 2	17,744,707	536,971	33.05
Tight Subarea	**2017**	5,033,763	142,622	35.29
	2040 No-build	6,039,001	177,710	33.98
	2040 Build 1	6,086,280	174,760	34.83
	2040 Build 2	6,066,648	176,001	34.47
	2040 Build 3	6,053,617	177,329	34.14

The VMT increase in 2040 is expected, in response to the future year socio-economic data trend. ***Tables 6.2 and 6.3*** compare the tight subarea VMT and VHT statistics among 2017, 2040 No-Build and 2040 Build scenarios. The toll facilities VMT has the highest growth rate of 1.54%. It is followed by low speed arterial with a growth of 1.50%.

Table 6.2 – Comparison of 2017, 2040 No-Build and 2040 Build Tight Subarea VMT by Facility Type

Facility Type	VMT					CAGR No-Build (VMT)
	2017	2040 No-Build	2040 Build 1	2040 Build 2	2040 Build 3	
Freeway	1,829,657	2,156,400	1,963,308	1,941,728	2,013,438	0.72%
High Speed Arterial	1,746,494	1,979,477	2,010,700	1,984,817	1,990,857	0.55%
Low Speed Arterial	248,253	349,356	324,129	348,683	350,319	1.50%
Ramps	509,950	559,831	696,713	596,542	659,315	0.41%
Toll Facilities	699,409	993,937	1,091,429	1,194,878	1,039,688	1.54%
Total	**5,033,763**	**6,039,001**	**6,086,280**	**6,066,648**	**6,053,617**	**0.79%**

Table 6.3 – Comparison of 2017, 2040 No-Build and 2040 Build Tight Subarea VHT by Facility Type

Facility Type	VHT				
	2017	2040 No-Build	2040 Build 1	2040 Build 2	2040 Build 3
Freeway	39,910	48,900	44,574	43,614	46,471
High Speed Arterial	66,400	80,425	81,539	80,302	80,331
Low Speed Arterial	9,262	13,718	12,643	13,659	13,765
Ramps	13,565	16,178	17,042	17,397	18,489
Toll Facilities	13,485	18,489	18,962	21,028	18,273
Total	**142,622**	**177,710**	**174,760**	**176,001**	**177,329**

6.2 Link-Level Model Results

Table 6.4 shows the model average Compound Annual Growth Rate (CAGR) along SR 826, SR 874, SR 836 and US 1. Overall the average growth rate for all facilities is 0.65%. The average growth rate along SR 826 is 0.85%.

The SR 826 mainline segment between SR 836 and NW 25th Street has the highest growth rate of 1.21% whereas south of SW 88th Street (Kendall Drive) has the least growth rate of 0.48%. The average growth rate on US 1 is 0.24%. The average growth rate on SR 874 is 1.24% and SR 836 is 0.38%. The raw model volumes indicate low growth for US 1 and SR 836 corridors. However, these volumes were further post-processed based on validation.

Table 6.4 – Model Growth Rate between 2017 and 2040 No-Build Volumes

Location		2017 Volume*	2040 Volume*	Growth (Per Year)	Corridor Growth (Per year)
US 1	South of 112th St	74,000	75,700	0.10%	**0.24%**
	North of 112th St	73,000	77,000	0.23%	
	South of 104th St	82,200	86,000	0.20%	
	North of 104th St	107,000	118,000	0.43%	
SR 826	South of SW 88th St	68,000	76,000	0.48%	**0.85%**
	South of SW 72nd St	115,000	138,000	0.80%	
	South of SW 56th St	147,000	171,000	0.66%	
	South of SW 40th St	261,000	324,000	0.94%	
	South of SW 24th St	262,000	323,000	0.91%	
	South of SW 8th St	269,000	328,000	0.87%	
	South of W Flagler St	289,000	354,000	0.89%	
	South of NW 25th St	270,000	356,000	1.21%	
SR 874	West of SR 826	95,000	126,000	1.24%	**1.24%**
SR 836	East of SR 826	189,000	223,000	0.72%	**0.38%**
	West of SR 826	134,000	135,000	0.04%	
Overall Average CAGR				**0.65%**	

*Note: Based on the raw model volumes.

Based on reviewing the aerial images, it was observed that the subarea area is built-out. The system wide subarea growth rate was estimated using the mainline, ramps and arterial links, within the subarea (excludes short distance links). ***Table 6.5*** shows an average VMT growth rate of 0.57%. A conservative growth rate of 0.5% percentage was used in post-processing the links with negative or low growth and to develop forecasts for the minor intersections that are not in the model network. In addition, the CAGR of 0.5% was used to extrapolate 2040 volumes to 2045 volumes.

Table 6.5 – Tight Subarea VMT Based Growth Rate

VMT*	2017	2040	CAGR
	2,273,998	**2,588,935**	0.57%

* VMT excludes short distance links and duplicate links

7.0 TRAFFIC FACTORS

The future AADT volumes were developed from the SR 826 subarea model by combining AM, PM and off-peak period volumes. The DDHV volumes development process for the study did not involve the application of the standard procedure of multiplying the AADT volumes with the K_{30} and D_{30} traffic factors. The DDHV volumes were developed using diurnal factors applied to the model estimated peak periods AM and PM volumes.

The traffic factor tables from the *FDOT Project Traffic Forecasting Handbook* provide a summary of K_{std} and acceptable ranges for D_{30}. The K_{std} factor is the proportion of AADT volumes occurring during the peak-hour of the design year, depending upon the area type and facility type. The D_{30} factor is the proportion of traffic in the 30th highest hour of the year traveling in the peak period direction. ***Tables 7.1*** and ***7.2*** show the FDOT K_{std} and D_{30} target thresholds. In general, the existing truck percentages were assumed for the future year.

Table 7.1 – FDOT Standard K Factors

Area Type	Facility Type	K_{std}
Large Urban Areas with Core Freeways	Freeways	8.0-9.0
	Arterials	9.0
Other Urbanized Areas	Freeways	9.0
	Arterials	9.0

(Adopted from the 2014 FDOT Project Traffic Forecasting Handbook, Figure 2.4 - FDOT Standard K Factors.)

Table 7.2 – FDOT Recommended D_{30} Factor Ranges

Road Type	Low D_{30}	Medium D_{30}	High D_{30}	Standard Deviation
Urban Freeways	50.4	55.8	61.2	4.11
Urban Arterials	50.8	57.9	67.1	4.60

(Adopted from the 2014 FDOT Project Traffic Forecasting Handbook, Figure 2.9 - Recommended D-Factors (D) for Traffic Forecasting.)

The K and D factors were calculated based on the collected traffic data and forecasted traffic volumes from the PD&E Study and were compared to the ranges specified in the *FDOT Project Traffic Forecasting Handbook*.

8.0 Post Processing Approach and AADT/DDHV Development

The model results were post-processed using the *FDOT 2014 Project Traffic Forecasting Handbook* and *NCHRP 765* recommendations. The project team developed a corridor prototype spreadsheet with separate workbooks for AM peak-hour, PM peak-hour and AADT volumes. The volumes and traffic counts for 2017 conditions were verified. If the differences between volumes and counts were more than a threshold percentage, the link volumes were post-processed to account for the differences. A 10% threshold percentage for freeways and a 15% threshold percentage for all other facility types were used. If negative growths were observed at any location, then the subarea compound growth rates developed using tight subarea VMT were applied. The volumes were balanced and smoothed as needed. The growth rates of the forecasted volumes were compared against the growth trends. Any outlier links were post-processed.

The turning movement forecast was developed from the subarea origin-destination assignments. This way, the subarea origin-destination matrices and the turning movements were ensured to be consistent. The future year turns were forecasted to ensure sufficient growth between base and future year turns from the subarea traffic assignment model.

A thorough subarea validation effort was performed as part of this PD&E Study. However, a few locations (ramp intersection turning movements and link volumes) were found to be unreasonable. The primary issue observed was that some ramp intersection turning movements were less than the corresponding 2017 traffic counts. Many factors in travel demand model can contribute to these kinds of effects and this issue is not uncommon. The following key factors were identified as causes for the differences in values:

- Changes in trip distribution from base year to future year, based on the proximity of new development.
- Addition of new express lane access points causes traffic shifts from one location to the other.
- Addition of new network enhancements on parallel corridors can form alternate route to the travelers.
- Equilibrium assignment can allocate some trips to other paths, in order to reach convergence criteria, causing traffic shifts.

- TAZ data development itself could cause this kind of issue. It was observed that certain TAZs have negative growth, as the growth is allocated to other TAZs.

The project team recognized these potential causes for the turbulence in the model forecasts. However, for those locations that showed a negative growth, the values were forecasted from 2017 to 2040 using a growth rate method. Overall, the tight subarea model indicates an average compound annual growth rate of 0.5%.

Adjacent intersections east and west from the ramp terminals are included as part of study area. Some of these adjacent intersections were not in the model networks as they are minor intersections. The forecasts for these intersections were manually adjusted and balanced for the 2040 No-Build scenario. The following steps were involved in the balancing effort:

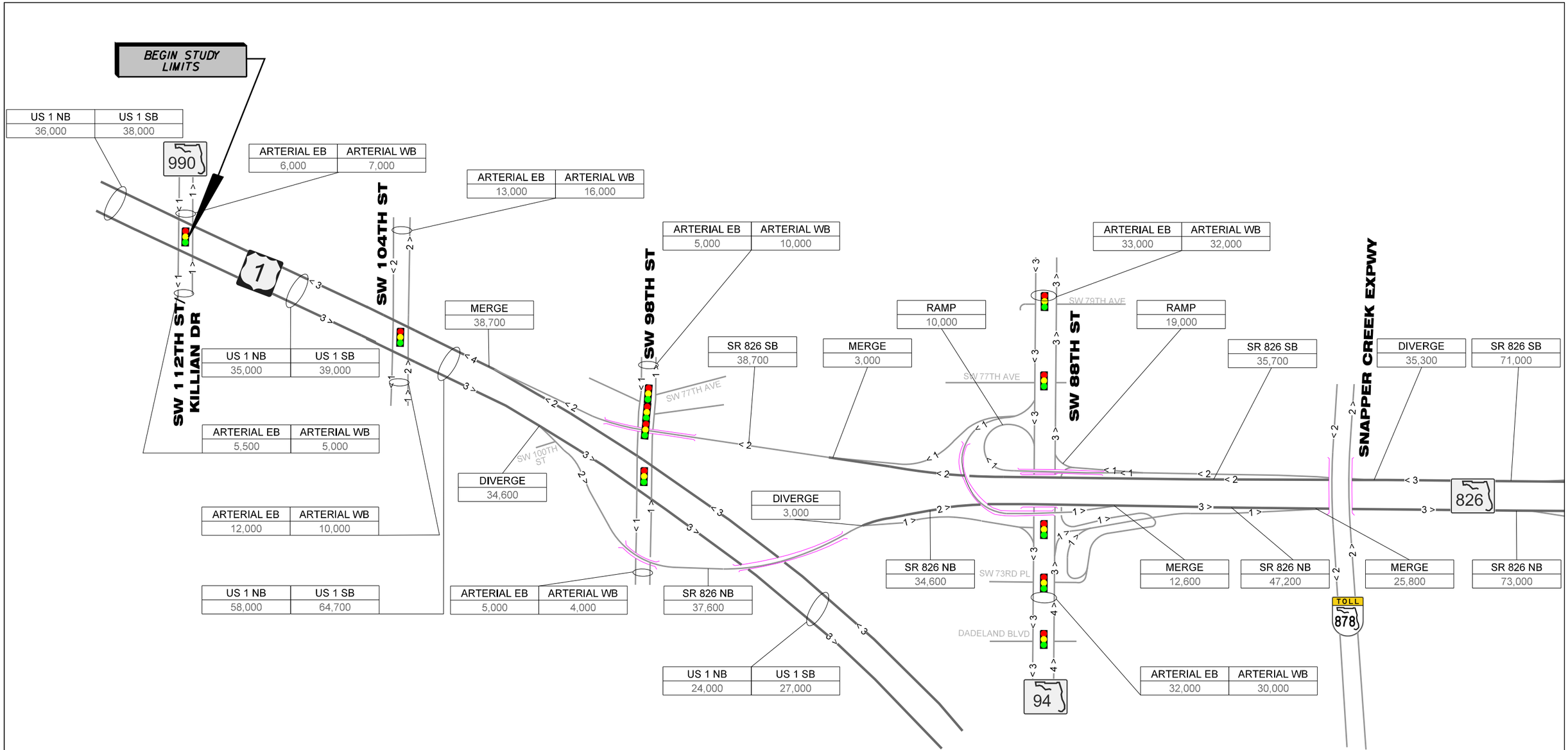
- Reviewed the aerial images between ramp terminals and adjacent intersections for the presence of driveways and minor streets.
- The forecasted turning movement volumes with negative growth and the missing model links were manually adjusted using a growth rate of 0.5%.

The 2045 No-Build forecasts were developed by extrapolation. The control totals on SR 826 south of SW 72nd Street (permanent count station) and the SR 826 system ramps within the area of influence were locked. For example, the 2045 mainline volume south of SW 56th Street is computed as following:

[2045 Volume Mainline south of SW 56th Street] = [Mainline Control Total 2045] – [Diverge Ramp Control Total] + [Merge Ramp Control Total]

The balanced volumes for every segment were then compared against the raw model volume to ensure reasonableness.

Figure 8.1 summarizes the 2045 No-Build link-by-link AADT volume assignments for the study area. ***Figure 8.2*** summarizes the 2045 No-Build link-by-link DDHV volume assignments for the study area. ***Figure 8.3*** summarizes the 2045 No-Build intersection turning movement volumes. These figures also depict number of lanes and interchange layouts.



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 AADT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

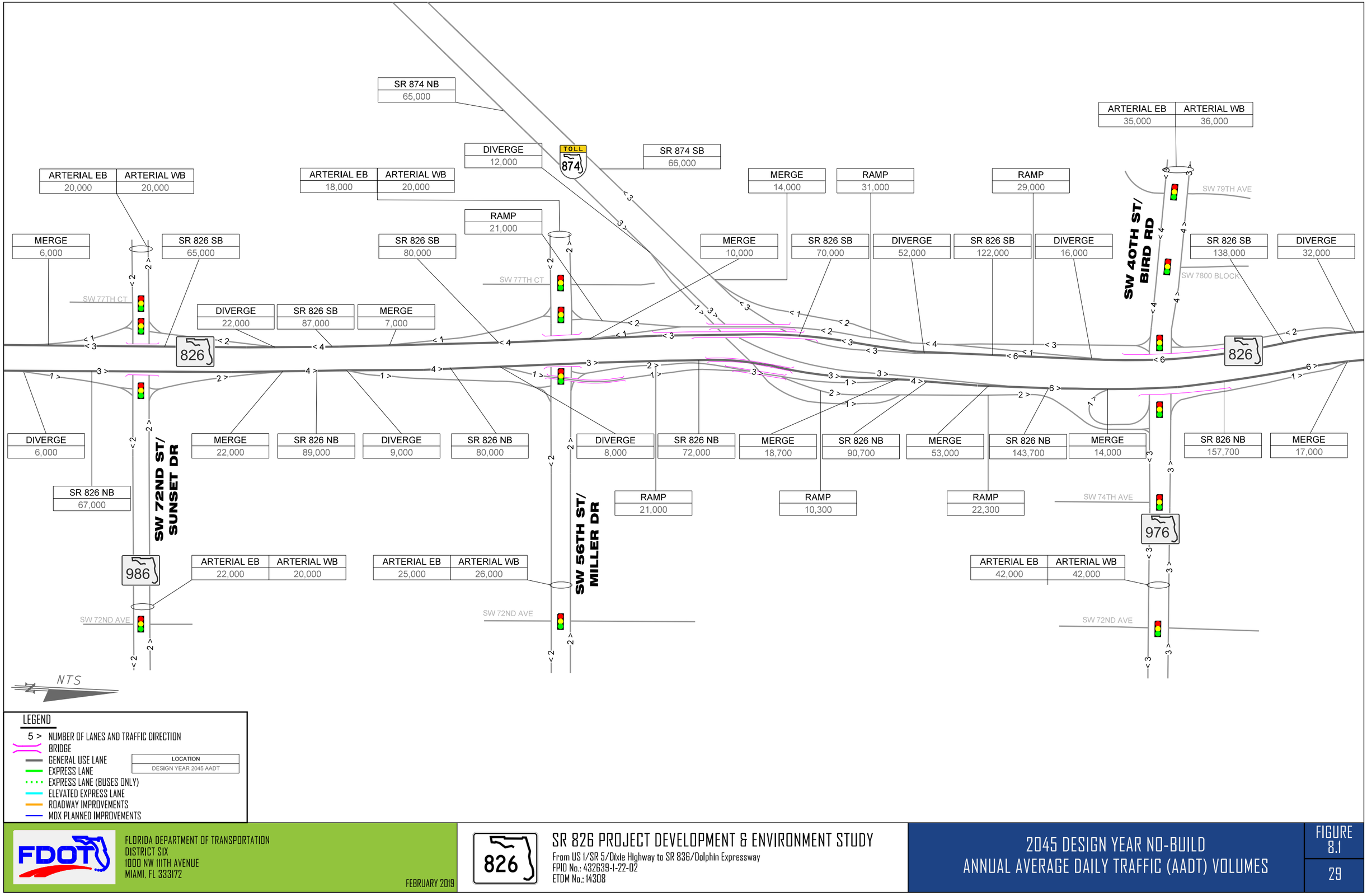
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.1



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

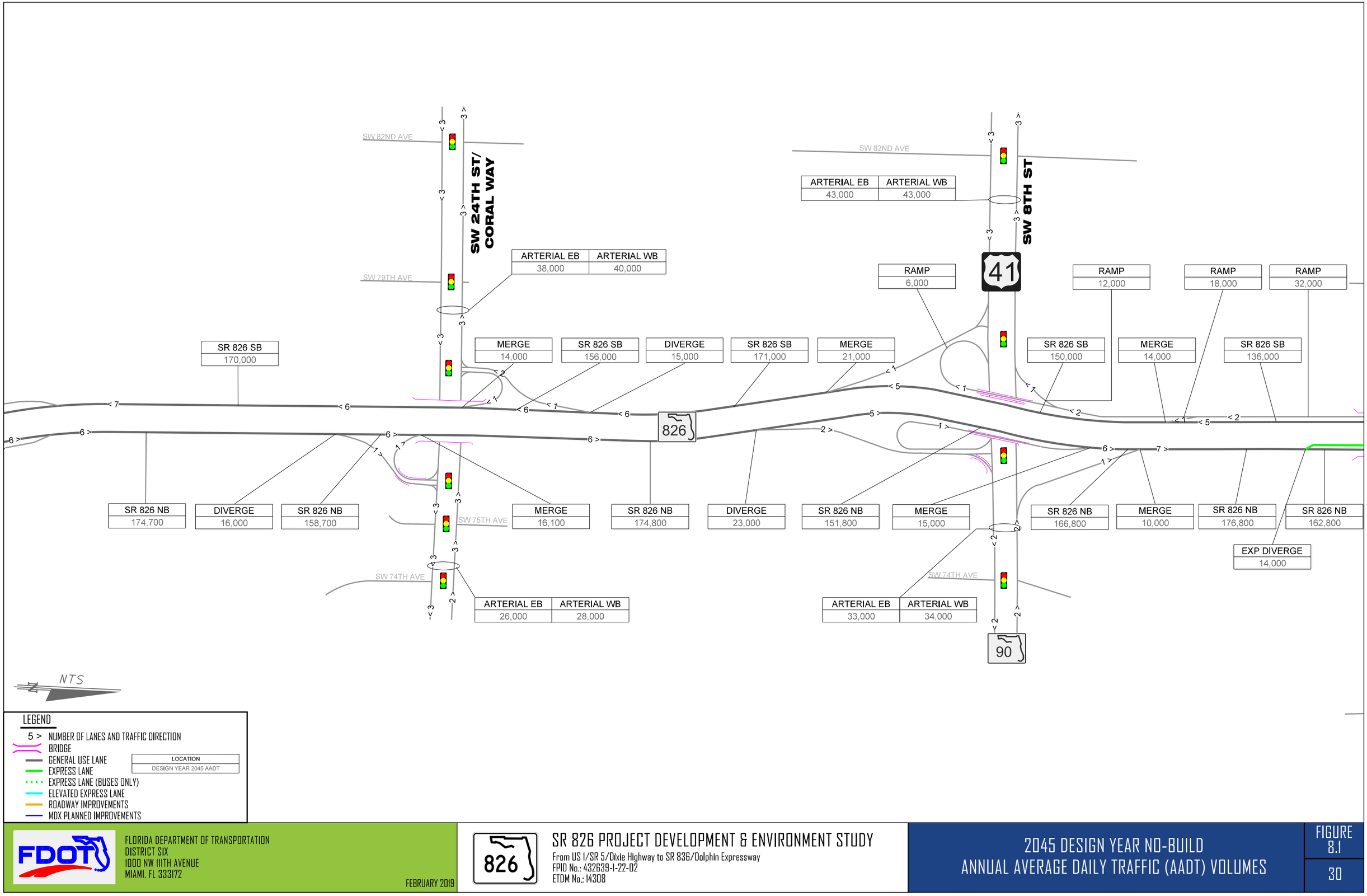
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.1



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.1

LEGEND

5 > NUMBER OF LANES AND TRAFFIC DIRECTION
BRIDGE
GENERAL USE LANE
EXPRESS LANE
EXPRESS LANE (BUSES ONLY)
ELEVATED EXPRESS LANE
ROADWAY IMPROVEMENTS
MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 AADT

NTS

NW 84TH AVE

NW 82ND AVE

NW 72ND AVE

MILAM DAIRY RD

FLAGLER ST

FLAGLER ST

NW 25TH ST

SW 82ND AVE

SW 79TH AVE

SW 74TH AVE

SW 72ND AVE

END STUDY LIMITS
STATION 130+00

ARTERIAL EB	ARTERIAL WB
30,000	30,000

EXP MERGE
14,000

RAMP
6,000

RAMP
15,000

RAMP
27,000

RAMP
17,000

SR 826 SB
122,000

MERGE
46,000

RAMP
44,000

SR 826 SB
76,000

RAMP
10,000

DIVERGE
34,000

SR 826 SB
110,000

DIVERGE
6,000

SR 826 SB
116,000

DIVERGE
51,000

EXP LANES SB
14,000

SR 826 SB
167,000

MERGE
27,000

ARTERIAL EB	ARTERIAL WB
37,000	36,000

SR 826 SB
161,000

SR 826 SB
140,000

DIVERGE
21,000

DIVERGE
26,000

SR 826 NB
136,800

DIVERGE
42,000

SR 826 NB
94,800

MERGE
36,000

SR 826 NB
143,800

MERGE
32,000

SR 826 NB
175,800

DIVERGE
30,000

SR 826 NB
145,800

MERGE
18,500

MERGE
13,000

SR 826 NB
107,800

SR 826 NB
164,300

EXP LANES NB
14,000

RAMP
9,000

RAMP
20,000

RAMP
37,000

ARTERIAL EB	ARTERIAL WB
30,000	29,000

ARTERIAL EB	ARTERIAL WB
25,000	25,000

TOLL 836

TOLL 836

826

968

FDOT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

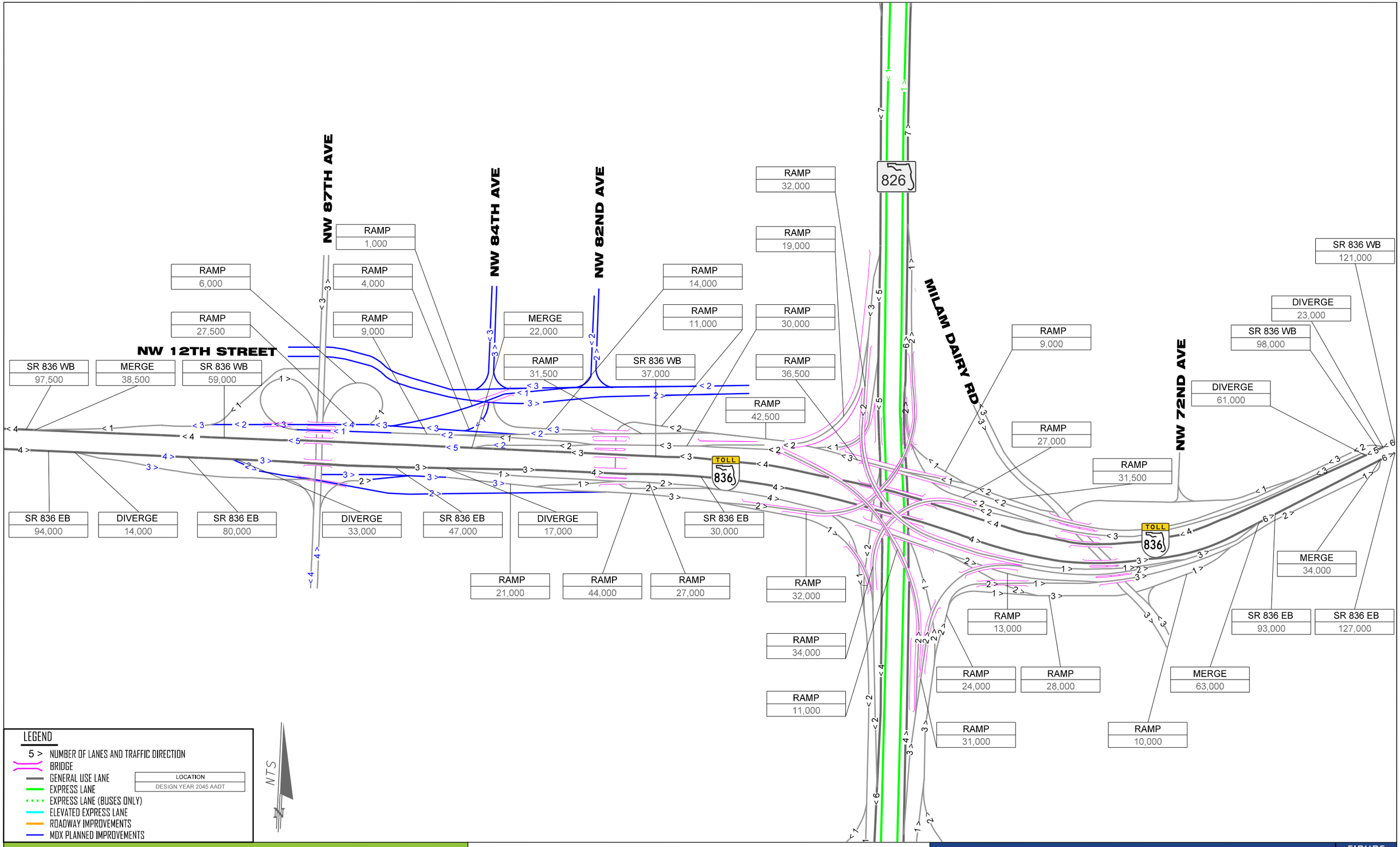
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.1



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

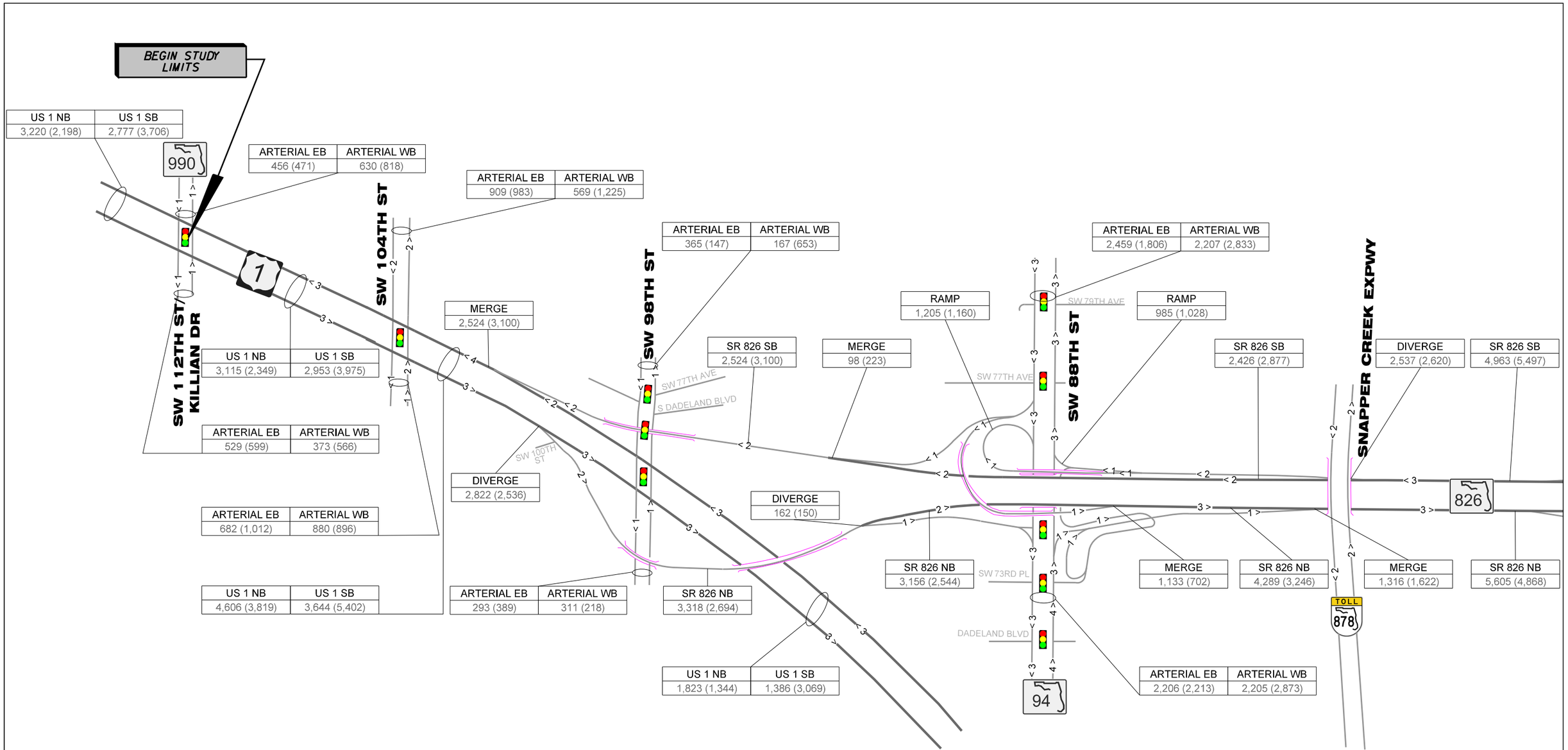
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.1



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

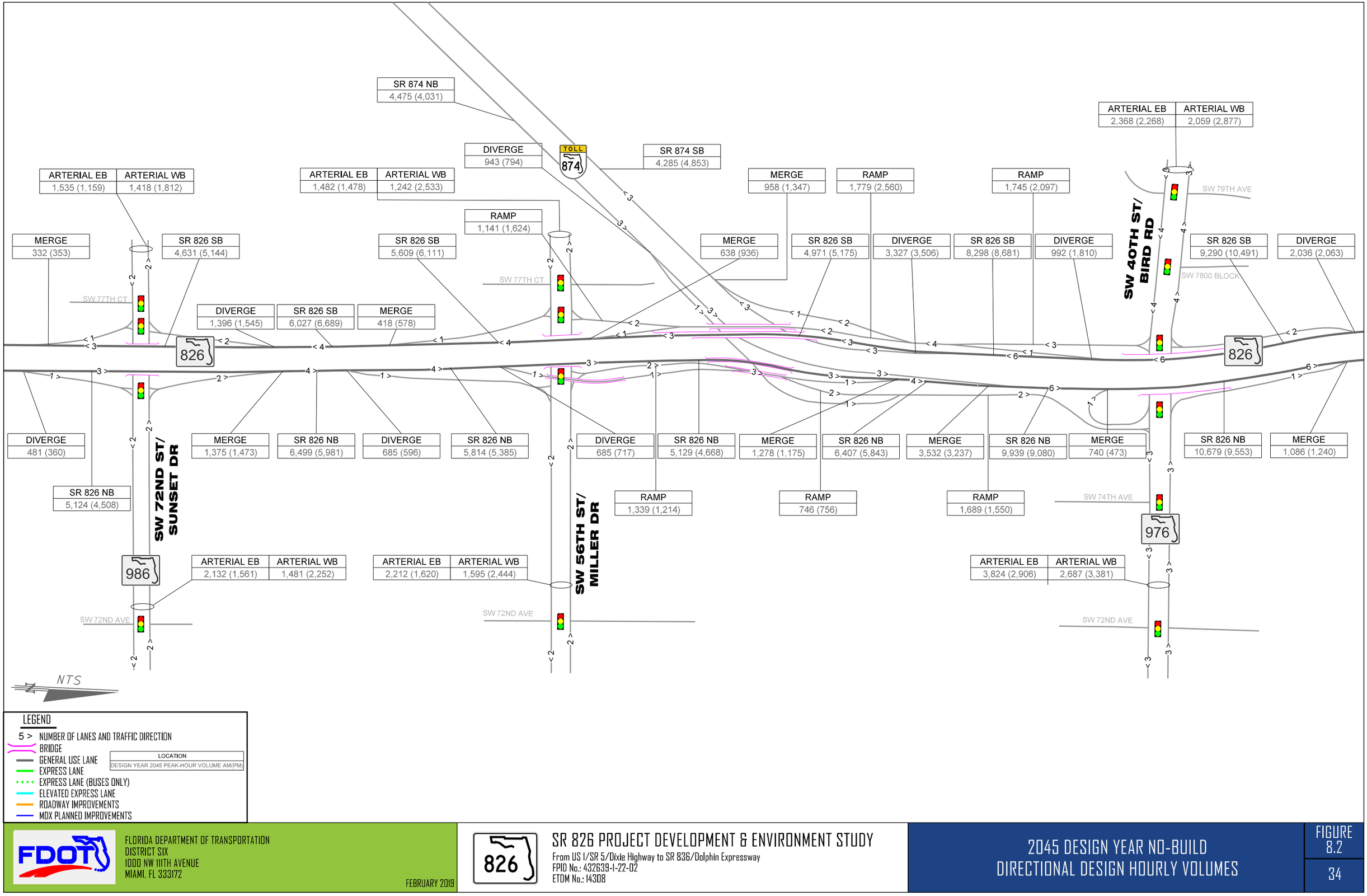
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD DIRECTIONAL DESIGN HOURLY VOLUMES

FIGURE 8.2



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

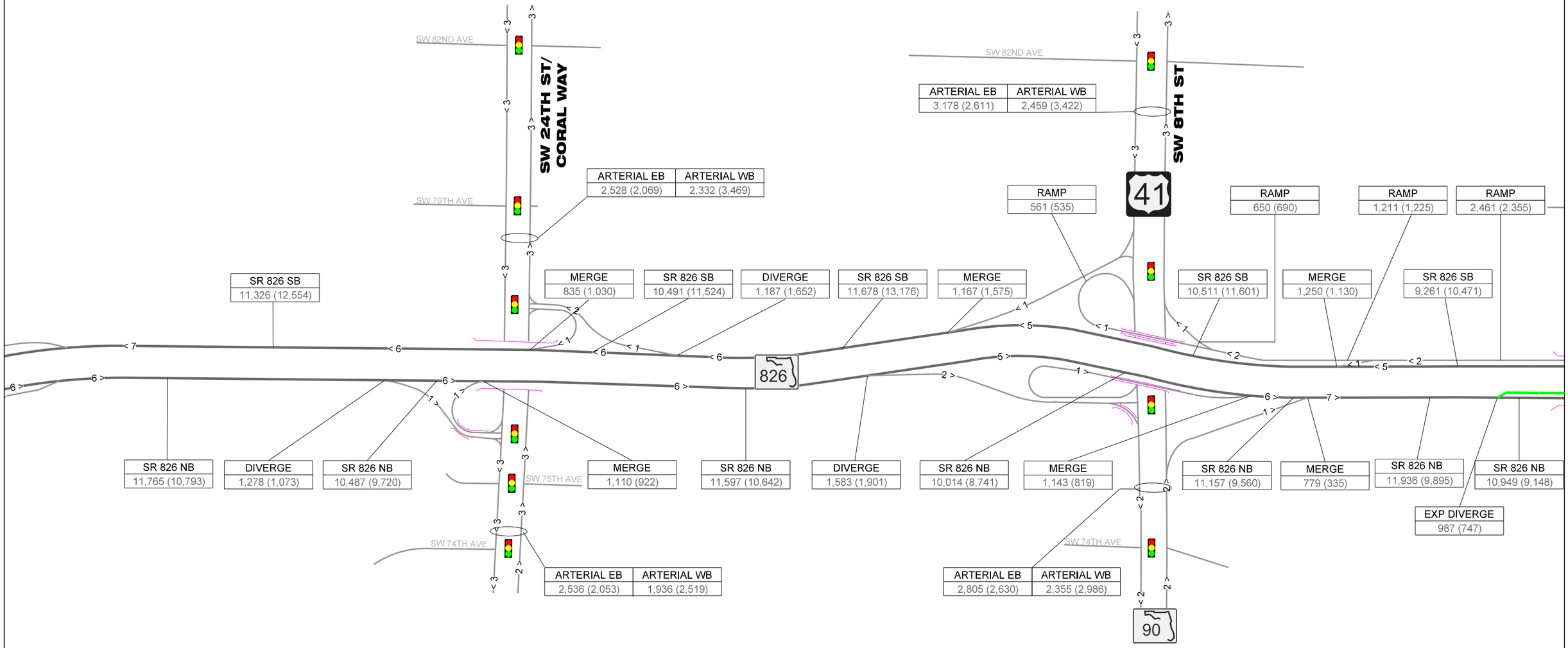
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD DIRECTIONAL DESIGN HOURLY VOLUMES

FIGURE 8.2



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

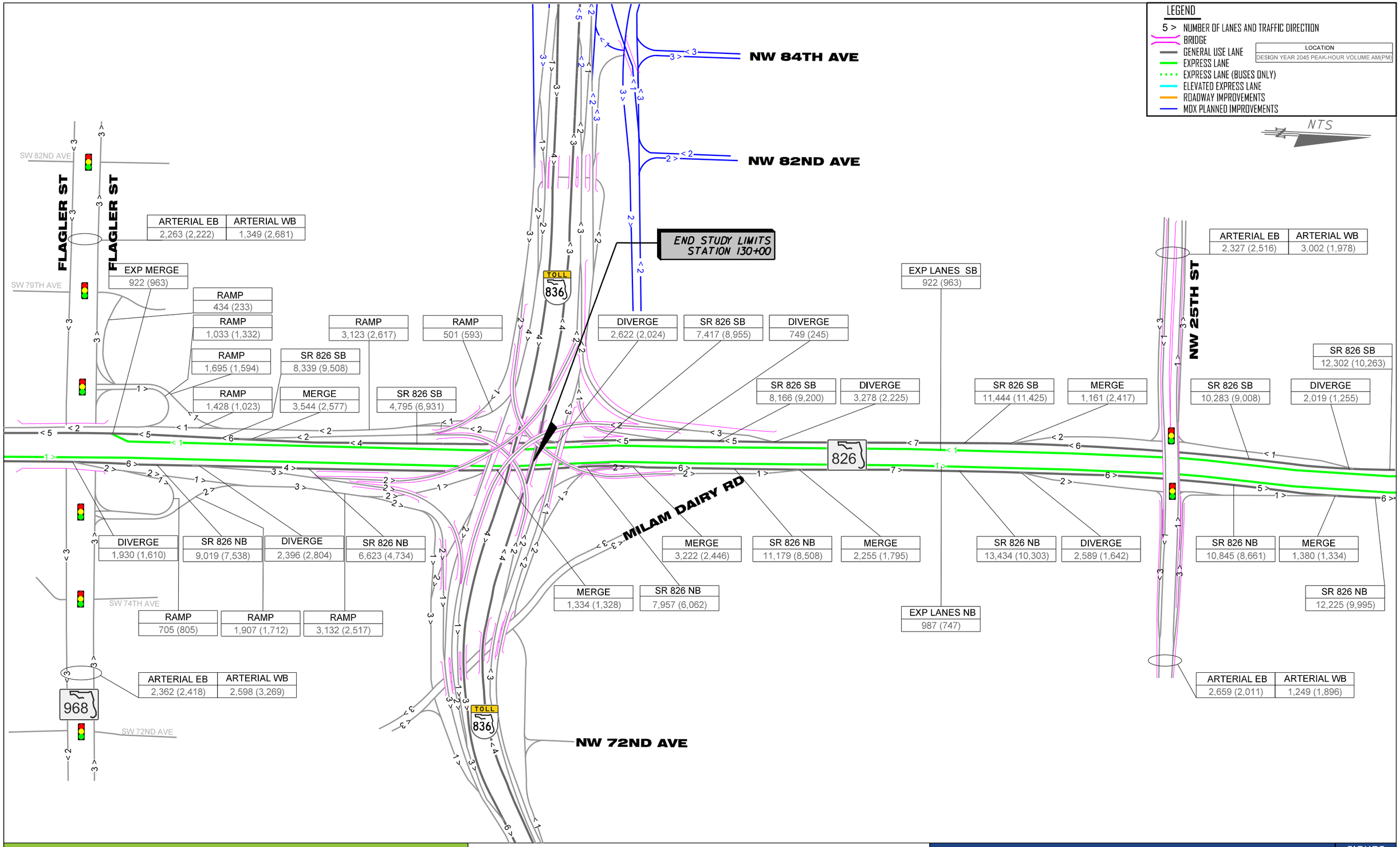
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD DIRECTIONAL DESIGN HOURLY VOLUMES

FIGURE 8.2



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

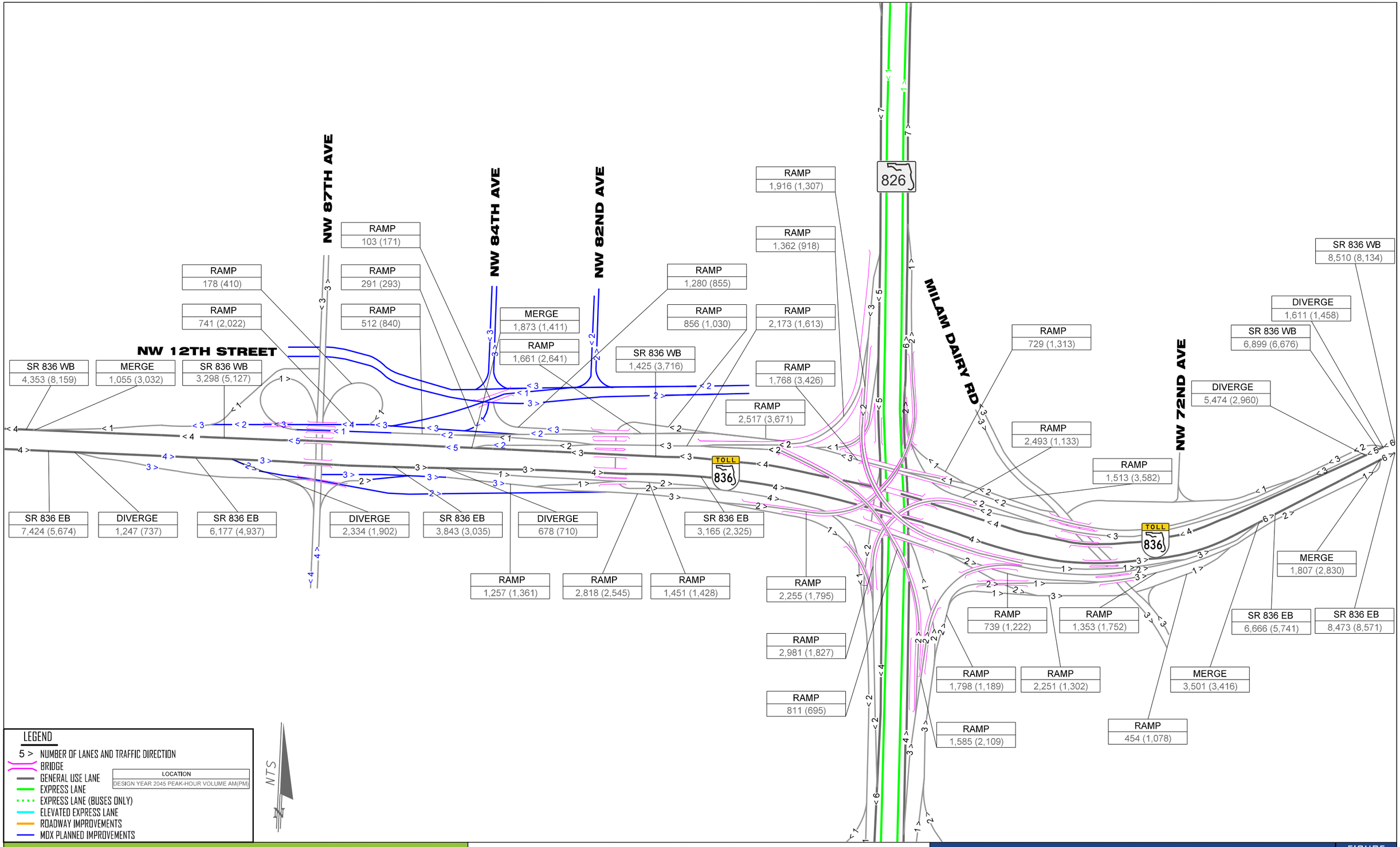
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD DIRECTIONAL DESIGN HOURLY VOLUMES

FIGURE 8.2



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

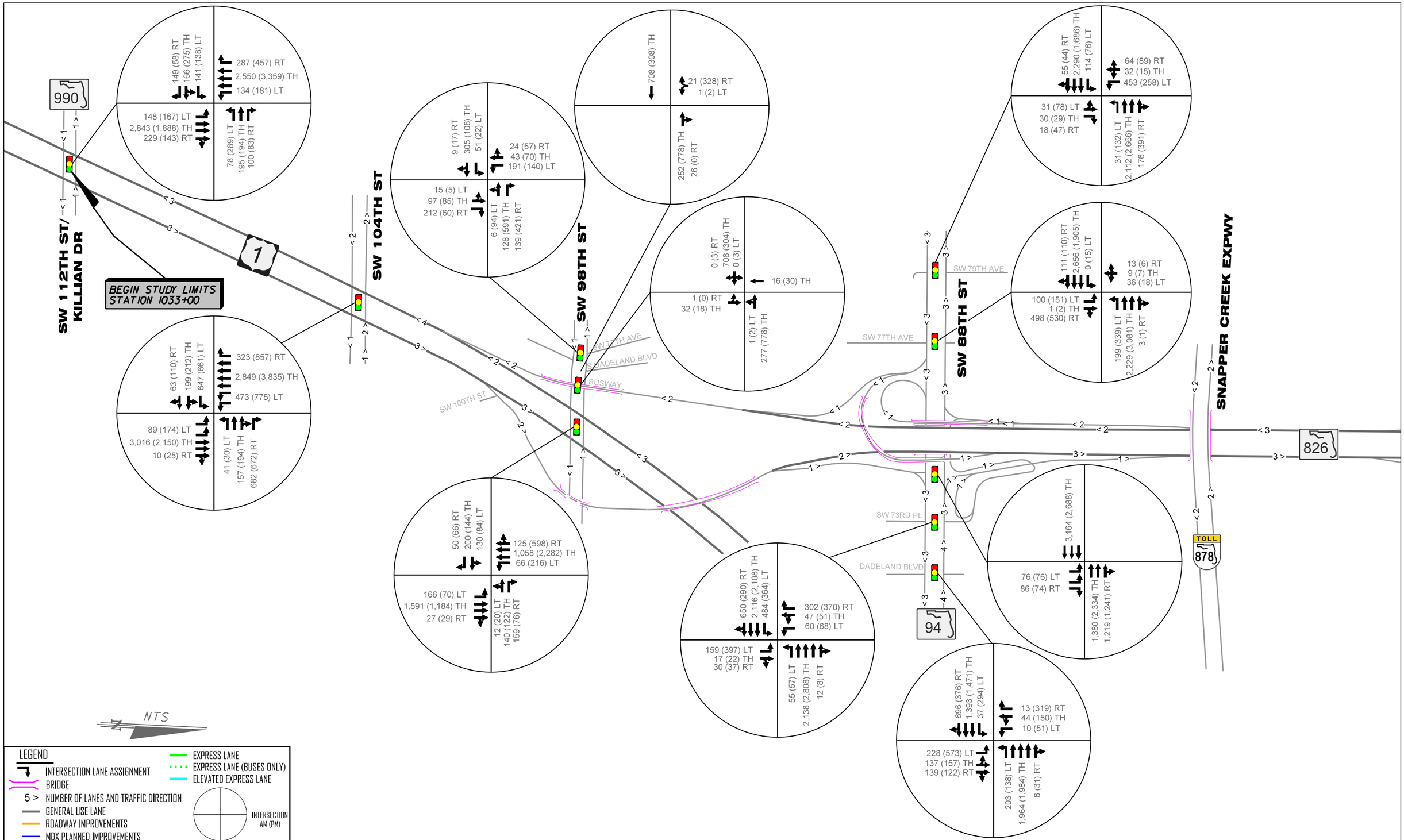
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD DIRECTIONAL DESIGN HOURLY VOLUMES

FIGURE 8.2



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

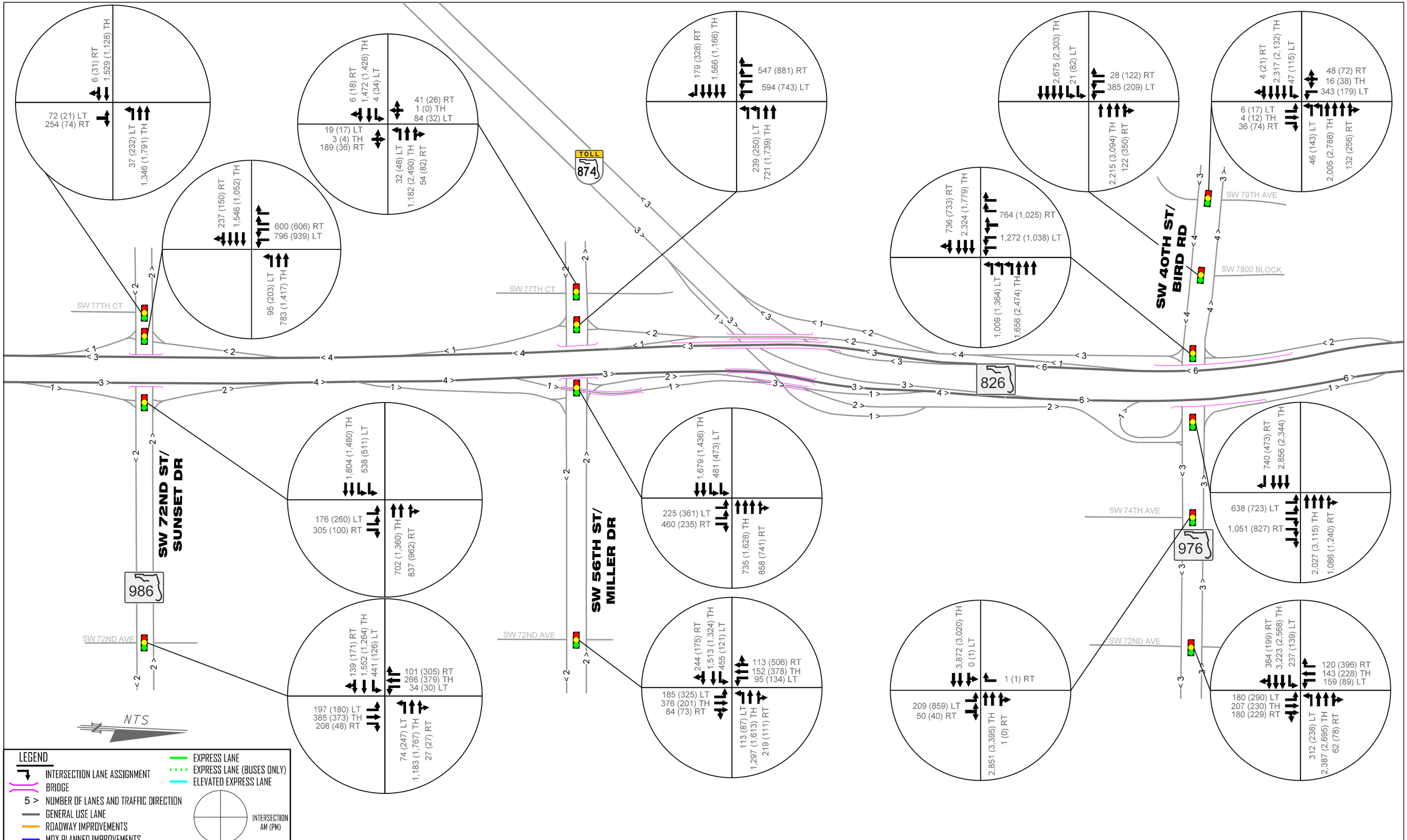
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD INTERSECTION TURNING MOVEMENT VOLUMES

FIGURE 8.3



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

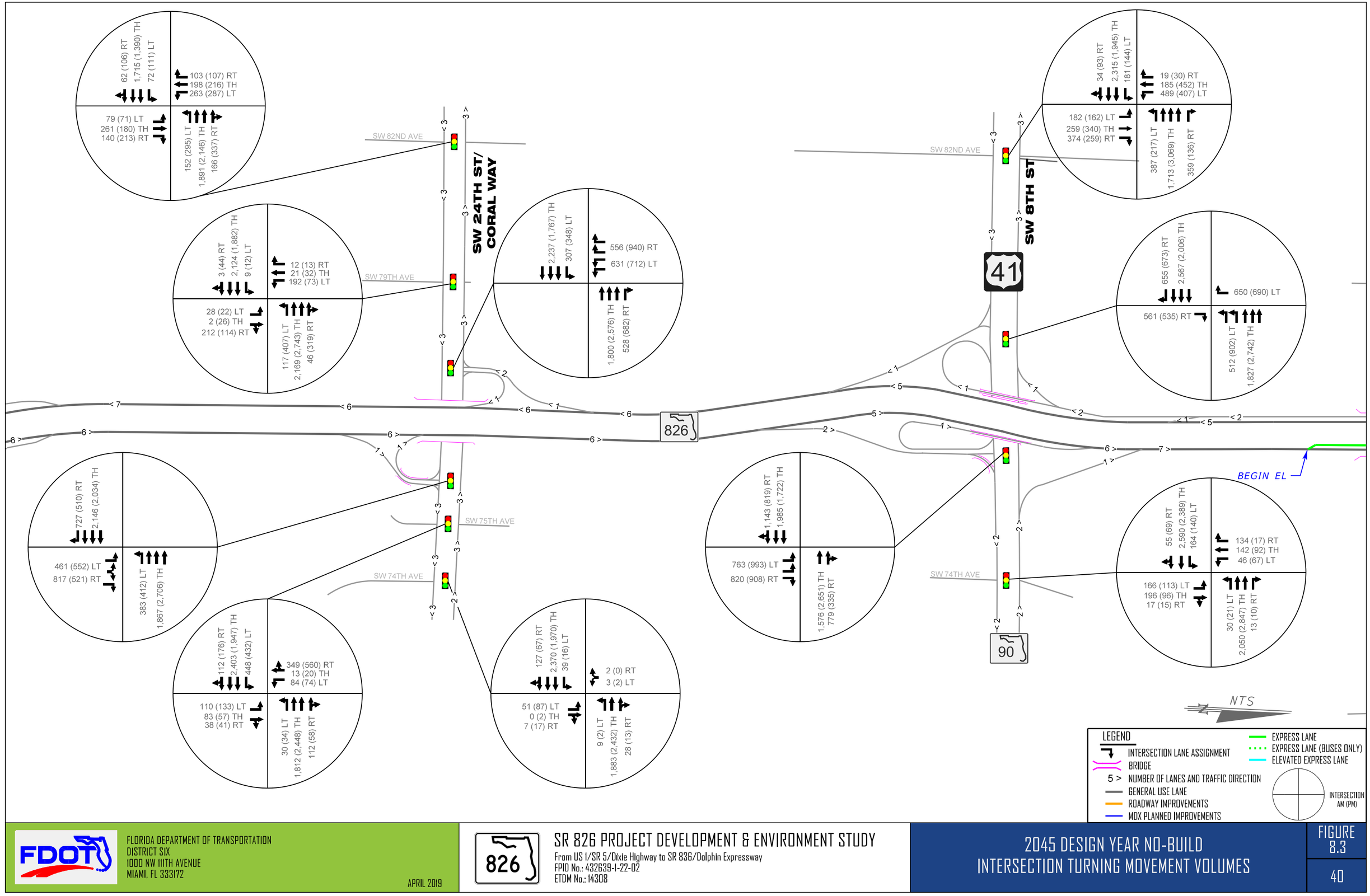
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD INTERSECTION TURNING MOVEMENT VOLUMES

FIGURE 8.3



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

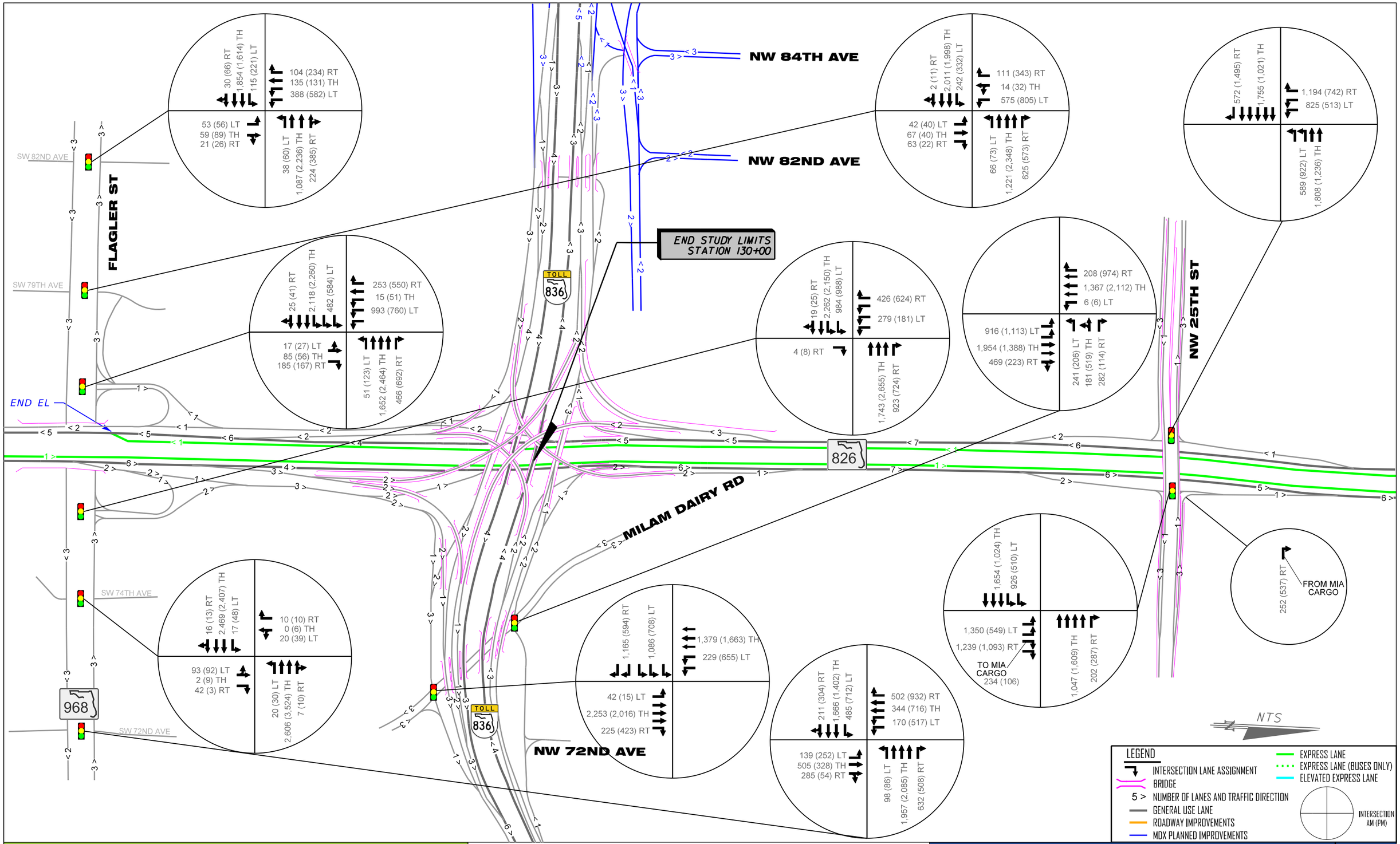
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD INTERSECTION TURNING MOVEMENT VOLUMES

FIGURE 8.3



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

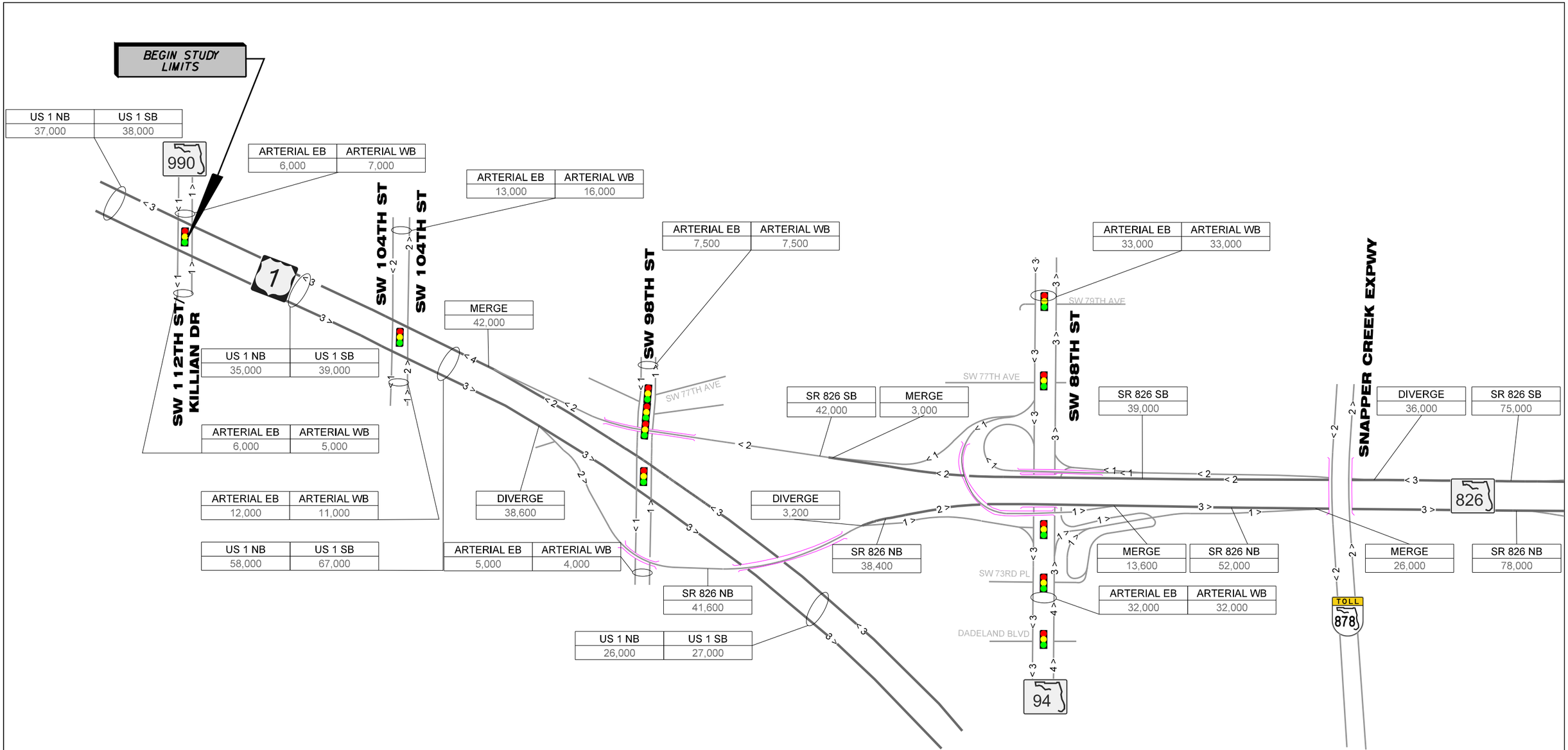
SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

2045 DESIGN YEAR NO-BUILD INTERSECTION TURNING MOVEMENT VOLUMES

FIGURE 8.3

Figure 8.4 summarizes the 2045 Build 1 link-by-link AADT volume assignments for the study area. ***Figure 8.5*** summarizes the 2045 Build 1 link-by-link DDHV volume assignments for the study area. ***Figure 8.6*** summarizes the 2045 Build 1 intersection turning movement volumes. These figures also depict number of lanes and interchange layouts.



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

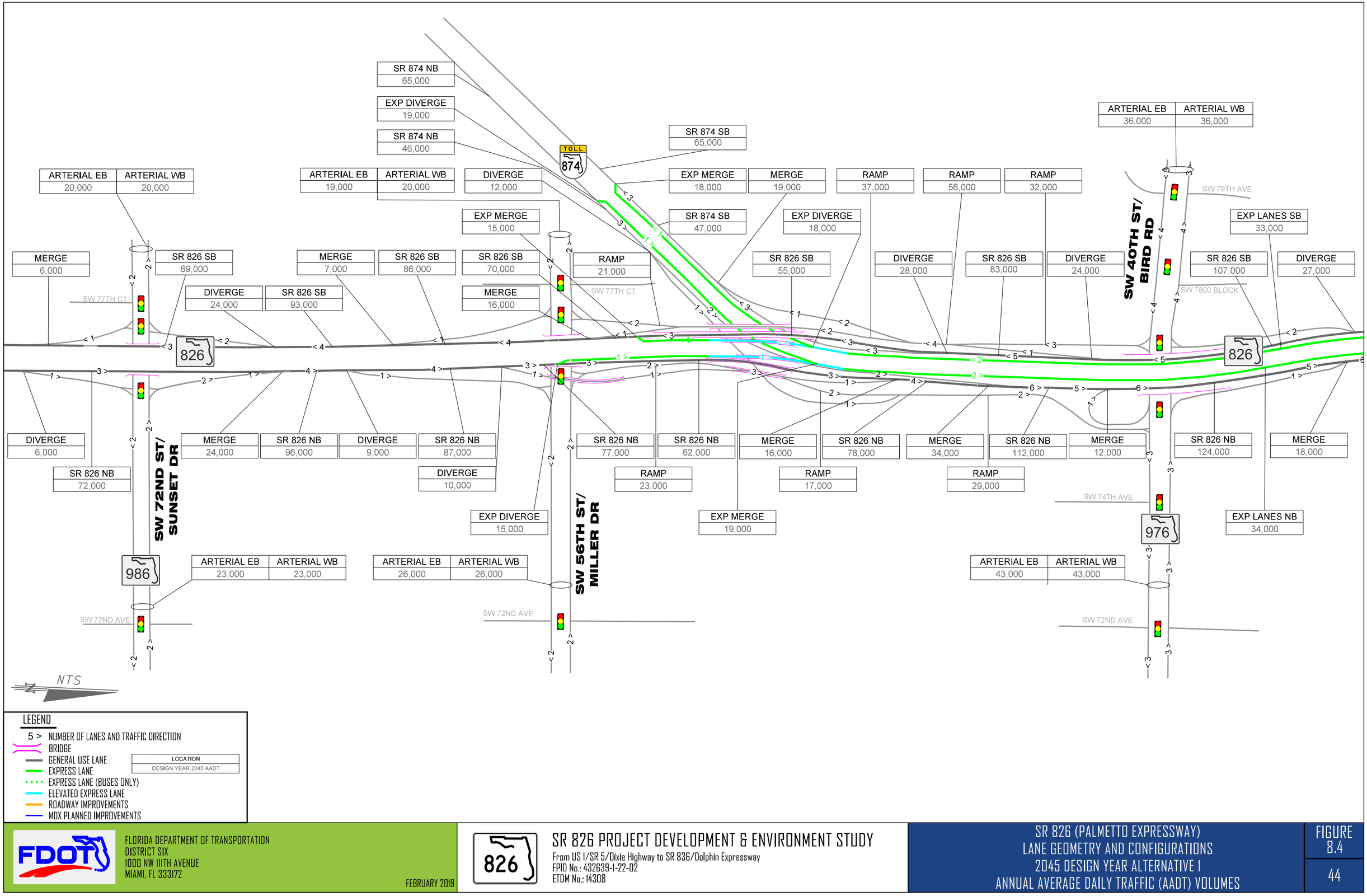
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

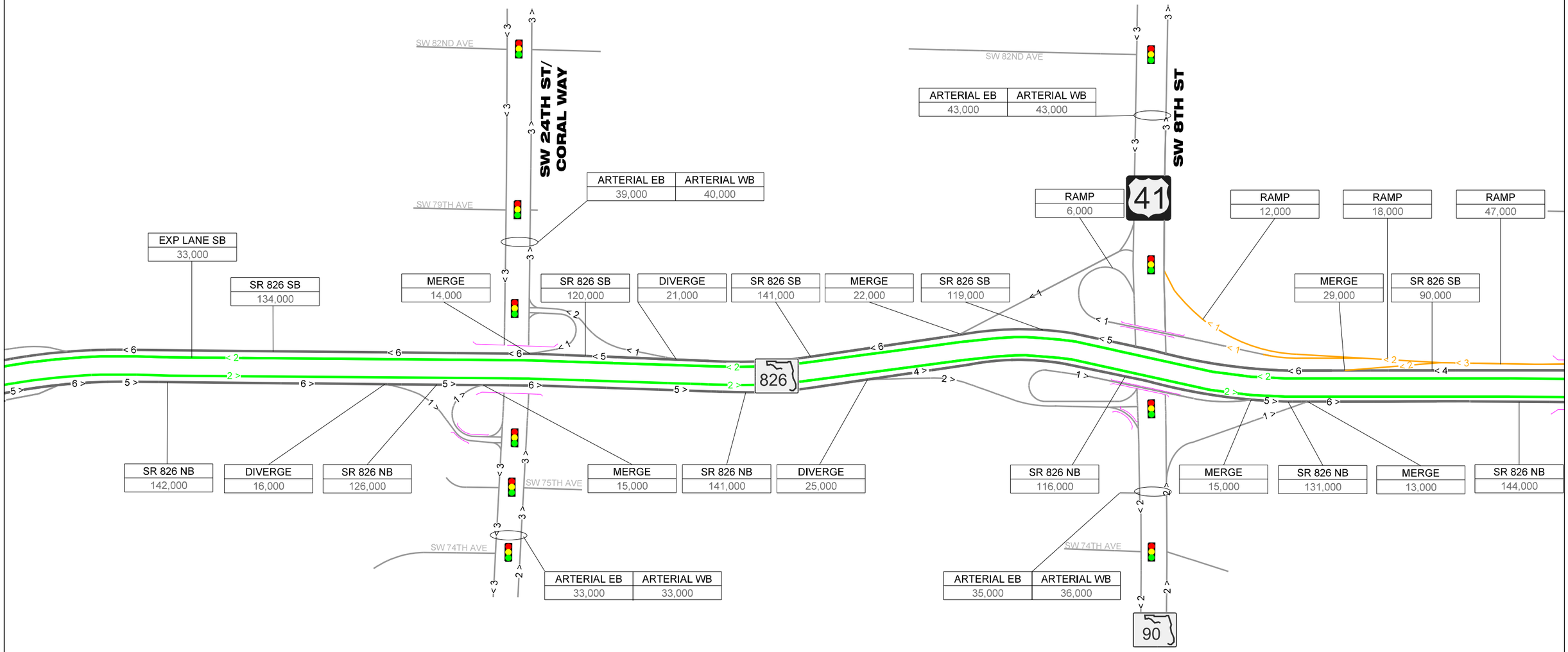
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.4



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 AADT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

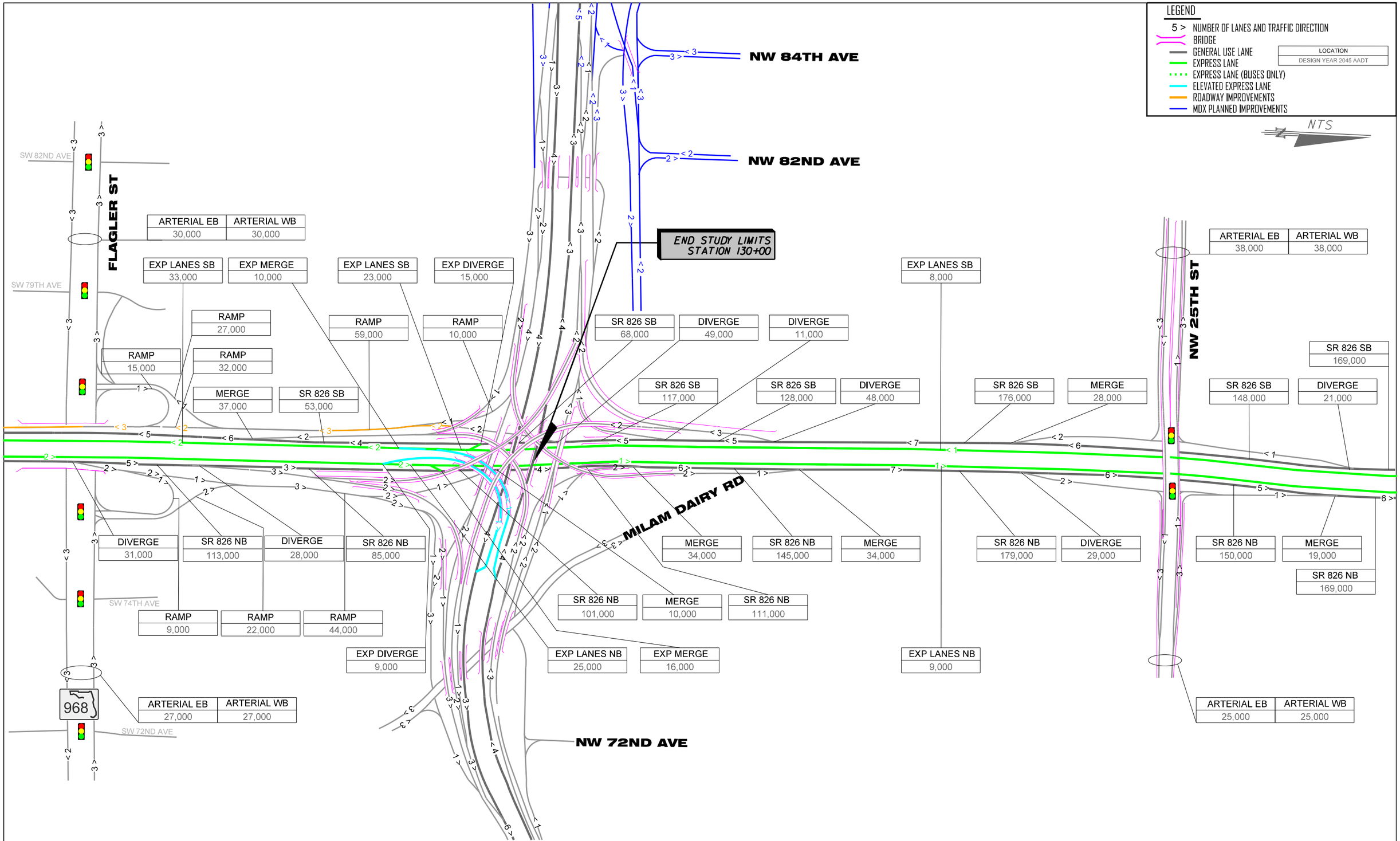
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

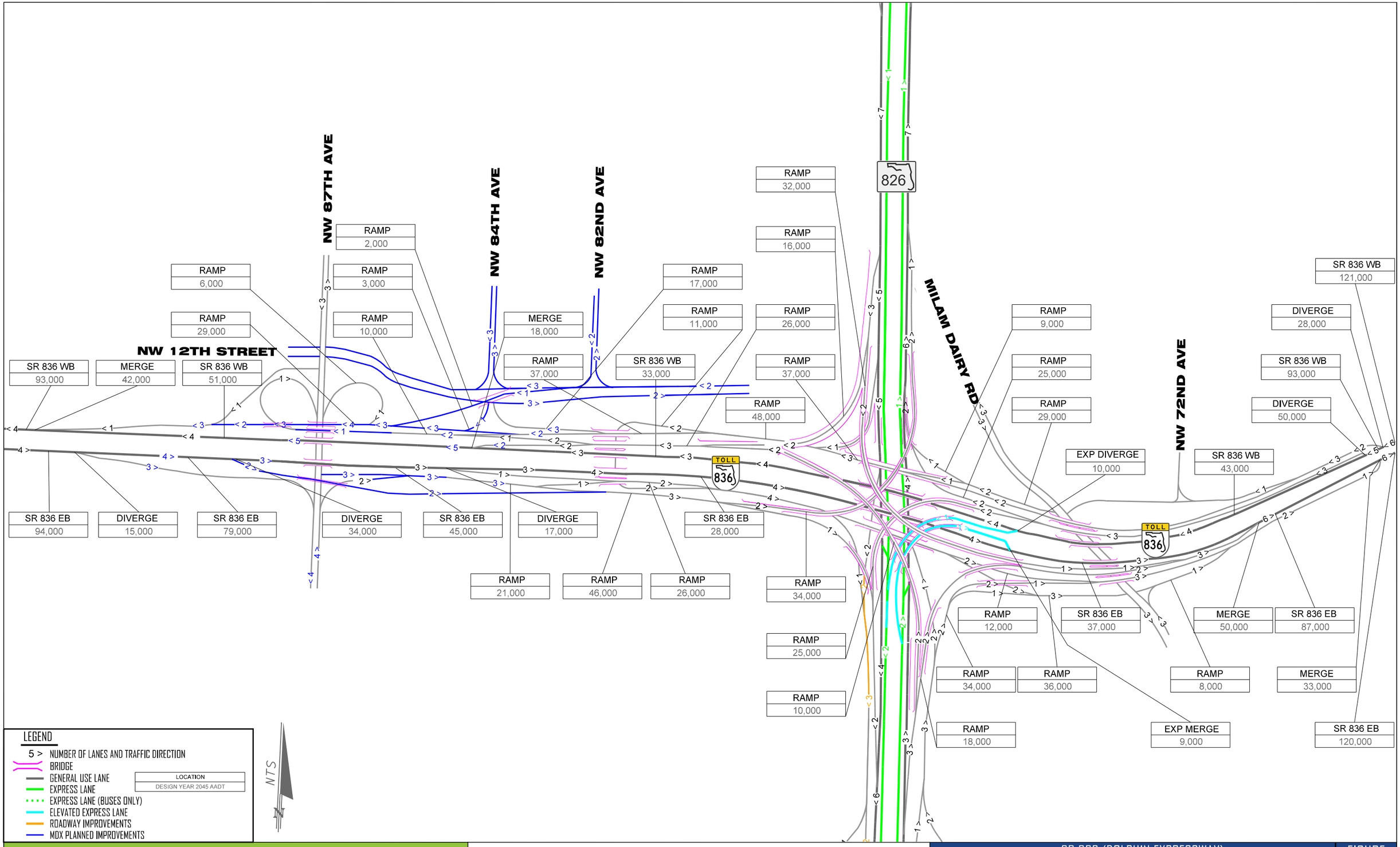
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

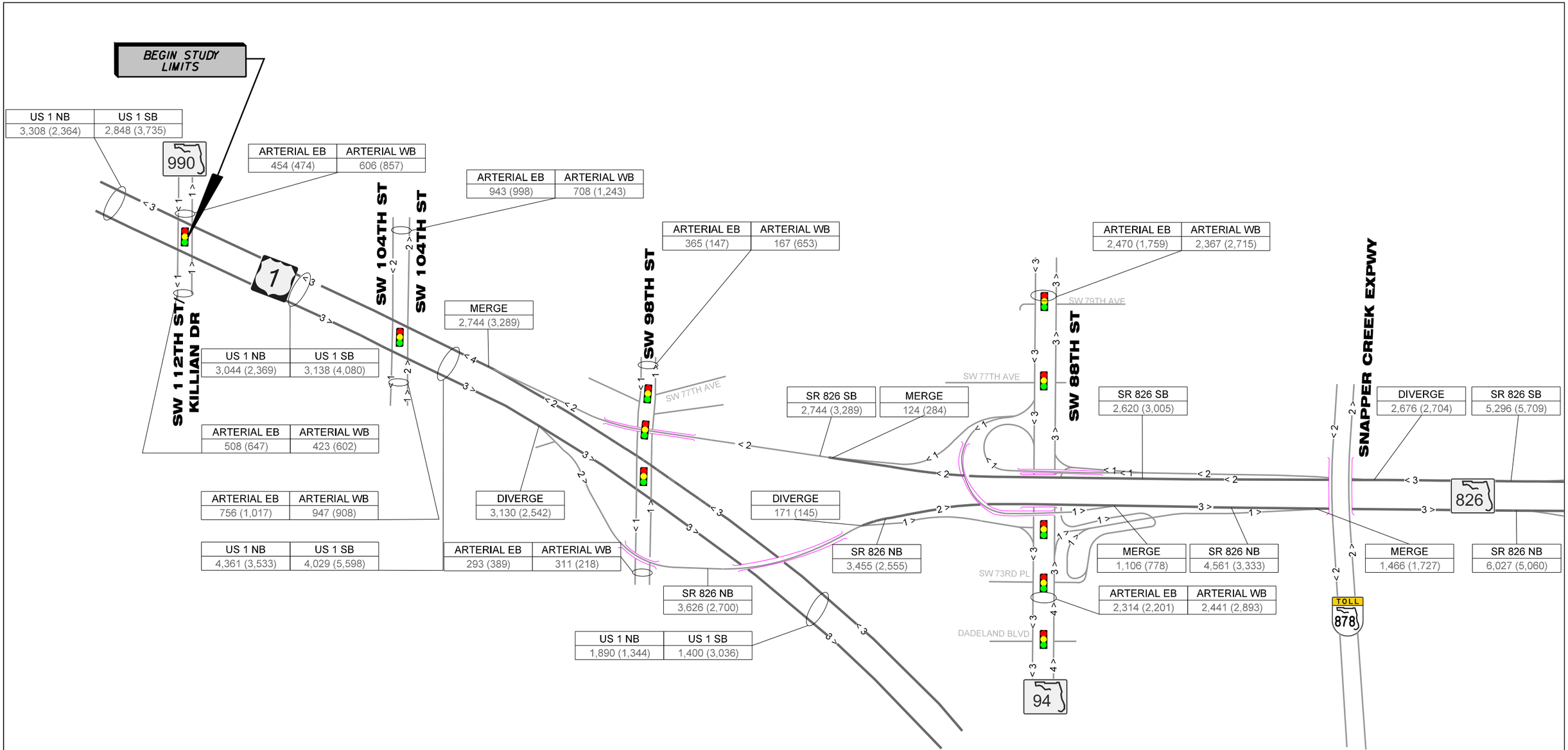
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

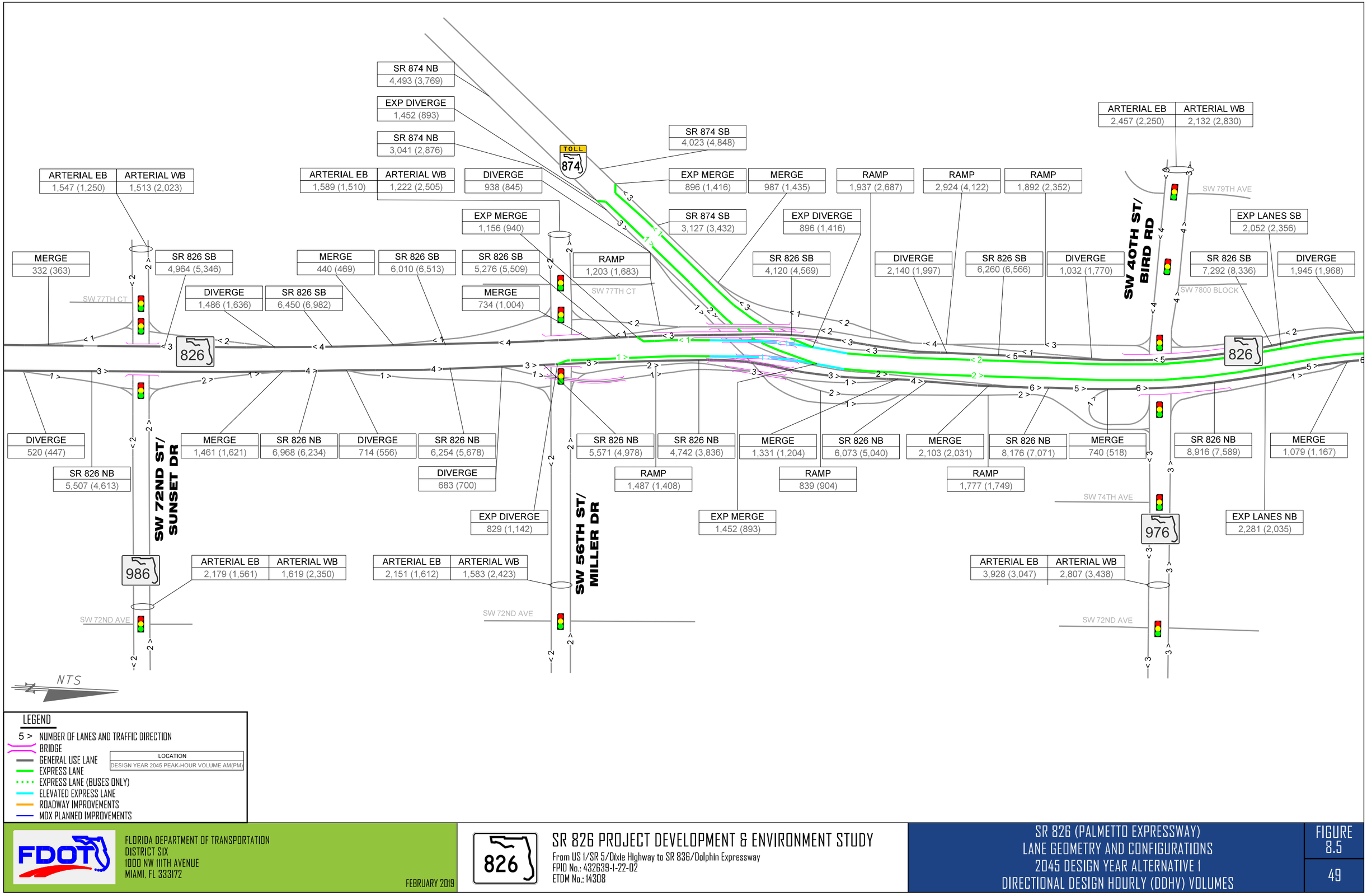
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.5



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

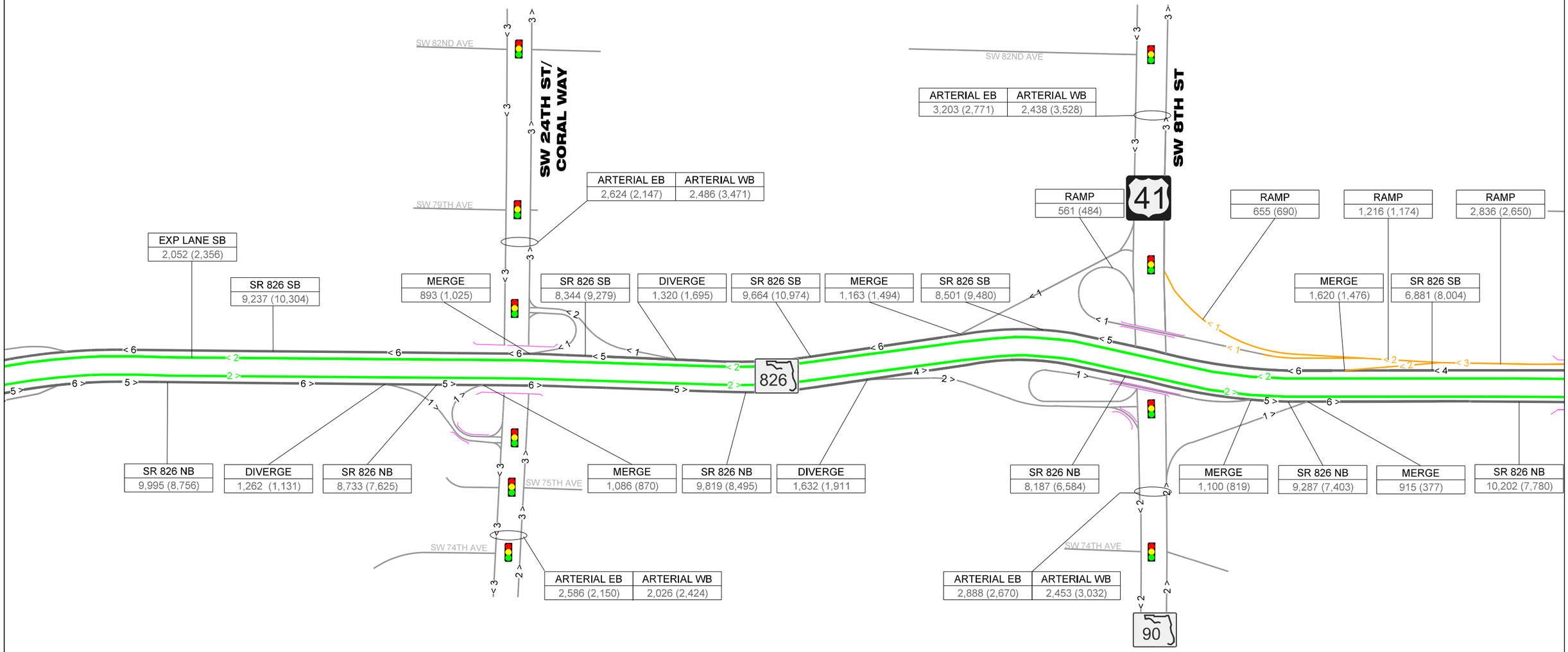
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.5



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.5

LEGEND

5 > NUMBER OF LANES AND TRAFFIC DIRECTION
BRIDGE
GENERAL USE LANE
EXPRESS LANE
EXPRESS LANE (BUSES ONLY)
ELEVATED EXPRESS LANE
ROADWAY IMPROVEMENTS
MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

NTS

NW 84TH AVE

NW 82ND AVE

SW 82ND AVE

FLAGLER ST

SW 79TH AVE

END STUDY LIMITS
STATION 130+00

ARTERIAL EB	ARTERIAL WB
2,194 (2,481)	1,802 (2,995)

EXP LANES SB	EXP MERGE	EXP LANES SB	EXP DIVERGE
2,052 (2,356)	432 (1,248)	1,620 (1,108)	982 (540)

RAMP	RAMP	RAMP
1,933 (1,683)	3,837 (3,016)	501 (593)

RAMP	RAMP
932 (1,317)	1,904 (1,333)

MERGE	SR 826 SB
2,987 (1,990)	3,894 (6,014)

SR 826 SB	DIVERGE	DIVERGE
4,808 (6,555)	3,336 (2,423)	924 (459)

SR 826 SB	SR 826 SB	DIVERGE
8,212 (8,977)	9,136 (9,436)	2,983 (2,998)

EXP LANES SB
638 (568)

SR 826 SB	MERGE
12,119 (12,434)	1,215 (2,490)

ARTERIAL EB	ARTERIAL WB
2,258 (2,799)	3,095 (2,055)

NW 25TH ST

SR 826 SB	DIVERGE
10,904 (9,944)	2,047 (1,281)

SR 826 SB
12,951 (11,225)

MILAM DAIRY RD

DIVERGE	SR 826 NB	DIVERGE	SR 826 NB
1,930 (1,652)	8,272 (6,128)	1,854 (1,858)	6,418 (4,270)

MERGE	SR 826 NB	MERGE
3,298 (2,312)	11,853 (8,680)	2,232 (1,959)

SR 826 NB	DIVERGE
14,085 (10,639)	2,596 (1,709)

SR 826 NB	MERGE
11,489 (8,930)	1,486 (1,343)

SR 826 NB
12,975 (10,273)

SW 74TH AVE

RAMP	RAMP	RAMP
705 (824)	1,934 (1,664)	3,159 (2,492)

SR 826 NB	MERGE	SR 826 NB
6,961 (5,136)	1,594 (1,232)	8,555 (6,368)

EXP DIVERGE
1,168 (591)

EXP LANES NB	EXP MERGE
1,113 (1,444)	543 (866)

EXP LANES NB
570 (578)

968

SW 72ND AVE

ARTERIAL EB	ARTERIAL WB
2,492 (2,314)	2,645 (3,061)

ARTERIAL EB	ARTERIAL WB
2,430 (2,003)	1,369 (1,871)

NW 72ND AVE

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

MAY 2019

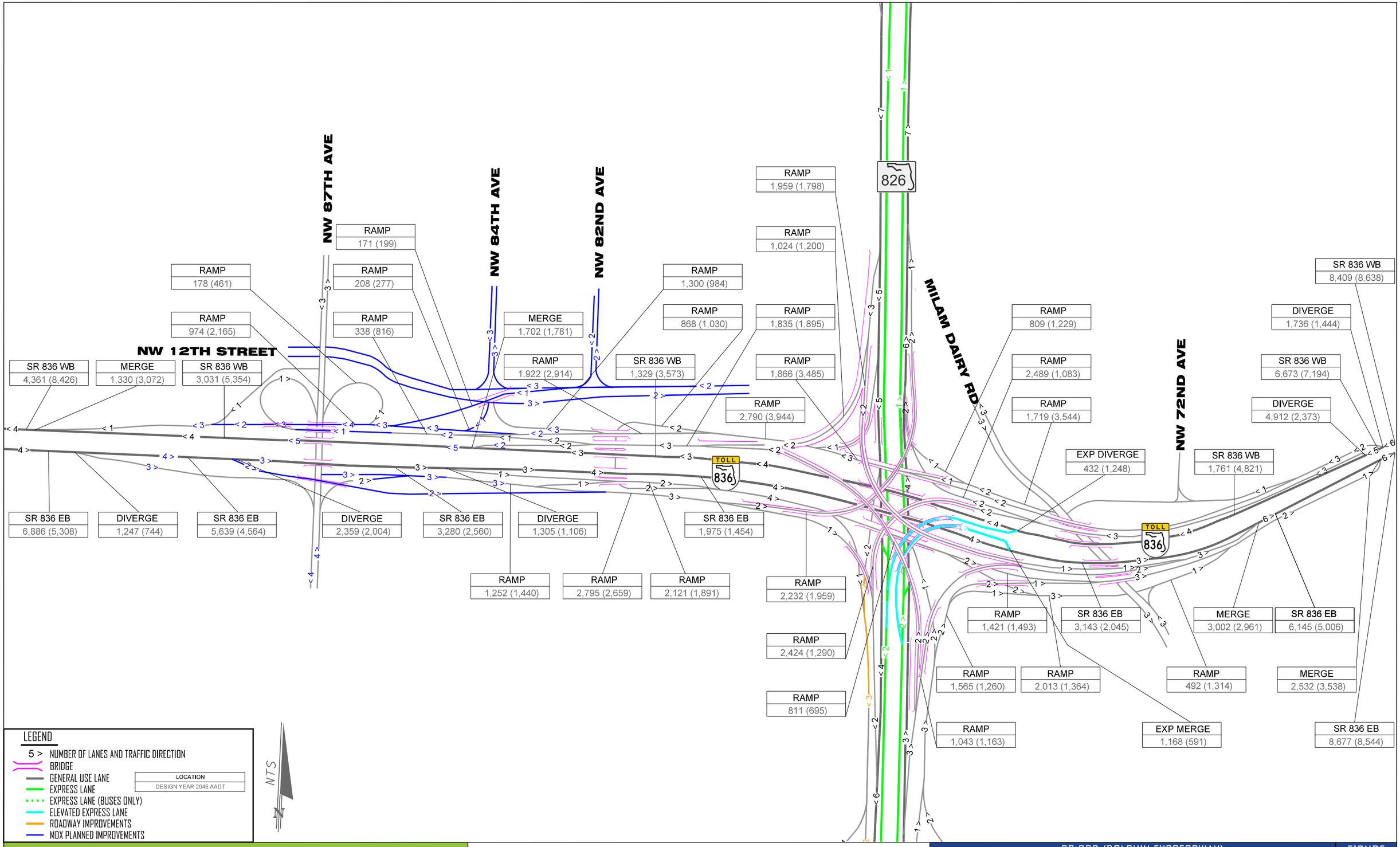
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.5



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

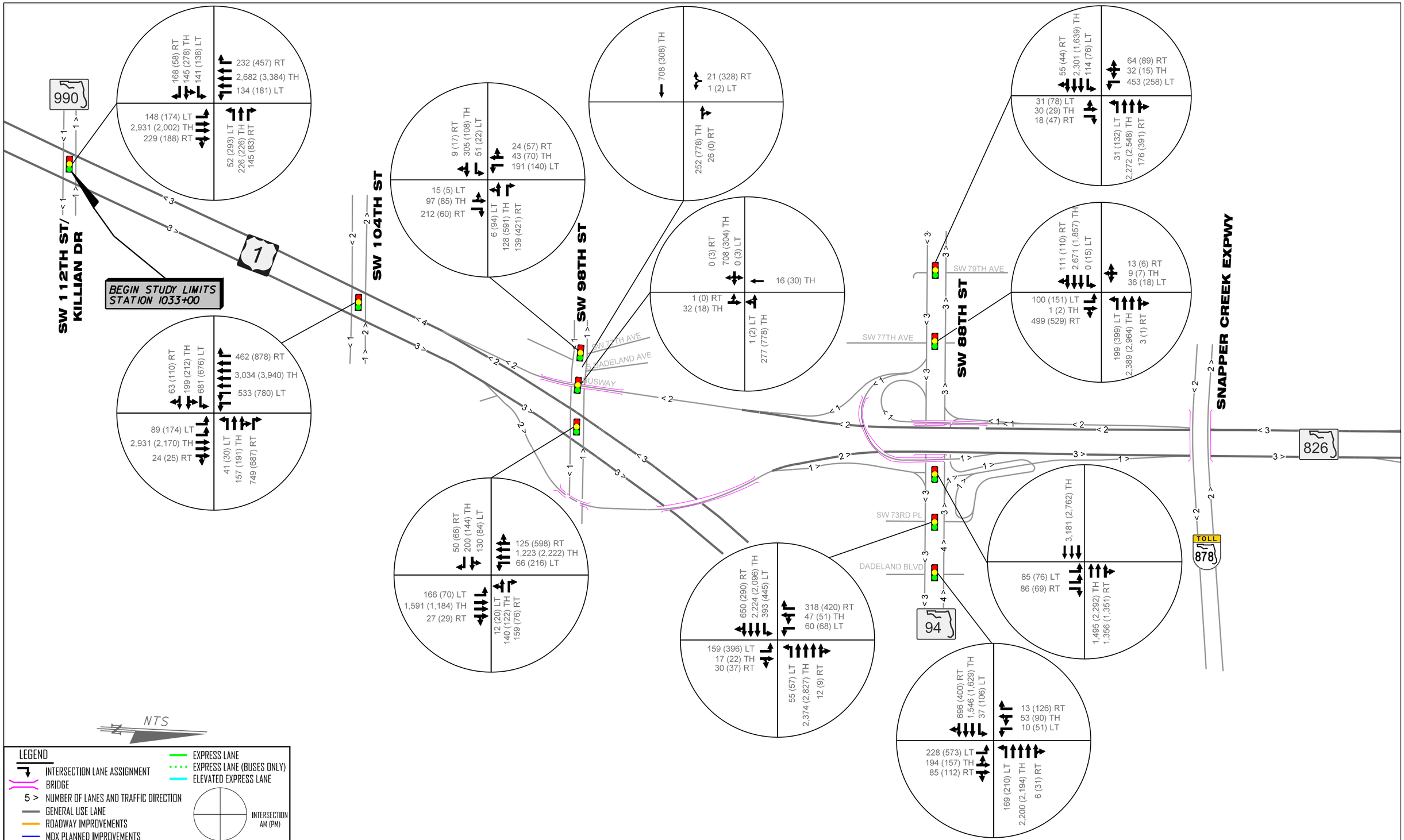
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.5



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

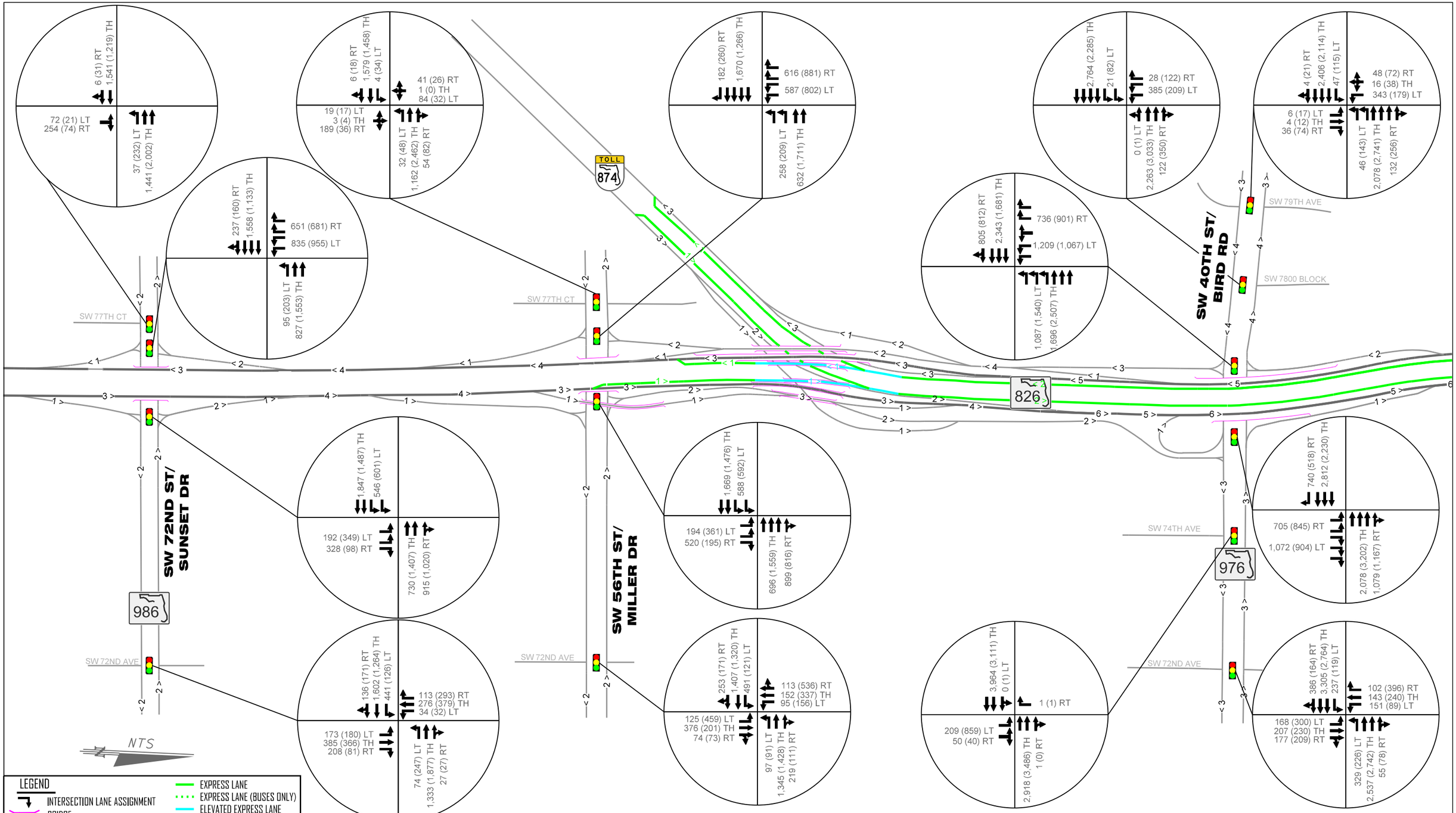
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
TURNING MOVEMENT VOLUME

FIGURE 8.6



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

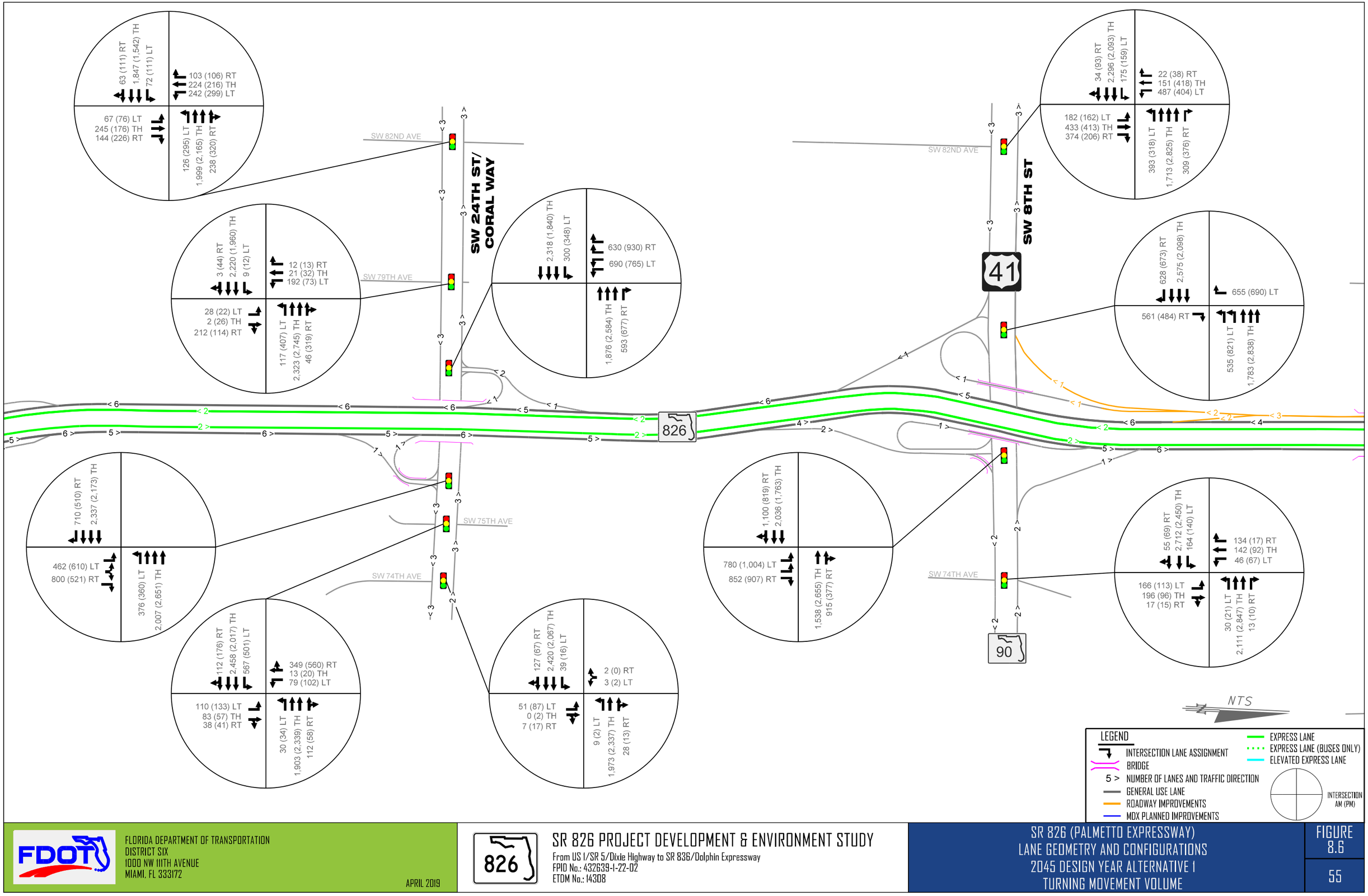
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
TURNING MOVEMENT VOLUME

FIGURE 8.6



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

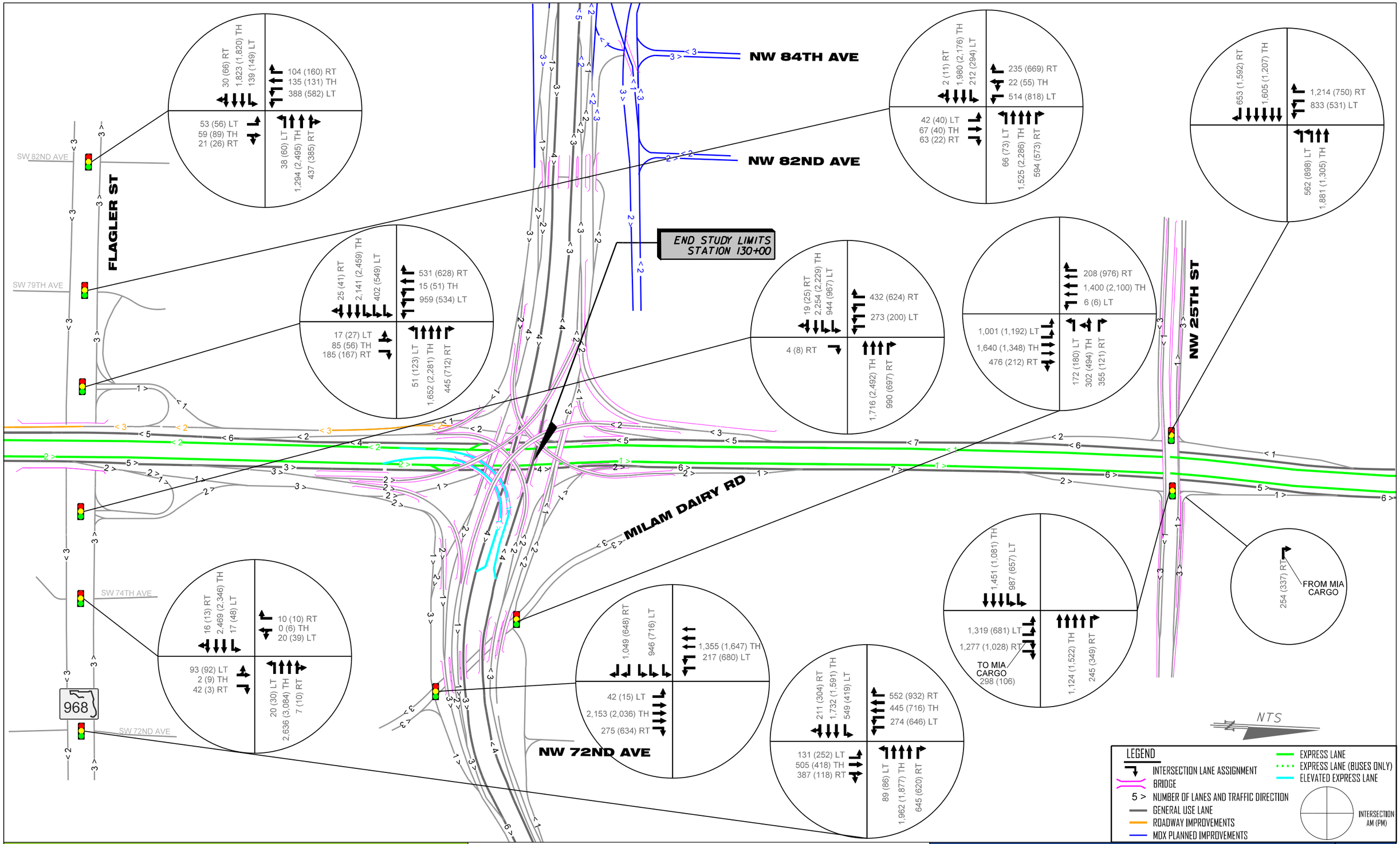
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
TURNING MOVEMENT VOLUME

FIGURE 8.6



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

826

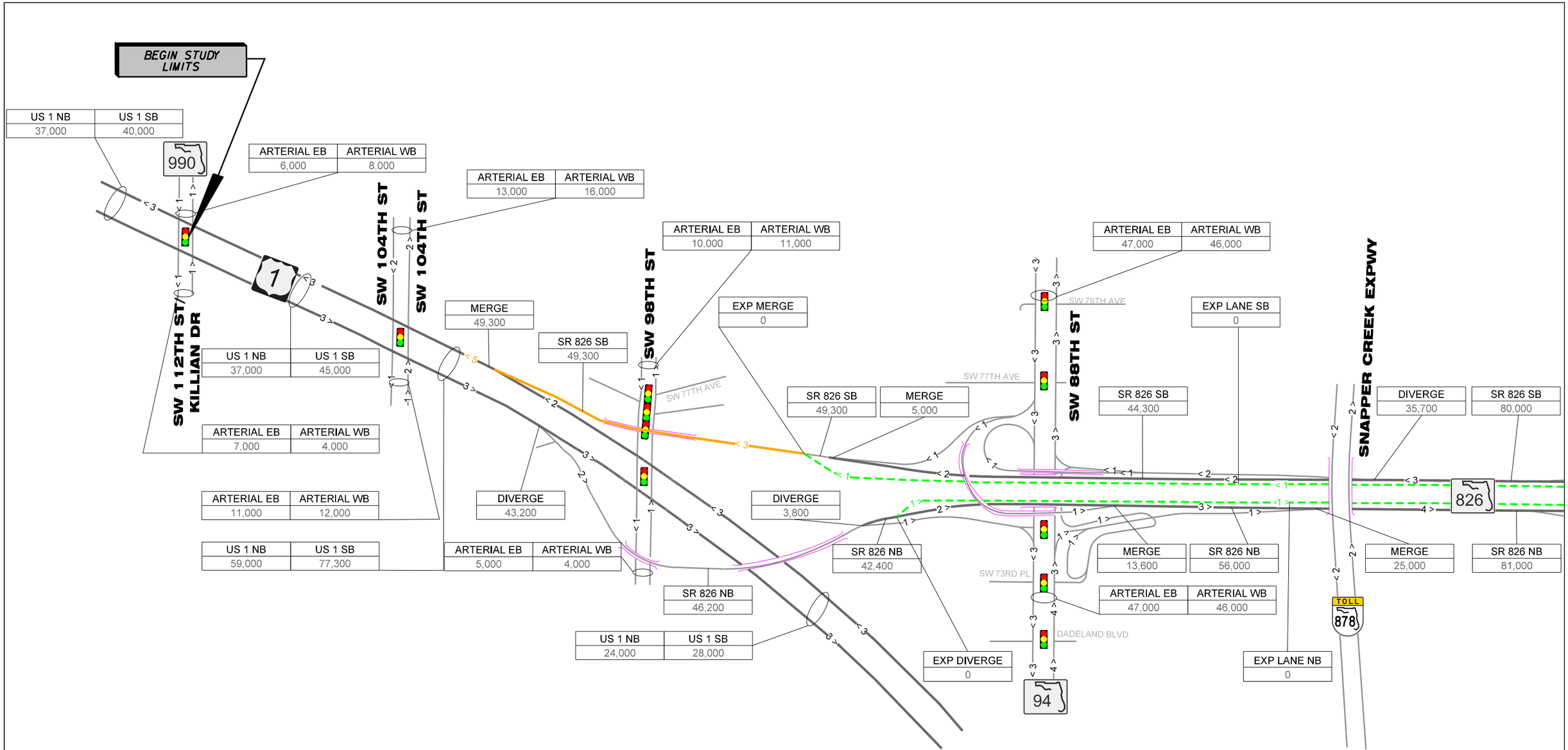
SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1
TURNING MOVEMENT VOLUME

FIGURE 8.6

Figure 8.7 summarizes the 2045 Build 2 link-by-link AADT volume assignments for the study area. ***Figure 8.8*** summarizes the 2045 Build 2 link-by-link DDHV volume assignments for the study area. ***Figure 8.9*** summarizes the 2045 Build 2 intersection turning movement volumes. These figures also depict number of lanes and interchange layouts.



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

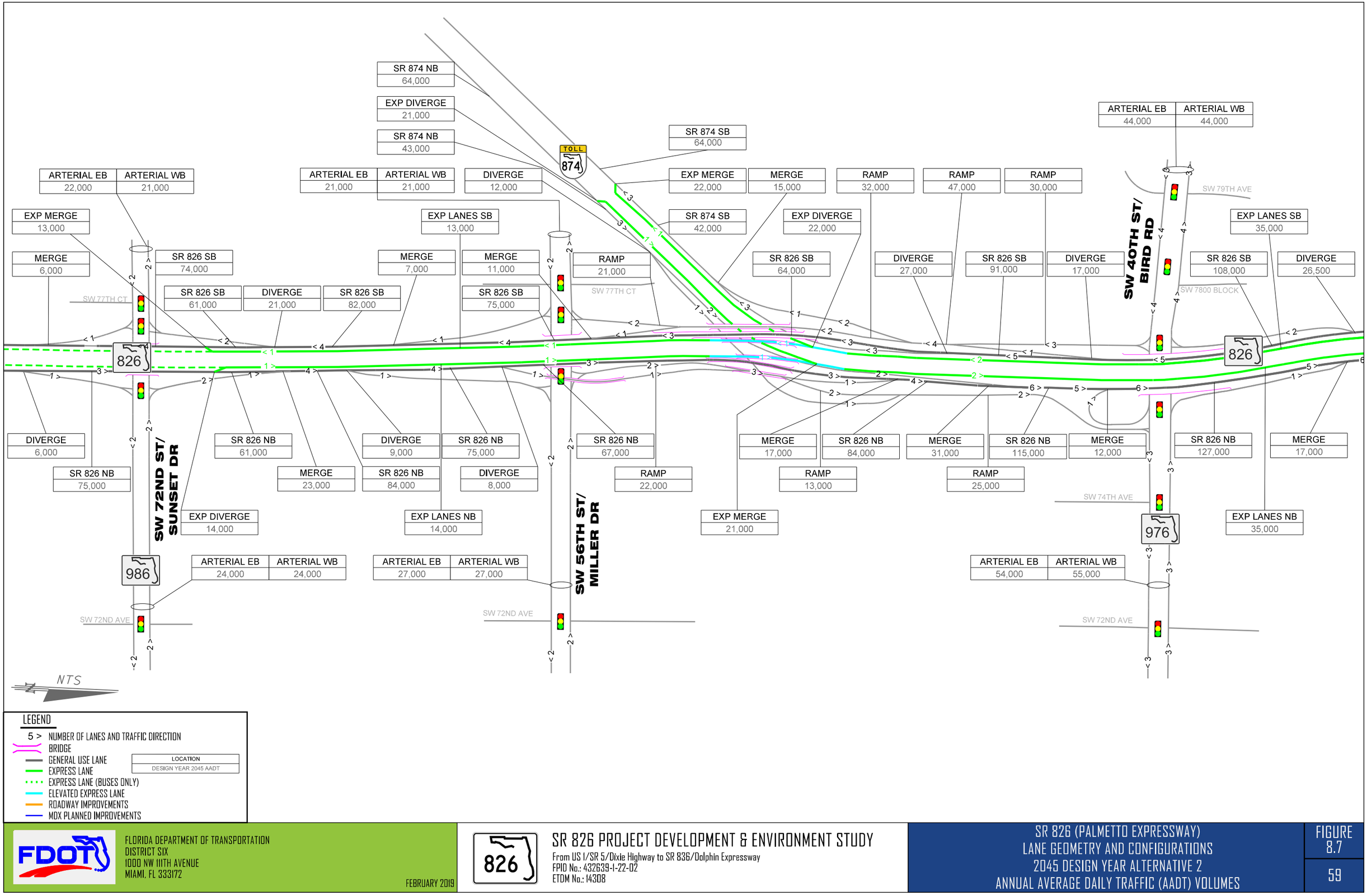
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2 ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.7



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

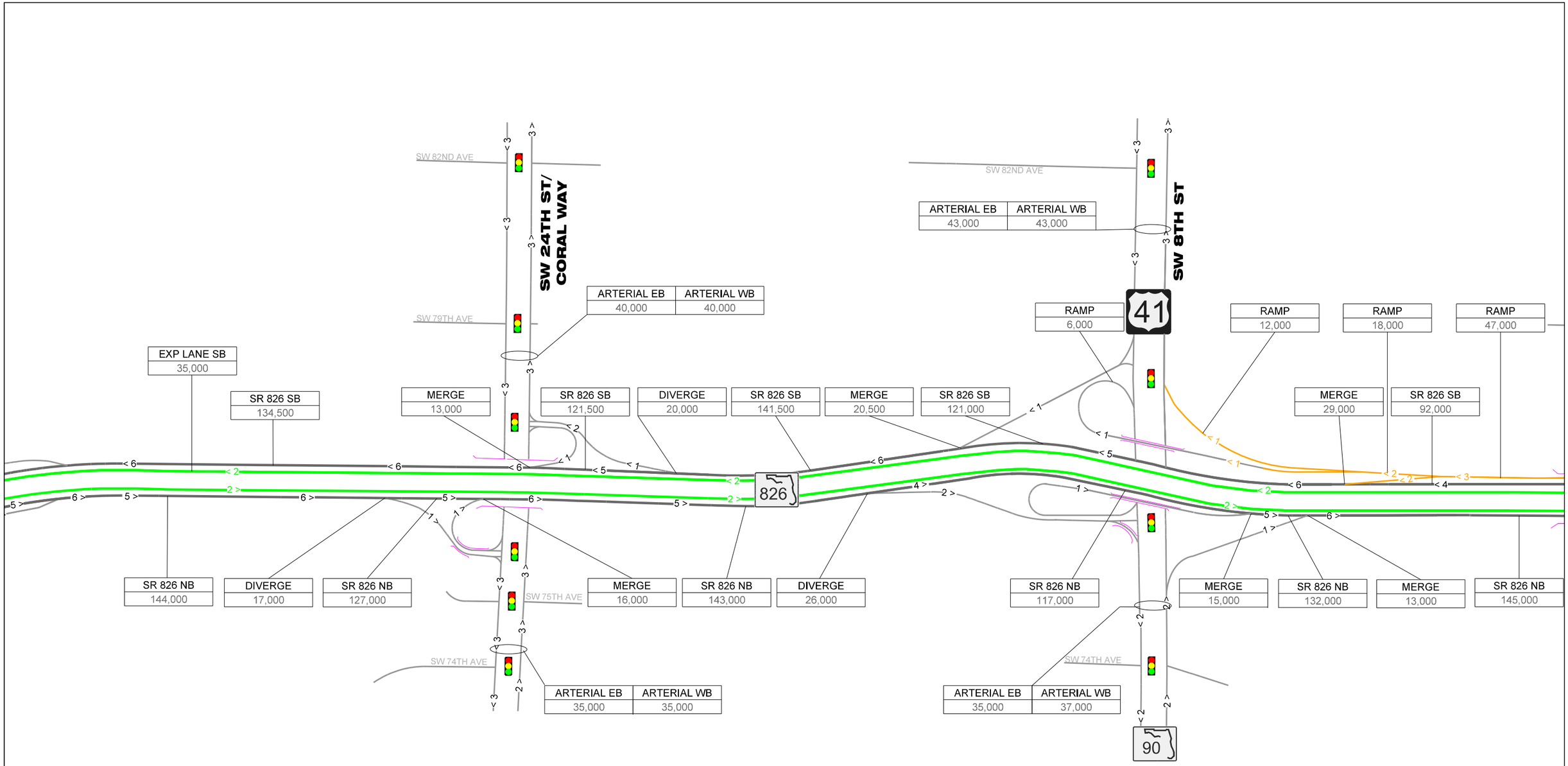
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.7



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 AADT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

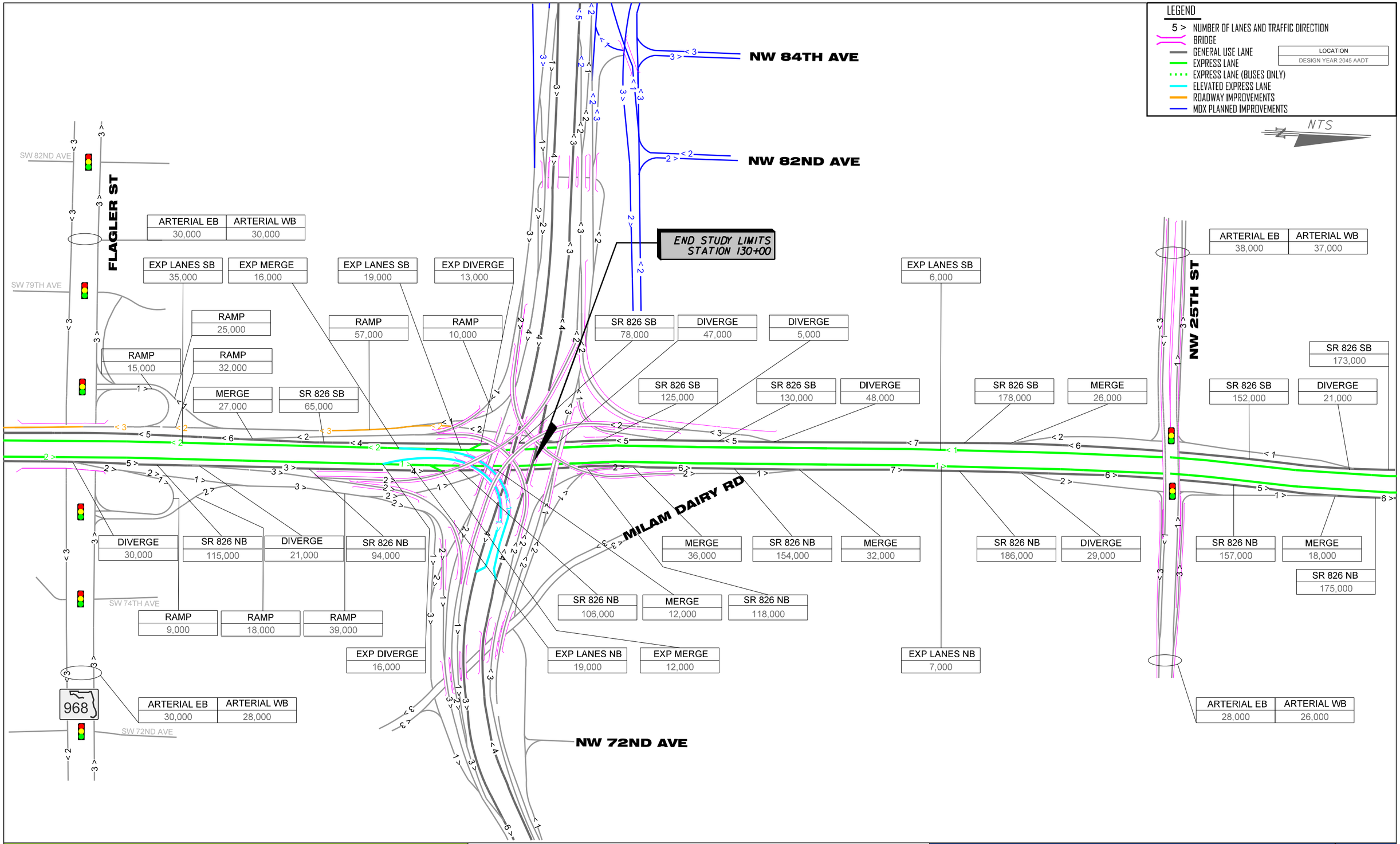
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.7



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

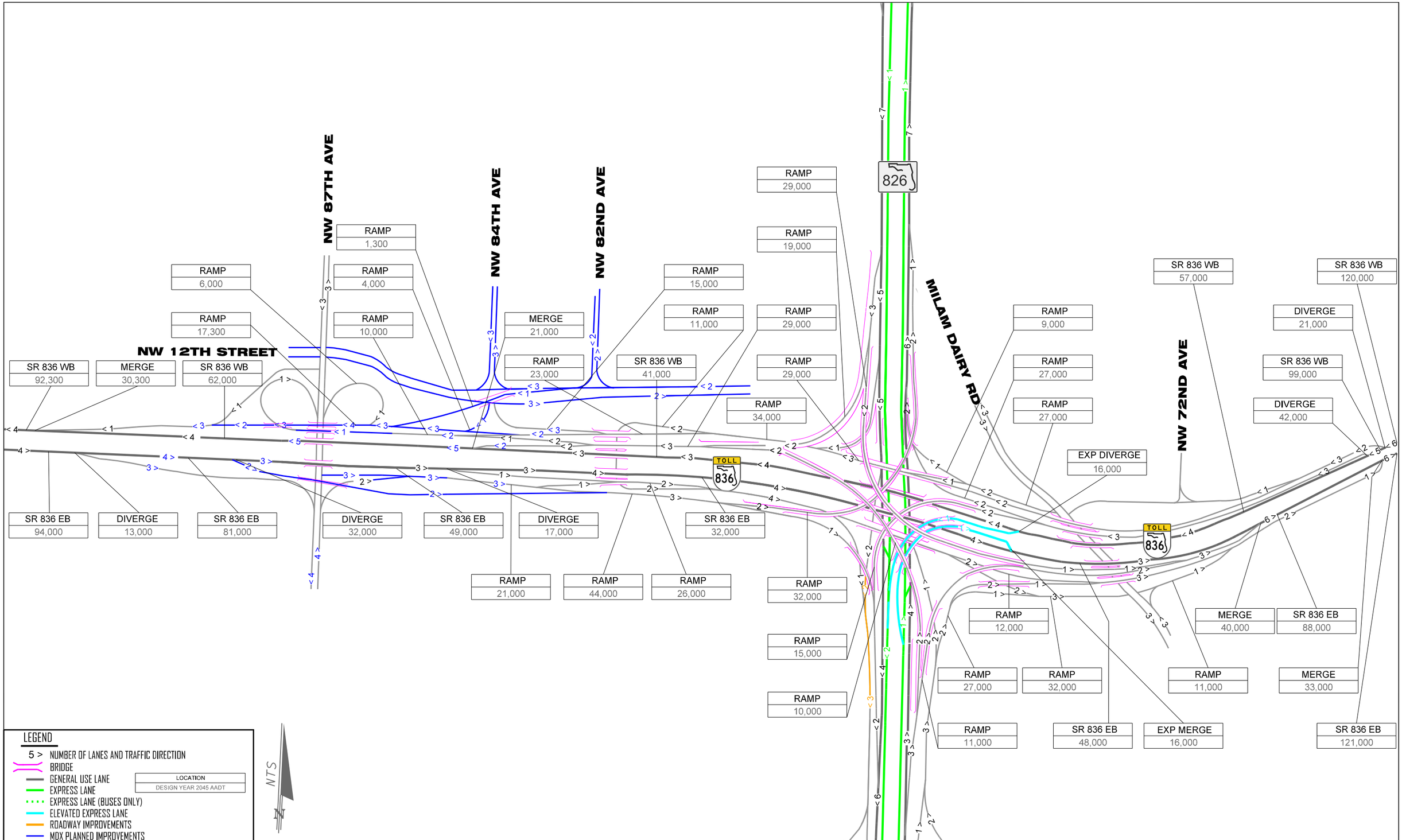
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.7



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

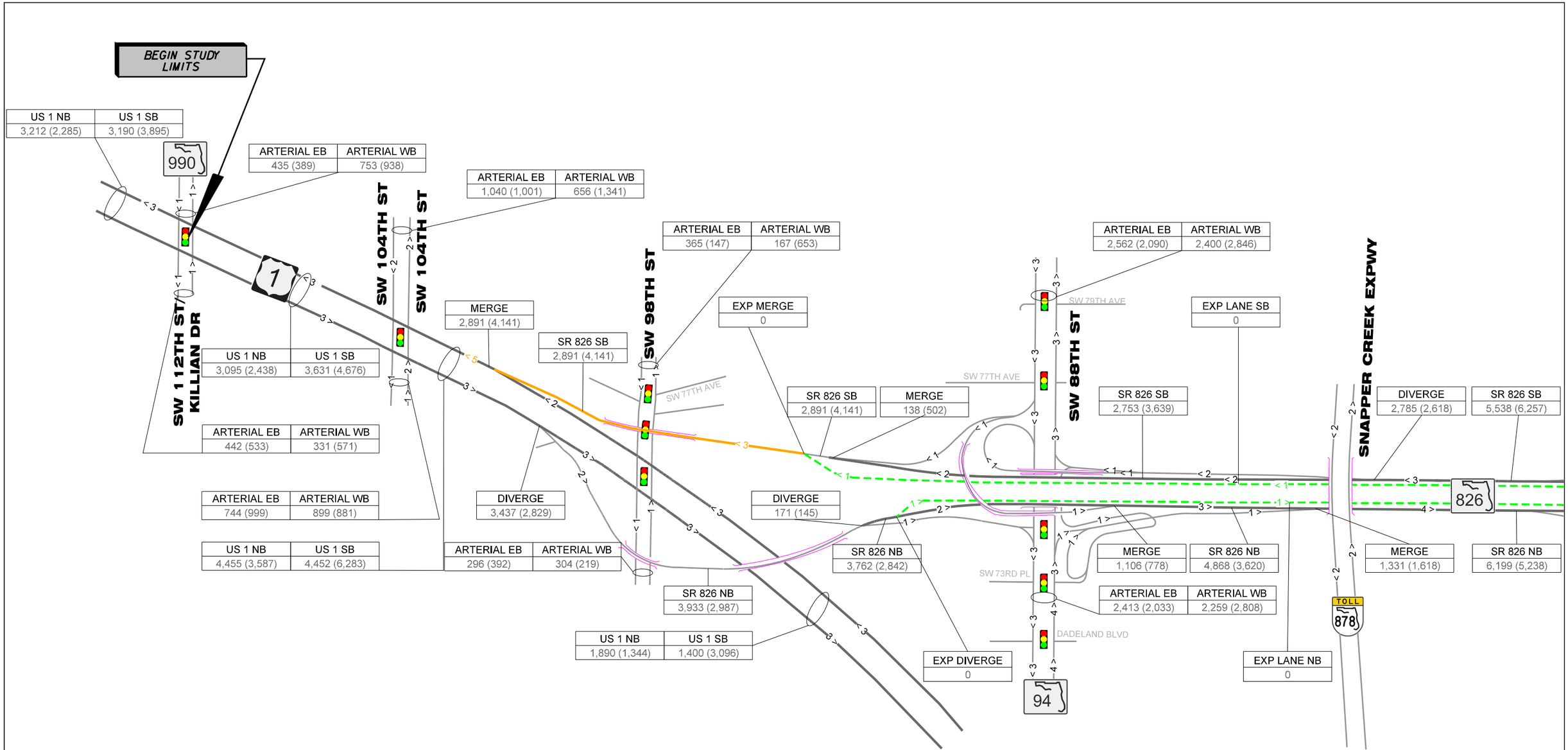
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2 ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.7



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

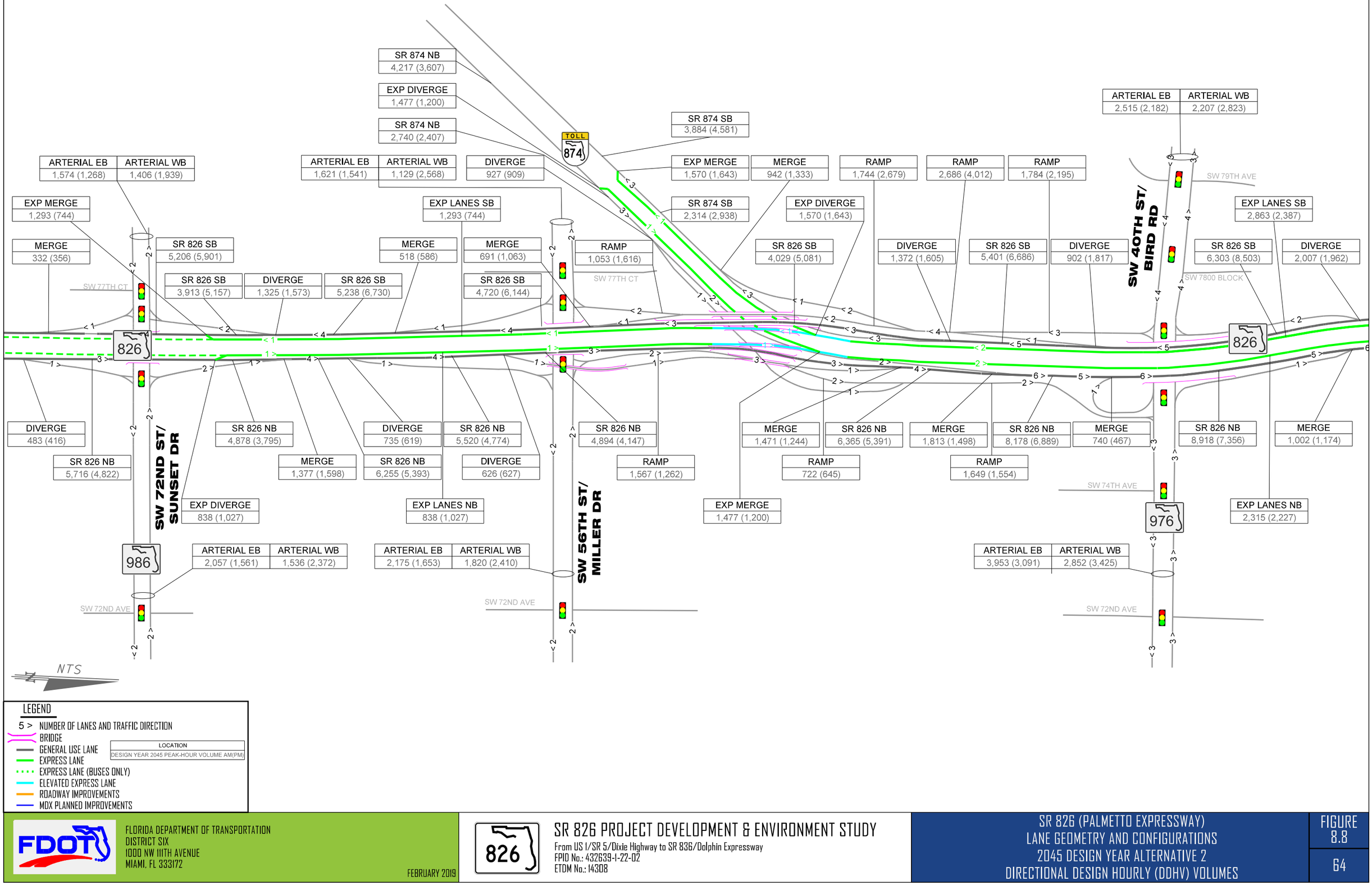
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2 DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.8



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

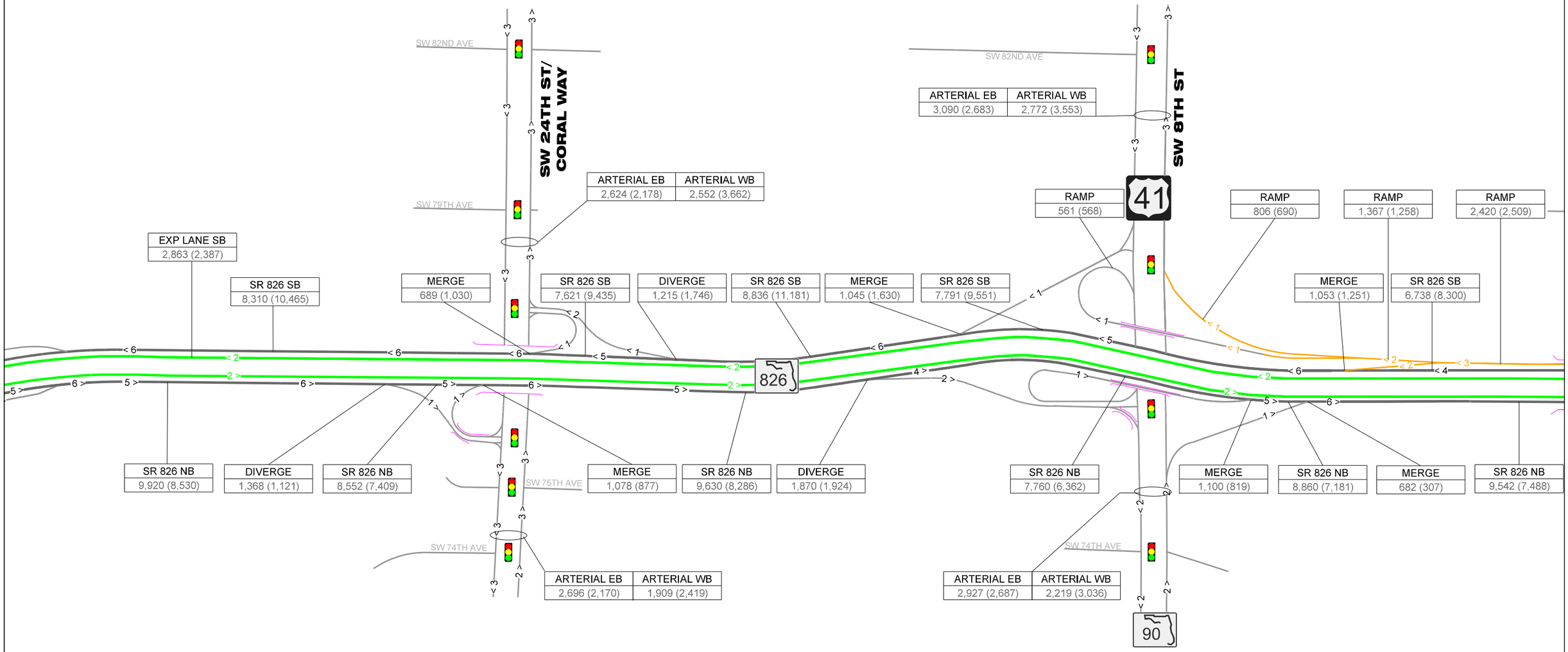
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2 DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.8



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.8

LEGEND

5 > NUMBER OF LANES AND TRAFFIC DIRECTION
BRIDGE
GENERAL USE LANE
EXPRESS LANE
EXPRESS LANE (BUSES ONLY)
ELEVATED EXPRESS LANE
ROADWAY IMPROVEMENTS
MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

NTS

NW 84TH AVE

NW 82ND AVE

SW 82ND AVE

FLAGLER ST

ARTERIAL EB	ARTERIAL WB
2,183 (2,202)	1,519 (2,877)

END STUDY LIMITS
STATION 130+00

EXP LANES SB	EXP MERGE
2,863 (2,387)	1,532 (1,448)

EXP LANES SB	EXP DIVERGE
1,331 (939)	949 (517)

EXP LANES SB
382 (422)

SW 79TH AVE

RAMP
435 (355)

RAMP
1,950 (1,698)

RAMP
3,144 (2,869)

RAMP
501 (593)

SR 826 SB	DIVERGE
5,939 (7,175)	2,643 (2,276)

DIVERGE
791 (209)

RAMP
1,226 (1,338)

RAMP
1,194 (1,171)

SR 826 SB
8,582 (9,451)

SR 826 SB	DIVERGE
9,373 (9,660)	3,069 (2,294)

SR 826 SB
12,442 (11,954)

MERGE
936 (2,264)

MERGE
1,748 (1,642)

SR 826 SB
4,990 (6,658)

NW 25TH ST

ARTERIAL EB	ARTERIAL WB
2,268 (2,515)	3,216 (2,164)

SR 826 SB
13,528 (11,106)

SR 826 SB
11,506 (9,690)

DIVERGE
2,022 (1,416)

MILAM DAIRY RD

DIVERGE
2,163 (1,529)

SR 826 NB
7,379 (5,959)

DIVERGE
1,099 (1,339)

SR 826 NB
6,280 (4,620)

MERGE
3,347 (2,421)

SR 826 NB
11,782 (8,804)

MERGE
2,199 (1,830)

SR 826 NB
13,981 (10,634)

DIVERGE
2,509 (1,697)

SR 826 NB
11,472 (8,937)

MERGE
1,515 (1,303)

SR 826 NB
13,017 (10,240)

SW 74TH AVE

RAMP
705 (822)

RAMP
1,912 (1,674)

RAMP
3,370 (2,381)

SR 826 NB
6,780 (5,166)

MERGE
1,655 (1,217)

SR 826 NB
8,435 (6,383)

EXP DIVERGE
1,377 (1,288)

EXP LANES NB
938 (939)

EXP MERGE
500 (546)

EXP LANES NB
438 (393)

968

ARTERIAL EB	ARTERIAL WB
2,492 (2,069)	2,822 (3,229)

ARTERIAL EB	ARTERIAL WB
2,430 (2,100)	1,380 (1,831)

SW 72ND AVE

NW 72ND AVE

FDOT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

FEBRUARY 2019

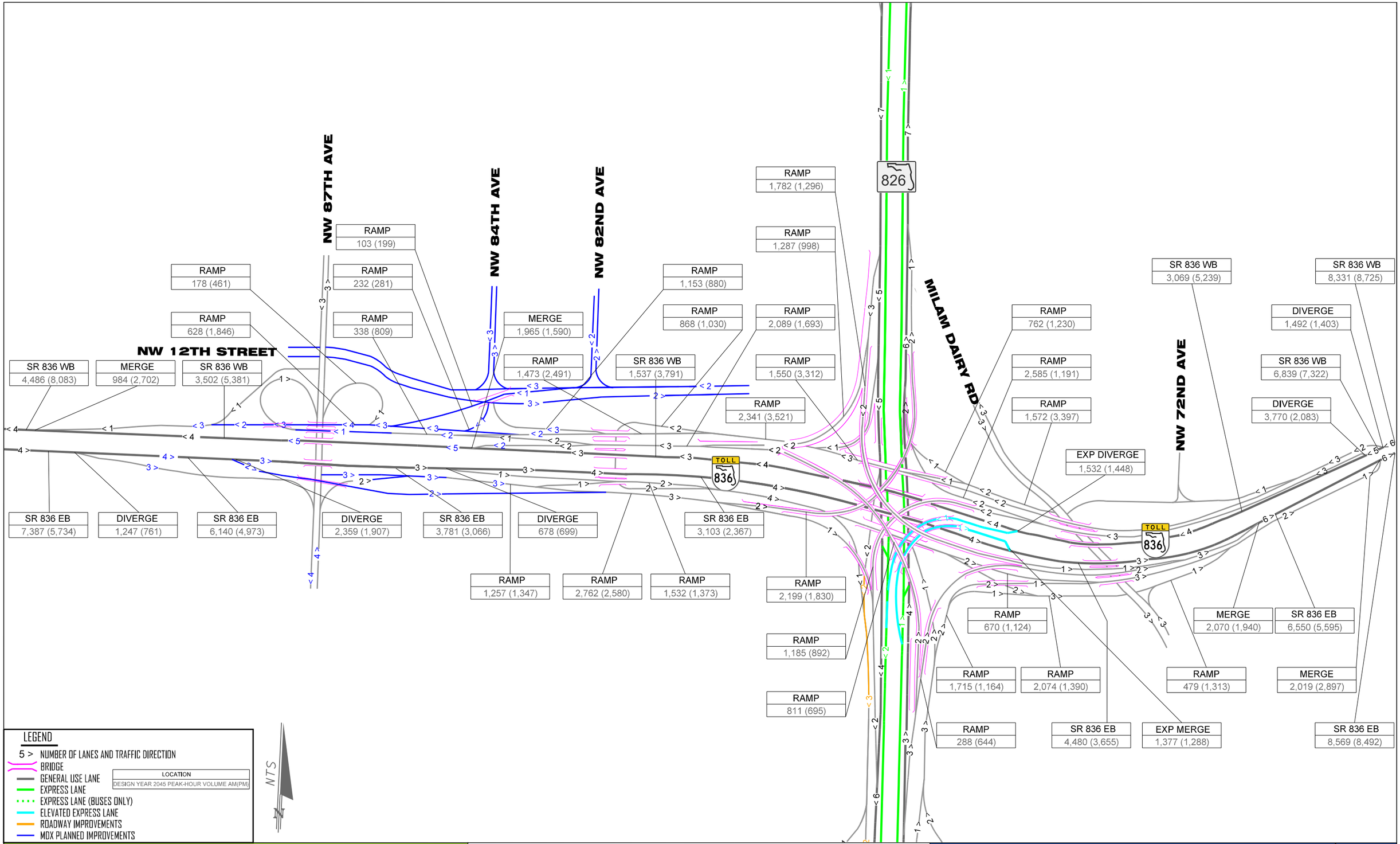
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.8



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

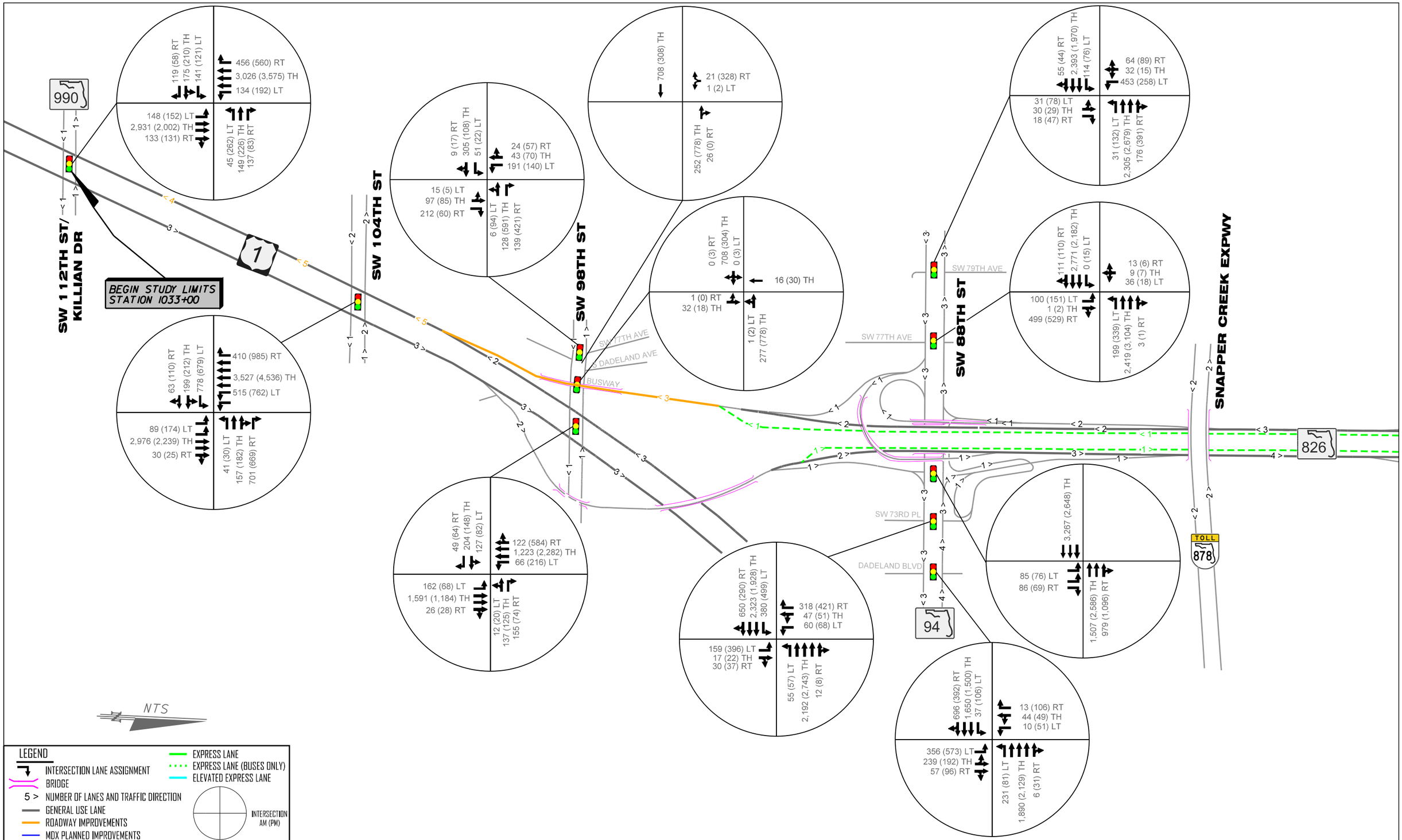
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.8



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

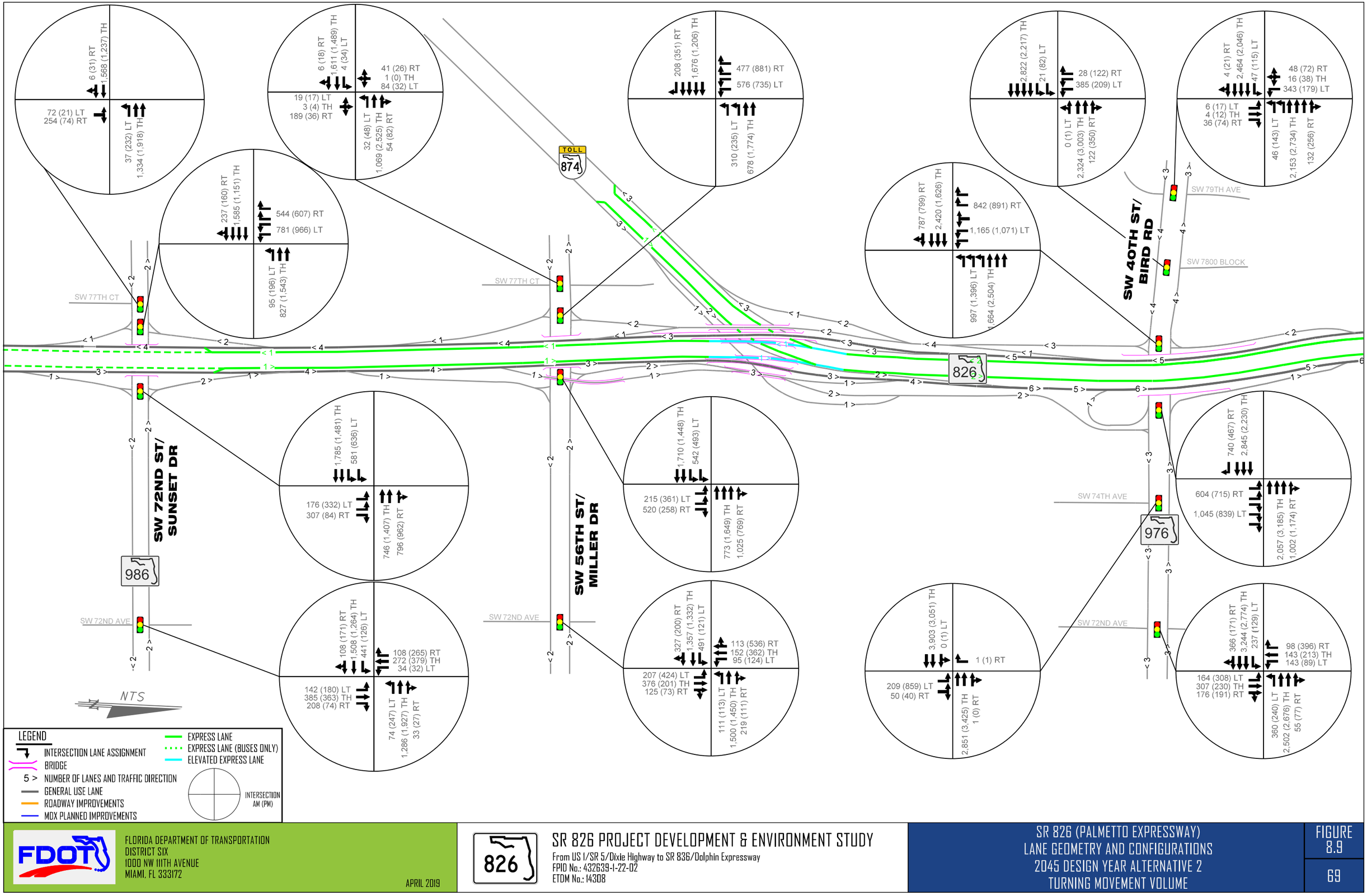
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2 TURNING MOVEMENT VOLUME

FIGURE 8.9



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

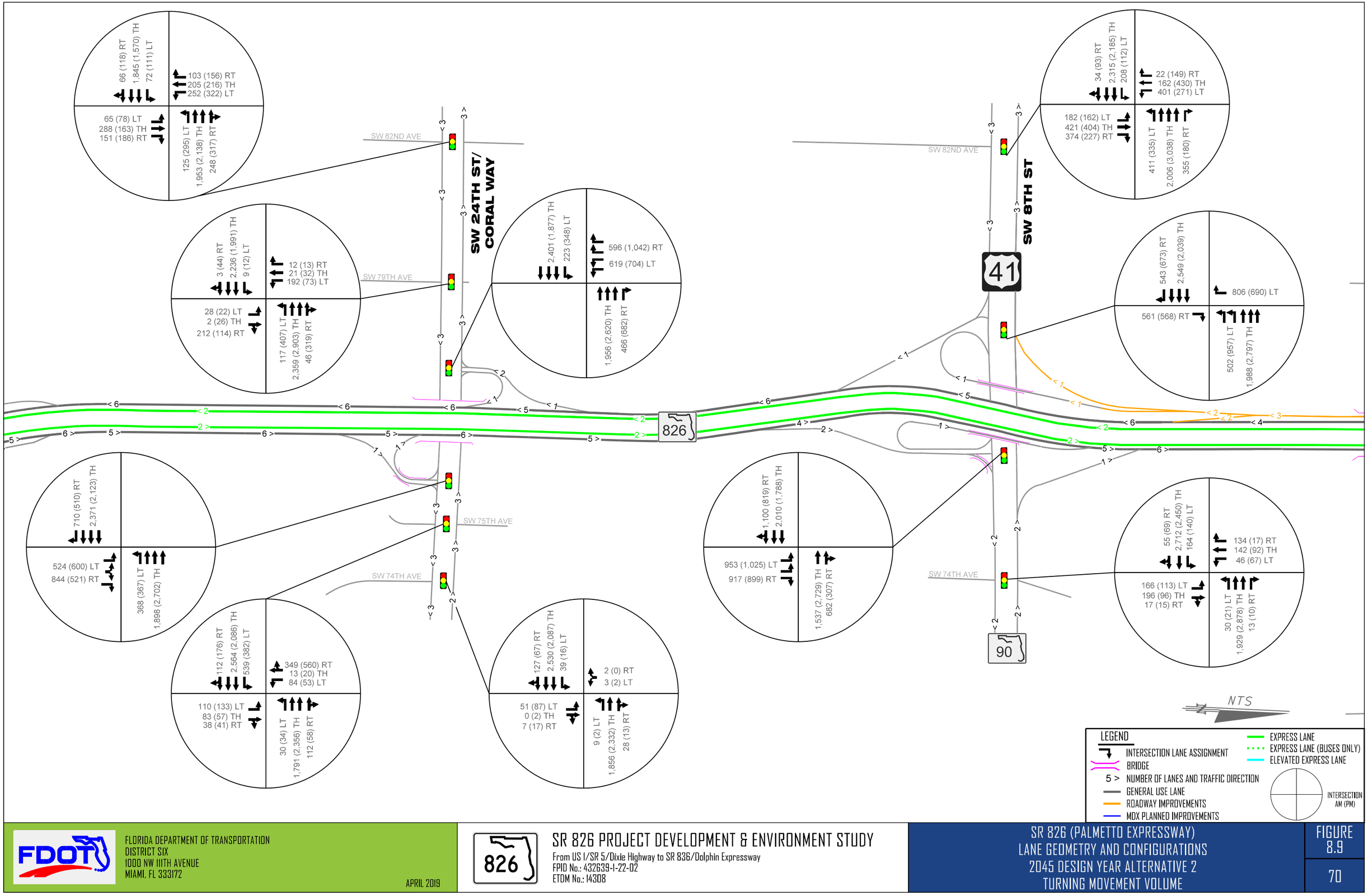
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
TURNING MOVEMENT VOLUME

FIGURE 8.9



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

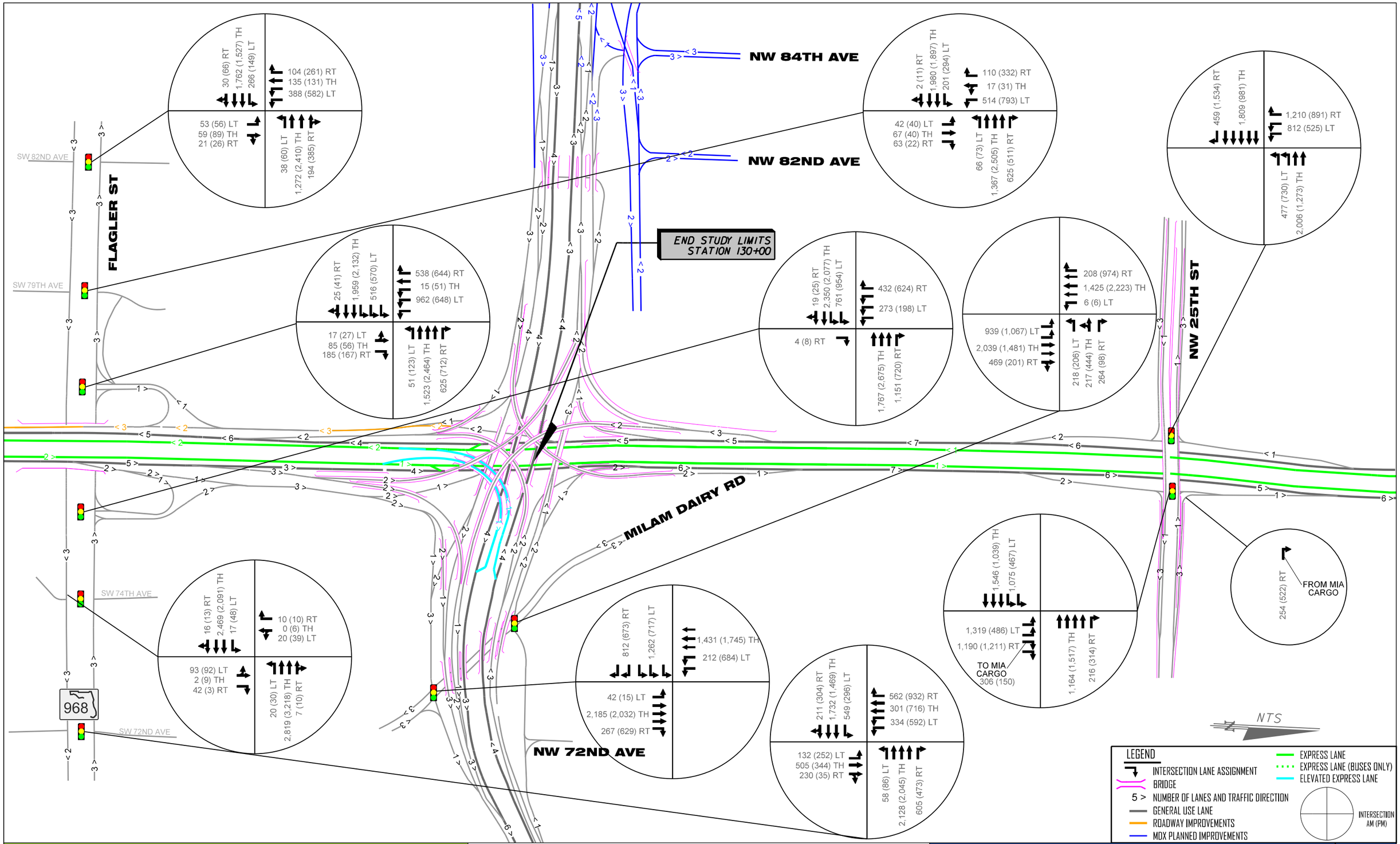
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
TURNING MOVEMENT VOLUME

FIGURE 8.9



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

826

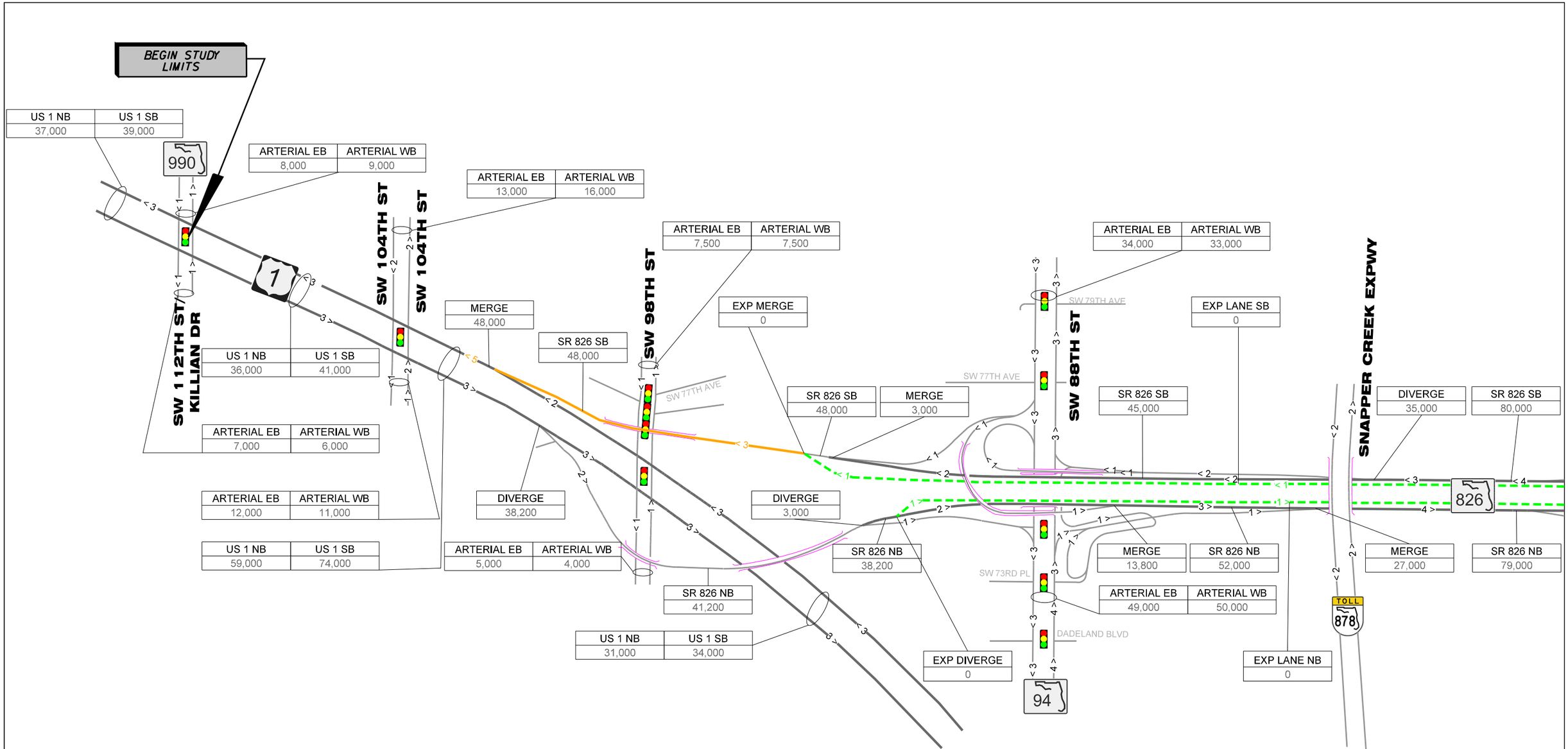
SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2
TURNING MOVEMENT VOLUME

FIGURE 8.9

Figure 8.10 summarizes the 2045 Build 3 link-by-link AADT volume assignments for the study area. ***Figure 8.11*** summarizes the 2045 Build 3 link-by-link DDHV volume assignments for the study area. ***Figure 8.12*** summarizes the 2045 Build 3 intersection turning movement volumes. These figures also depict number of lanes and interchange layouts.



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

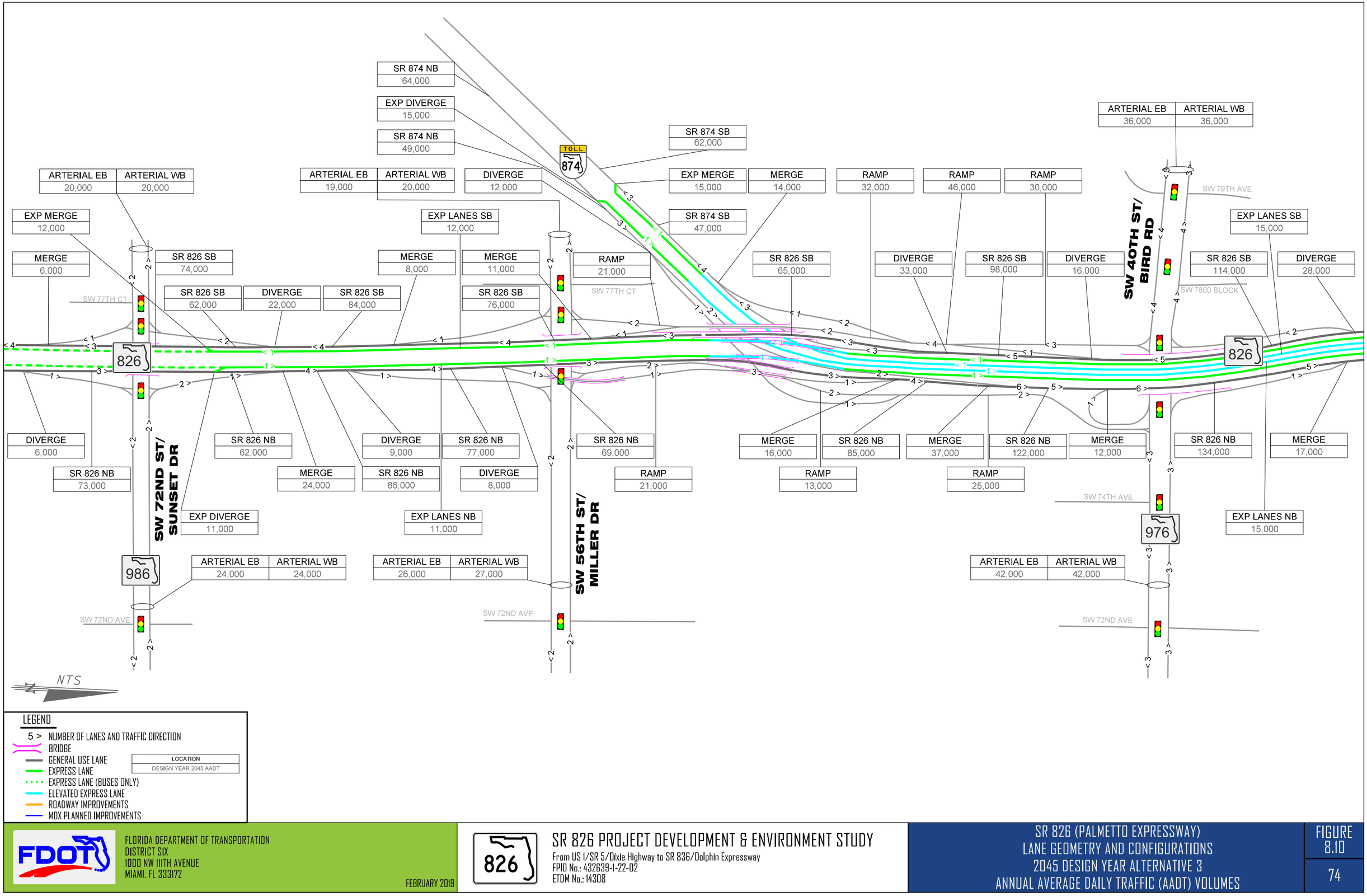
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 3 ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.10



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

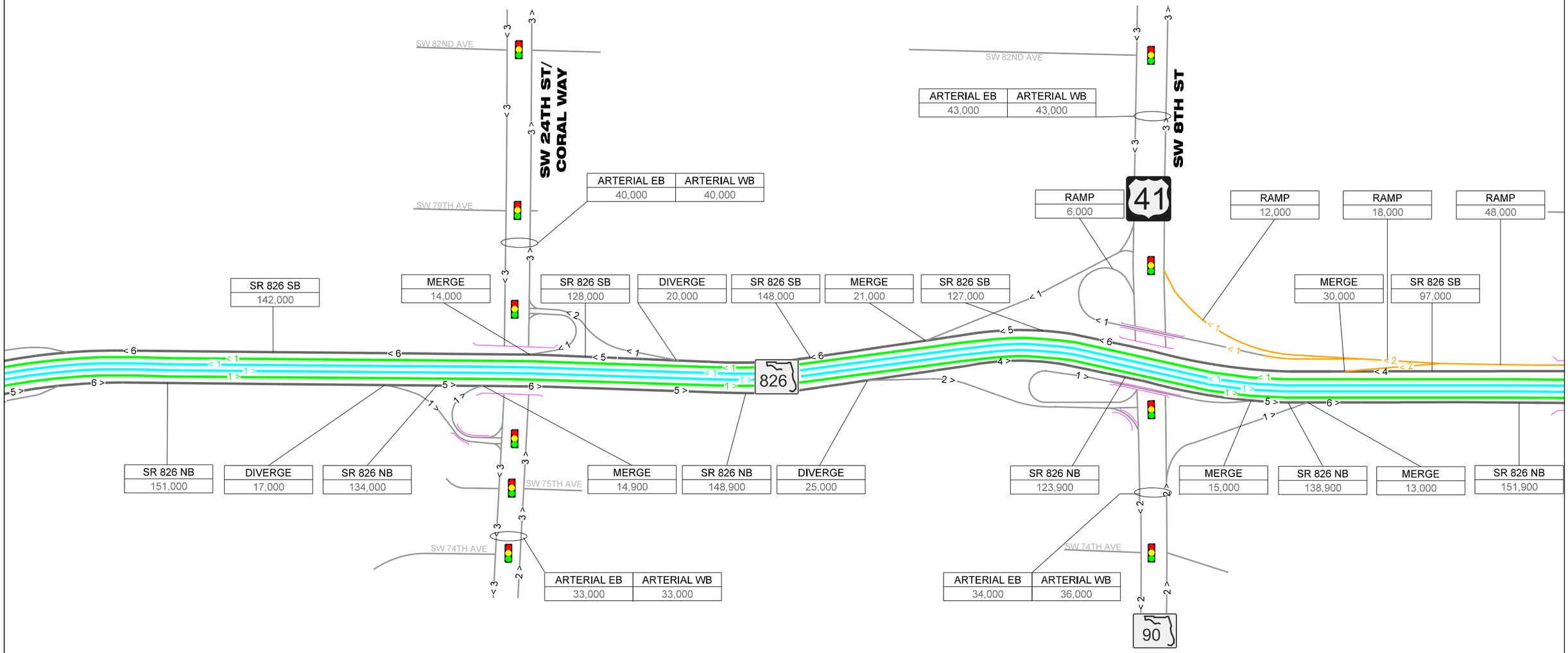
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.10



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

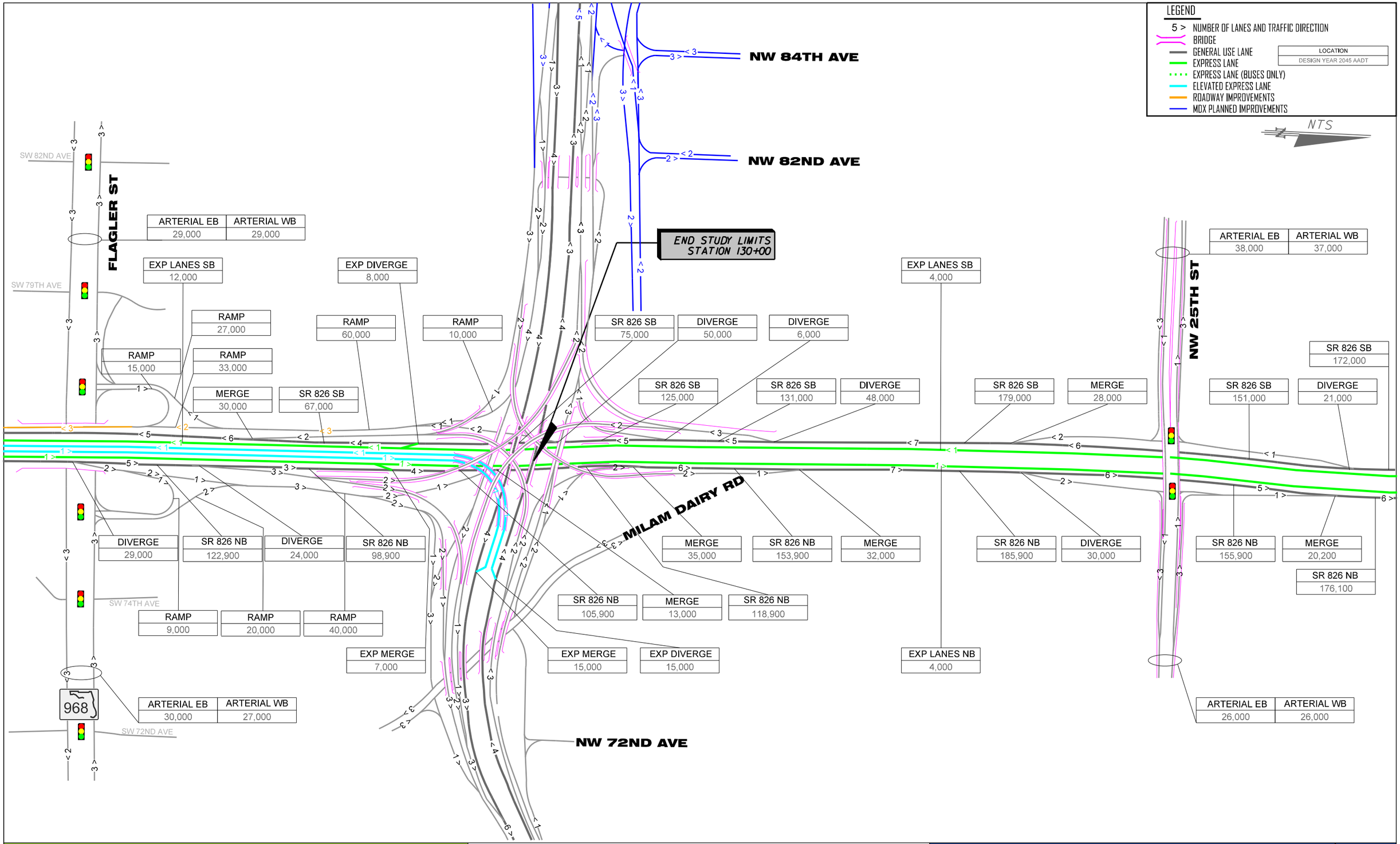
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.10



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

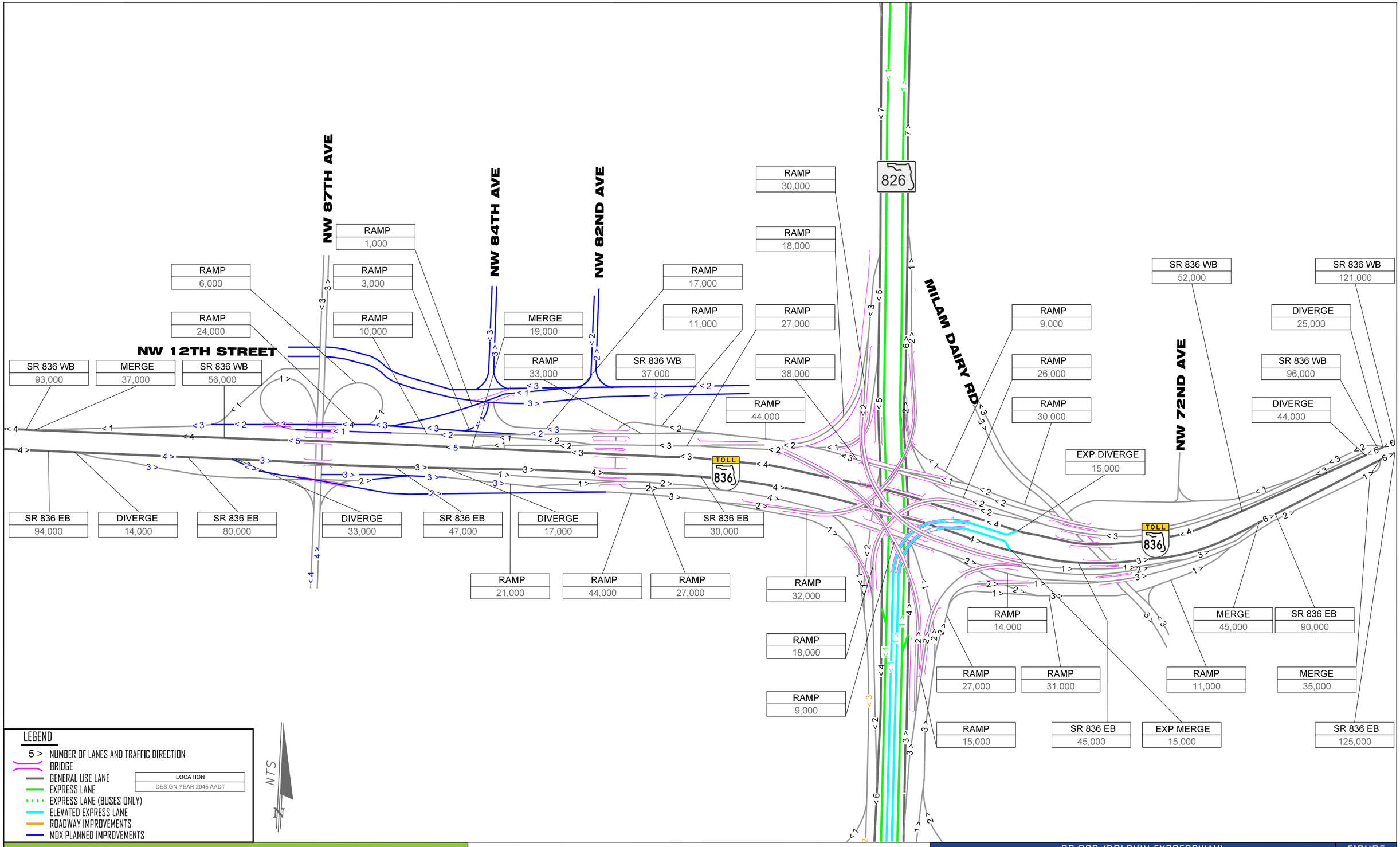
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.10



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

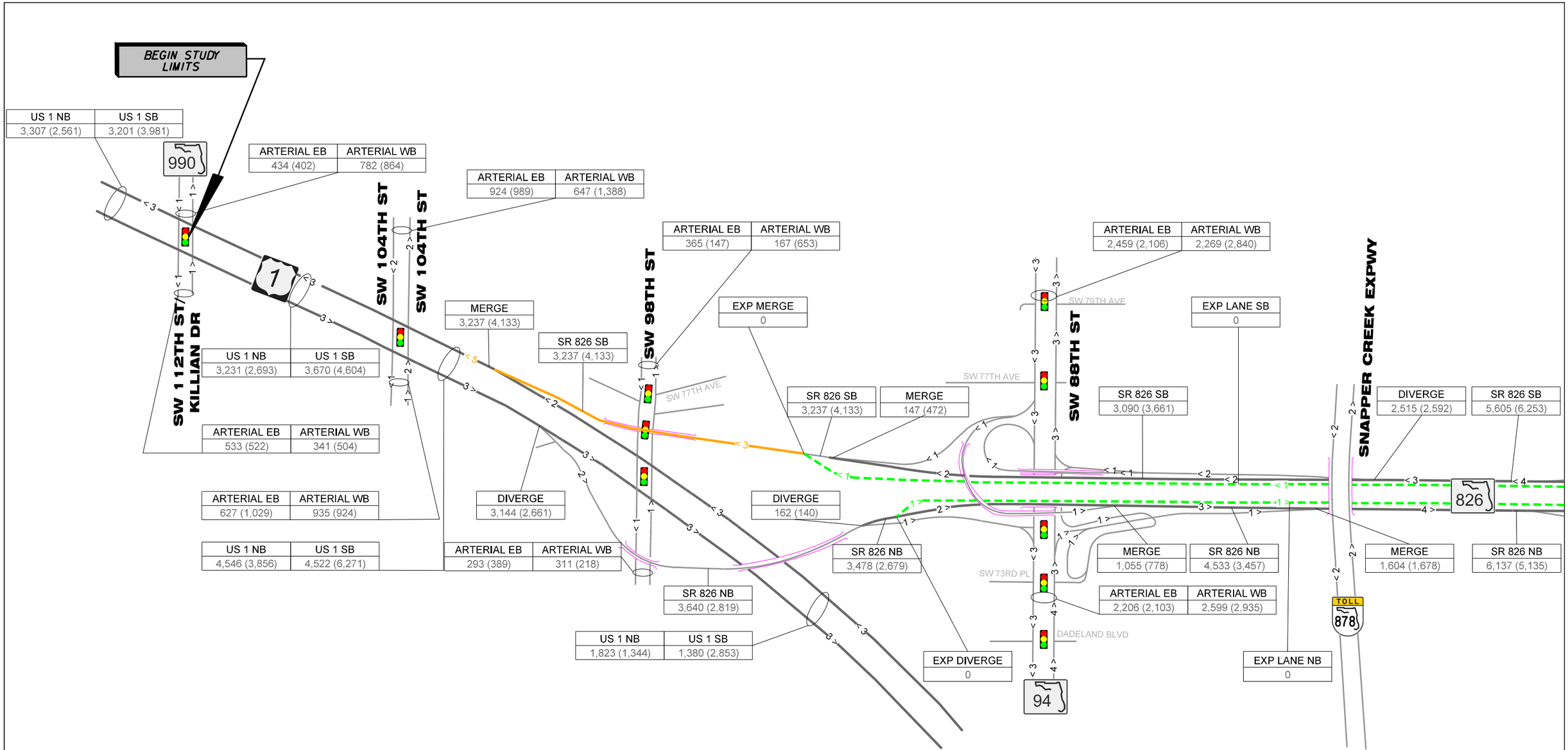
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
ANNUAL AVERAGE DAILY TRAFFIC (AADT) VOLUMES

FIGURE 8.10



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

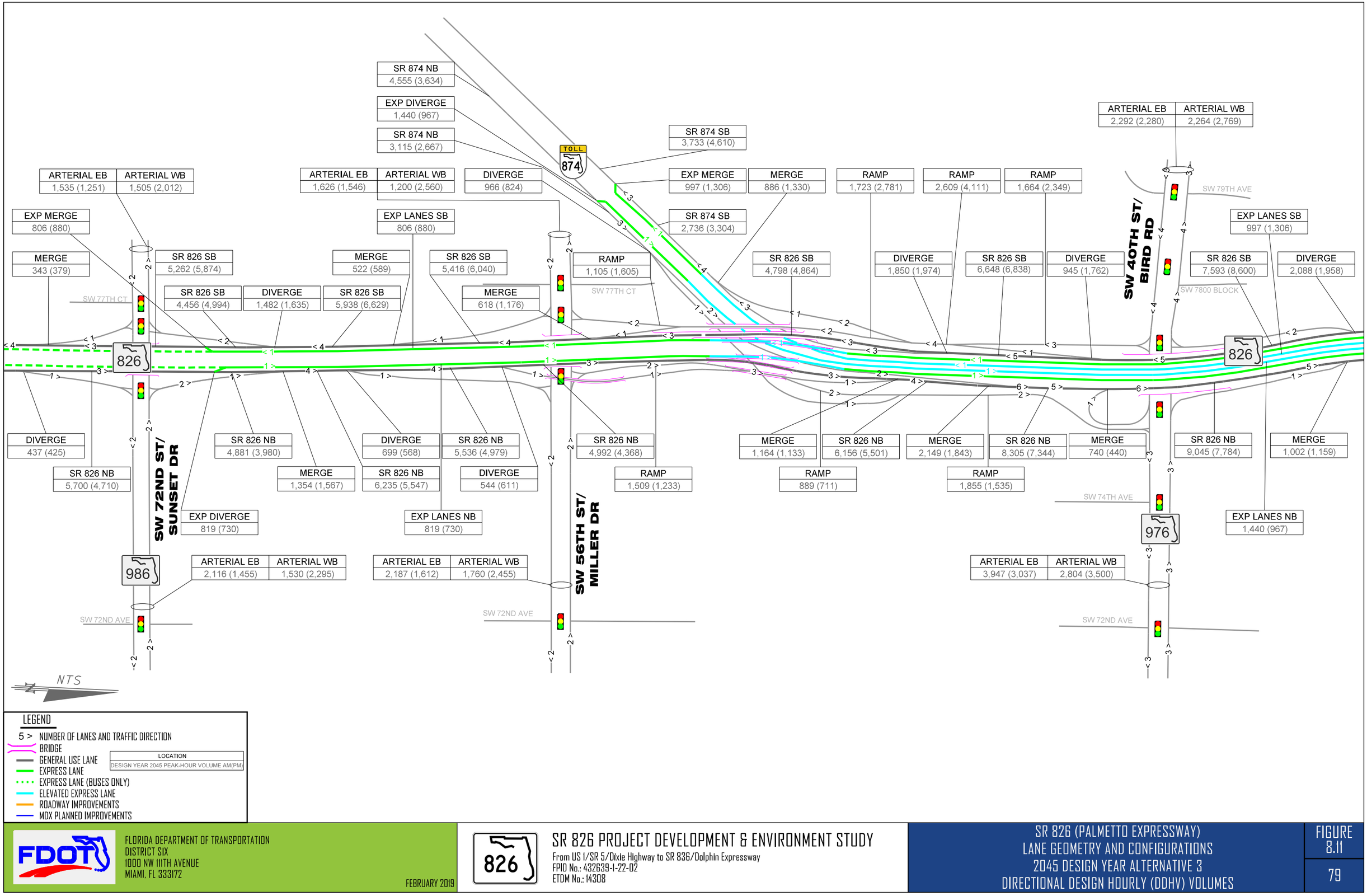
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 3 DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.11



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

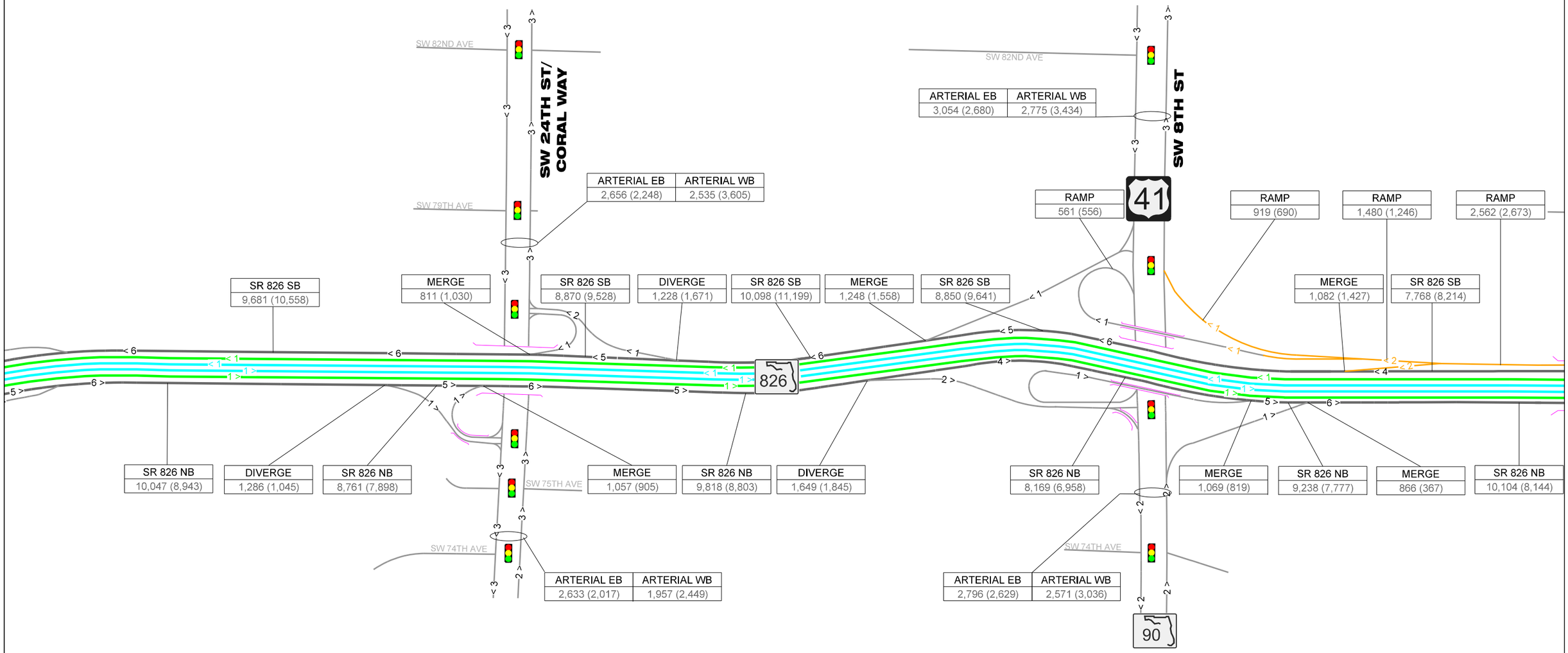
FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 3 DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.11



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

FEBRUARY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 3 DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.11

LEGEND

5 > NUMBER OF LANES AND TRAFFIC DIRECTION
BRIDGE
GENERAL USE LANE
EXPRESS LANE
EXPRESS LANE (BUSES ONLY)
ELEVATED EXPRESS LANE
ROADWAY IMPROVEMENTS
MDX PLANNED IMPROVEMENTS

LOCATION
DESIGN YEAR 2045 PEAK-HOUR VOLUME AM(PM)

NTS

NW 84TH AVE

NW 82ND AVE

SW 82ND AVE

FLAGLER ST

ARTERIAL EB	ARTERIAL WB
2,217 (2,449)	1,559 (2,847)

END STUDY LIMITS
STATION 130+00

SW 79TH AVE

EXP LANES SB
806 (880)

EXP DIVERGE
482 (514)

RAMP
1,720 (1,708)

RAMP
3,255 (3,015)

RAMP
501 (593)

SR 826 SB	DIVERGE	DIVERGE
5,772 (6,746)	2,754 (2,422)	791 (256)

RAMP
1,027 (1,366)

RAMP
1,535 (1,307)

MERGE
2,478 (1,982)

SR 826 SB
5,290 (6,232)

SR 826 SB
8,526 (9,168)

SR 826 SB	DIVERGE
9,317 (9,424)	3,136 (2,898)

EXP LANES SB
324 (366)

ARTERIAL EB	ARTERIAL WB
2,424 (2,671)	3,013 (1,985)

NW 25TH ST

SR 826 SB
13,447 (11,211)

SR 826 SB	DIVERGE
11,444 (9,953)	2,003 (1,258)

SR 826 SB	MERGE
12,453 (12,322)	1,009 (2,369)

MILAM DAIRY RD

DIVERGE
1,930 (1,580)

SR 826 NB
8,174 (6,564)

DIVERGE
1,822 (1,688)

SR 826 NB
6,352 (4,876)

MERGE
3,252 (2,371)

SR 826 NB
11,694 (8,956)

MERGE
2,151 (1,779)

SR 826 NB	DIVERGE
13,845 (10,735)	2,521 (1,851)

SR 826 NB
11,324 (8,884)

MERGE
1,490 (1,382)

SR 826 NB
12,814 (10,266)

SW 74TH AVE

RAMP
705 (824)

RAMP
1,767 (1,560)

RAMP
2,992 (2,316)

SR 826 NB
6,815 (5,277)

MERGE
1,627 (1,308)

SR 826 NB
8,442 (6,585)

EXP MERGE
463 (401)

EXP MERGE
1,440 (967)

EXP DIVERGE
997 (1,306)

EXP LANES NB
356 (329)

968

ARTERIAL EB	ARTERIAL WB
2,492 (2,350)	2,694 (3,236)

ARTERIAL EB	ARTERIAL WB
2,514 (2,364)	1,142 (1,873)

SW 72ND AVE

NW 72ND AVE

FDOT

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

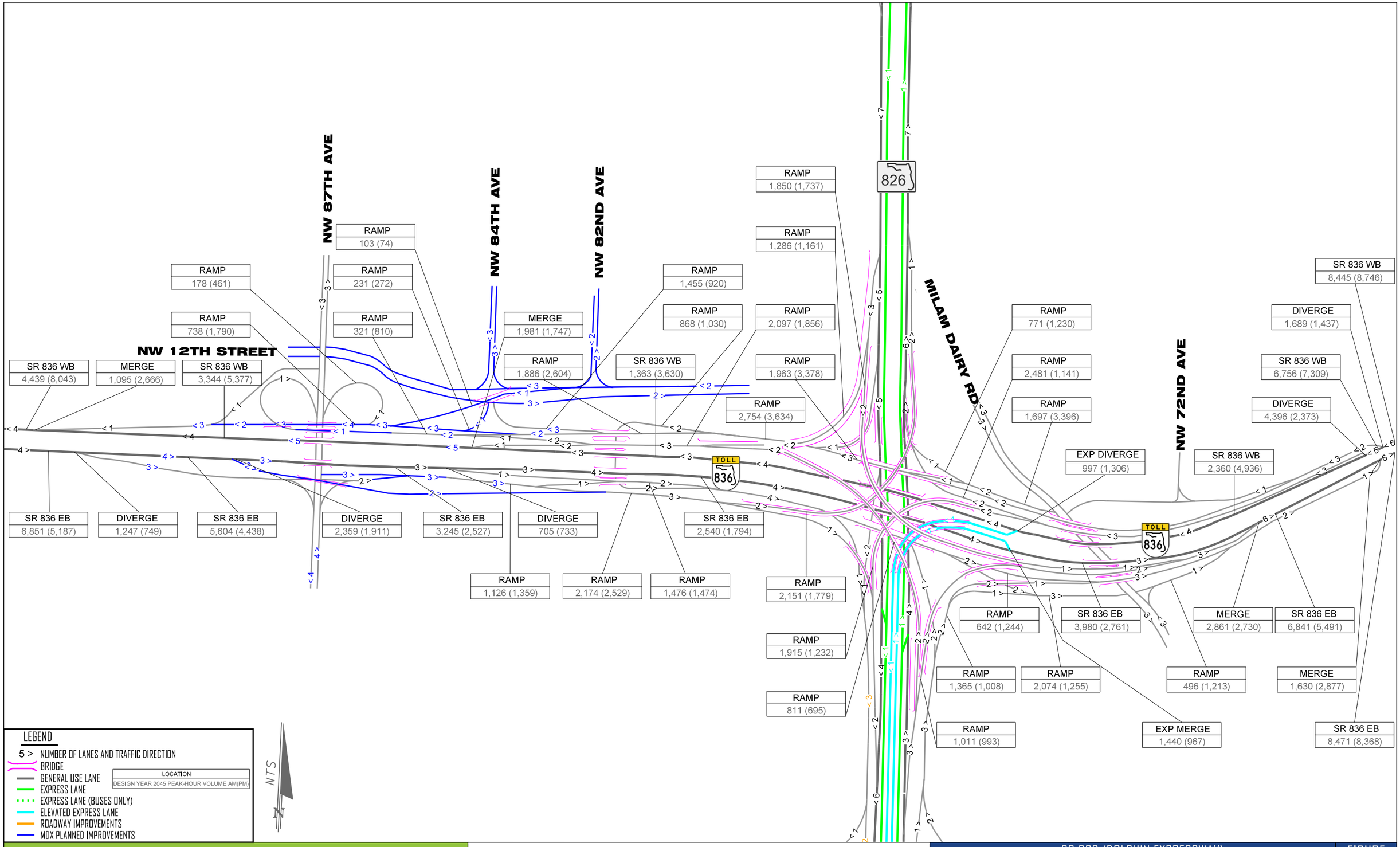
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.11



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

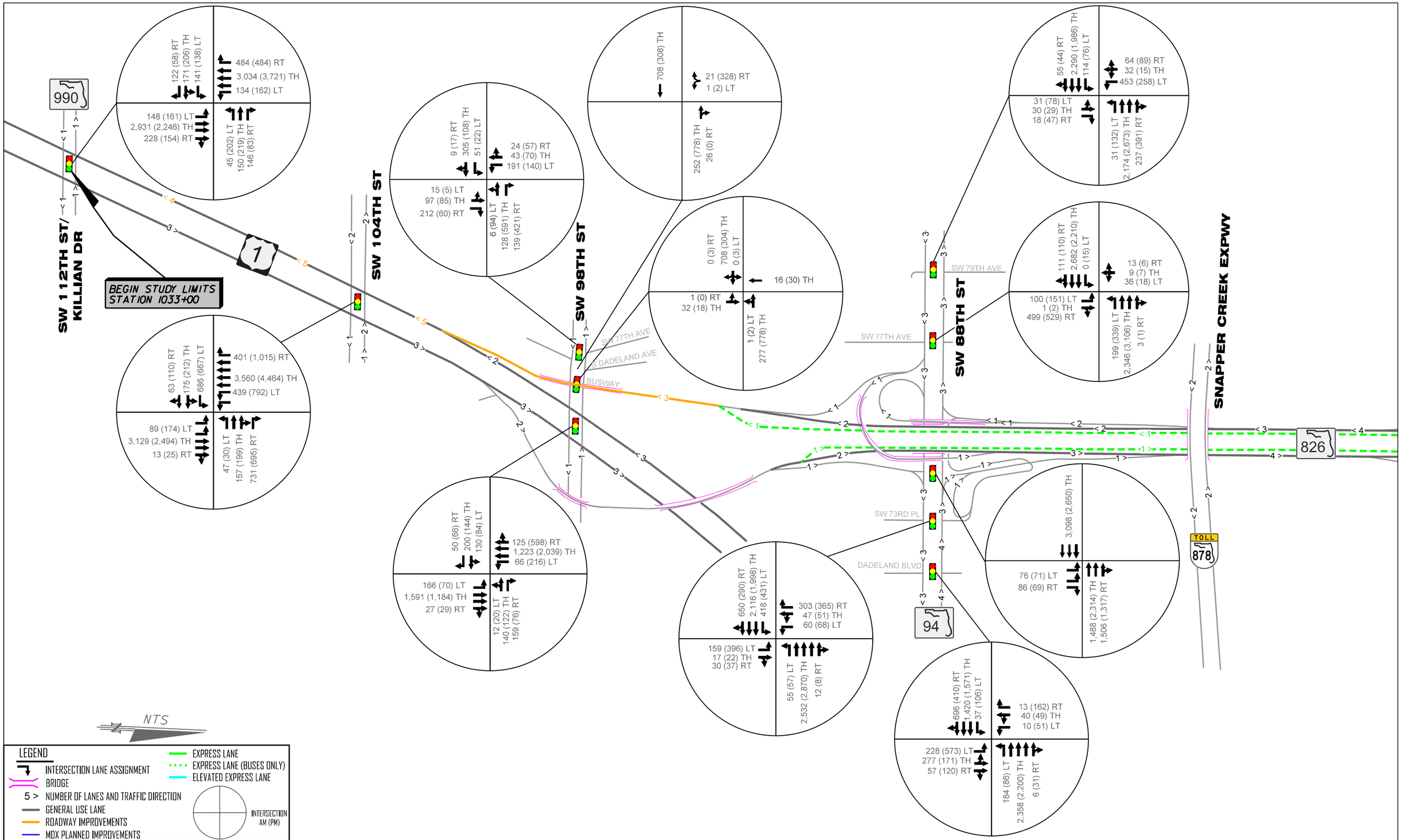
MAY 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
DIRECTIONAL DESIGN HOURLY (DDHV) VOLUMES

FIGURE 8.11



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

APRIL 2019

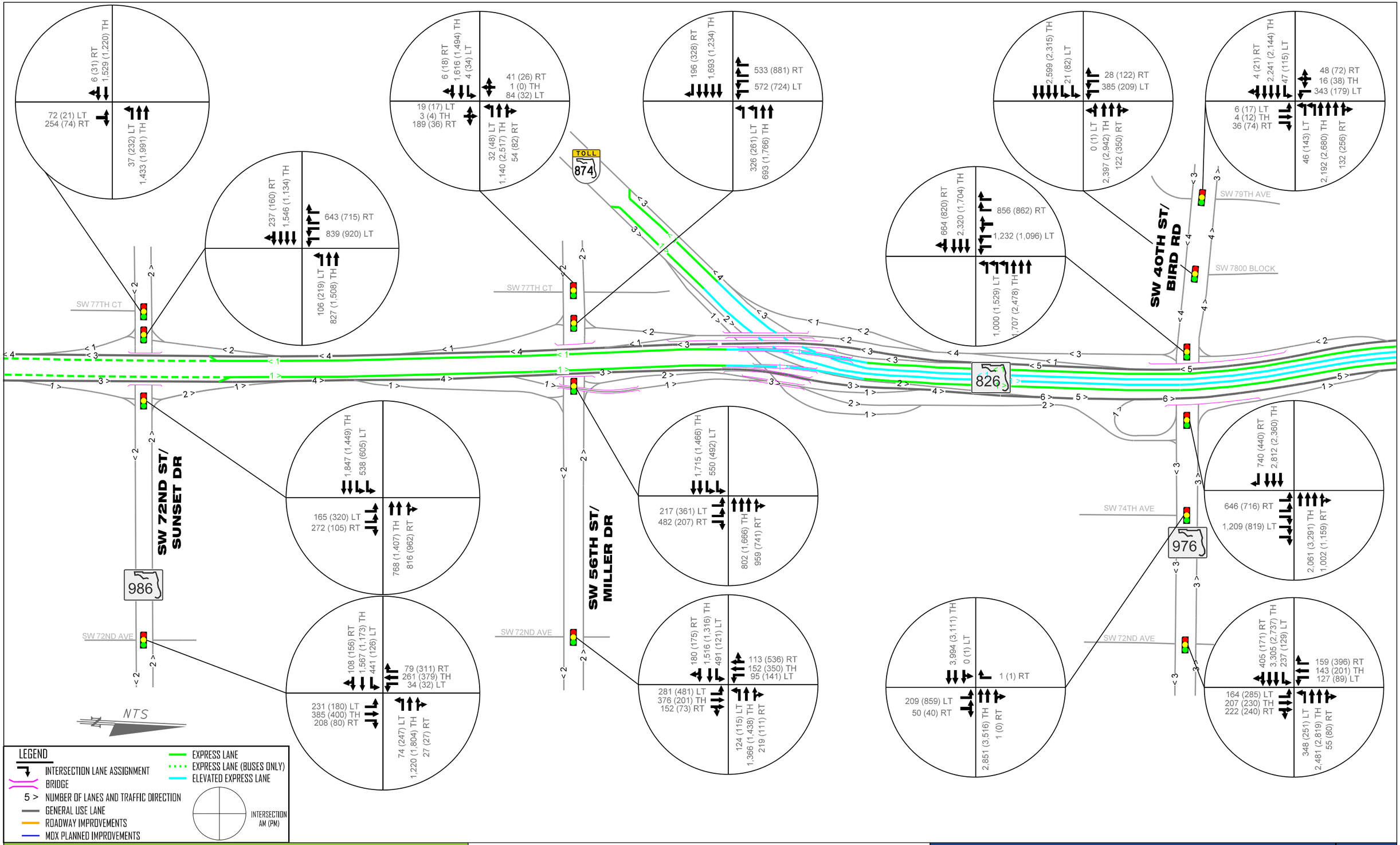
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
TURNING MOVEMENT VOLUME

FIGURE 8.12



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

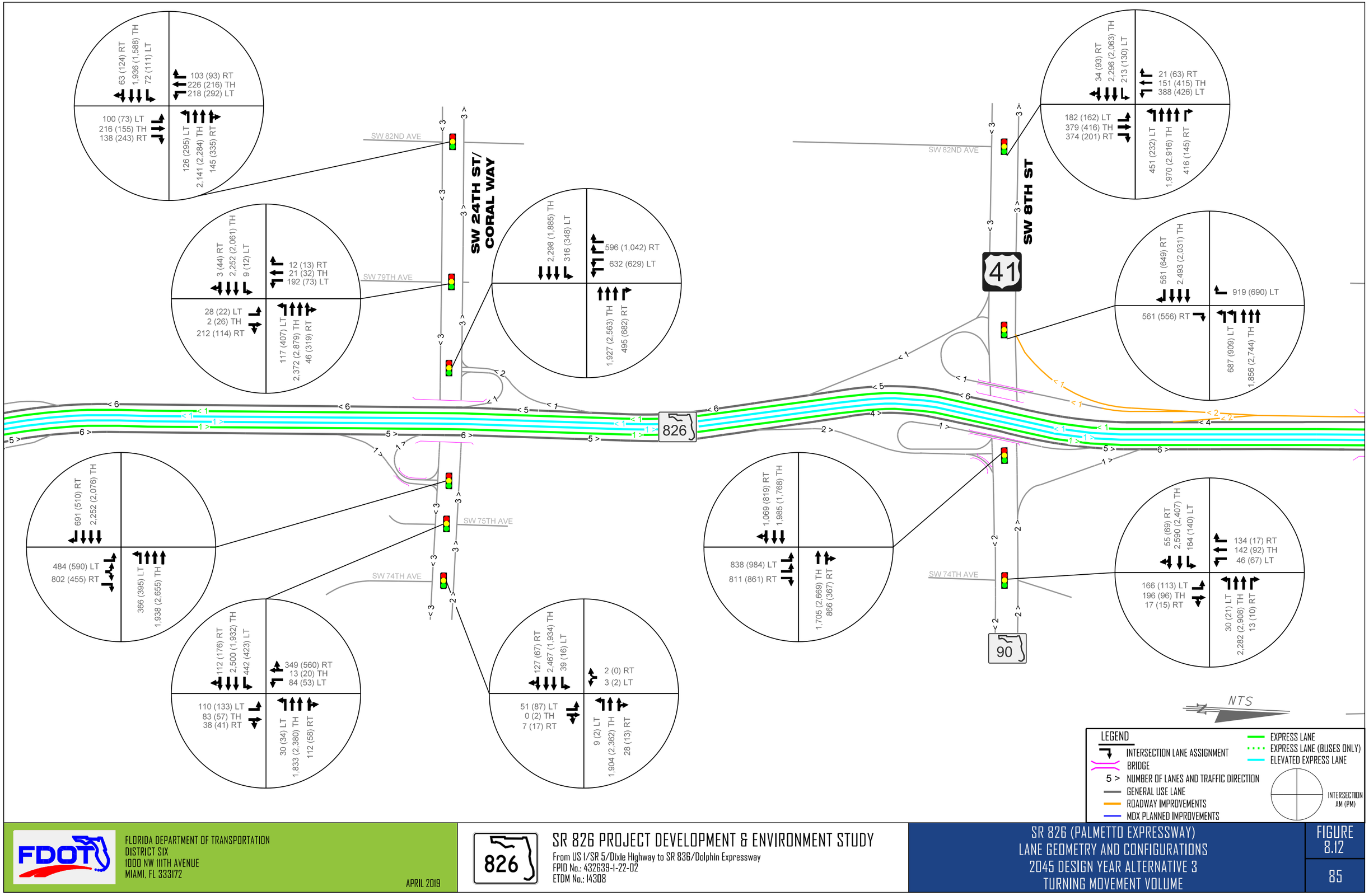
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
TURNING MOVEMENT VOLUME

FIGURE 8.12



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

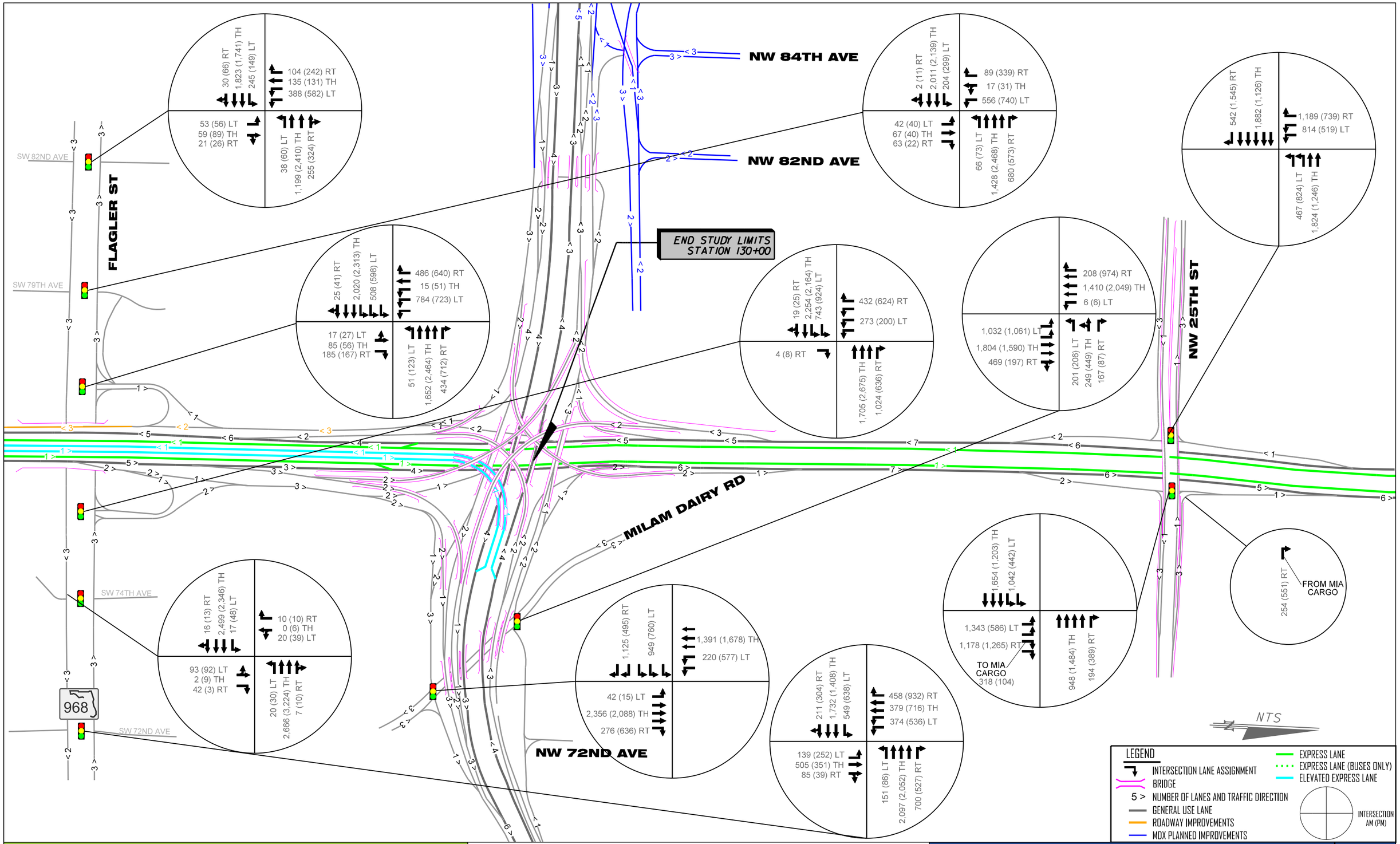
APRIL 2019

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
TURNING MOVEMENT VOLUME

FIGURE 8.12



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

MAY 2019

826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3
TURNING MOVEMENT VOLUME

FIGURE 8.12

9.0 Reasonableness Checks

The No-Build and Build model results were verified using independent projections from the following methods:

- Historic Trend Line Forecasts
- Compound Growth Factors

9.1 Historic Trend Line Forecasts

Historic trend line forecasts were developed using SR 826 mainline historic AADT data from the 2016 FTI (see ***Appendix F***). These projections were compared against the SR 826 2045 No-Build and Build scenario projections (see ***Table 9.1***). In some segments the historic trends are showing higher than expected differences. Due to the uncertainty in traffic count data and errors associated with trend line forecasting, these differences are considered acceptable. Overall, the build scenarios growth is higher than no-build scenario.

Table 9.1 – Comparison between 2017, 2045 No-Build, 2045 Build Volumes and 2045 Historic Trendline

Location South of	Count Station	2017 AADT 2-way	2045 NB Model Projection	2045 Build 1	2045 Build 2	2045 Build 3	2045 Historic Trendline Forecast	Percent Difference (No-build and Trendline)
SR 836	870569	146,000	170,800	196,000	213,000	218,900	182,000	-6.2%
W Flagler St	870568	237,000	298,800	330,000	336,000	331,900	311,000	-3.9%
SW 8th St	870567	257,000	345,800	349,000	354,500	349,900	412,000	-16.1%
SW 24th St	870566	251,000	344,700	343,000	348,500	346,000	385,000	-10.5%
SR 874	870565	115,000	142,000	147,000	158,000	157,000	179,000	-20.7%
SW 56th St	870564	140,000	176,000	189,000	193,000	193,000	242,000	-27.3%
SW 72nd St	870563	111,000	144,000	153,000	161,000	159,000	168,000	-14.3%
SW 88th St	870562	69,000	76,300	83,600	95,500	89,200	124,000	-38.5%

9.2 Compound Growth Factors

The TAZ annual compound growth rate is 0.719% for the study area. The rate is computed using a weighted average growth of population and employment. However, since SR 826 has trips distributed throughout the County, the next step

was to verify the compound growth rates for the entire Miami-Dade County. The County population compound growth rate is 1.08% and the employment growth rate is 1.24%. A weighted average compound growth rate of 1.14% was computed and applied to the 2017 traffic counts to obtain 2045 growth-based projections (see ***Table 9.2***).

Table 9.2 – Comparison of 2017, 2045 No-Build and Build Volumes to 2045 Compound Growth Rate Method

Location South of	2017 AADT 2-way	2045 NB Model Projection	2045 Build 1	2045 Build 2	2045 Build 3	Compound Growth Rate based 2045 Projection	Percent Difference (No-build and CAGR)
SR 836	146,000	170,800	196,000	213,000	218,900	201,000	-15.0%
W Flagler St	237,000	298,800	330,000	336,000	331,900	326,000	-8.3%
SW 8th St	257,000	345,800	349,000	354,500	349,900	353,000	-2.0%
SW 24th St	251,000	344,700	343,000	348,500	346,000	345,000	-0.1%
SR 874	115,000	142,000	147,000	158,000	157,000	158,000	-10.1%
SW 56th St	140,000	176,000	189,000	193,000	193,000	192,000	-8.3%
SW 72nd St	111,000	144,000	153,000	161,000	159,000	152,000	-5.3%
SW 88th St	69,000	76,300	83,600	95,500	89,200	95,000	-19.7%

The comparisons of the 2045 No-Build results with the compound growth rate-based 2045 projections show reasonable match in most segments. The build scenarios show reasonable growth compared to the no-build. Due to the construction of the SR 826/SR 836 Interchange and uncertainty in traffic count data, some of these differences are considered acceptable.

9.3 Comparison between Traffic Factors and Diurnal Factors

A reasonableness check was performed by comparing the DDHV volumes produced in this method with the corresponding DDHV volumes developed using the "traditional approach", along the SR 826 study corridor. The "traditional approach" involves applying K_{30} and D_{30} traffic factors to the AADT volumes to derive DDHV volumes. The reasonableness check was performed using the 2045 No-Build scenario. **Table 9.3** presents the results comparison between the two approaches.

Table 9.3 – Comparison between Traffic Factors and Diurnal Factors

Location South of	Corridor K factor*	SB D Factor	NB D Factor	2045 AADT	K Factor Approach		Diurnal Factors		Percent Error	
					SB	NB	SB	NB	SB	NB
					PM	AM	PM	AM	PM	AM
NW 25th St**	7%	51%	63%	370,800	13,238	16,352	12,388	14,421	-6.42%	-11.81%
SR 836**	7%	55%	60%	198,800	7,654	8,350	7,894	7,610	3.14%	-8.86%
Flagler St**	7%	51%	56%	326,800	11,667	12,811	9,508	11,936	-18.50%	6.83%
SW 8th St	7%	55%	58%	345,800	13,313	14,039	13,176	11,597	-1.03%	-17.40%
SW 24th St	7%	53%	51%	344,700	12,788	12,306	12,554	11,765	-1.83%	-4.39%
SW 40th St	7%	50%	55%	265,700	9,300	10,229	8,681	9,939	-6.65%	-2.84%
SW 56th St	7%	50%	60%	176,000	6,160	7,392	6,689	6,499	8.59%	-12.08%
SW 72nd St	7%	50%	54%	144,000	5,040	5,443	5,497	5,605	9.07%	2.97%
SW 88th St	7%	61%	62%	76,300	3,258	3,311	3,100	3,318	-4.85%	0.20%

Note: SB – Southbound, NB – Northbound

*** 2017 count data k-factor, D-factor and Truck percent are documented as part of "Data Collection Memorandum".**

**** 2045 AADT and DDHV report includes express lane volumes.**

9.4 Comparison between No-Build and Build Forecasts

First, the 2045 no-build forecasts were compared against the 2017 balanced traffic counts for adequate growth. This comparison is presented in **Table 9.4** for the mainline. The average AADT CAGR varied between 0.4% and 1.1%. However, in peak-hours CAGR varied between 0.5% and 1.8%. In general, CAGR during PM peak is greater than AM peak.

Table 9.4 - Mainline Growth between 2017 and 2045 No-Build Volumes

Location South of	2017 Count					2045 Volume (No-Build)					Percent Annual Growth				
	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT
	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
NW 25th St	8,512	8,443	9,997	6,218	261,000	11,444	11,425	13,434	10,303	324,800	1.1%	1.1%	1.1%	1.8%	0.8%
SR 836	3,559	5,579	5,170	2,881	146,000	4,795	6,931	6,623	4,734	170,800	1.1%	0.8%	0.9%	1.8%	0.6%
Flagler St	5,865	7,411	8,999	6,737	237,000	8,339	9,508	11,936	9,895	298,800	1.3%	0.9%	1.0%	1.4%	0.8%
SW 8th St	7,604	9,589	8,420	7,179	257,000	11,678	13,176	11,597	10,642	345,800	1.5%	1.1%	1.1%	1.4%	1.1%
SW 24th St	7,219	8,936	8,384	7,317	251,000	11,326	12,554	11,765	10,793	344,700	1.6%	1.2%	1.2%	1.4%	1.1%
SW 40th St	5,165	6,480	7,001	6,314	200,000	8,298	8,681	9,939	9,080	265,700	1.7%	1.0%	1.3%	1.3%	1.0%
SW 56th St	4,465	4,964	4,691	4,881	140,000	6,027	6,689	6,499	5,981	176,000	1.1%	1.1%	1.2%	0.7%	0.8%
SW 72nd St	3,635	4,208	4,177	3,935	111,000	4,963	5,497	5,605	4,868	144,000	1.1%	1.0%	1.1%	0.8%	0.9%
SW 88th St	2,136	2,679	2,882	2,097	69,000	2,524	3,100	3,318	2,694	76,300	0.6%	0.5%	0.5%	0.9%	0.4%

Table 9.5 compares the link-level mainline 2045 no-build and build scenarios forecasts. The build scenario forecasts presented in this table include express lanes traffic. Overall, the 2045 AADTs show reasonable growth in the build scenarios as compared to the no-build. However, the highlighted AADT mainline segments in the Build 1 scenario are less than the no-build traffic. The southbound mainline number of lanes, in the build scenarios, south of the off-ramp to SW 40th Street decreased from 6 to 5 lanes compared to the no-build. However, the reduction in traffic is not seen in the build scenario 2 and 3, due to higher express lane utilization. The express lane utilization of build 1 scenario is less than the other build scenarios.

Table 9.5 – Mainline 2045 Volumes comparison between No-Build and Build

Location South of	No-Build (2045 Volume)					Build 1 (2045 Volume)					Build 2 (2045 Volume)					Build 3 (2045 Volume)				
	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT
	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
NW 25th St	11,444	11,425	13,434	10,303	324,800	12,757	13,002	14,655	11,217	372,000	12,824	12,376	14,419	11,027	377,000	12,777	12,688	14,201	11,064	372,900
SR 836	4,795	6,931	6,623	4,734	170,800	5,514	7,122	7,531	5,714	186,000	6,321	7,597	7,218	5,559	197,000	6,096	7,112	7,171	5,606	188,900
Flagler St	8,339	9,508	11,936	9,895	298,800	10,553	11,836	12,483	9,815	330,000	10,654	11,938	11,857	9,715	336,000	10,653	11,827	12,363	9,841	331,900
SW 8th St	11,678	13,176	11,597	10,642	345,800	11,716	13,330	12,100	10,530	349,000	11,699	13,568	11,945	10,513	354,500	11,901	13,385	12,077	10,500	322,000
SW 24th St	11,326	12,554	11,765	10,793	344,700	11,289	12,660	12,276	10,791	343,000	11,173	12,852	12,235	10,757	349,000	11,484	12,744	12,306	10,640	346,000
SW 40th St	8,298	8,681	9,939	9,080	265,700	8,312	8,922	10,457	9,106	262,000	8,264	9,073	10,493	9,116	276,000	8,451	9,024	10,564	9,041	273,000
SW 56th St	6,027	6,689	6,499	5,981	176,000	6,450	6,982	6,968	6,234	189,000	6,531	7,474	7,093	6,420	193,000	6,744	7,509	7,054	6,277	193,000
SW 72nd St	4,963	5,497	5,605	4,868	144,000	5,296	5,709	6,027	5,060	153,000	5,538	6,257	6,199	5,238	161,000	5,605	6,253	6,137	5,135	159,000
SW 88th St	2,524	3,100	3,318	2,694	76,300	2,744	3,289	3,626	2,700	84,000	2,891	4,141	3,933	2,987	96,000	3,237	4,133	3,640	2,819	89,200

Note: Volumes are General Use Lanes and Express Lanes

Table 9.6 presents the general use lanes (GU) volumes comparisons among the no-build and build scenario forecasts. The table shows that the GU lanes volumes are expected to decrease in the build scenarios when compared to the no-build scenario. This is consistent among all the mainline segments of all the build scenarios. This is because of the diversion of traffic on to the express lanes, in the build scenarios.

Table 9.6 – Mainline 2045 Volumes comparison between No-Build and Build

Location South of	No-Build (2045 Volume)					2045 Volume (Build1) General Use					2045 Volume (Build2) General Use					2045 Volume (Build3) General Use				
	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT	Southbound		Northbound		AADT
	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
NW 25th St	11,444	11,425	13,434	10,303	324,800	12,119	12,434	14,085	10,639	355,000	12,442	11,954	13,981	10,634	364,000	12,453	12,322	13,845	10,735	364,900
SR 836	4,795	6,931	6,623	4,734	170,800	3,894	6,014	6,418	4,270	138,000	4,990	6,658	6,280	4,620	159,000	5,290	6,232	6,352	4,876	165,900
Flagler St	8,339	9,508	11,936	9,895	298,800	8,501	9,480	10,202	7,780	263,000	7,791	9,551	9,542	7,488	266,000	8,850	9,641	10,104	8,144	278,900
SW 8th St	11,678	13,176	11,597	10,642	345,800	9,664	10,974	9,819	8,495	282,000	8,836	11,181	9,630	8,286	284,500	10,098	11,199	9,818	8,803	269,000
SW 24th St	11,326	12,554	11,765	10,793	344,700	9,237	10,304	9,995	8,756	276,000	8,310	10,465	9,920	8,530	279,000	9,681	10,558	10,047	8,943	293,000
SW 40th St	8,298	8,681	9,939	9,080	265,700	6,260	6,566	8,176	7,071	195,000	5,401	6,686	8,178	6,889	206,000	6,648	6,838	8,305	7,344	220,000
SW 56th St	6,027	6,689	6,499	5,981	176,000	6,450	6,982	6,968	6,234	189,000	5,238	6,730	6,255	5,393	166,000	5,938	6,629	6,235	5,547	170,000
SW 72nd St	4,963	5,497	5,605	4,868	144,000	5,296	5,709	6,027	5,060	153,000	5,538	6,257	6,199	5,238	161,000	5,605	6,253	6,137	5,135	159,000
SW 88th St	2,524	3,100	3,318	2,694	76,300	2,744	3,289	3,626	2,700	84,000	2,891	4,141	3,933	2,987	96,000	3,237	4,133	3,640	2,819	89,200

Note: Volumes are General Use Lanes only

Table 9.7 depicts the express lane utilization of the build scenarios. In Build 2, the mainline and express lane system has a maximum traffic utilization when compared to the other scenarios.

Table 9.7 – Express Lanes 2045 Volumes comparison between Build Alternatives

Location South of	2045 Volume (Build1) Express Lanes						2045 Volume (Build2) Express Lanes						2045 Volume (Build3) Elevated + At-grade Express Lanes					
	Southbound			Northbound			Southbound			Northbound			Southbound			Northbound		
	AM	PM	AADT	AM	PM	AADT	AM	PM	AADT	AM	PM	AADT	AM	PM	AADT	AM	PM	AADT
NW 25th St	638	568	8,000	570	578	9,000	382	422	6,000	438	393	7,000	324	366	4,000	356	329	4,000
SR 836	1,620	1,108	23,000	1,113	1,444	25,000	1,331	939	19,000	938	939	19,000	806	880	12,000	819	730	11,000
Flagler St	2,052	2,356	33,000	2,281	2,035	34,000	2,863	2,387	35,000	2,315	2,227	35,000	1,803	2,186	27,000	2,259	1,697	26,000
SW 8th St	2,052	2,356	33,000	2,281	2,035	34,000	2,863	2,387	35,000	2,315	2,227	35,000	1,803	2,186	27,000	2,259	1,697	26,000
SW 24th St	2,052	2,356	33,000	2,281	2,035	34,000	2,863	2,387	35,000	2,315	2,227	35,000	1,803	2,186	27,000	2,259	1,697	26,000
SW 40th St	2,052	2,356	33,000	2,281	2,035	34,000	2,863	2,387	35,000	2,315	2,227	35,000	1,803	2,186	27,000	2,259	1,697	26,000
SW 56th St							1,293	744	13,000	838	1,027	14,000	806	880	12,000	819	730	11,000

The following inferences were drawn comparing the no-build and build scenarios:

- The 2045 AADT general use lanes for no-build scenario ranges from 76,000 to 346,000 vehicles per day.
- The 2045 AADT general use lanes for build 1 scenario range from 84,000 and 355,000 vehicles per day.
  The 2045 AADT express lanes for build 1 scenario range between 17,000 and 67,000 vehicles per day.
  - It reduces approximately 18% traffic volumes in general use lanes.
  - The average throughput traffic increased by 6% compared to the no-build scenario.
- The 2045 AADT general use lanes for build 2 scenario ranges from 96,000 to 369,000 vehicles per day.
  The 2045 AADT express lanes for build 2 scenario range between 13,000 and 70,000.
  - It reduces approximately 12% traffic volumes in general use lanes.
  - The average throughput traffic increased by 12% compared to the no-build scenario.

- The 2045 AADT general use lanes for build 3 scenarios ranges from 89,000 to 369,000 vehicles per day.
  The 2045 AADT elevated express lanes (direct connect) to SR 836 is 30,000 vehicles per day.
  The 2045 AADT at-grade express lanes ranges from 8,000 and 23,000 vehicles per day.
  - It reduces approximately 18% traffic volumes in general use lanes.
  - The average throughput traffic increased by 9% compared to the no-build scenario.

The link-level arterial annual compound growth rate between 2017 and 2045 is presented in **Table 9.8**. Overall, the average peak-hours volumes CAGR varied between 0.13% and 3.64%.

Table 9.8 – Arterial Growth between 2017 Counts and 2045 No-Build Volumes

Arterial	Location		2017 Count					2045 Volumes (No-Build)					CAGR				
			Eastbound		Westbound		AADT	Eastbound		Westbound		AADT	Eastbound		Westbound		AADT
	East of	West of	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
Flagler St		NW 82nd Ave	1,926	1,540	1,192	1,961	53,000	1,999	1,901	1,244	2,526	58,000	0.13%	0.75%	0.15%	0.91%	0.32%
		NW 79th Ave	1,946	1,484	1,241	2,158	56,000	2,255	2,341	1,374	2,731	60,000	0.53%	1.64%	0.36%	0.84%	0.25%
		SB Ramp Terminal	2,381	2,037	1,675	2,410	47,000	2,625	2,885	1,922	3,041	58,000	0.35%	1.25%	0.49%	0.83%	0.75%
	NB Ramp Terminal		2,050	1,575	1,794	2,460	62,000	2,545	2,339	2,666	3,379	70,000	0.78%	1.42%	1.42%	1.14%	0.43%
	NW 74th Ave		2,206	1,816	1,445	2,234	54,000	2,531	2,449	2,633	3,294	59,000	0.49%	1.07%	2.17%	1.40%	0.32%
	NW 72nd Ave		1,661	1,666	1,399	1,569	48,000	2,121	1,973	2,687	2,679	64,000	0.88%	0.61%	2.36%	1.93%	1.03%
SW 8th St		SW 82nd Ave	1,800	1,904	1,747	2,814	59,000	2,530	2,182	1,914	3,261	68,000	1.22%	0.49%	0.33%	0.53%	0.51%
		SB Ramp Terminal	2,355	2,118	1,840	3,092	74,000	3,222	2,679	2,477	3,432	86,000	1.13%	0.84%	1.07%	0.37%	0.54%
	NB Ramp Terminal		2,303	1,623	1,955	2,529	61,000	2,805	2,630	2,355	2,986	67,000	0.71%	1.74%	0.67%	0.60%	0.34%
	SW 74th Ave		1,887	1,357	1,538	2,296	47,000	2,653	2,471	2,093	2,878	60,000	1.22%	2.16%	1.11%	0.81%	0.88%
SW 24th St		SW 82nd Ave	1,057	1,415	1,361	1,845	54,000	1,849	1,607	2,073	2,324	59,000	2.02%	0.46%	1.51%	0.83%	0.32%
		SW 79th Ave	1,257	1,517	1,354	2,090	57,000	2,136	1,938	2,209	2,778	69,000	1.91%	0.88%	1.76%	1.02%	0.68%
		SB Ramp Terminal	1,795	1,695	1,513	2,693	67,000	2,544	2,115	2,356	3,516	78,000	1.25%	0.79%	1.59%	0.96%	0.54%
	NB Ramp Terminal		2,263	2,077	1,538	2,251	61,000	2,963	2,555	2,250	3,118	70,000	0.97%	0.74%	1.37%	1.17%	0.49%
	SW 75th Ave		2,008	1,769	1,229	1,692	50,000	2,525	2,062	1,954	2,540	54,000	0.82%	0.55%	1.67%	1.46%	0.28%
	SW 74th Ave		1,826	1,757	1,270	1,702	48,000	2,380	1,989	1,920	2,447	56,000	0.95%	0.44%	1.49%	1.31%	0.55%
SW 40th St		SW 79th Ave	1,727	1,397	1,313	2,352	62,000	2,368	2,268	2,059	2,877	71,000	1.13%	1.75%	1.62%	0.72%	0.49%
		SB Ramp Terminal	2,373	1,728	1,477	2,801	73,000	3,060	2,512	2,420	3,499	87,000	0.91%	1.35%	1.78%	0.80%	0.63%
	NB Ramp Terminal		3,443	2,277	2,176	3,247	91,000	3,907	3,171	3,113	4,355	114,000	0.45%	1.19%	1.29%	1.05%	0.81%
	SW 74th Ave		3,338	2,136	1,848	2,719	73,000	3,922	3,060	2,852	3,395	84,000	0.58%	1.29%	1.56%	0.80%	0.50%
	SW 72nd Ave		3,408	2,198	2,011	2,226	73,000	3,562	2,886	2,761	3,011	83,000	0.16%	0.98%	1.14%	1.08%	0.46%
SW 56th St		SW 77th CT	1,204	1,031	975	2,380	33,000	1,482	1,478	1,242	2,533	38,000	0.74%	1.29%	0.87%	0.22%	0.51%
		SB Ramp Terminal	1,433	1,045	997	2,456	36,000	1,745	1,494	1,268	2,620	41,000	0.71%	1.28%	0.86%	0.23%	0.47%
	NB Ramp Terminal		1,629	911	814	1,972	48,000	2,139	1,671	1,593	2,369	51,000	0.98%	2.19%	2.43%	0.66%	0.22%
	SW 72nd Ave		1,203	911	860	1,442	35,000	1,692	1,531	1,629	1,811	45,000	1.23%	1.87%	2.31%	0.82%	0.90%
SW 72nd St		SB Ramp Terminal	1,553	1,150	1,226	1,791	42,000	1,783	1,202	1,383	2,023	42,000	0.49%	0.16%	0.43%	0.44%	0.00%
	NB Ramp Terminal		1,693	1,112	1,050	1,943	37,000	2,109	1,580	1,539	2,322	46,000	0.79%	1.26%	1.37%	0.64%	0.78%
	SW 72nd Ave		1,381	841	837	1,830	43,000	1,794	1,342	1,284	2,041	46,000	0.94%	1.68%	1.54%	0.39%	0.24%
SW 88th St		SW 79th Ave	2,174	1,604	1,151	1,950	57,000	2,459	1,806	2,207	2,833	65,000	0.44%	0.42%	2.35%	1.34%	0.47%
		SW 77th Ave	2,458	1,752	1,313	2,155	56,000	2,767	2,030	2,342	3,238	70,000	0.42%	0.53%	2.09%	1.46%	0.80%
		SB Ramp Terminal	2,827	2,121	1,390	2,314	71,000	3,190	2,453	2,441	3,438	94,000	0.43%	0.52%	2.03%	1.42%	1.01%
	NB Ramp Terminal		2,607	1,863	1,045	2,430	69,000	3,250	2,762	2,599	3,575	96,000	0.79%	1.42%	3.31%	1.39%	1.19%
	SW 73rd Pl		1,863	1,471	926	1,923	49,000	2,206	2,213	2,205	2,873	62,000	0.61%	1.47%	3.15%	1.44%	0.84%
	Dadeland Blvd		1,284	1,337	799	1,370	37,000	1,542	1,644	2,173	2,153	55,000	0.66%	0.74%	3.64%	1.63%	1.43%

The link-level arterial 2045 volumes were compared between the no-build and the build scenarios (see **Table 9.9**). Overall, the arterial forecasts have not changed significantly in build scenarios as compared to the no-build.

Table 9.9 – Arterial 2045 Volumes comparison between No-Build and Build Scenarios

Arterial	Location		No-Build (2045 Volume)					Build 1 (2045 Volume)					Build 2 (2045 Volume)					Build 3 (2045 Volume)				
			Eastbound		Westbound		AADT	Eastbound		Westbound		AADT	Eastbound		Westbound		AADT	Eastbound		Westbound		AADT
	East of	West of	AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM		AM	PM	AM	PM	
Flagler St		NW 82nd Ave	1,999	1,901	1,244	2,526	58,000	1,992	2,035	1,451	2,711	58,000	2,058	1,742	1,429	2,727	58,000	2,098	1,956	1,356	2,708	58,000
		NW 79th Ave	2,255	2,341	1,374	2,731	60,000	2,194	2,481	1,802	2,995	60,000	2,183	2,202	1,519	2,877	60,000	2,217	2,449	1,559	2,847	60,000
		SB Ramp Terminal	2,625	2,885	1,922	3,041	58,000	2,568	3,049	2,200	2,936	58,000	2,500	2,743	2,078	3,135	60,000	2,553	2,952	2,155	3,131	58,000
	NB Ramp Terminal		2,545	2,339	2,666	3,379	70,000	2,531	2,437	2,706	3,189	66,000	2,627	2,283	2,918	3,395	69,000	2,531	2,372	2,729	3,311	70,000
	NW 74th Ave		2,531	2,449	2,633	3,294	59,000	2,531	2,388	2,663	3,124	54,000	2,531	2,133	2,846	3,258	58,000	2,561	2,388	2,693	3,264	57,000
	NW 72nd Ave		2,121	1,973	2,687	2,679	64,000	2,393	2,355	2,696	2,583	64,000	2,296	2,096	2,791	2,604	64,000	2,191	1,983	2,948	2,665	64,000
SW 8th St		SW 82nd Ave	2,530	2,182	1,914	3,261	68,000	2,505	2,345	1,917	3,025	68,000	2,557	2,390	2,210	3,349	68,000	2,543	2,286	2,173	3,141	69,000
		SB Ramp Terminal	3,222	2,679	2,477	3,432	86,000	3,203	2,771	2,438	3,528	86,000	3,092	2,712	2,794	3,487	86,000	3,054	2,680	2,775	3,434	86,000
	NB Ramp Terminal		2,805	2,630	2,355	2,986	67,000	2,888	2,670	2,453	3,032	71,000	2,927	2,687	2,219	3,036	72,000	2,796	2,629	2,571	3,036	70,000
	SW 74th Ave		2,653	2,471	2,093	2,878	60,000	2,775	2,532	2,154	2,878	60,000	2,775	2,532	1,972	2,909	62,000	2,653	2,489	2,325	2,939	62,000
SW 24th St		SW 82nd Ave	1,849	1,607	2,073	2,324	59,000	1,982	1,764	2,169	2,347	59,000	1,983	1,799	2,121	2,372	61,000	2,071	1,823	2,350	2,450	60,000
		SW 79th Ave	2,136	1,938	2,209	2,778	69,000	2,232	2,016	2,363	2,780	69,000	2,248	2,047	2,399	2,938	70,000	2,264	2,117	2,412	2,914	69,000
		SB Ramp Terminal	2,544	2,115	2,356	3,516	78,000	2,618	2,188	2,506	3,514	79,000	2,624	2,225	2,552	3,662	80,000	2,614	2,233	2,523	3,605	80,000
	NB Ramp Terminal		2,963	2,555	2,250	3,118	70,000	3,137	2,694	2,383	3,011	71,000	3,215	2,644	2,266	3,069	70,000	3,054	2,531	2,304	3,050	70,000
	SW 75th Ave		2,525	2,062	1,954	2,540	54,000	2,575	2,160	2,045	2,431	66,000	2,686	2,180	1,933	2,448	66,000	2,622	2,026	1,975	2,472	66,000
	SW 74th Ave		2,380	1,989	1,920	2,447	56,000	2,430	2,086	2,010	2,352	56,000	2,540	2,106	1,893	2,347	56,000	2,477	1,953	1,941	2,377	56,000
SW 40th St		SW 79th Ave	2,368	2,268	2,059	2,877	71,000	2,457	2,250	2,132	2,830	72,000	2,515	2,182	2,207	2,823	72,000	2,292	2,280	2,246	2,769	72,000
		SB Ramp Terminal	3,060	2,512	2,420	3,499	87,000	3,148	2,493	2,432	3,408	88,000	3,207	2,425	2,506	3,395	88,000	2,984	2,524	2,563	3,340	86,000
	NB Ramp Terminal		3,907	3,171	3,113	4,355	114,000	3,884	3,134	3,157	4,369	112,000	3,890	3,069	3,059	4,359	109,000	4,021	3,179	3,063	4,450	115,000
	SW 74th Ave		3,922	3,060	2,852	3,395	84,000	4,014	3,151	2,919	3,486	86,000	3,953	3,091	2,852	3,425	85,000	4,044	3,151	2,852	3,516	84,000
	SW 72nd Ave		3,562	2,886	2,761	3,011	83,000	3,633	3,062	2,921	3,046	84,000	3,563	3,054	2,917	2,993	83,000	3,654	3,066	2,884	3,150	84,000
SW 56th St		SW 77th CT	1,482	1,478	1,242	2,533	38,000	1,589	1,510	1,222	2,505	39,000	1,621	1,541	1,129	2,568	39,000	1,626	1,546	1,200	2,560	39,000
		SB Ramp Terminal	1,745	1,494	1,268	2,620	41,000	1,852	1,526	1,248	2,592	43,000	1,884	1,557	1,155	2,655	42,000	1,889	1,562	1,226	2,647	42,000
	NB Ramp Terminal		2,139	1,671	1,593	2,369	51,000	2,189	1,671	1,595	2,375	52,000	2,230	1,706	1,798	2,417	54,000	2,197	1,673	1,761	2,407	53,000
	SW 72nd Ave		1,692	1,531	1,629	1,811	45,000	1,576	1,549	1,661	1,630	46,000	1,577	1,529	1,830	1,674	46,000	1,763	1,530	1,709	1,664	46,000
SW 72nd St		SB Ramp Terminal	1,783	1,202	1,383	2,023	42,000	1,795	1,293	1,478	2,234	44,000	1,822	1,311	1,371	2,150	43,000	1,783	1,294	1,470	2,223	44,000
	NB Ramp Terminal		2,109	1,580	1,539	2,322	46,000	2,175	1,585	1,645	2,427	49,000	2,092	1,565	1,542	2,369	48,000	2,119	1,554	1,584	2,369	48,000
	SW 72nd Ave		1,794	1,342	1,284	2,041	46,000	1,844	1,377	1,434	2,151	48,000	1,750	1,370	1,393	2,201	47,000	1,809	1,285	1,321	2,078	46,000
SW 88th St		SW 79th Ave	2,459	1,806	2,207	2,833	65,000	2,470	1,759	2,367	2,715	66,000	2,562	2,090	2,400	2,846	66,000	2,459	2,106	2,269	2,840	67,000
		SW 77th Ave	2,767	2,030	2,342	3,238	70,000	2,782	1,982	2,502	3,121	70,000	2,882	2,307	2,532	3,261	71,000	2,793	2,335	2,459	3,263	72,000
		SB Ramp Terminal	3,190	2,453	2,441	3,438	94,000	3,206	2,646	2,581	3,386	94,000	3,306	2,729	2,632	3,456	93,000	3,217	2,757	2,560	3,424	101,000
	NB Ramp Terminal		3,250	2,762	2,599	3,575	96,000	3,267	2,831	2,851	3,643	94,000	3,353	2,717	2,486	3,682	93,000	3,184	2,719	2,994	3,631	99,000
	SW 73rd Pl		2,206	2,213	2,205	2,873	62,000	2,314	2,201	2,441	2,893	64,000	2,413	2,033	2,259	2,808	63,000	2,206	2,103	2,599	2,935	64,000
	Dadeland Blvd		1,542	1,644	2,173	2,153	55,000	1,641	1,792	2,375	2,435	56,000	1,717	1,647	2,127	2,241	49,000	1,487	1,742	2,548	2,317	57,000

APPENDIX A

Methodology Letter of Understanding (MLOU)

Florida Department of Transportation Interchange Access Request

Methodology Letter of Understanding (MLOU)

Type of Request ☐ IJR ☒ SIMR ☐ IOAR

Type of Process ☒ Programmatic ☐ Non-Programmatic

SR 826 (Palmetto Expressway) from US 1/SR 5 to SR 836 (Dolphin Expressway) Systems Interchange Modification Report (SIMR)

Coordination of assumptions, procedures, data, networks, and outputs for project traffic review during the access request process will be maintained throughout the evaluation process.

Full compliance with all MLOU requirements does not obligate the Acceptance Authorities to accept the IAR.

The Requester shall inform the approval authorities of any changes to the approved methodology in the MLOU and an amendment shall be prepared if determined to be necessary.

Requestor	Maria Perdomo, PE *FDOT District Six Project Manager*	7/17/18 *Date*
MDX Review Coordinator	Mayra Diaz *MDX Project Manager*	7/17/18 *Date*
Interchange Review Coordinator	Dat Huynh, PE *Planning and Environmental Manager*	7/18/18 *Date*
State Interchange Review Coordinator **(if applicable)**	Maria Overton, PE *Systems Planning Office – Central Office*	07/20/18 *Date*

1.0 Project Description

A Systems Interchange Modification Report (SIMR) is being conducted in support of the SR 826 (Palmetto Expressway) Project Development and Environment (PD&E) Study from US 1/SR 5 to SR 836 (Dolphin Expressway), a distance of approximately seven miles (see ***Figure 1.1***). The PD&E Study is proposing corridor improvements that will add highway and interchange capacity with the implementation of an express lanes system and interchange improvements. The project is located in Miami-Dade County, Florida and is contained within unincorporated Miami-Dade County.

SR 826 is one of the most traveled transportation corridors in Miami-Dade County. This multilane expressway extends north-south from US 1 to the Golden Glades Interchange for a distance of approximately 25 miles. SR 826 connects southern Miami-Dade County to northern Miami-Dade County and serves as a feeder route to the County's busiest east-west corridor, SR 836. SR 826 also provides system-level connections to I-75, SR 924 (Gratigny Parkway), SR 874 (Don Shula Expressway), and I-95. SR 826 is part of the Strategic Intermodal System (SIS) and National Highway System (NHS). SR 826 is listed as a local evacuation route in Miami-Dade County.

SR 826, between US 1 and SR 874, consists primarily of six travel lanes (three lanes in each direction). Between SR 874 and SR 836 the corridor consists primarily of ten travel lanes (five lanes in each direction) and two undesignated High Occupancy Vehicle (HOV) lanes (one in each direction). This segment of SR 826 is functionally classified as an Urban Other Freeway/Expressway and has a posted speed limit of 55 miles per hour. The access management classification for this corridor is Class 1.2, Freeway in an existing urbanized area with limited access.

According to the 2015 FDOT Florida Traffic Online data, the highest existing Annual Average Daily Traffic (AADT) volume recorded within the project limits was 194,500 vehicles per day (vpd). According to the SR 826 Planning Feasibility Study, dated September 2016, the projected year 2040 AADT volume was as high as 349,000 vpd within the project limits.

There are ten existing interchanges within the project limits. Eight of the ten interchanges provide connection to arterial/collector facilities. Two major system-to-system interchanges within the project limits are SR 826 with SR 874 and SR 826 with SR 836. These system-to-system interchanges provide a connection between major expressways, which services and distributes traffic originating from or destined to the north, south, east, and west portions of Miami-Dade County.

This project will evaluate the following potential types of improvements:

- Implementation of dynamically priced express lanes.
- Access and ramp connections to and from the express lanes (ingress and egress access points).
- Interchange improvements – Modification of existing entrance and exit ramps serving the interchanges within the project limits.
- Intersection improvements – Widening and turn lane modifications along the cross streets to facilitate the ramp modifications and improve the access and operation of the corridors upstream and downstream from the interchanges.

Figure 1.1 – Project Location Map

A. Purpose and Need Statement

The overall goals and objectives of the PD&E Study and SIMR are described below:

- Evaluate the implementation of an express lanes system that will improve safety, capacity, operations, regional express lane network connectivity, expressway/interchange access, mobility and emergency evacuation.
- Identify the appropriate express lanes typical section that, combined with strategic ingress and egress locations, will service the users of the area and achieve the Purpose and Need.
- Provide relief from existing and projected traffic congestion.
- Improve the safety of the SR 826 mainline corridor by addressing speed differentials and lane weaving deficiencies between interchanges.
- Support the optimal operations of the existing roadway network.
- Maintain consistency with the current SR 826 Express Lanes Project, from SR 836 to I-75, and local projects.
- Once a conceptual alternative is selected, the improvements will be prioritized based on the area needs (short-term vs. long-term), logical segmentation and funding.

The need for this project is to add capacity to the SR 826 corridor to meet future transportation demand, improve travel time reliability and to provide long-term mobility options. Other considerations for the Purpose and Need of this project include safety, system linkage, freight movement and emergency evacuation. The primary and secondary needs for the project are discussed in further detail below.

Capacity

The project traverses four of the six transportation planning areas (Central, Northwest, South, and West) as identified within the Miami-Dade Transportation Planning Organization (TPO) 2040 Long Range Transportation Plan. The greatest population and employment growth between the years 2010 and 2040 within Miami-Dade County is expected to occur within the South transportation planning area. Population within this area is projected to increase by 49.6% while employment is projected to increase by 64.5%. The other three transportation planning areas are also anticipated to grow modestly between this same period. Population within Central is projected to increase by 27.9% and employment by 32.5%. Population within Northwest is projected to increase by 20% and employment by 41.9%. Population within West is projected to increase by 12.5% and employment by 42.5%. The projected growth in the area will result in a significant increase in travel demand and further deteriorate the conditions of the already congested SR 826 corridor.

Safety

According to the FDOT Crash Analysis Reporting System there were a total of 2,531 crashes along the corridor within the project limits between the years 2011 and 2013, of which 1,522 (60.1%) were rear-end crashes and 259 (10.2%) were fixed object crashes. These types of crashes can be attributed to the heavy levels of congestion and operational weaving conditions within the project area. The majority (547) of the total crashes occurred between milepost 5.7 and 6.8 (between SW 24th Street and north of Flagler Street), resulting in 811 injuries and one fatality.

Safety along the corridor will be enhanced with the construction of the express lanes. Implementing express lanes will improve mobility, reduce congestion and provide additional travel options along the corridor. Diverting some of the future traffic volumes off the general purpose lanes to the express lanes, will help increase gaps along the general purpose lanes

providing more space for vehicles entering SR 826. The express lanes will also help reduce tailgating and improve traffic flow while at the same time separating long distance trips from local trips. Separating these trips will reduce weaving and sideswipe crashes. The express lanes will also create added capacity helping the corridor to operate more efficiently during emergency evacuation events.

System Linkage

SR 826 connects southern Miami-Dade County to northern Miami-Dade County and serves as a feeder route to the County's busiest east-west transportation corridor, SR 836. The corridor provides system-level connections to I-75, Florida's Turnpike, SR 874, and I-95. In addition, SR 826 is designated as an SIS facility. The section of SR 826 from US 1 to SR 836 serves the major western Miami-Dade County growth areas along SW 8th Street, SW 40th Street and the Dadeland South area. The corridor also provides access to the Miami International Airport north and east of SR 836 and to the Dadeland Mall at SW 88th Street. The SR 826 southern segment from US 1 to SR 836 is the final segment of a larger express lanes project for the SR 826 corridor. The northern segment, which extends from SR 836 to I-75, is already under construction. When complete, this regional system will greatly improve capacity, safety, connectivity and peak-hour travel times.

Freight

SR 826 is an integral component of the regional freight network carrying over 10,000 trucks a day according to the 2014 Miami-Dade County Freight Plan Update. The plan identifies the construction of a separate barriered truck lane with manageable entry and exit points along SR 826 as a freight priority highway need of Miami-Dade County. The addition of express lanes along SR 826 would create a more efficient roadway network, improving traffic flow in the general purpose lanes. While trucks are not allowed in express lanes, the enhanced traffic conditions along SR 826 would aid in the movement and delivery of freight.

Emergency Evacuation

In accordance with the Miami-Dade's Comprehensive Development Master Plan, SR 826 is listed as a local evacuation route in Miami-Dade County. This corridor is critical in facilitating traffic movement during emergency evacuation periods as it connects to other major arterials and highways of the state evacuation route network.

B. Project Location

The project is located in western Miami-Dade County and is approximately 7 miles in length. The project limits extend along SR 826 from US 1 to SR 836 (see ***Figure 1.1***).

C. Area of Influence

The area of influence along SR 826 extends from US 1 to south of NW 25th Street. ***Figure 1.2*** depicts the area of influence along SR 826 and cross streets.

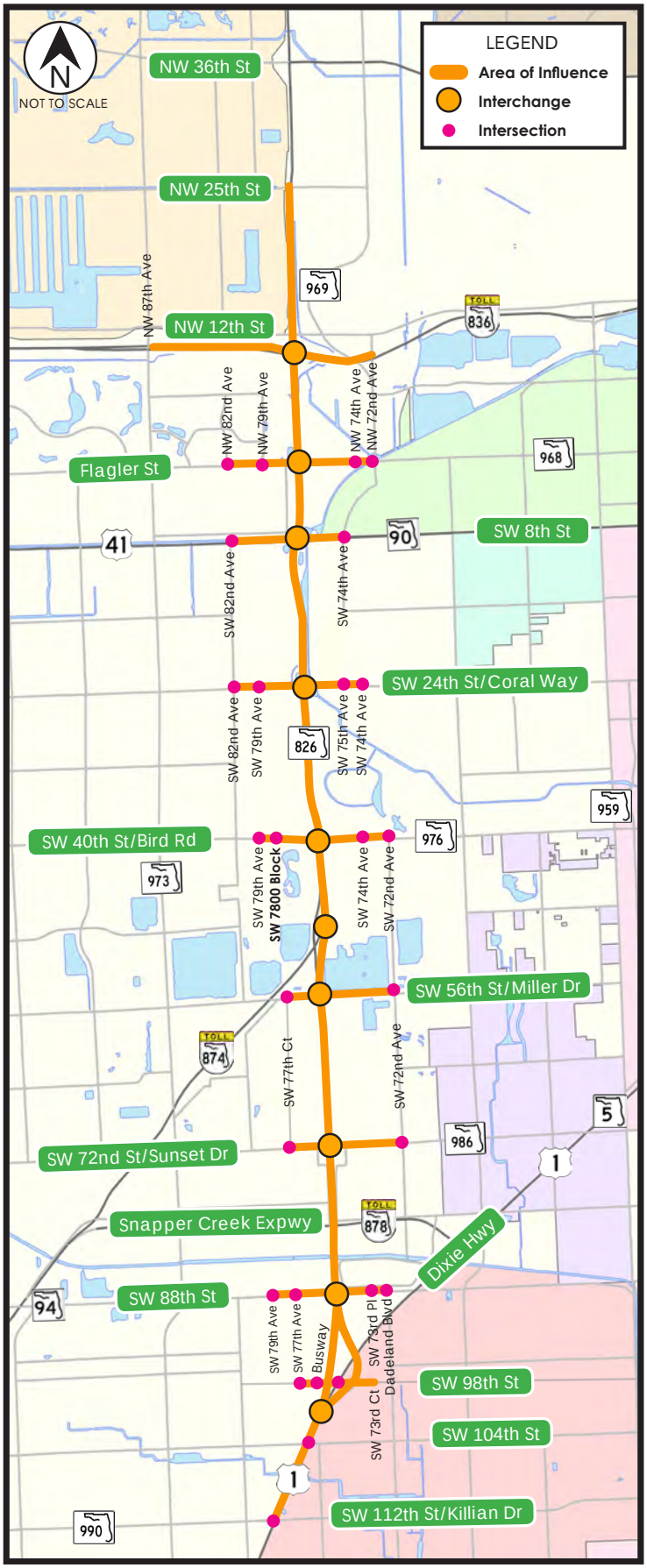


Figure 1.2 – Area of Influence Map

There are ten interchanges under consideration within the area of influence along SR 826. These interchanges are listed below.

1. US 1
2. SW 88th Street (Kendall Drive)
3. SW 72nd Street (Sunset Drive)
4. SW 56th Street (Miller Drive)
5. SR 874
6. SW 40th Street (Bird Rd)
7. SW 24th Street (Coral Way)
8. SW 8th Street (Tamiami Trail)
9. Flagler Street
10. SR 836

There are 43 intersections under consideration within the area of influence along the arterials (27 arterial intersections and 16 terminal ramp intersections). These intersections are listed below.

1. US 1/Killian Drive
2. US 1/SW 104th Street
3. SW 98th Street/SW 77th Avenue
4. SW 98th Street/Busway
5. SW 98th Street/US 1
6. SW 88th Street/SW 79th Avenue
7. SW 88th Street/SW 77th Avenue
8. SW 88th Street/Southbound Ramp Terminal
9. SW 88th Street/Northbound Ramp Terminal
10. SW 88th Street/SW 73rd Place
11. SW 88th Street/Dadeland Boulevard
12. SW 72nd Street/SW 77th Court
13. SW 72nd Street/Southbound Ramp Terminal
14. SW 72nd Street/Northbound Ramp Terminal
15. SW 72nd Street/SW 72nd Avenue
16. SW 56th Street/SW 77th Court
17. SW 56th Street/Southbound Ramp Terminal
18. SW 56th Street/Northbound Ramp Terminal
19. SW 56th Street/SW 72nd Avenue
20. SW 40th Street/SW 79th Avenue
21. SW 40th Street/SW 7800 Block
22. SW 40th Street/Southbound Ramp Terminal
23. SW 40th Street/Northbound Ramp Terminal
24. SW 40th Street/SW 72nd Avenue
25. SW 40th Street/SW 74th Avenue
26. SW 24th Street/SW 82nd Avenue
27. SW 24th Street/SW 79th Avenue
28. SW 24th Street/Southbound Ramp Terminal
29. SW 24th Street/Northbound Ramp Terminal
30. SW 24th Street/SW 74th Avenue
31. SW 24th Street/SW 75th Avenue
32. SW 8th Street/SW 82nd Avenue
33. SW 8th Street/Southbound Ramp Terminal

34. SW 8th Street/Northbound Ramp Terminal
35. SW 8th Street/SW 74th Avenue
36. Flagler Street/NW 82nd Avenue
37. Flagler Street/NW 79th Avenue
38. Flagler Street/Southbound Ramp Terminal
39. Flagler Street/Northbound Ramp Terminal
40. Flagler Street/NW 74th Avenue
41. Flagler Street/NW 72nd Avenue
42. NW 25th Street/Southbound Ramp Terminal
43. NW 25th Street/Northbound Ramp Terminal

D. Project Schedule

The PD&E Study for the SR 826 corridor improvements is currently underway. The expected completion date for the Systems Interchange Modification Report (SIMR) is Summer 2019. Location Design Concept Acceptance (LDCA) is schedule for Summer 2019. Funding for the PD&E Study is in the Fiscal Year 2017-2021 under FPID # 432639-1.

2.0 Analysis Years

A. Traffic Forecasting

The forecasting years proposed for the project are as follows:

- Base year: 2010
- Horizon year: 2040

B. Traffic Operational Analysis

The 2010 and 2040 base and horizon years will be used to produce opening year and design year traffic. The design year for this project is 2045, which will be completed by extrapolation. The analysis years proposed for this project are as follows:

- Existing year: 2017
- Opening year: 2025
- Design year: 2045

In the event a failing level of service (LOS) is obtained in the design year for the recommended alternative, the traffic operational analysis will evaluate the following:

- Identify the year of failure between the opening and design years.
- Determine the life in years of the recommended alternative.
- Compare the improvements of the recommended alternative against the No-Build Alternative.
- Document the benefits associated with the recommended alternative when compared against the No-Build Alternative.

3.0 Alternatives

The PD&E Study and SIMR are planning to evaluate the following alternatives:

- No-Build Alternative – The No-Build (no construction) Alternative will include currently planned and programmed improvements.
- Build Alternatives – The three recommended alternatives from the SR 826 Planning Feasibility Study will be evaluated during the PD&E Study.
    - Alternative 1 proposes one express lane in each direction between SW 56th Street and SR 874 and two express lanes in each direction between SR 874 and SR 836.
    - Alternative 2 proposes one express lane in each direction between US 1 and SR 874 and two express lanes between SR 874 and SR 836.
    - Alternative 3 proposes one express lane in each direction between US 1 and SR 836 and two elevated reversible express lanes between SR 874 and SR 836.

  The PD&E Study will identify other types of reasonable corridor and interchange improvements to support the optimal operations of the express lanes system. Transportation Systems Management and Operations (TSM&O) strategies will be integrated in the recommended alternative.

4.0 Data Collection

A. Transportation System Data

Traffic data intersection turning movement counts and 72-hour continuous approach counts will be collected for typical weekday AM and PM peak periods (6-9 AM, 3-7 PM) in 15-minute increments as part of the PD&E Study work efforts. The traffic data will be collected during regular weekdays starting the week of September 25, 2017. The traffic data collection efforts are anticipated to be completed in approximately six weeks. In addition to the 3-hour AM and 4-hour PM turning movement vehicles counts, the intersection traffic counts will include pedestrian, bicyclist, and truck volumes. A peak-hour volume summary will be calculated by approach.

The 72-hr continuous approach counts will be collected at all the ramps, US 1 mainline corridor and SR 826 mainline corridor. The 72-hr mainline approach counts along the cross streets will be supplemented by information from the FDOT count stations, FTI CD, travel demand model, turning movement counts (converting these to AADTs) and other studies. A map depicting the traffic data collection locations is attached as ***Appendix A***.

The PD&E Study intents to use traffic data from recent/ongoing projects/studies within the project limits. Traffic data will be gathered from the SW 40th Street Planning Study, Kendall Drive Transit Premium Corridor Project Development Study and the SR 836/SR 826 Interchange Project (Section Five). As a result, adjustment factors will be applied to account for the traffic growth between the collection year and existing year of this project.

The following data will also be collected as part of the traffic data collection effort:

- Video of traffic counts will be recorded to capture the data collection (volumes and classifications) and to use for the microsimulation calibration.

- Field observations will be summarized to document the existing traffic conditions and to use for the microsimulation calibration.
- Freeway speed data and travel time data will be gathered for the calibration of the traffic microsimulation models. The data will be gathered in coordination with FDOT using the existing Intelligent Transportation System (ITS) facilities installed along the corridor and Bluetooth Survey Data. Data will be gathered for multiple weekdays during the AM and PM peak periods.
- Queue data will be collected at the ramp terminals and other critical intersections for the calibration of the microsimulation models. Field reviews will be conducted to record the typical intersection queue lengths during the AM and PM peak periods on typical weekdays.
- An Origin and Destination 3-day Bluetooth Survey Data will be performed during regular weekdays to assist with the travel demand forecasting validation, origin/destination matrix development and corridor average trip lengths determination. The survey data will also help determine the traffic distribution between cross streets. Thirteen Bluetooth stations have been strategically located along the SR 826 mainline corridor (see ***Appendix A*** depicting the traffic data collection locations).

Other sources of information to be collected shall include, but not be limited to:

- Straight Line Diagrams (SLDs)
- Roadway Characteristic Inventory (RCI) Data
- Florida Geographic Data Library (FGDL) Geographic Information System (GIS) Data
- FDOT Design Standards
- FDOT Florida Traffic Online

<u>Crash Data</u>

Crash data will be collected from the FDOT Crash Analysis Reporting System (CARS), Signal 4 Analytics and local agencies for the five most recent years on the mainline, interchanges, and cross streets within the area of influence. The data collected will include the number, type and location of crashes, high crash locations, number of fatalities and injuries, and estimates of property damage and economic loss.

The SIMR will document how the actual rates compare to statewide averages for similar corridors and/or interchanges.

B. Existing and Historical Traffic Data

Field visits will be conducted to collect information on existing geometry, storage lengths, queuing lengths, traffic signal heads, and to determine/verify signal phasing information, such as protected/permitted left-turn operations, right-turn-on-red restrictions and phase overlaps. The signal timing plans for the signalized intersections will be obtained from the Miami-Dade County Department of Transportation and Public Works. In addition, historic data will be gathered from various sources including FDOT District Six, Miami-Dade County and prior studies within the study area.

C. Planned and Programmed Projects

The PD&E Study and SIMR will consider all the programmed and planned roadway improvements in the area and will be consistent with all regional transportation plans including, but not limited to, the following:

- FDOT Five-Year Work Program
- FDOT SIS Plans
- FDOT State Transportation Improvement Program (STIP)
- Committed improvements from local and private sources
- Miami-Dade TPO Fiscal Year TIP
- Miami-Dade TPO Adopted LRTP
- Miami-Dade County Comprehensive Plan
- Developments of Regional Impact (DRIs) within the area
- PD&E studies and master plans within the area

5.0 Travel Demand Forecasting

A. *Selected Travel Demand Model(s)*

The Southeast Florida Regional Planning Model (SERPM) Version 7.071 will be used for this study. SERPM 7.071 is the official model for the FDOT District Six region, with a 2010 base year and 2040 horizon year. The 2040 scenario in this model has the TPO-approved 2040 Cost Feasible LRTP network and the population and employment forecasts. The SERPM 7.071 model is an activity based time of day model that is capable of forecasting traffic into future years for various highway and transit scenarios. The model has a 5-time period assignment:

1. Early AM Period (10:00 PM – 5:59 AM)
2. AM-Peak Period (6:00 AM – 8:59 AM)
3. Midday Period (9:00 AM – 2:59 PM)
4. PM-Peak Period (3:00 PM – 6:59 PM)
5. Evening Period (7:00 PM – 9:59 PM)

The results of the time of day assignments are combined to forecast the daily traffic. The SERPM model has been validated with 2010 Annual Average Daily Traffic (AADT) volumes. Therefore, no adjustment factors are necessary to forecast the AADT volumes. However, adjustments may be needed to ensure subarea model volumes match the AADT counts closely.

B. Project Traffic Forecast Development Methodology

The future year traffic volumes will be developed using the time of day assignments. Since this is an express lanes study, time of day information is critical. Research has shown that peak-to-daily ratios of express lanes are different from general purpose freeway lanes. Most of the express lanes utilization is expected to happen during the peak periods. Therefore, the project team will use the three-hour AM peak period and four-hour PM peak period volumes to forecast the one-hour AM and one-hour PM peak-hour directional volumes. This peak-hour volume set with the highest demand within the peak period will be selected for the design traffic development. Separate peak-hour volumes for general purpose and express lanes will be developed. Origin-

destination matrices will be developed for the three-hour AM peak period and the four-hour PM peak period. These will be sliced to develop an AM peak-hour matrix and a PM peak-hour matrix. The AADT volumes will be forecasted from the summation of all the time periods. The model horizon year is 2040. Therefore, for the design year forecast development, the 2040 forecasts will be extrapolated to forecast the 2045 design year volumes.

2040 SERPM No-Build and Build scenarios will be developed as part of the future forecasts development process. The 2040 No-Build scenario will be first developed by using the 2040 Cost Feasible LRTP network as baseline. Any LRTP improvements within the project corridor that are Priority II or Priority III will be deleted from the No-Build scenario. The No-Build scenario development will be closely coordinated with FDOT to only include the existing and committed projects on the SR 826 corridor. The list of projects that will be removed will be closely coordinated with the Department and will be documented in the Design Traffic Technical Memorandum. The AADT volume forecasts will be compared against the independently developed historical trend line forecasts and the compound growth rates-based forecasts. The population and employment forecasts of the 2-mile corridor subarea will be used to develop the compound growth rates after conducting a desktop review of the corridor 2-mile subarea socioeconomic data.

The AM and PM peak-hour volumes will be determined by using diurnal factors. Diurnal factors convert the 3-hour AM period volumes to 1-hour AM peak-hour volumes and the 4-hour PM period volumes to the 1-hour PM peak-hour volumes. The diurnal factors will be developed from existing traffic patterns by reviewing the time of day profiles of the mainline and cross streets of SR 826. Since the traffic volumes of the cross streets near SR 826 are mainly driven by SR 826 mainline volumes, major emphasis will be given to the SR 826 traffic profile. The cross street diurnal factors will be used to identify any outliers from the SR 826 mainline diurnal factors, and necessary adjustments will be made.

The forecasting approach will require extensive subarea validation to match the AM and PM volumes to the traffic counts. A 2017 model scenario will be developed for this effort. The detailed 2017 subarea validation approach is described in ***Section C*** below. The approach primarily will focus on post-processing the 2017 model origin-destination matrix to improve the model assigned volumes. The CUBE Analyst origin-destination matrix estimation software will be used for this effort. The average trip length and the trip length frequency distribution of the estimated 2017 subarea origin-destination will be verified against the Bluetooth origin-destination survey. The subarea matrix will consist of internal-internal flows of all traffic analysis zones within the subarea plus the external-internal, internal-external and external-external flows. This matrix will be developed using the CUBE Subarea extraction process, which automatically will renumber the matrix zones and will extract the flows from the regional SERPM origin-destination into the subarea SERPM origin destination. Any trips that cross the subarea boundary only once will be tabulated into external-internal or internal-external flows. Any trips that cross the subarea boundary twice will be tabulated into external-external flows.

Once satisfactory validation results are achieved at the subarea level, the 2017 subarea origin-destination will be used as a starting point for the future year forecasting efforts. The growth matrix between the 2017 SERPM origin-destination and the 2040 SERPM origin-destination will be developed by subtraction. The growth will be added to the 2017 CUBE Analyst origin-destination at the subarea level.

The model subarea validation will ensure reasonable origin-destination flows and sufficient agreement between the volumes and counts. The future year total demand on the corridor will be verified against historical and socioeconomic growth trends. Once sufficient confidence is achieved, the split between general purpose lane and express lane loads will be verified. Since there are no express lanes in the base year, a comparison of base year volumes to counts cannot be performed. However, the future year express lane volumes in highly congested corridors like SR 826 are expected to be at capacity. The future loads will be verified against the expected peak period and daily volumes. Express lane volumes close to or more than 1,650 vehicles per lane per hour are anticipated throughout the corridor.

The 2045 design traffic volumes will be developed by extrapolating between 2017 balanced traffic counts and 2040 balanced volumes. Opening year will be developed by interpolation between the years 2017 and 2045.

C. Validation Methodology

Several modifications to the travel demand model will be performed to refine the subarea forecasts of the SR 826 corridor. A 2-mile radius subarea will be generally defined as part of this task. The subarea development process will ensure major competing roadways are included in the analysis. To this effect, the subarea will be extended up to the Homestead Extension of Florida Turnpike (HEFT) to the west and Red Road/SW 57th Avenue to the east. The northern limits of the SR 826 subarea will be extended up to the I-75/SR 826/SR 924 Interchange. North of NW 36th Street, only the SR 826, SR 924 and I-75 mainlines will be included in the subarea to balance the subarea size. The SR 826, SR 924 and I-75 mainline segments are included in the subarea to ensure the major movements of mainline and express lane volumes coming from the north are captured. A 2017 SERPM model scenario will be developed using 2017 networks and socioeconomic data. The 2017 socioeconomic data will be developed by interpolating between the 2010 and 2040 socioeconomic data sets. The data will be cross-checked against the 2015 SERPM 8 data that has been under development by the Miami Dade TPO. The 2017 networks will be developed by desktop review of the 2010 network and updating it to 2017 conditions. Prior to this PD&E Study, the Department conducted a planning study on this corridor, in which a 2015 base scenario was modeled. The network changes adopted in the 2015 planning study networks will be transferred to the 2017 SERPM network development. As part of the planning study, a subarea extraction process and CUBE Analyst origin-destination estimation process were also implemented. However, this setup is based on the earlier version of the SERPM 7 model. The subarea application will be transferred to the latest version of the SERPM 7 model as part of this study.

Time of day traffic counts will be coded into the 2017 network for the 2-mile radius study area. Within the corridor limits, the PD&E Study's 2017 traffic count data will be coded into the network. Outside the corridor, but within the 2-mile radius limits, the traffic counts from 2016 will be obtained and coded into the network. A SR 826 corridor growth rate will be developed between the 2016 and 2017 traffic counts. The growth rate will be applied to the 2016 subarea traffic counts to develop the 2017 traffic counts for the subarea validation.

Various model network attributes, within the subarea, will be reviewed and corrected (if necessary). These may include facility types, number of lanes, area types, posted speed, tolls for tolled lanes, geometric connections, turn penalties, centroid location and connections. All the subarea network changes will be propagated to the future years.

An iterative validation using the CUBE Analyst origin-destination estimation process will be

conducted as part of this task. The process needs the SERPM 2017 subarea origin-destination matrix and the time of day traffic counts. The origin-destination estimation process will be conducted separately for each of the 5-time periods. The resulting origin-destination matrix will be assigned back to the highway network to verify a satisfactory output of results. Root Mean Square Error (RMSE) and Volume-to-count ratio targets will be used to evaluate the model validation outputs in accordance with the FSUTMS CUBE Framework Phase 2. In addition to the subarea RMSE and Volume to count ratio measures, the Screenline/Cutline measures will be used in evaluating the model validation. The average trip lengths and trip length frequency distributions of the origin-destination matrix will be compared against the Bluetooth Survey to ensure a reasonable match.

D. Adjustment Procedures

The model results will be post-processed using the FDOT 2014 Project Traffic Handbook and NCHRP 765 recommendations. The project team will develop a corridor prototype spreadsheet with separate workbooks for AM peak-hour, PM peak-hour and AADT volumes. The volumes and traffic counts for 2017 conditions will be verified. If the differences between volumes and counts are more than a threshold percentage, the link volumes will be post-processed to account for the differences. A 10% threshold percentage for freeways and a 15% threshold percentage for all other facility types will be used. If negative growths are observed at any location, the subarea compound growth rates developed from the population and employment forecasts will be applied at those locations. The volumes will be balanced and smoothed as needed. The growth rates of the forecasted volumes will be compared against the growth trends. Any outlier links will be post-processed.

The turning movement forecast will be developed from the subarea origin-destination assignments. This way, the subarea origin-destination matrices and the turning movements are ensured to be consistent. The future year turns will be forecasted to ensure sufficient growth between base and future year turns from the subarea traffic assignment model. If by any chance any negative/unreasonable turns are forecasted in the model at select locations, adjustments will be performed to the turning movement forecasts to comply with the subarea growth rates.

E. Traffic Factors

The corridor design traffic will be based on diurnal factors, as opposed to using the traditional K and D factors. The diurnal factors are the peak period to peak-hour conversion factors and will be determined based on the traffic data collected. The diurnal factors will be compared against the values used in the previous planning study. The corridor traffic count profile by hour will be examined within the peak periods as well as the diurnal factors for the various SR 826 mainline stations by direction. An average of the factors will be considered in the development of the design traffic. Typically, the variation in diurnal factors in an urban area is not significant from one station to the other. However, the factors for SR 836, SR 874 and SR 836 will be separately examined.

The project team will conduct the development of unbalanced forecasts using the K and D factors to compare against the diurnal factors approach. If significant (more than 10%) differences are observed along the SR 826 mainline segments, additional reasons for the differences will be examined. The process also includes the possibility of revising the diurnal factors as appropriate.

The traffic factor tables from the FDOT Project Traffic Forecasting Handbook provide a summary of K_{std} and acceptable ranges for D_{30}. The K_{std} factor is the proportion of AADT volumes occurring

during the peak-hour of the design year, depending upon the area type and facility type. The D_{30} factor is the proportion of traffic in the 30th highest hour of the year traveling in the peak period direction. ***Table 5.1*** and ***Table 5.2*** show the FDOT K_{std} and D_{30} target thresholds.

Table 5.1. FDOT Standard K Factors[1]

Area Type	Facility Type	K_{std}
Large Urban Areas with Core Freeways	Freeways	8.0-9.0
	Arterials	9.0
Other Urbanized Areas	Freeways	9.0
	Arterials	9.0

[1]Adopted from the 2014 FDOT Project Traffic Forecasting Handbook, Figure 2.4 - FDOT Standard K Factors.

Table 5.2. FDOT Recommended D_{30} Factor Ranges[1]

Road Type	Low D_{30}	Medium D_{30}	High D_{30}	Standard Deviation
Urban Freeways	50.4	55.8	61.2	4.11
Urban Arterials	50.8	57.9	67.1	4.60

[1]Adopted from the 2014 FDOT Project Traffic Forecasting Handbook, Figure 2.9 - Recommended D-Factors (D) for Traffic Forecasting.

The T_{24} factor is the adjusted annual 24-hour percentage of truck traffic. The T_{24} factor will be obtained from the classification counts and compared to the factors obtained from the FDOT permanent count stations to assess reasonableness of the data. The Design Hour Truck (DHT) factor is the percentage of truck traffic during the peak-hour in the design year and can be estimated as half of the T_{24} factor. The Peak Hour Factor (PHF) will be obtained from the classification counts. The PHF is applied to the traffic counts to convert hourly flow to peak 15-minute flow rate for capacity analysis.

The K and D factors will be calculated based on the collected traffic data and forecasted traffic volumes from the PD&E Study and will be compared to the ranges specified in the FDOT Project Traffic Forecasting Handbook. The traffic factor development process will be documented in detail in the SIMR report.

6.0 Traffic Operational Analysis

A. Existing Area Type/Traffic Conditions

Area Type	Conditions	
	Under Saturated	Saturated
Rural	☐	☐
Urban Area/Transitioning Area	☐	☒

B. Traffic Analysis Software Used

Software		System Component					
		Freeway				Crossroad	
Name	Version	Basic Segment	Weaving	Ramp Merge	Ramp Diverge	Arterials	Intersections
HCS/ HCM	7/ 6th Edition	☒	☒	☒	☒	☐	☐
Synchro	10	☐	☐	☐	☐	☒	☒
SimTraffic		☐	☐	☐	☐	☐	☐
CORSIM	6.3	☒	☒	☒	☒	☒	☒
VISSIM		☐	☐	☐	☐	☐	☐
Other		☐	☐	☐	☐	☐	☐

Detailed operational analyses will be performed for all analysis years for both AM and PM peak hours. The following operational analyses will be conducted utilizing the design traffic forecasts:

- Freeway Analysis
- Freeway Weaving Analysis
- Ramp Merge and Diverge Analysis
- Queuing Analysis
- Intersection Analysis
- Express Lanes Analysis

The HCM 6th Edition Module in Synchro 10 will be used for intersection level of service and queue length analyses. The reasonableness of the Synchro results will be verified and documented in accordance with the calibration methodology described below in ***Section C***. In addition, Synchro results will be compared with CORSIM results at locations where both models are applied. CORSIM models will be developed for the 2017 existing year for model calibration and for the 2045 design year to compare the No-Build Alternative against the Recommended Alternative. All other operational analyses (existing year, opening year, year of failure and design year) will be performed based on the HCM 6th Edition procedures using HCS7 and/or Synchro 10.

C. Calibration Methodology

<u>Synchro:</u>
Synchro models will be calibrated in accordance with the guidelines provided in the FDOT's Traffic Analysis Handbook, March 2014. The calibration process will also include the following steps:

- Lost time adjustment factor will be adjusted to replicate field observed queue lengths.
- In order to calculate reasonable queuing in the model, all link terminals will extend at least 1,000 feet from the last node.

- 95th percentile queue lengths that are tagged with "#" or "m" will be examined for the extent of queuing problems.

The calibration process will be supported by observations and data gathered during field reviews including typical queue lengths, delays, operating speeds, right turns on red, signal timings and pedestrian/bicycle activity.

CORSIM:

The simulation calibration will incorporate guidance and criteria from the FDOT's Traffic Analysis Handbook (2014) and FHWA's Traffic Analysis Toolbox Volume III (2004). Traffic volume data, travel time data, and field observations will be used in the calibration of the CORSIM models. CORSIM models will be developed for the 2017 existing year for model calibration and for the 2045 design year to compare the No-Build Alternative against the Recommended Alternative. Three-hour AM and PM peak periods analysis will be conducted using 15-minute flow rates.

Several calibration measures will be used to ensure that the models accurately replicate existing year field conditions. The calibration process will consist of measuring and comparing volume, speed, and visual audits. The freeway mainline volumes will be calibrated using criteria specified in the FHWA's Traffic Analysis Toolbox Volume III. Individual link flow targets will be:

- Within 15% of field traffic flows for more than 85% of cases where flows range from 700 veh/hr to 2,700 veh/hr.
- Within 100 veh/hr for more than 85% of cases where flows are less than 700 veh/hr.
- Within 400 veh/hr for more than 85% of cases where flows are greater than 2,700 veh/hr.
- Sum of all link flows within 5% of sum of all link counts.

The target of the GEH statistic will be less than five for more than 85% of the links. Travel time targets will be within 15% (or 1 minute if higher) of the field measured travel times for more than 85% of cases. Travel speed profiles will be compared against travel time runs with the simulation output to ensure that the simulation provides similar trends and areas of congestion.

Visual audits of the simulation will be performed to analyst's satisfaction to observe speed-flow relationships for individual links. In addition to average travel speeds, individual link speeds and speed-flow diagrams will be used to evaluate the performance of the freeway segments.

The major bottlenecks within the study area will be calibrated to replicate the capacity and congestion based on field data. Visual audits of the simulation will be performed to analyst's satisfaction to observe speed-flow relationships for individual links and acceptable queuing at intersections and other bottlenecks in the network. In addition to average travel speeds, individual link speeds and speed-flow diagrams will be used to evaluate the performance of the network.

The existing conditions analysis will have a simulation duration (4 hours AM and 4 hours PM) that allows congestion to build and dissipate and minimize the potential for unmet demand. Volume inputs will be in 15-minute increments, which will be estimated based on traffic flow profiles from continuous machine counts. To determine the minimum required number of simulation runs, statistical tests will be performed using a 95% confidence level and an allowable error of 10%. Any parameters that are changed from the default value will be documented and justified accordingly. All future year Build and No-Build models shall be created from the calibrated 2017

existing year model.

D. Selection of Measures of Effectiveness (MOE)

Both qualitative and quantitative measures of performance or effectiveness (MOEs) will be used to differentiate between the alternatives. The MOEs that will be assessed for the CORSIM models AM and PM peak hours include the following:

- Freeway: Simulated Volume, Throughput, Operating Speed and Density
- Intersections: Volume, Delay, 95th Percentile queue length, and Volume over capacity ratio
- Network-wide: Total travel time, Total delay time, Vehicle-miles of travel, Average speed and Latent demand

The delay, 95th percentile queue length and volume over capacity ratio will be reported for every movement at every intersection.

The CORSIM analysis will compare MOEs for the No-Build Alternative and recommended Build Alternative. CORSIM MOEs will be assessed for a simulation period covering a total of 4 hours in the AM period and 4 hours in the PM period for each alternative scenario. The simulation periods will include the following:

- AM Period: model initialization period + highest 4-hour AM peak period (in 15-minute intervals based on forecasted AM peak-hour and existing traffic flow profiles)
- PM Period: model initialization period + highest 4-hour PM peak period (in 15-minute intervals based on forecasted PM peak-hour and existing traffic flow profiles)

The MOEs that will be assessed from the HCS and Synchro analyses will include the following:

- Freeway Analysis: Speed, Density, Simulated volume/demand volume and LOS
- Intersection Analysis: Total Delay, LOS, Volume over capacity ratio and 95th Percentile queue length

FDOT recommends a target LOS D for roadways in urban areas. Therefore, LOS D will be applied for all roadways within the project limits.

7.0 Safety Analysis

The SIMR will be mainly focused on the SR 826 corridor and interchange areas. Interchanges will be evaluated to determine if the traffic operations will impact the operations of the express lanes (especially interchanges upstream and downstream from the express lanes access points). Cross street improvements are not the priority of this project. Therefore, the safety analysis will be mainly focused on the SR 826 corridor and interchange areas.

The safety conditions will be assessed using the Historical Crash Analysis Method (traditional method). This task includes the tabulation of crash data, the determination of high accident sections, and the safety analysis of the existing facility and alternatives. Crash data will be obtained from the FDOT CARS database, Signal 4 Analytics and local agencies for the five most recent years. A safety analysis will be performed for the study intersections and roadway segments. The safety analysis will document vehicle types, crash rate, crash patterns, crash types, and their contributing causes for existing conditions and

display information graphically. The limits of the safety analysis will be selected based on the conditions that influence the operation of the interchanges. Additional emphasis will be placed on identifying existing safety issues at the interchange entry and exit points. The potential safety impact (positive or negative) of the proposed improvements for the design year will be qualitatively identified. When negative impacts to safety are identified, an evaluation of design mitigation measures will occur. The safety analysis will also document the crash severity and how the rates compare to statewide averages for similar corridors and/or interchanges.

8.0 Consistency with Other Plans/Projects

This SIMR will maintain consistency with the following plans and projects:

- SR 826/SR 836 Interchange Improvements (Section Five) Project
- SR 826 Express Lanes Project (from SR 836 to I-75)
- SR 836/NW 87th Avenue Interchange Improvements Project (by Miami-Dade Expressway Authority)
- SR 874/Sunset Drive Interchange PD&E Study (by Miami-Dade Expressway Authority)
- Strategic Miami Area Rapid Transit (SMART) Plan (by Miami-Dade Department of Transportation and Public Works)
- All Bus Rapid Transit Projects within the area of influence (by Miami-Dade Department of Transportation and Public Works)
- Miami-Dade TPO Adopted LRTP
- Miami-Dade County Comprehensive Plan
- Any approved DRIs within the area of influence

Where the request is inconsistent with any plan, steps to bring the plan into consistency will be developed.

9.0 Coordination

Yes	No/NA	
☒	☐	An appropriate effort of coordination will be made with appropriate proposed developments in the area.
☒	☐	Request will identify and include (if applicable) a commitment to complete the other non-interchange/non-intersection improvements that are necessary for the interchange/intersection to function as proposed.
☒	☐	Request will document whether the project requires financial or infrastructure commitments from other agencies, organizations, or private entities.
☒	☐	Request will document any pre-condition contingencies required in regards to the timing of other improvements and their inclusion in a TIP/STIP/LRTP prior to the Interstate access approval (final approval of NEPA document).
☒	☐	Request will document the funding and phasing.

**Explain if No or Not Applicable (N/A) is checked*:

10.0 Anticipated Design Exceptions and Variations

☐ *Design exceptions/variations are not anticipated, but if an exception/variation should arise it will be processed per FHWA and FDOT standards.*

☒ *The following exceptions/variations to FDOT, AASHTO or FHWA rules, policies, standards, criteria or procedures have been identified:*

- Lane Width
- Shoulder Width
- Border Width

11.0 Conceptual Signing Plan

A conceptual signing plan shall be prepared for the recommended Build Alternative. The conceptual signing plan will provide major guide sign placement and messages. The conceptual signing plan will be prepared in accordance with all applicable FDOT, FHWA, and Manual on Uniform Traffic Control Devices (MUTCD) guidelines. The CORSIM microsimulation model will reflect driver behavior (lane changing decisions) based on conceptual guide sign placement.

12.0 Access Management Plan

☒ *Access management plan within the area of influence will not be changed by the proposed improvements to the interchange.*

☐ *The improvement will affect access management within the area of influence will be changed. An access management plan will be developed within the area of influence to complement the improvements to the interchange:*

13.0 FHWA Policy Points

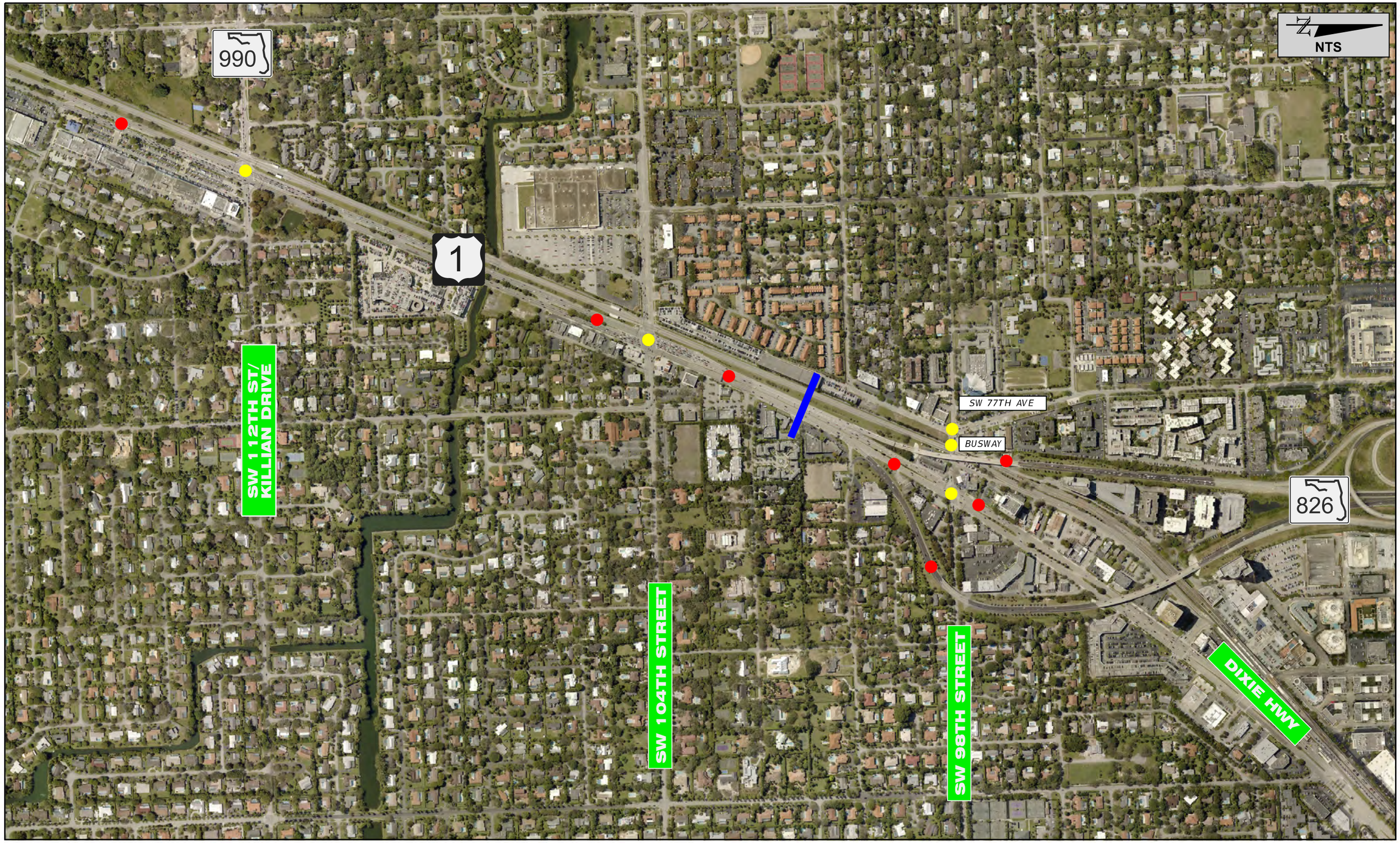
The following two FHWA Policy Criteria (also known as 2 FHWA criteria, Document E9-20679, dated May 22, 2017) will be specifically addressed within the SIMR:

- **Policy Point 1:** An operational and safety analysis has concluded that the proposed change in access does not have a significant adverse impact on the safety and operation of the Interstate facility (which includes mainline lanes, existing, new, or modified ramps, ramp intersections with crossroad) or on the local street network based on both the current and the planned future traffic projections. The analysis should, particularly in urbanized areas, include at least the first adjacent existing or proposed interchange on either side of the proposed change in access (23 CFR 625.2(a), 655.603(d) and 771.111(f)). The crossroads and the local street network, to at least the first major intersection on either side of the proposed change in access, should be included in this analysis to the extent necessary to fully evaluate the safety and operational impacts that the proposed change in access and other transportation improvements may have on the local street network (23 CFR 625.2(a) and 655.603(d)). Requests for a proposed change in access should include a description and assessment of the impacts and ability of the proposed changes to safely and efficiently collect, distribute, and accommodate traffic on the Interstate facility, ramps, intersection of ramps with crossroad, and local street network (23 CFR 625.2(a) and 655.603(d)). Each request should also include a conceptual plan of the type and location of the signs proposed to support each design alternative (23 U.S.C. 109(d) and 23 CFR 655.603(d)).

- **Policy Point 2:** The proposed access connects to a public road only and will provide for all traffic movements. Less than "full interchanges" may be considered on a case-by-case basis for applications requiring special access, such as managed lanes (e.g., transit, HOVs, HOT lanes) or park and ride lots. The proposed access will be designed to meet or exceed current standards (23 CFR 625.2(a), 625.4(a)(2), and 655.603(d)). In rare instances where all basic movements are not provided by the proposed design, the report should include a full-interchange option with a comparison of the operational and safety analyses to the partial-interchange option. The report should also include the mitigation proposed to compensate for the missing movements, including wayfinding signage, impacts on local intersections, mitigation of driver expectation leading to wrong-way movements on ramps, etc. The report should describe whether future provision of a full interchange is precluded by the proposed design.

APPENDIX A

Traffic Data Collection Locations



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

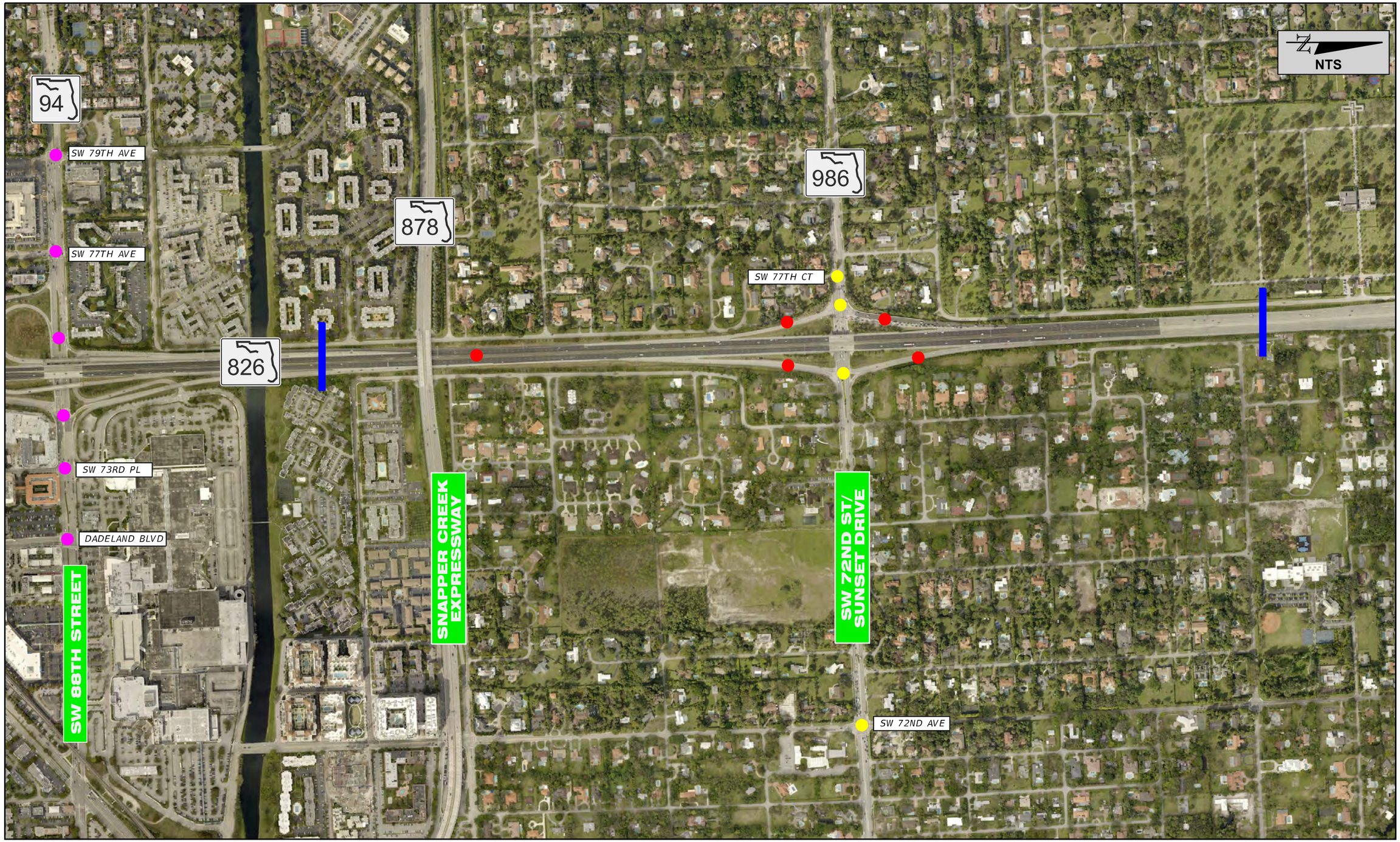
SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 1



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

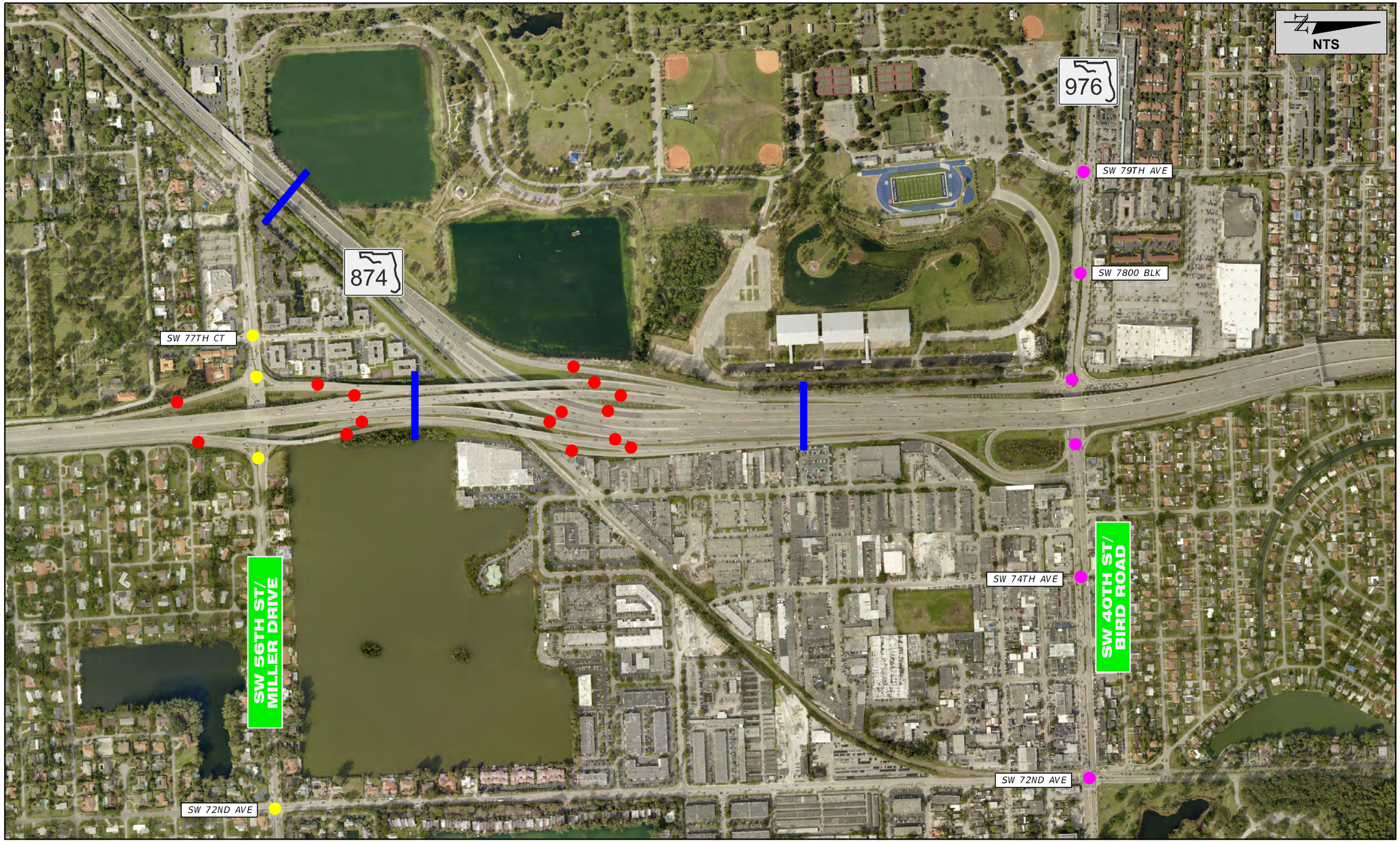
SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 2



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

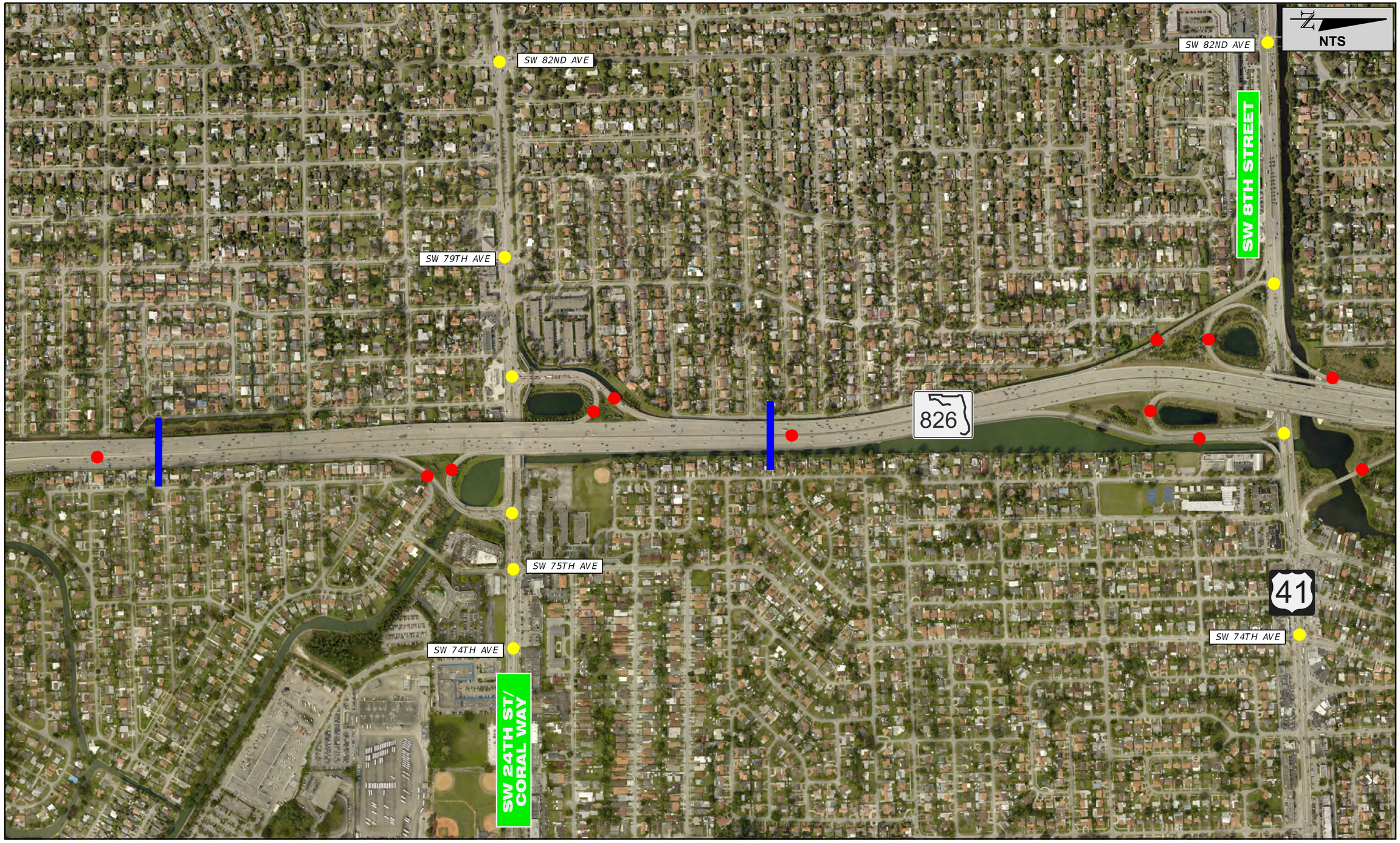
SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 3



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

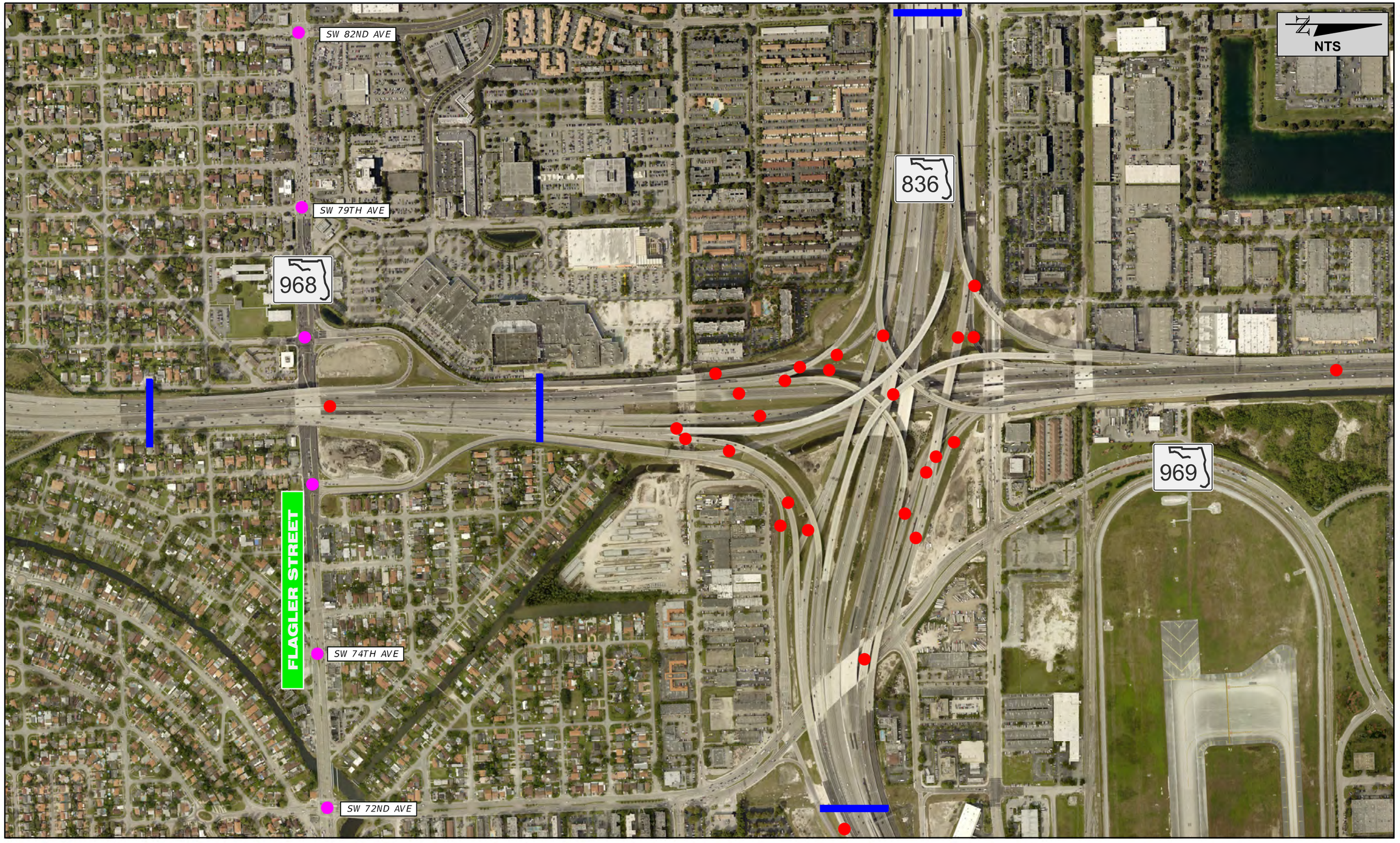
SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 4



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

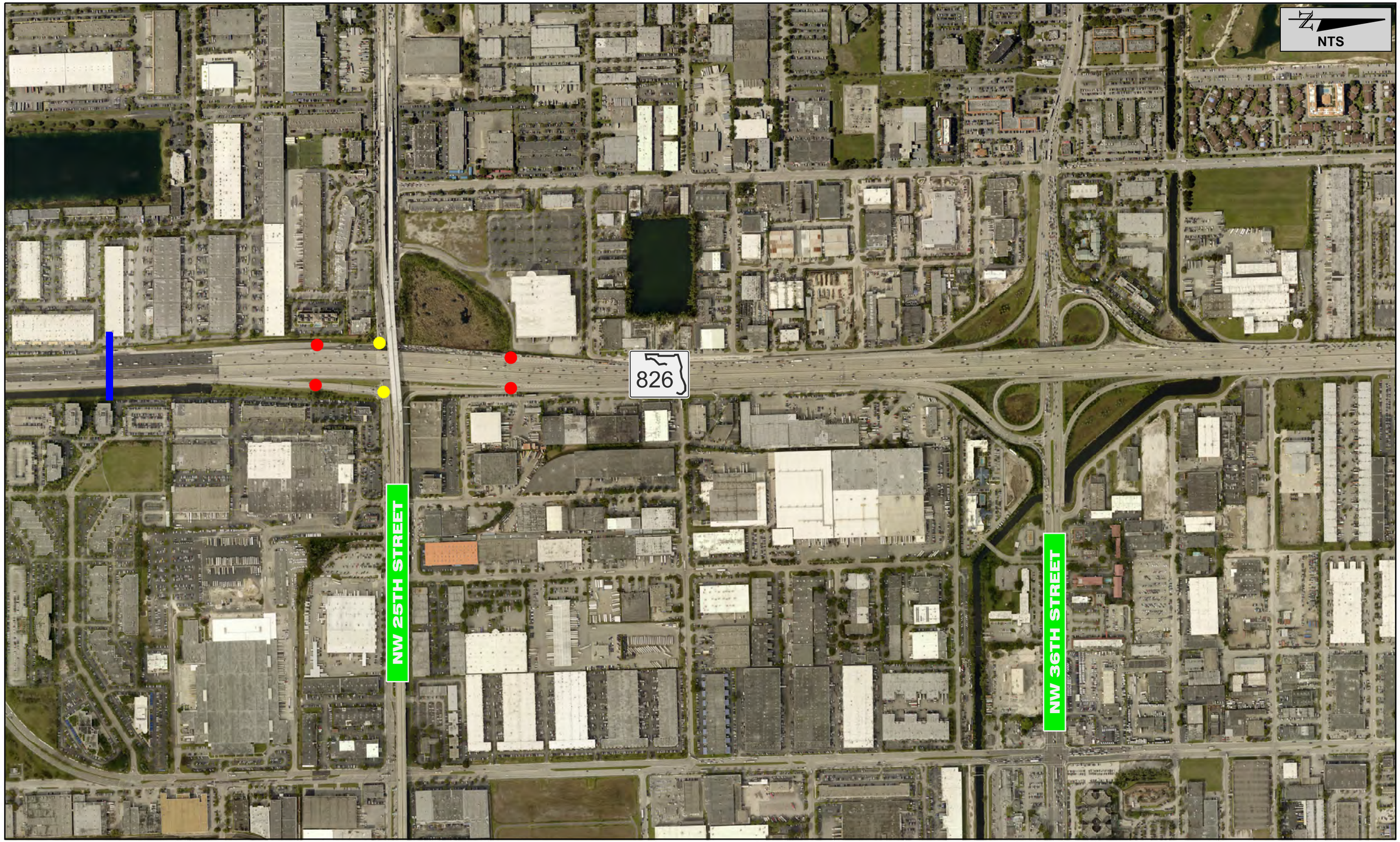
SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 5



LEGEND

- TURNING MOVEMENT COUNT LOCATION
- TURNING MOVEMENT COUNT LOCATION FROM OTHER STUDIES
- APPROACH COUNT LOCATION
- ORIGIN/DESTINATION STATION LOCATION

PALMETTO EXPRESS

SEPTEMBER 2017

826

SR 826 EXPRESS LANES PD&E STUDY
FROM US 1 TO SR 836 (DOLPHIN EXPRESSWAY)

STATE OF FLORIDA
DEPARTMENT OF TRANSPORTATION

ROAD NO.	COUNTY	FINANCIAL PROJECT ID
826	MIAMI-DADE	432639-1-22-02

TRAFFIC DATA COLLECTION LOCATIONS

SHEET NO. 6

APPENDIX B

SR 826 Diurnal Factors Development

SR 826 Diurnal Factors Development

The diurnal factors were calculated for SR 826, SR 836 and SR 874 within the study area. There are separate factors for the am and pm analysis periods. The am and pm analysis periods are 6:00 am to 9:00 am and 3:00 pm to 7:00 pm, respectively. The diurnal factor is the ratio of the peak hour traffic to the analysis period traffic (AM – 3 Hour period, PM – 4 Hour period).

Hourly traffic counts were obtained from FDOT's Florida Traffic Online. The traffic counts were performed on various weekdays during 2016 and 2017. The directional, hourly traffic counts were presented in 15-minute increments. The peak hour is chosen from the respective analysis period. An individual peak hour is chosen for each location, direction, and analysis period (i.e. SR 826 north of Kendall Dr, northbound, am).

The following step-by-step procedure was implemented to develop the diurnal factors:

- Traffic counts were tabulated and organized in a spreadsheet table in 15-minute increments.
- Within peak period, an hourly directional volume was computed for each 15-minute increment by adding the four consecutive intervals.
- The highest hourly volume was highlighted.
- The diurnal factor was computed as the highest hourly volume divided by the peak period volume.
- The data and the factors were examined throughout the study area corridor for logical similarities. An average diurnal factor of all the mainline count stations was estimated for each peak period, by direction. The average diurnal factor is then compared against the individual station diurnal factors visually to examine any outliers. For this study, the average single diurnal factor in both northbound and southbound directions was considered, as the differences in factors by direction were found to be insignificant.

The individual diurnal factors, presented in Figures B1-B4, were calculated using the unique peak hour volumes and the analysis period volumes.

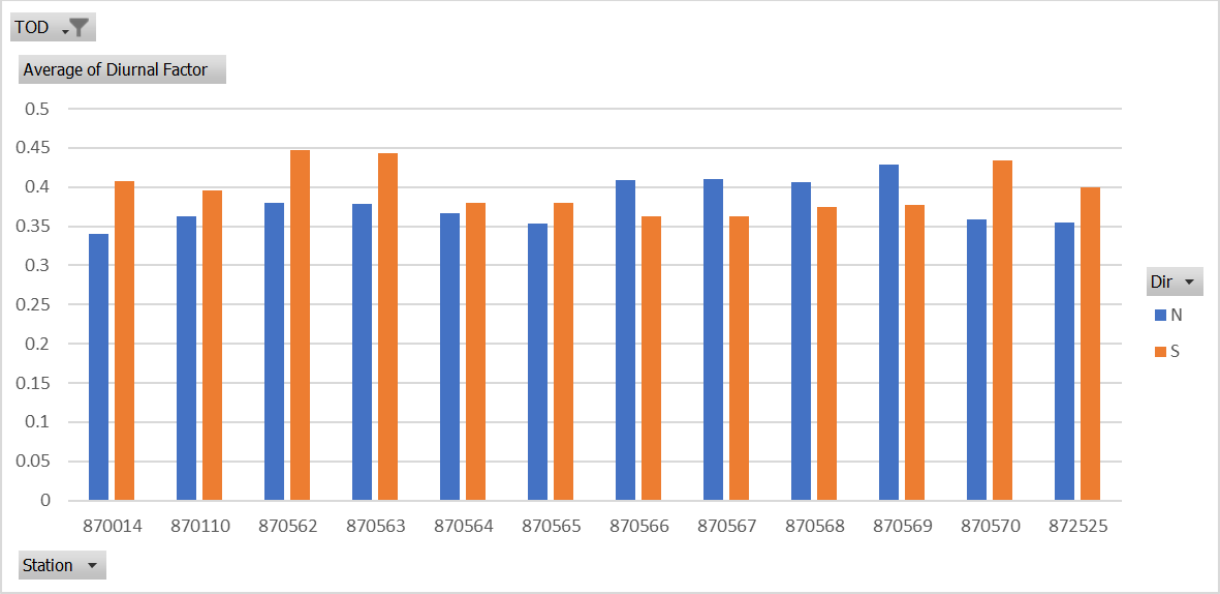


Figure B1: SR 826 Corridor - 2017 Average Directional Diurnal Factor for AM

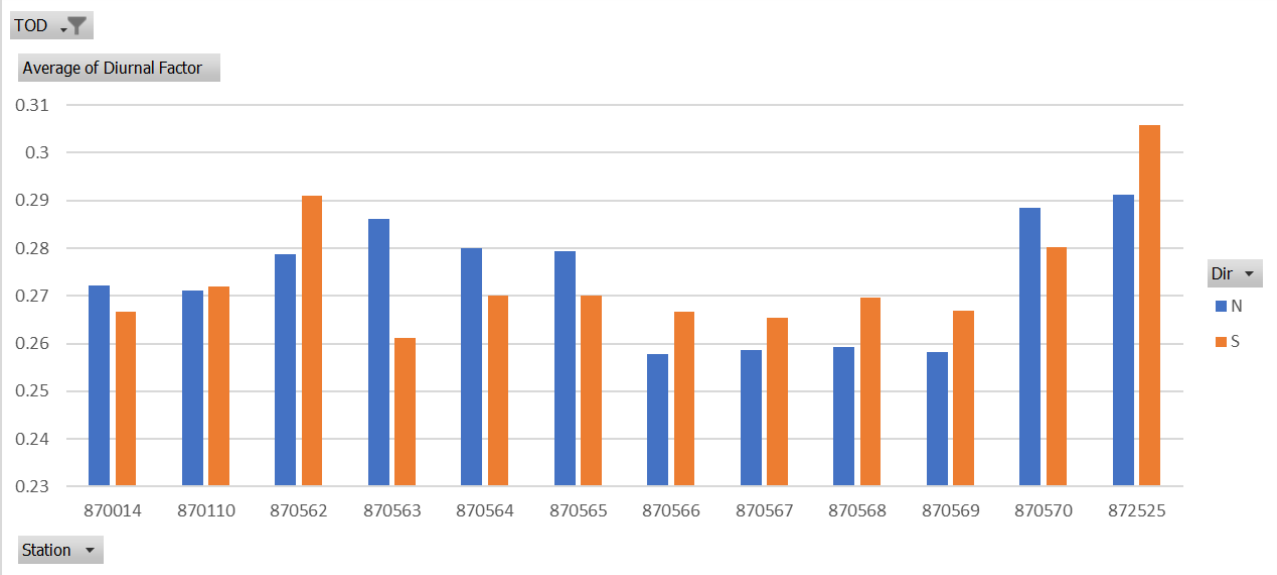


Figure B2: SR 826 Corridor - 2017 Average Directional Diurnal Factor for PM

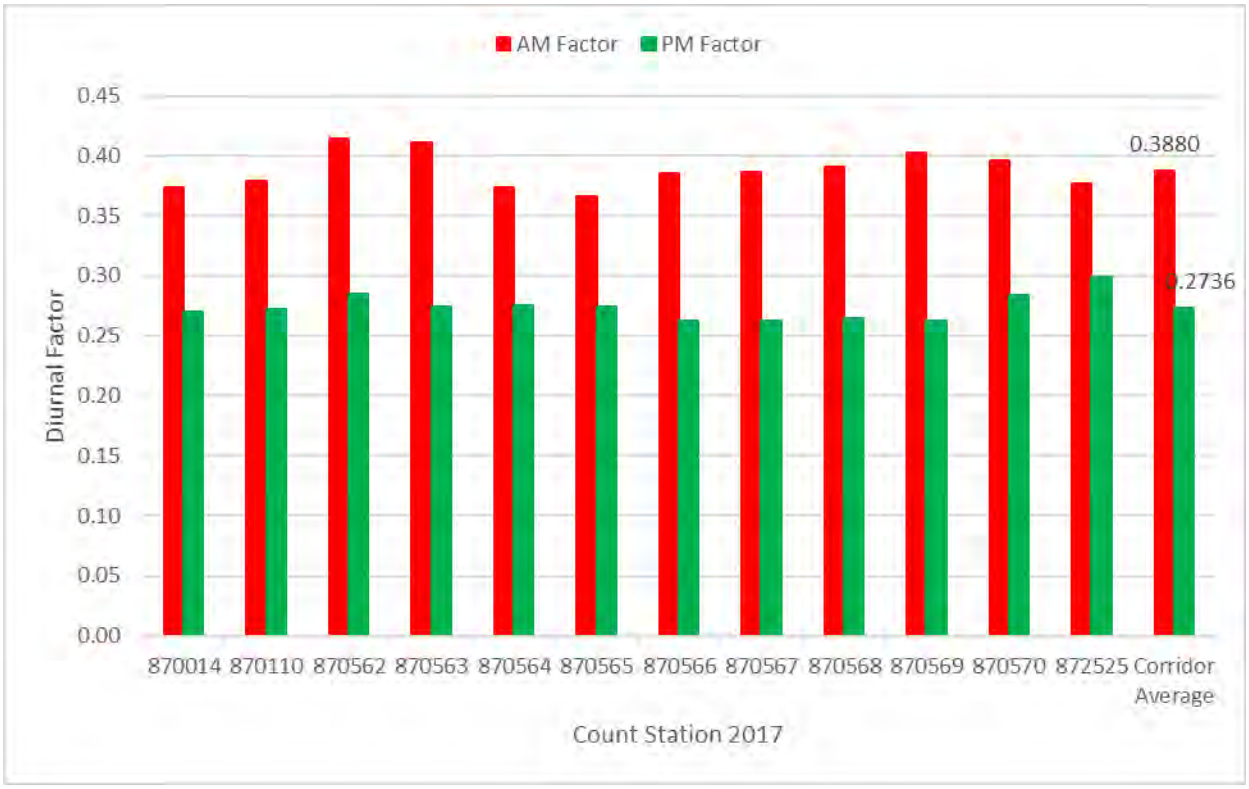


Figure B3: SR 826 Corridor 2017 Diurnal Factor

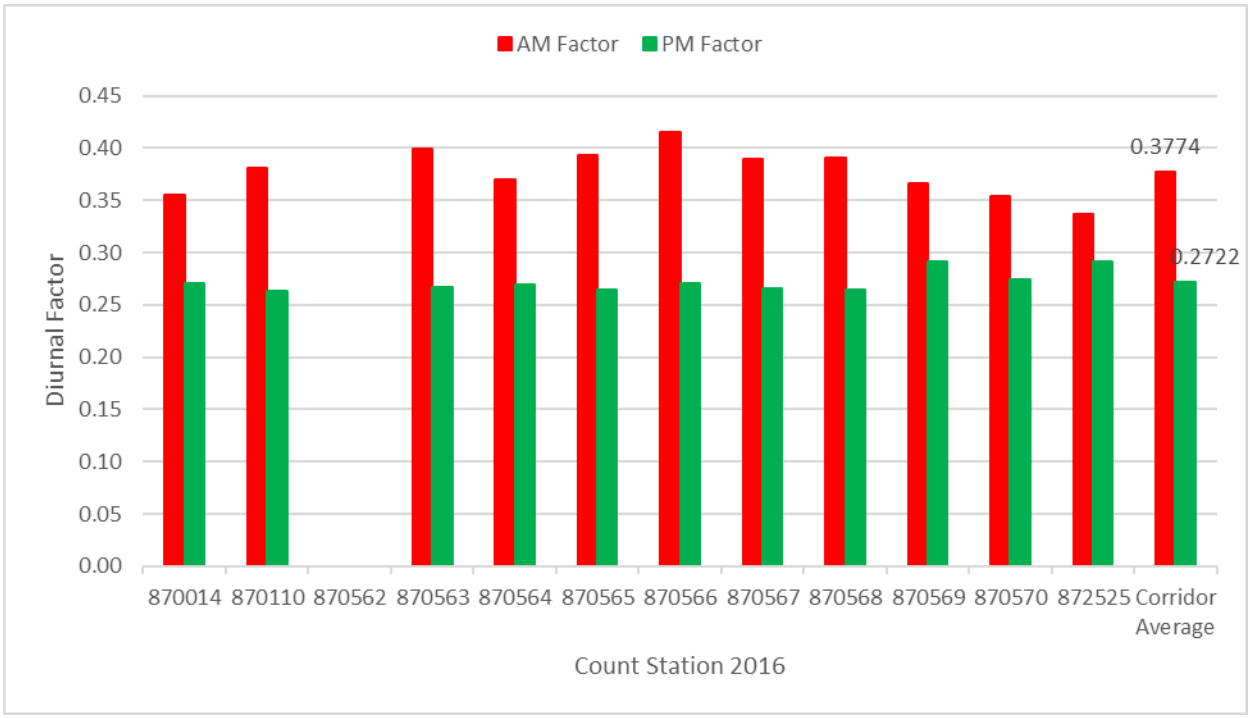


Figure B4: SR 826 Corridor 2017 Diurnal Factor

The average of the diurnal factors by facility is presented in Table B1-B2. As the differences in SR 826, SR 874 and SR 836 diurnal factors are not significantly different from each other, the factors developed for SR 826 were used for this project.

Table B1: SR 826 Mainline Diurnal Factors

COSITE	Location	2017		2016	
		AM Factor	PM Factor	AM Factor	PM Factor
870014	US 1, S of Killian Dr	0.3737	0.2694	0.3556	0.2701
870110	US 1, S of Palmetto Expy	0.3792	0.2716	0.3804	0.2637
870562	SR 826, N of US 1	0.4138	0.2849	-no data-	-no data-
870563	SR 826, N of SW 88th St	0.4105	0.2737	0.3992	0.2674
870564	SR 826, N of SW 72nd St	0.3731	0.275	0.3705	0.2697
870565	SR 826, N of SW 56th St	0.3667	0.2747	0.3935	0.2641
870566	SR 826, N of SW 40th St	0.3856	0.2621	0.4155	0.2706
870567	SR 826, N of SW 24th St	0.3869	0.262	0.3893	0.266
870568	SR 826, N of SW 8th St	0.3907	0.2645	0.3902	0.2642
870569	SR 826, N of W Flagler St	0.4029	0.2626	0.3665	0.2916
870570	SR 826, N of SR 836	0.3962	0.2843	0.3544	0.2749
872525	SR 826, N of NW 25th St	0.3772	0.2985	0.3365	0.2916
Corridor Average		**0.388**	**0.2736**	**0.3774**	**0.2722**

Note: COSITE – FTI Count Station /Site Number

Table B2: SR 836 and SR 874 Mainline Diurnal Factors

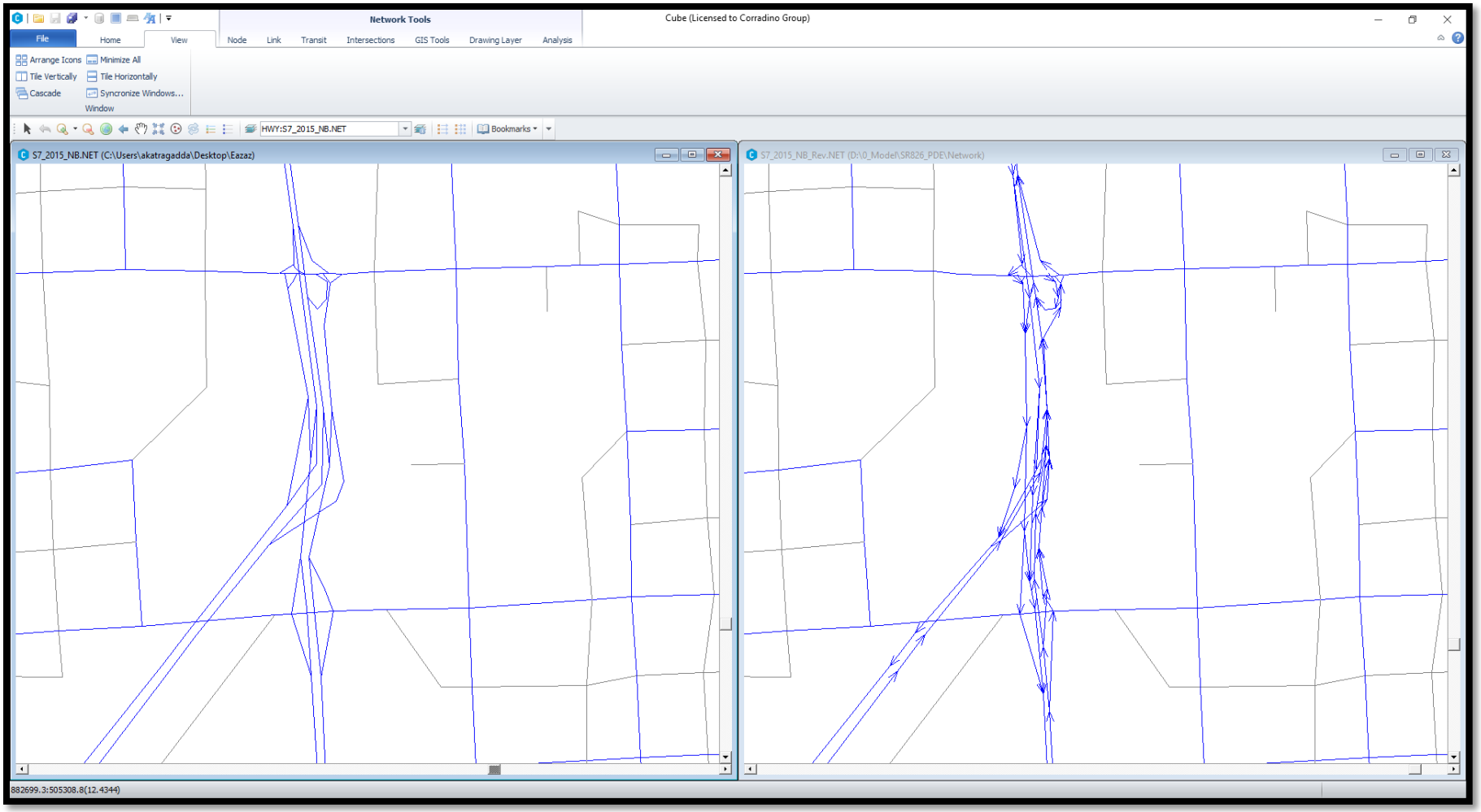
COSITE	Location	AM Factor	PM Factor
872193	SR 836, W of NW 87 Ave	0.3832	0.2741
872188	SR 836, E of SR 826	0.3959	0.2693
872244	SR 836, E of NW 87 Ave	0.4182	0.3046
SR 836 Average		**0.3991**	**0.2827**
872278	SR 874, W of SR 826	**0.3594**	**0.2737**

APPENDIX C

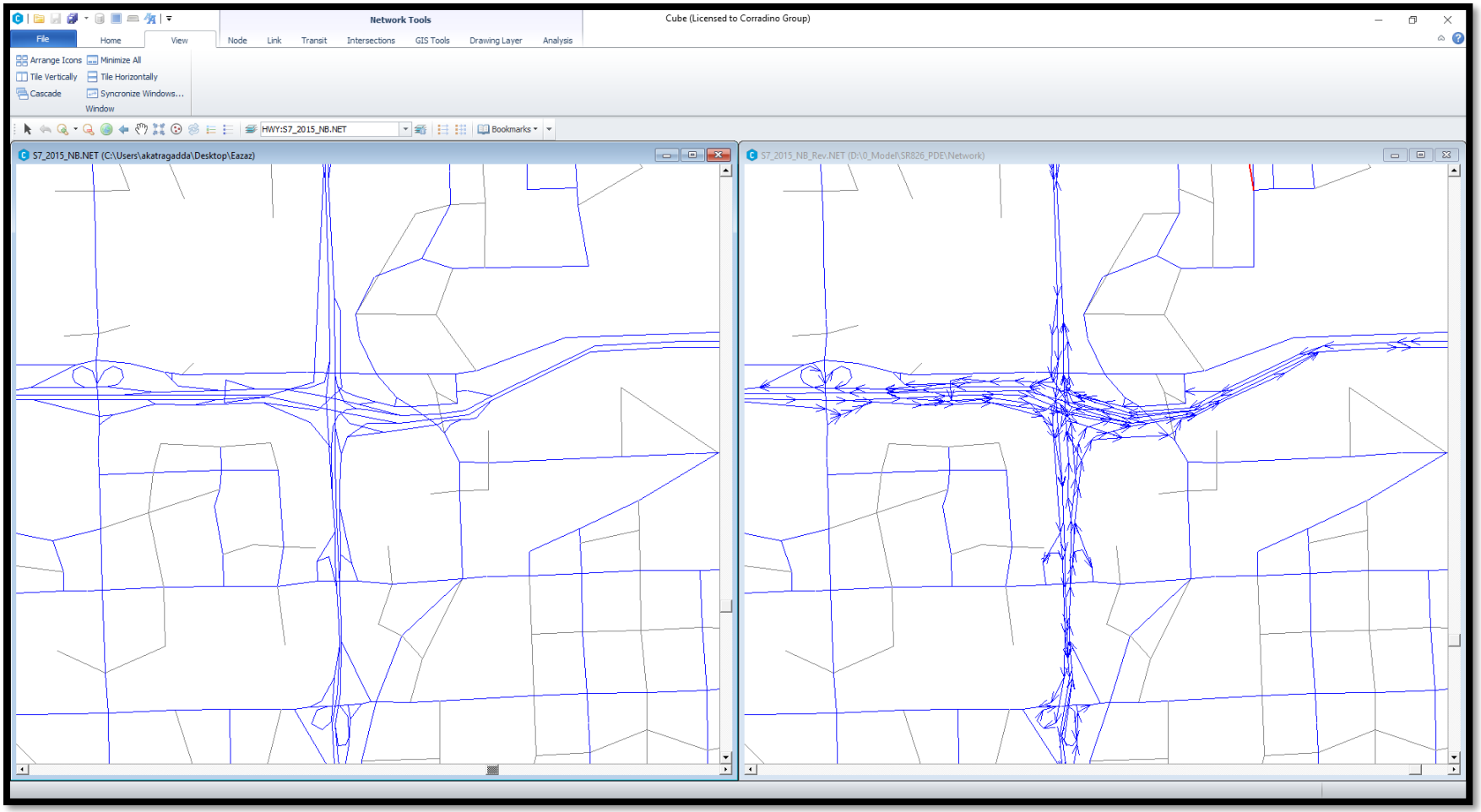
SERPM Network Corrections and/or Updates

Configuration Changes

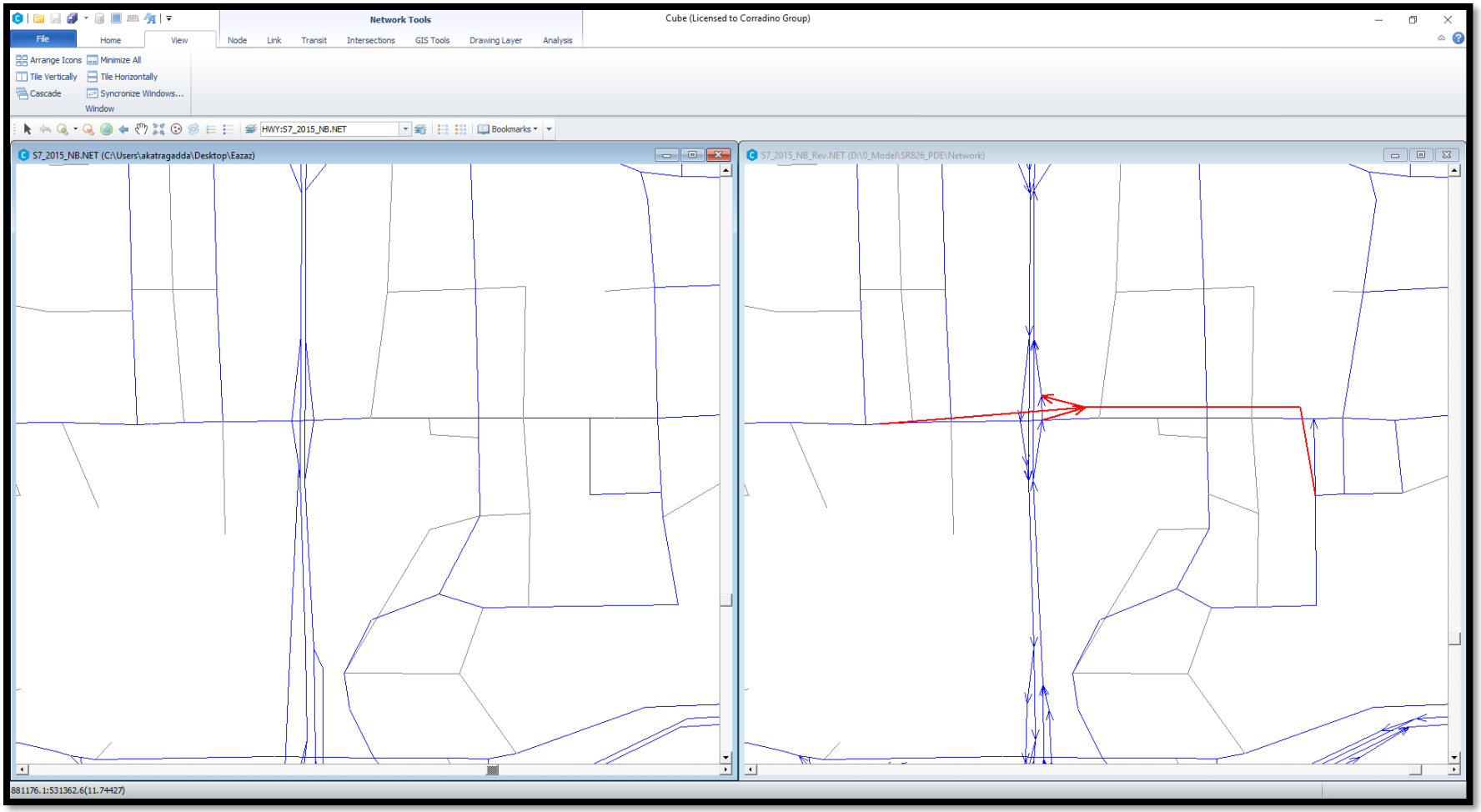
SR 874 and SR 826 Interchange



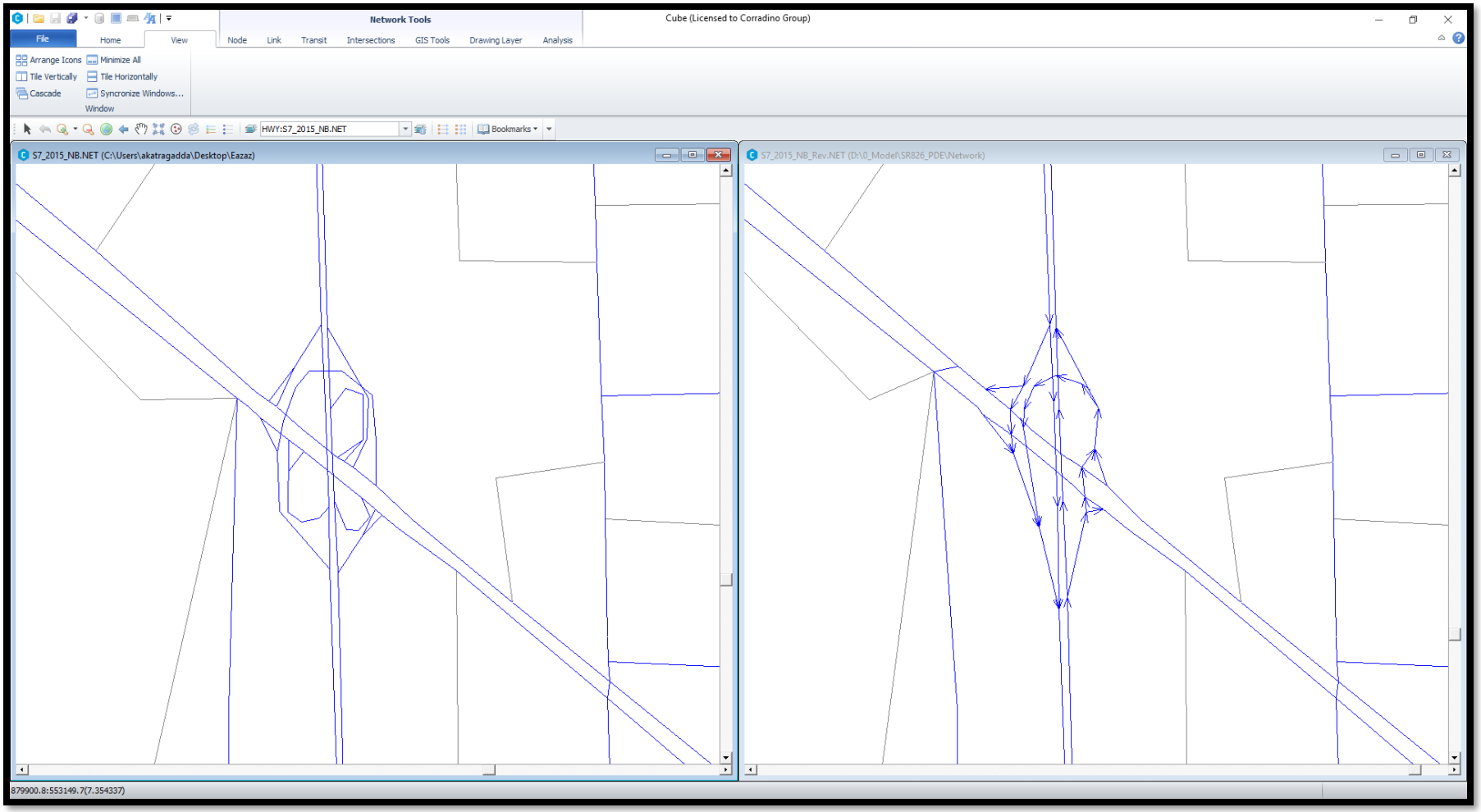
SR 836 and SR 826 Interchange



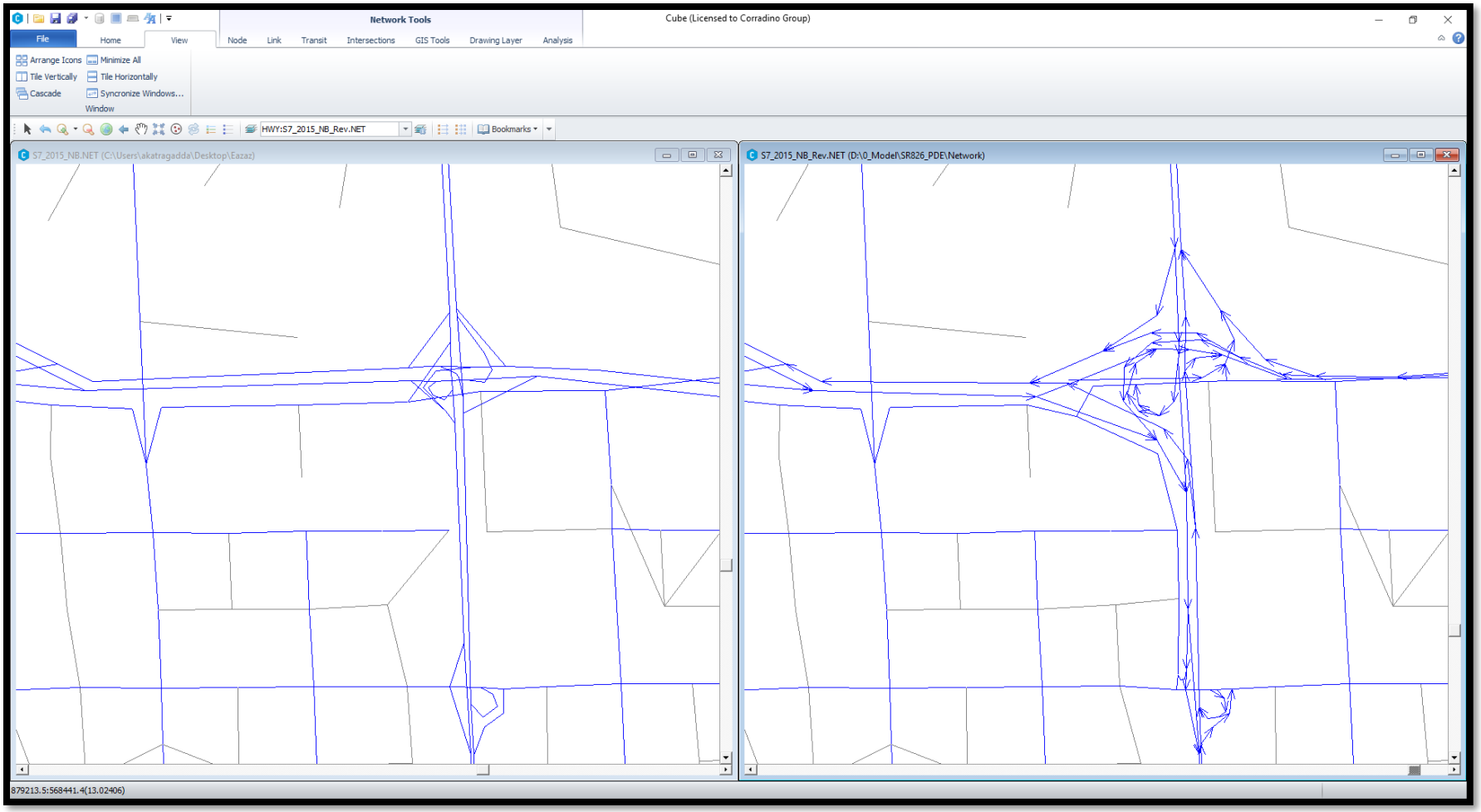
NW 25th St and SR 826 Interchange



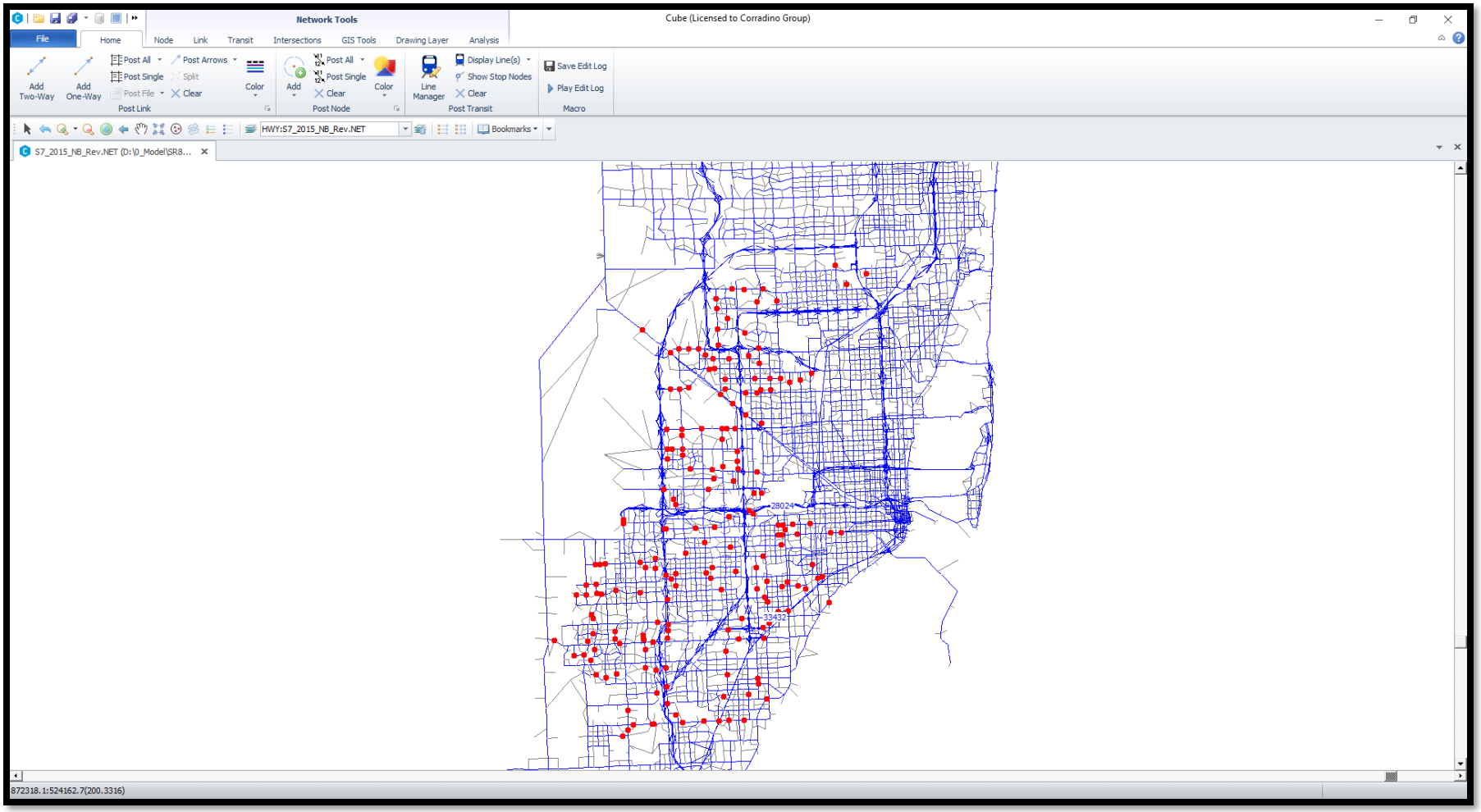
US 27 and SR 826 Interchange



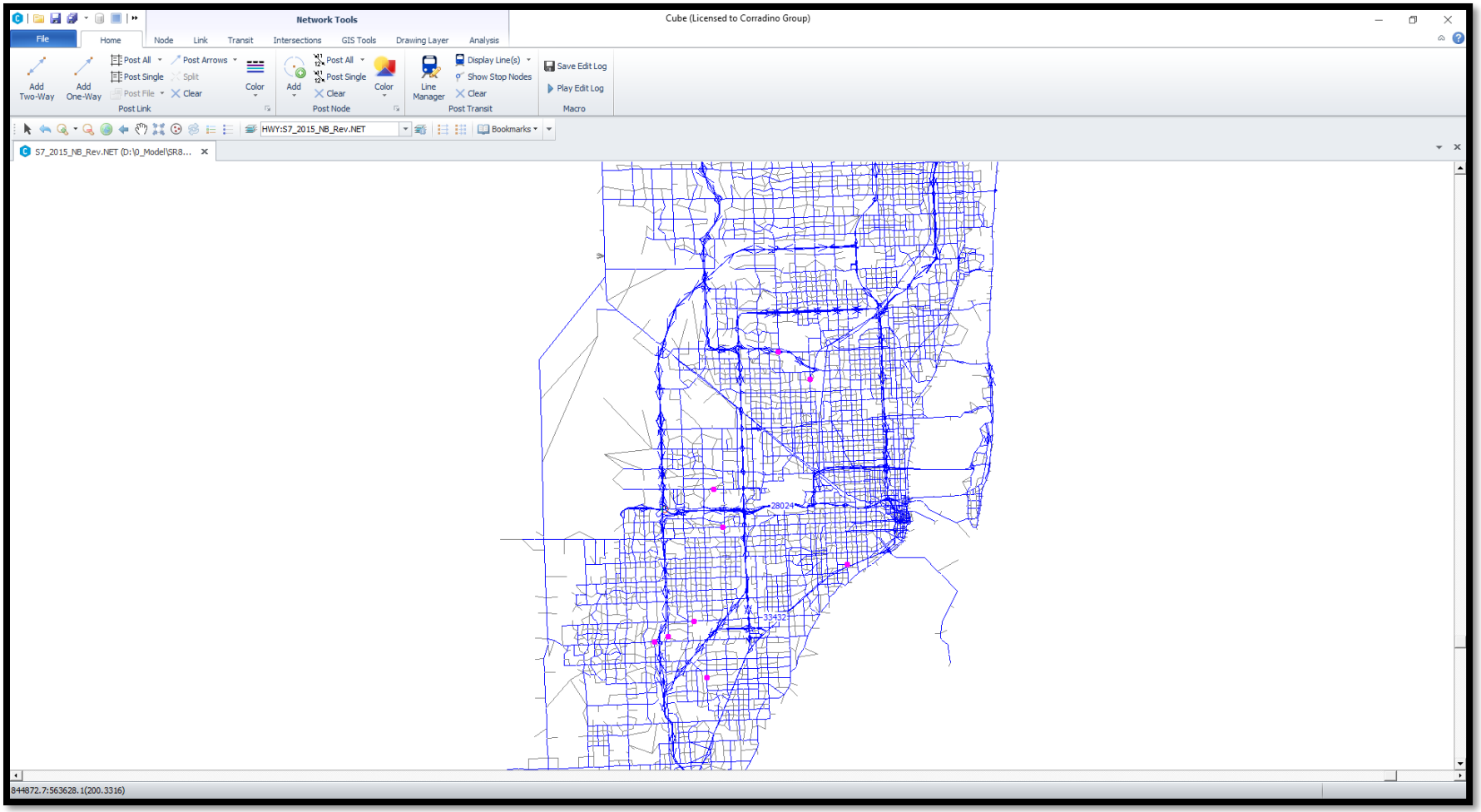
I-75/SR924 and SR 826 Interchange



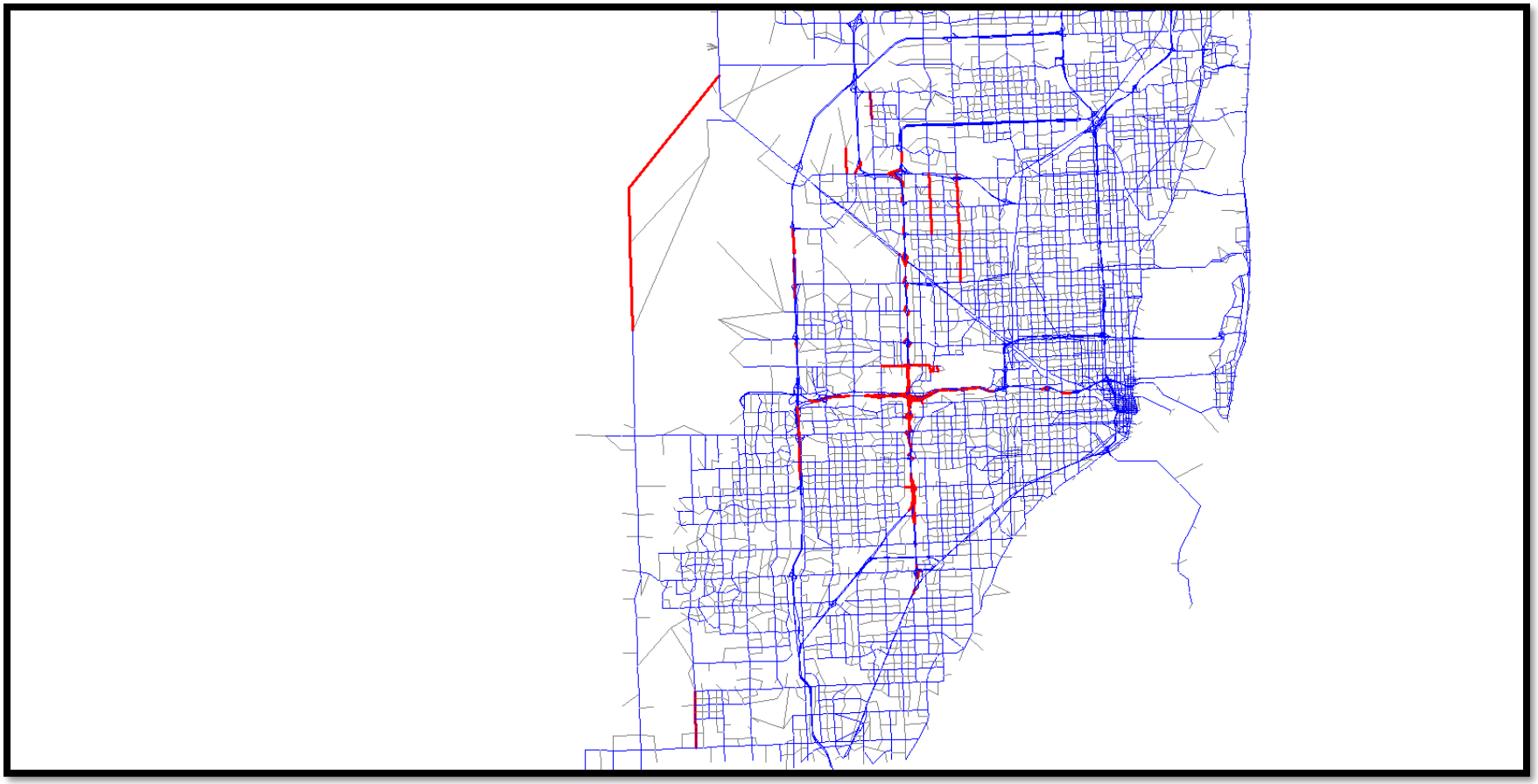
New Signals Coded



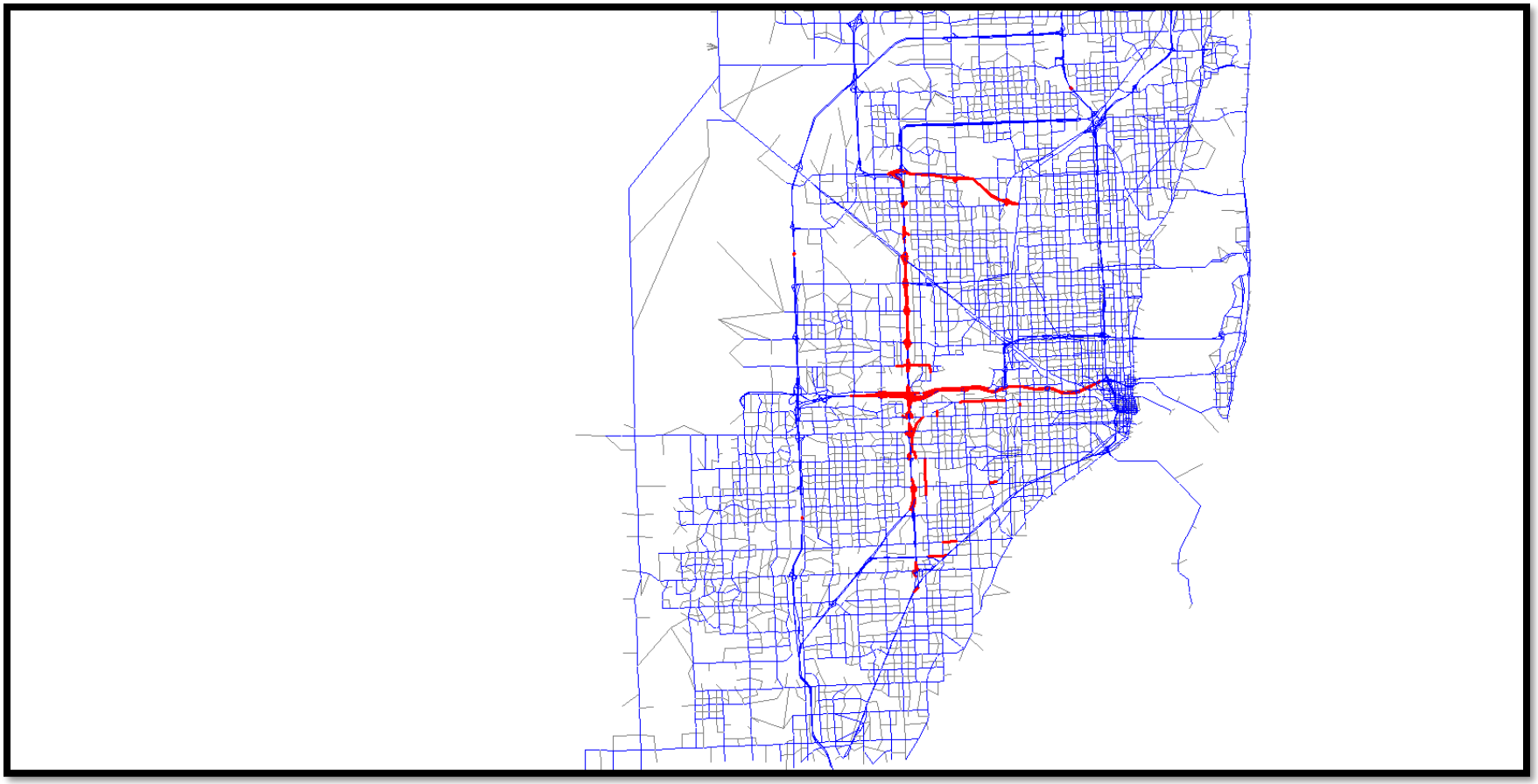
Signals Removed



Number of Lanes



Posted Speed



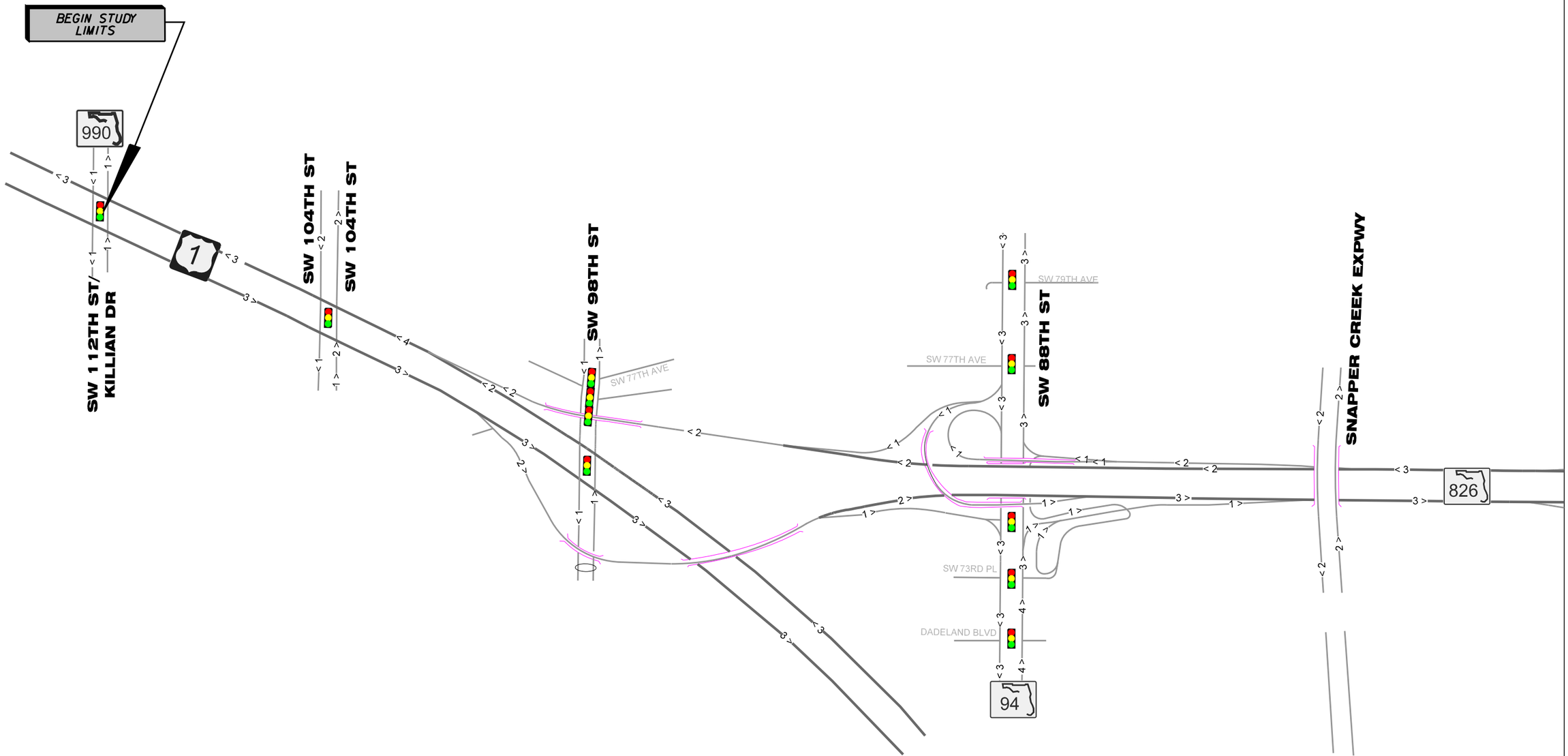
APPENDIX D

2040 LRTP Amended Projects

Source	Description	Project Link	Project No.	Comments
LRTP, MDX TIP FY 2019-2023 and Miami Dade TIP 2018	SR-874 (Don Shula) to SW 72 Street: The ramps will provide access from SW 72nd Street to SR 874 northbound and from SR 874 southbound to SW 72nd Street.	http://miamidadetpo.org/library/boards/TPO-Governing-Board/Resolutions/2016-02-mpo-board.pdf	Agency Project No. 87413	Code
LRTP	A NEW TWO (2) LANE ROAD AT NW 7TH STREET UNDER STATE ROAD (SR) 826/PALMETTO EXPRESSWAY WEST OF SR 826 TO NW 76TH AVENUE	http://miamidadetpo.org/library/boards/TPO-Governing-Board/Resolutions/2017-14-tpo-board.pdf		Code
LRTP and MDX TIP FY 2019-2023	A NEW PARTIAL INTERCHANGE PROJECT ON STATE ROAD (SR) 924/GRATIGNY PARKWAY AT NW 67TH AVENUE, MIAMI-DADE EXPRESSWAY AUTHORITY PROJECT NUBMER 92408	http://miamidadetpo.org/library/boards/TPO-Governing-Board/Resolutions/2017-12-tpo-board.pdf		Code
LRTP and MDX TIP FY 2019-2023	NEW RAMPS IMPROVEMENT PROJECT ON STATE ROAD (SR) 112/AIRPORT EXPRESSWAY AT NW 37TH AVENUE, MIAMI-DADE ESPRESSWAY AUTHORITY PROJECT NUMBER 11212	http://miamidadetpo.org/library/boards/TPO-Governing-Board/Resolutions/2016-56-mpo-board.pdf		Code
LRTP and MDX TIP FY 2019-2023	NW 32 Ave to I-95			Request
Miami Dade TIP 2018	Bridge over Tamiami Canal. Prior Years' Funding as follows: $3,000,000 for PE/CST.		Agency Project No. 212	Code
Miami Dade TIP 2018	Bridge over Tamiami Canal. Prior Years' Funding as follows: $3,000,000 for PE/CST..		Agency Project No. 213	code
Miami Dade TIP 2018	Traffic signal.		Agency Project No. 000997	code

APPENDIX E

Alternatives Line-Diagram



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

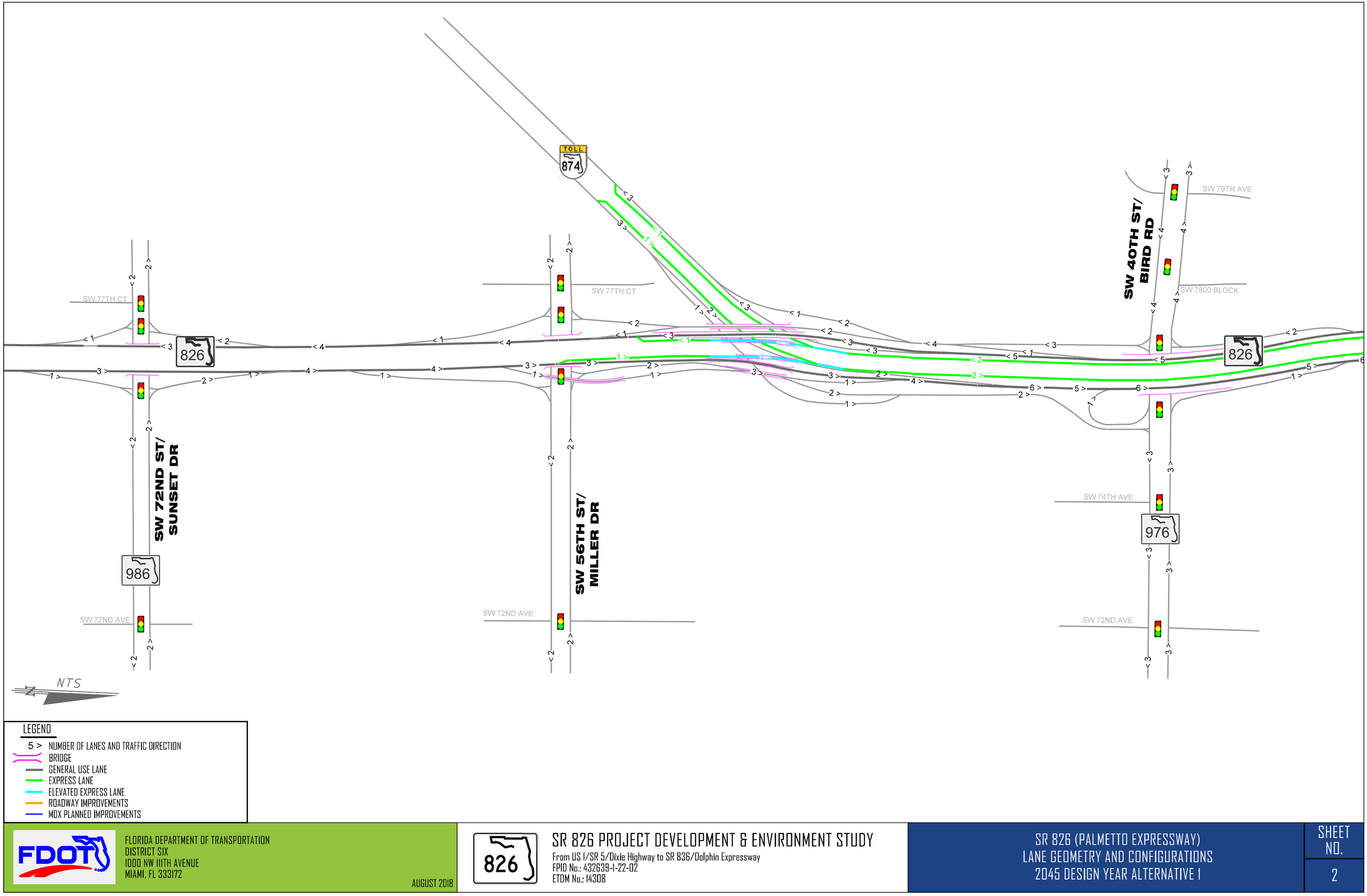
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 1

SHEET NO. 1



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

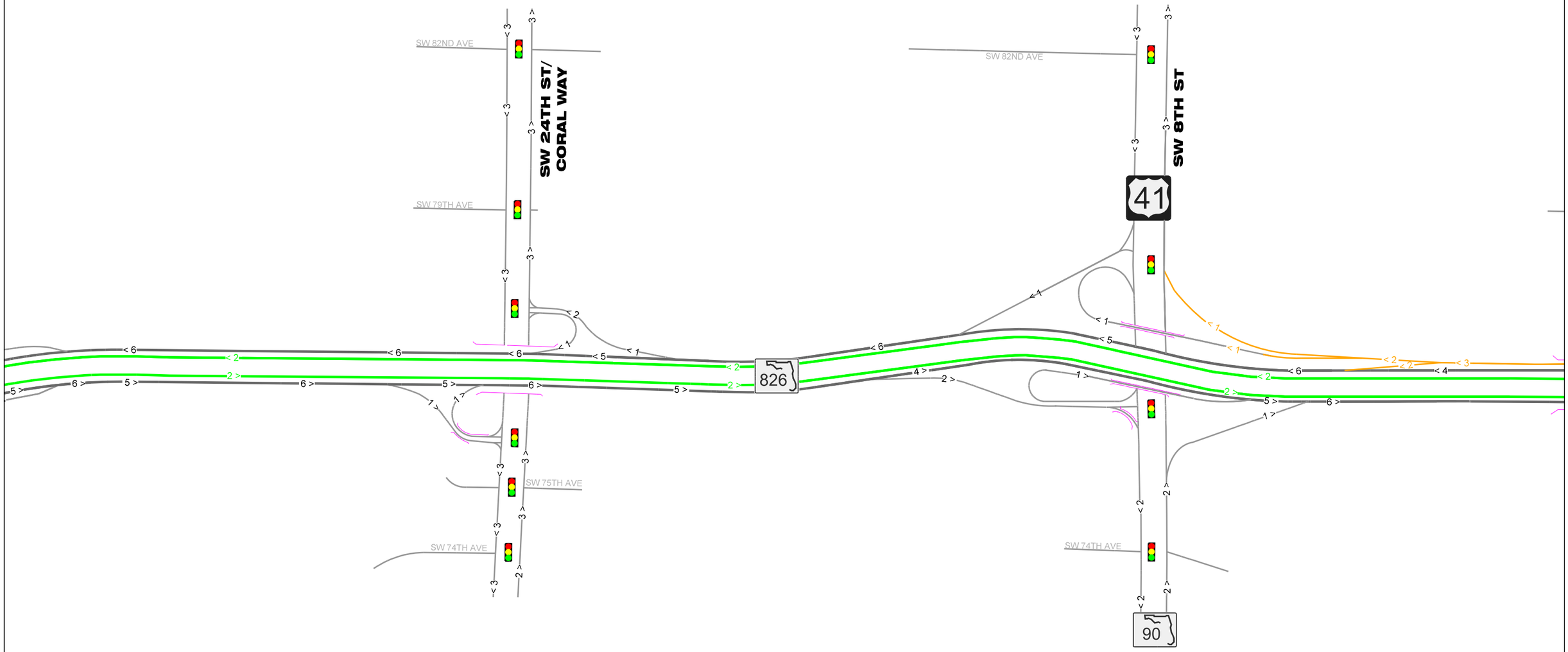
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1

SHEET NO. 2



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1

SHEET NO.
3

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

NTS

NW 84TH AVE

NW 82ND AVE

SW 82ND AVE

FLAGLER ST

SW 79TH AVE

TOLL 836

END STUDY LIMITS
STATION 130+00

NW 25TH ST

MILAM DAIRY RD

SW 74TH AVE

968

SW 72ND AVE

NW 72ND AVE

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

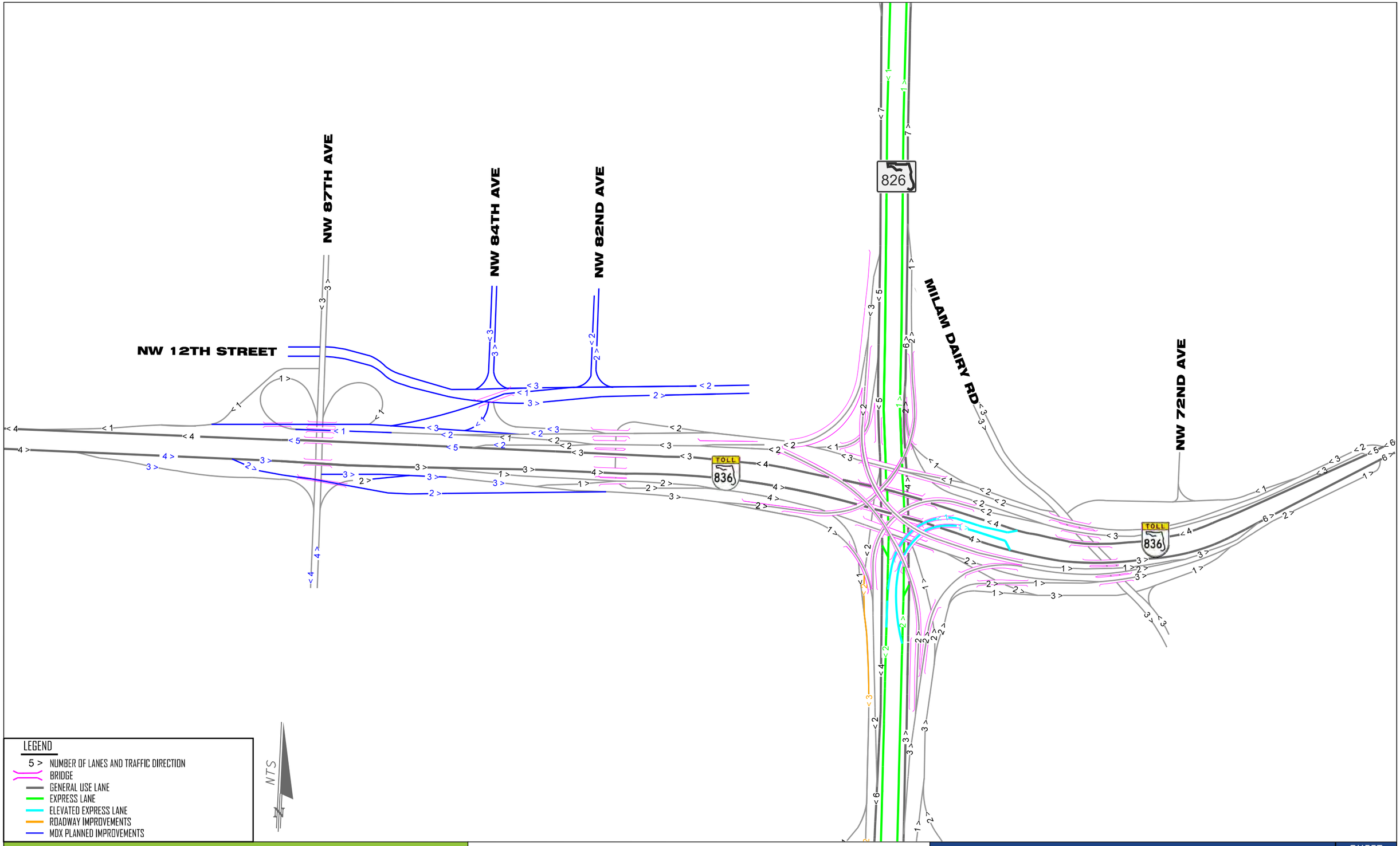
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1

SHEET NO.
4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

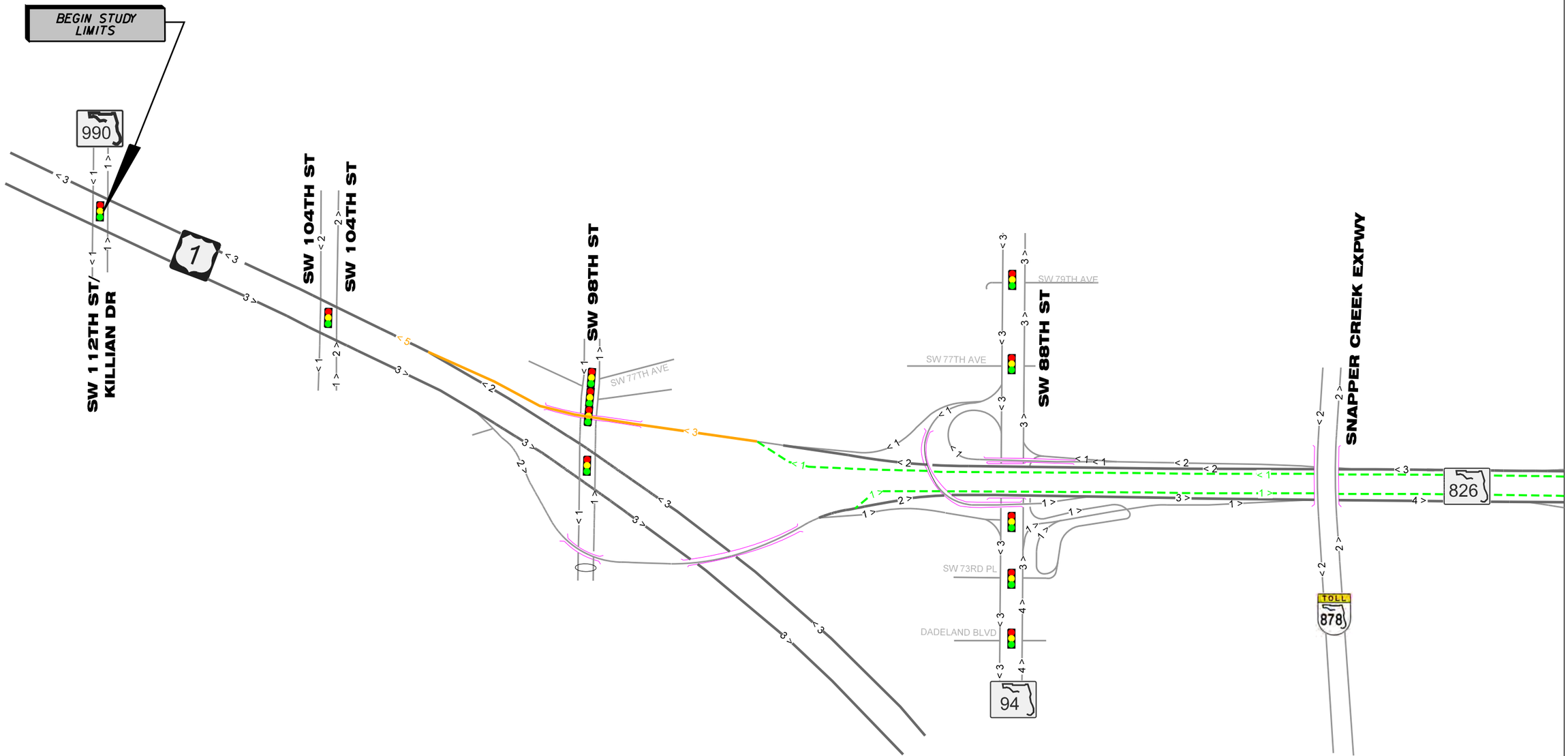
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 1

SHEET NO.
5



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

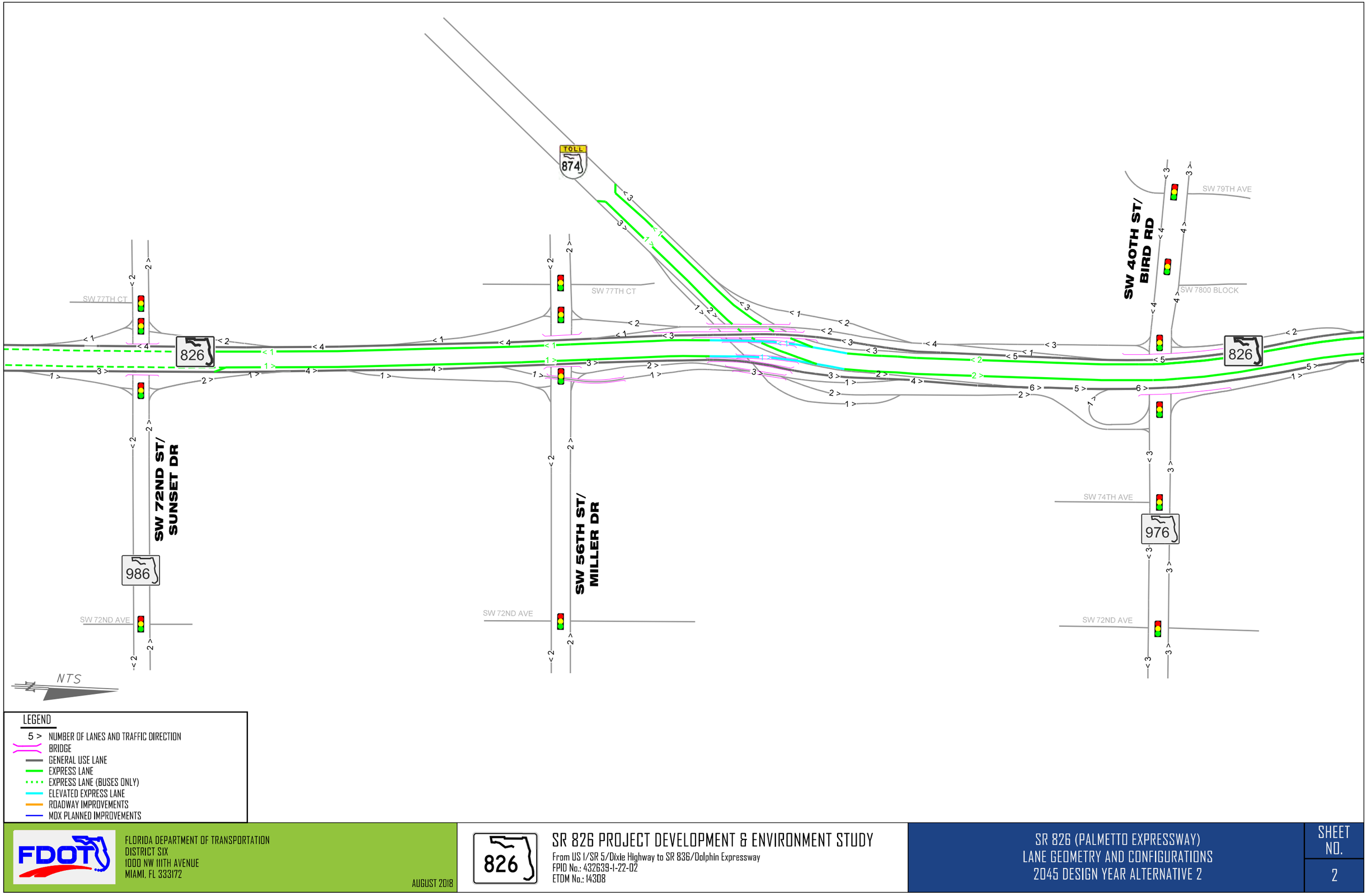
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2

SHEET NO. 1



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

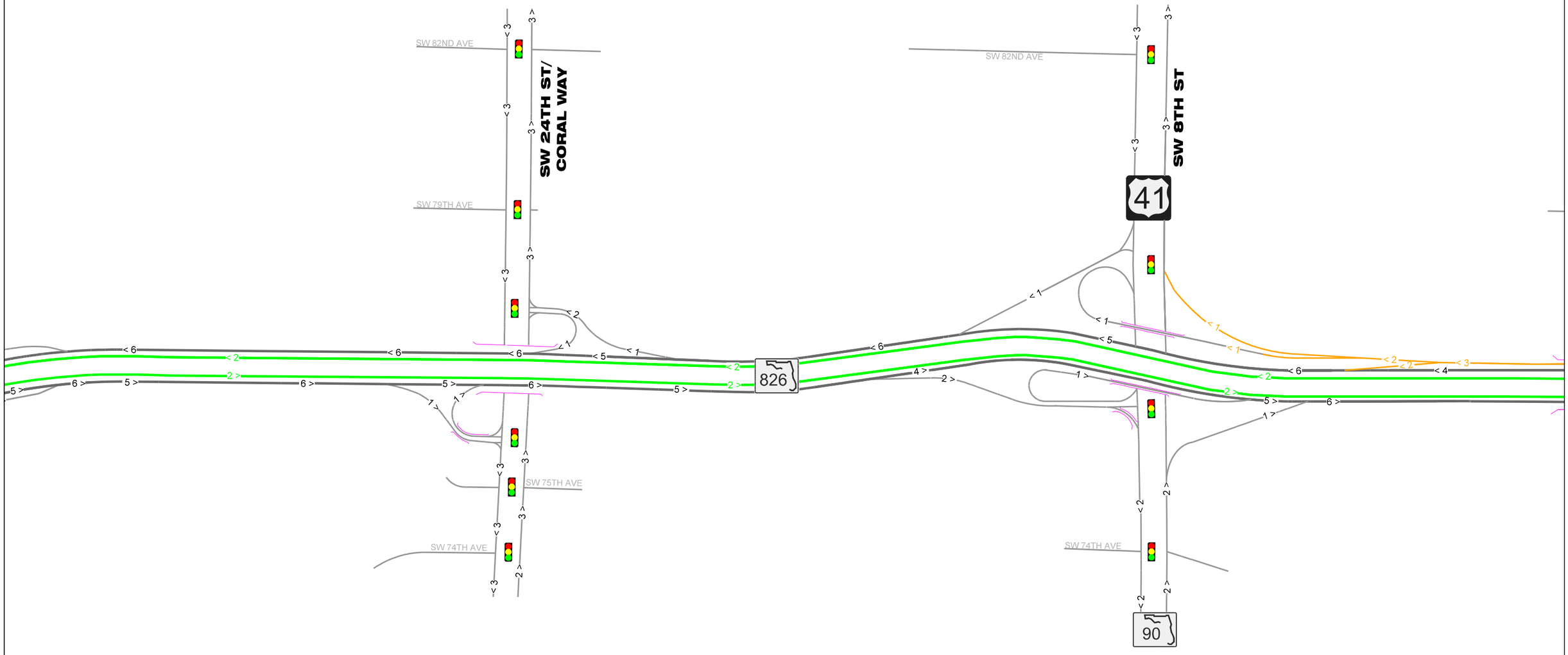
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2

SHEET NO. 2



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 333172

AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 2

SHEET NO. 3

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

NTS

NW 84TH AVE

NW 82ND AVE

SW 82ND AVE

FLAGLER ST

SW 79TH AVE

TOLL 836

END STUDY LIMITS
STATION 130+00

NW 25TH ST

MILAM DAIRY RD

SW 74TH AVE

968

SW 72ND AVE

NW 72ND AVE

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

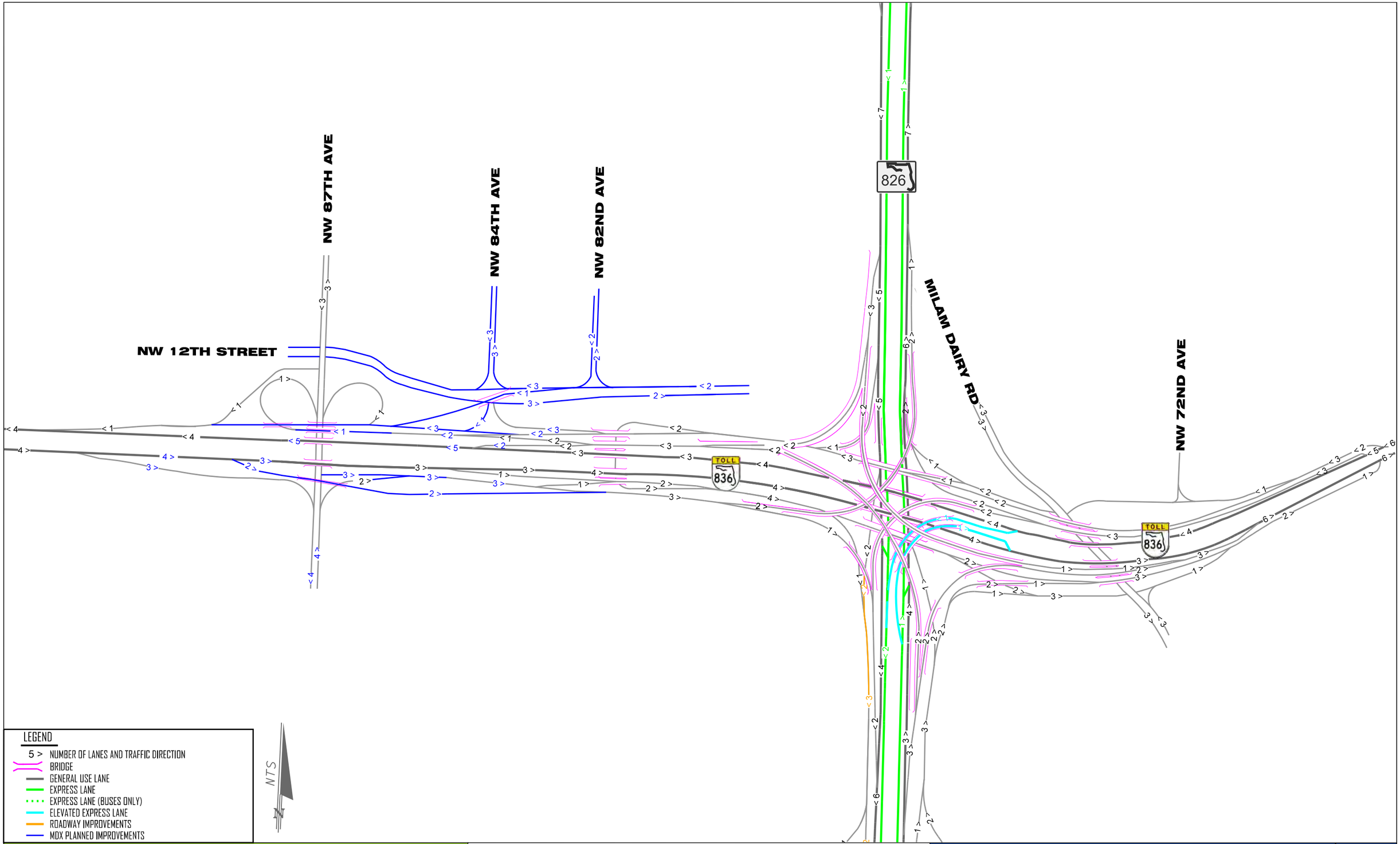
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2

SHEET NO.
4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

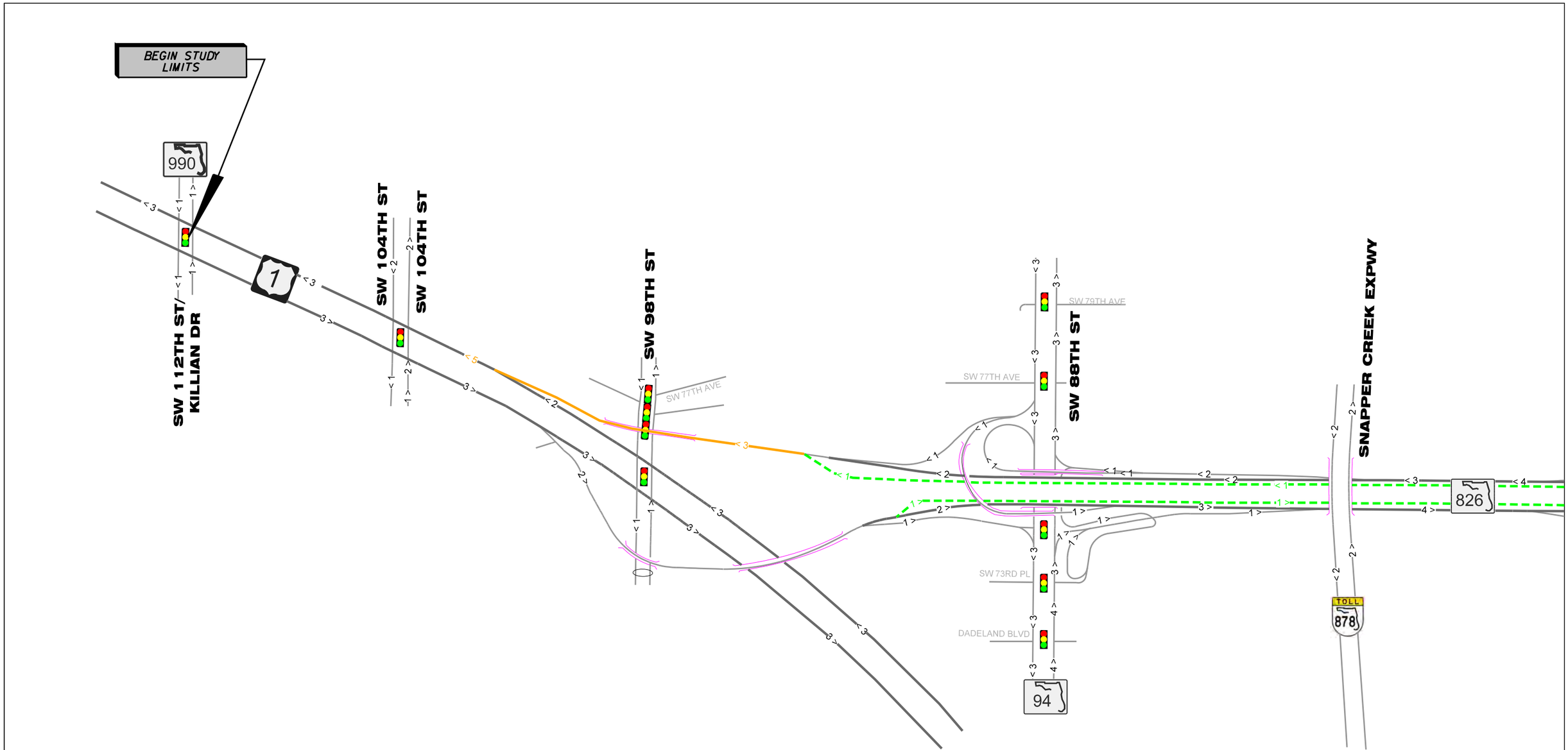
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 2

SHEET NO.
5



NTS

LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

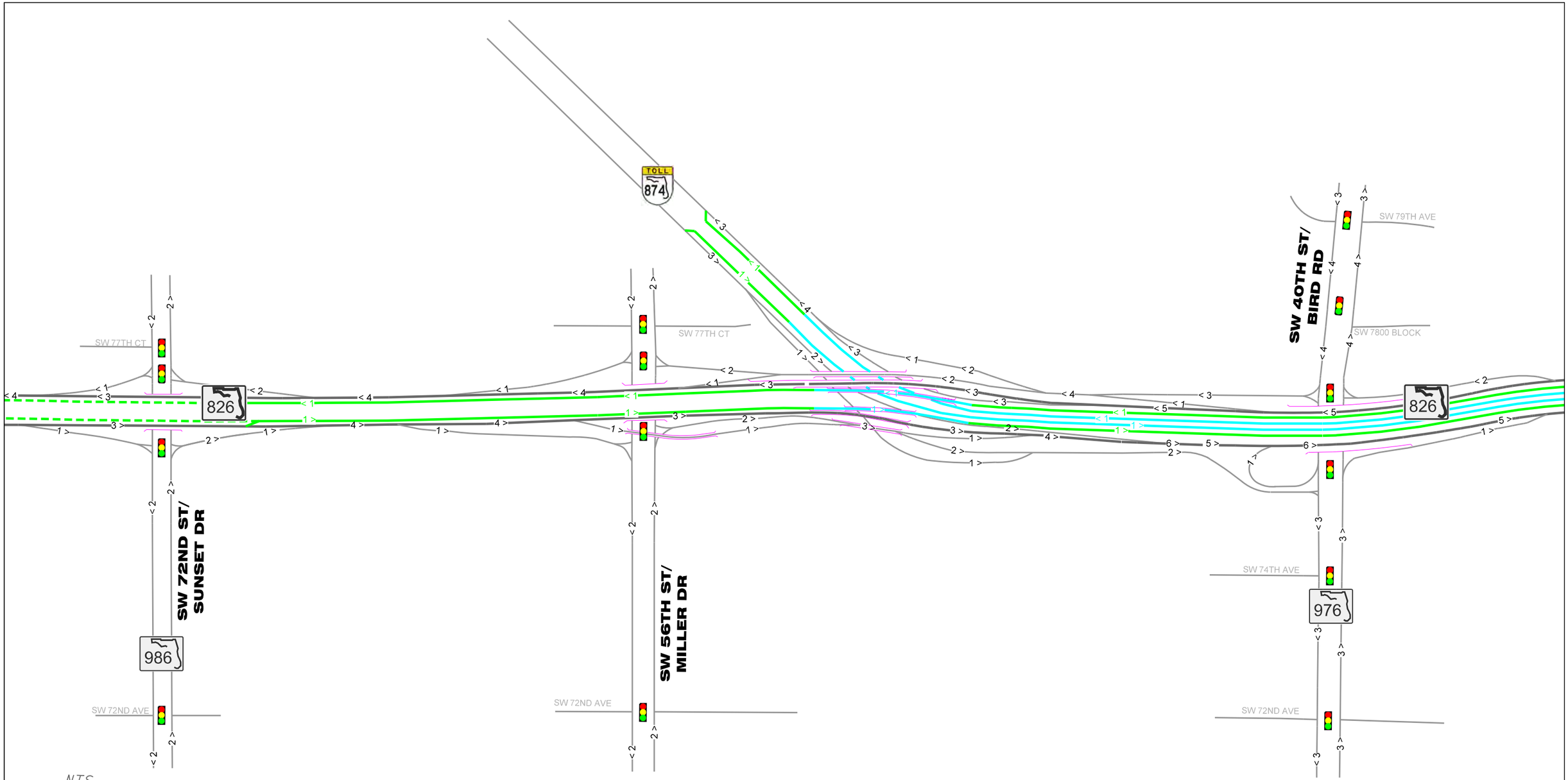
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY) LANE GEOMETRY AND CONFIGURATIONS 2045 DESIGN YEAR ALTERNATIVE 3

SHEET NO. 1



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

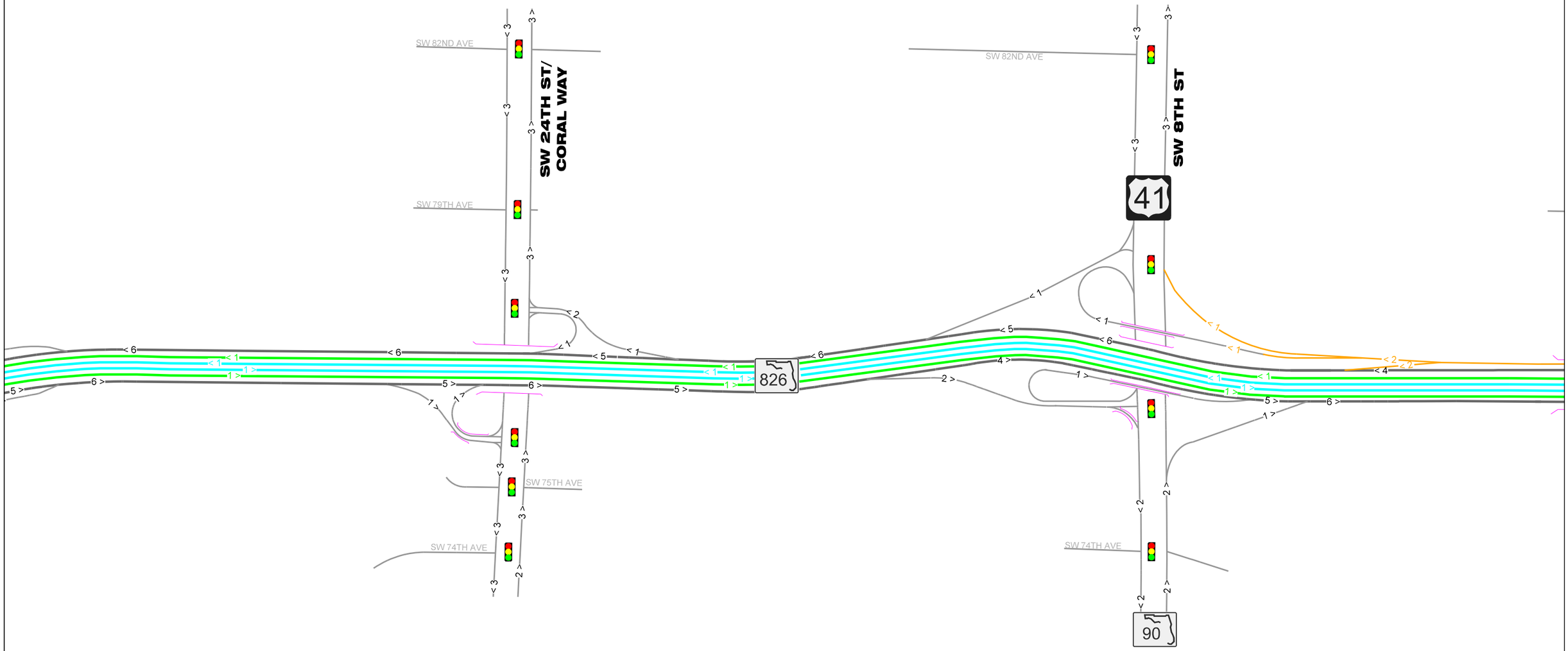
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3

SHEET NO. 2



LEGEND

- 5 > NUMBER OF LANES AND TRAFFIC DIRECTION
- BRIDGE
- GENERAL USE LANE
- EXPRESS LANE
- EXPRESS LANE (BUSES ONLY)
- ELEVATED EXPRESS LANE
- ROADWAY IMPROVEMENTS
- MDX PLANNED IMPROVEMENTS

FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

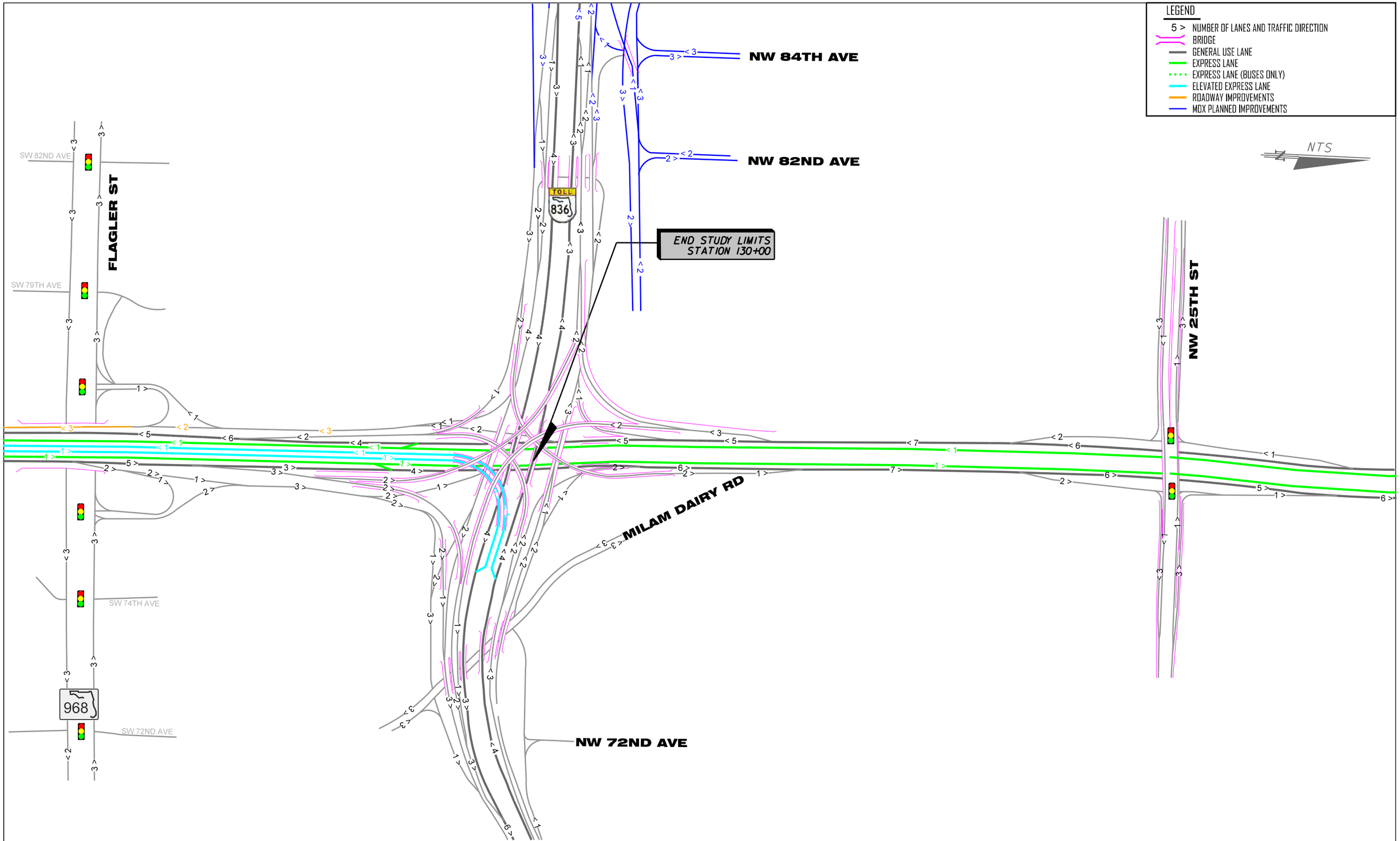
AUGUST 2018

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3

SHEET NO.
3



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

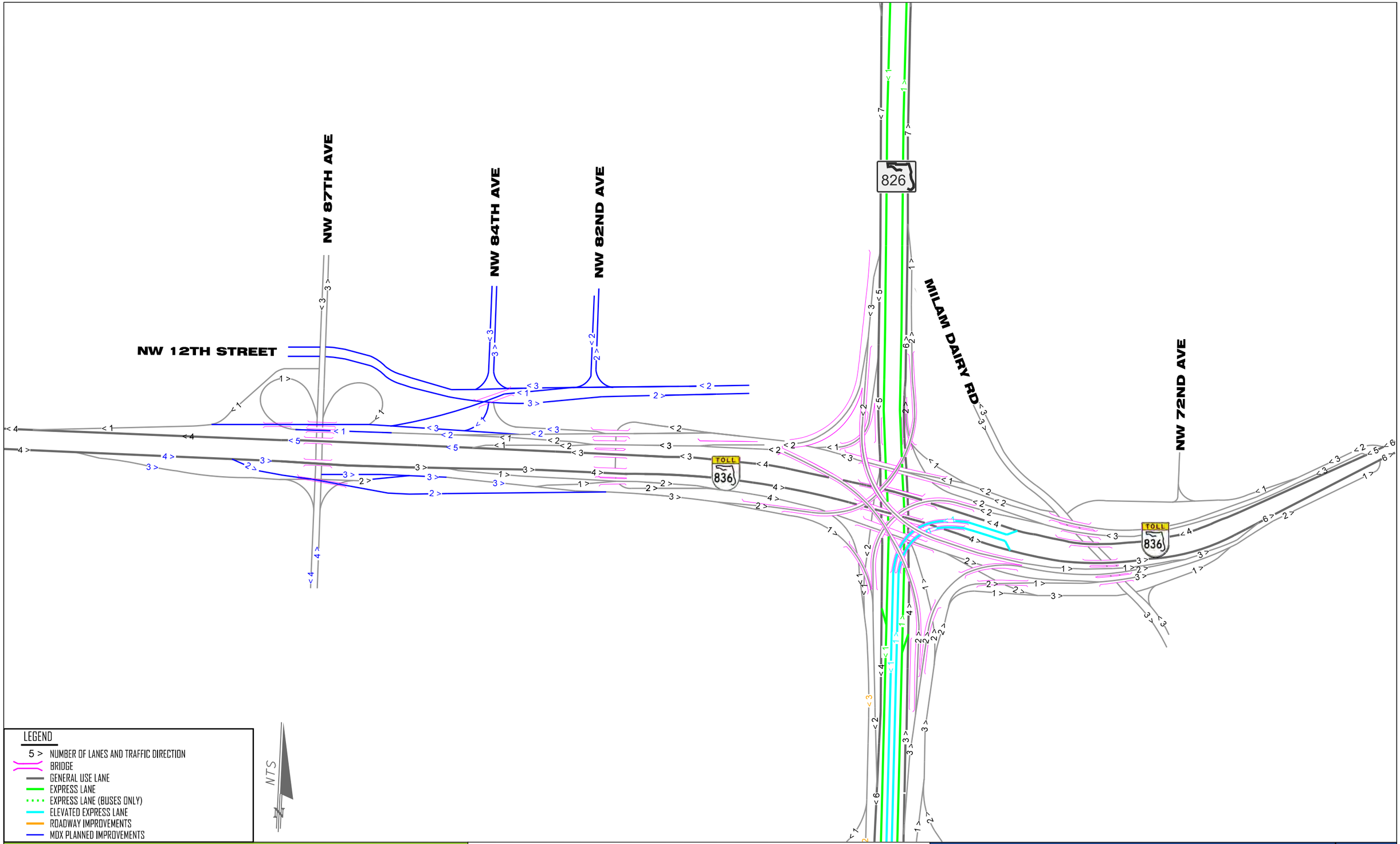
826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

SR 826 (PALMETTO EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3

SHEET NO.
4



FLORIDA DEPARTMENT OF TRANSPORTATION
DISTRICT SIX
1000 NW 111TH AVENUE
MIAMI, FL 33172

AUGUST 2018

826

SR 826 PROJECT DEVELOPMENT & ENVIRONMENT STUDY

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
FPID No.: 432639-1-22-02
ETDM No.: 14308

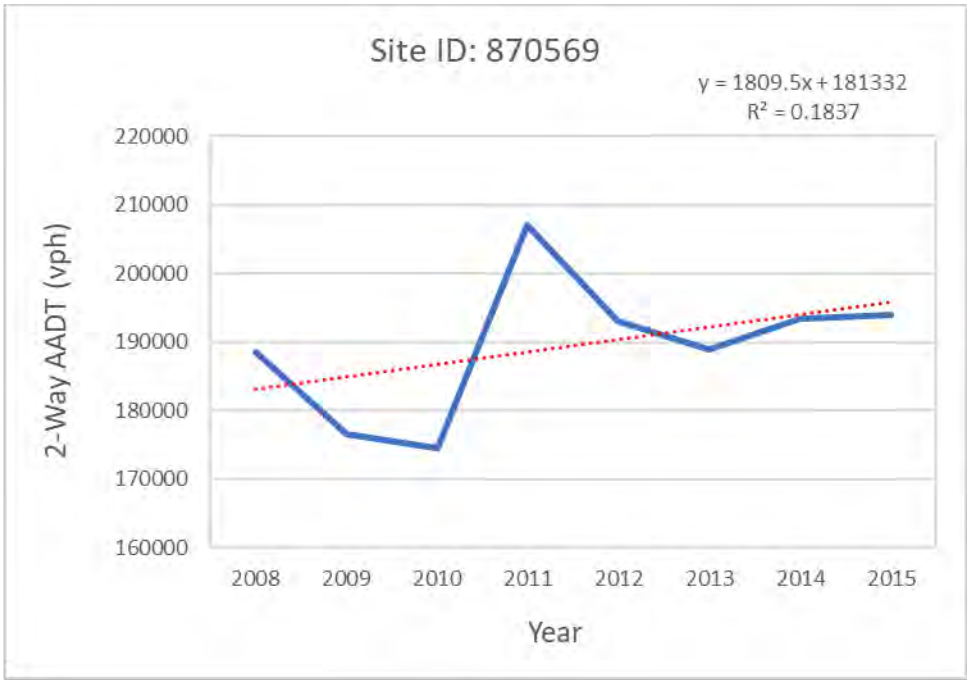
SR 836 (DOLPHIN EXPRESSWAY)
LANE GEOMETRY AND CONFIGURATIONS
2045 DESIGN YEAR ALTERNATIVE 3

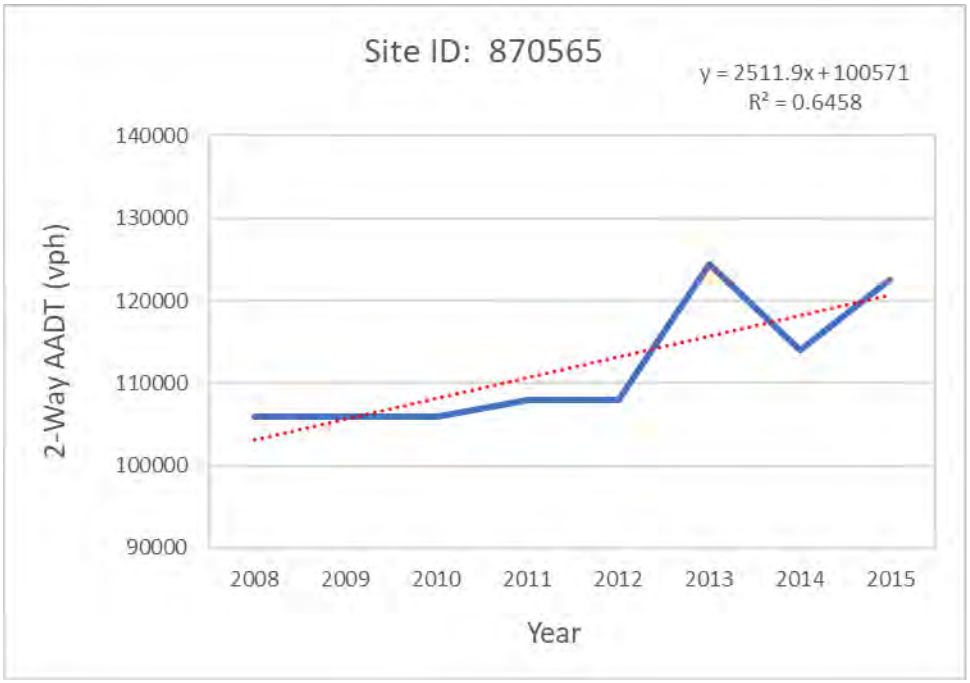
SHEET NO.
5

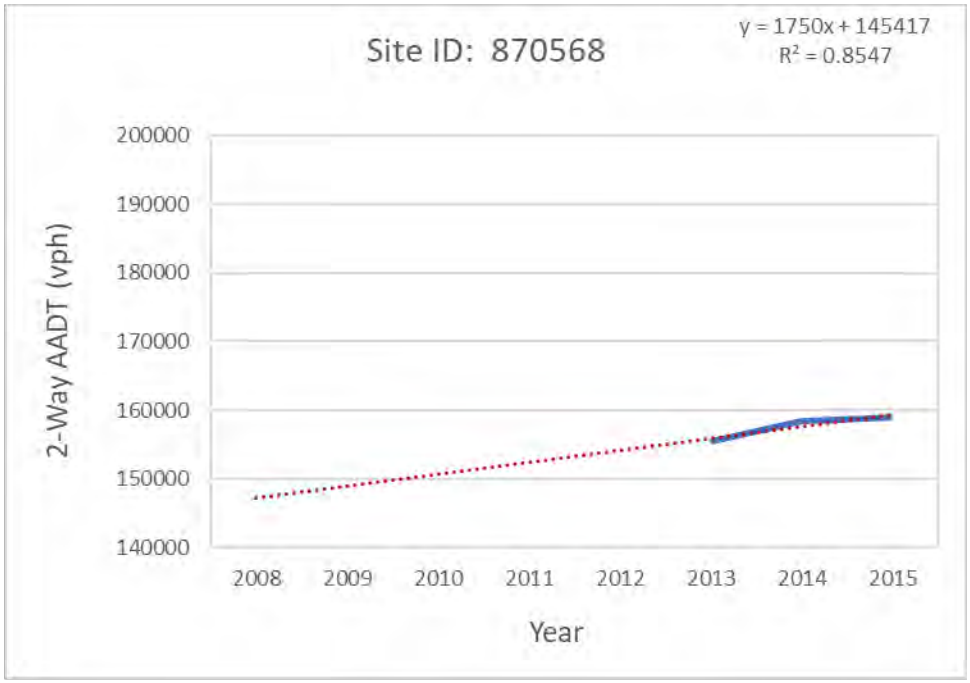
APPENDIX F

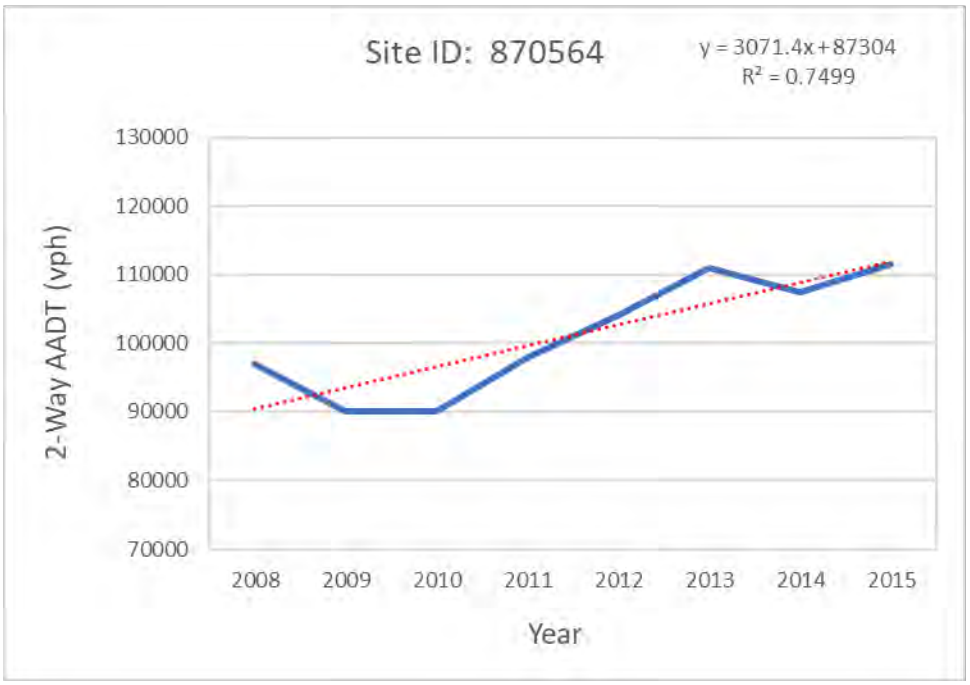
Historic Trend Line Forecasts

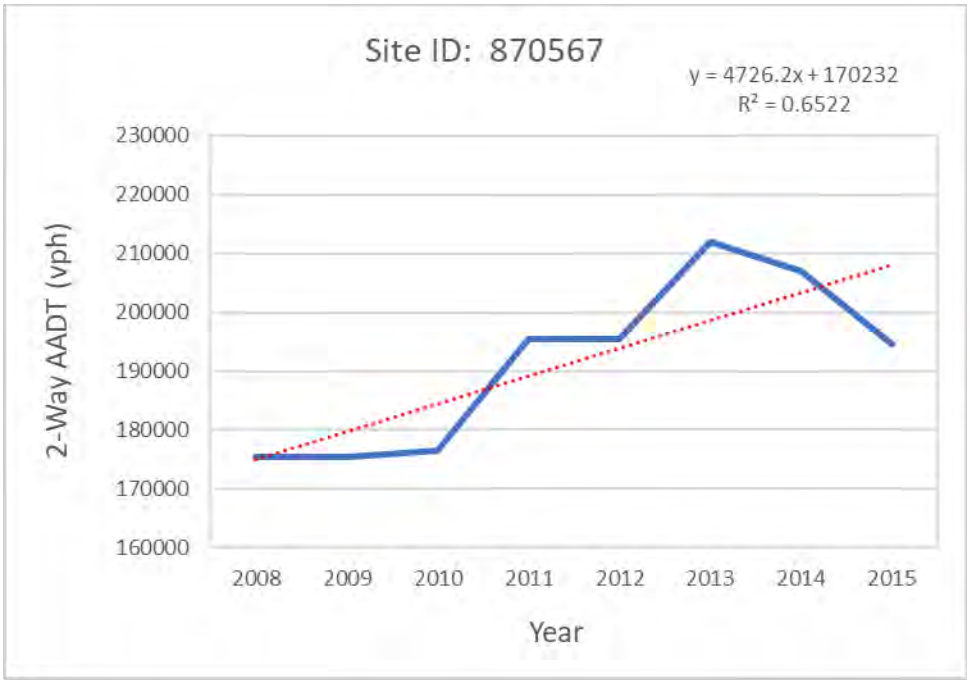
SR 826 Mainline Trendline Forecast

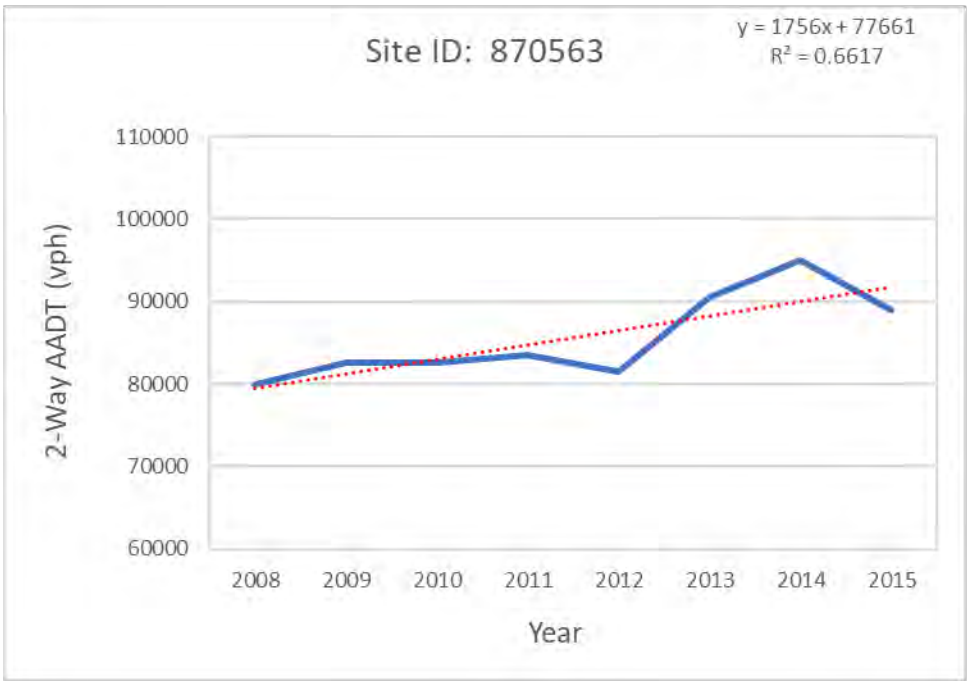


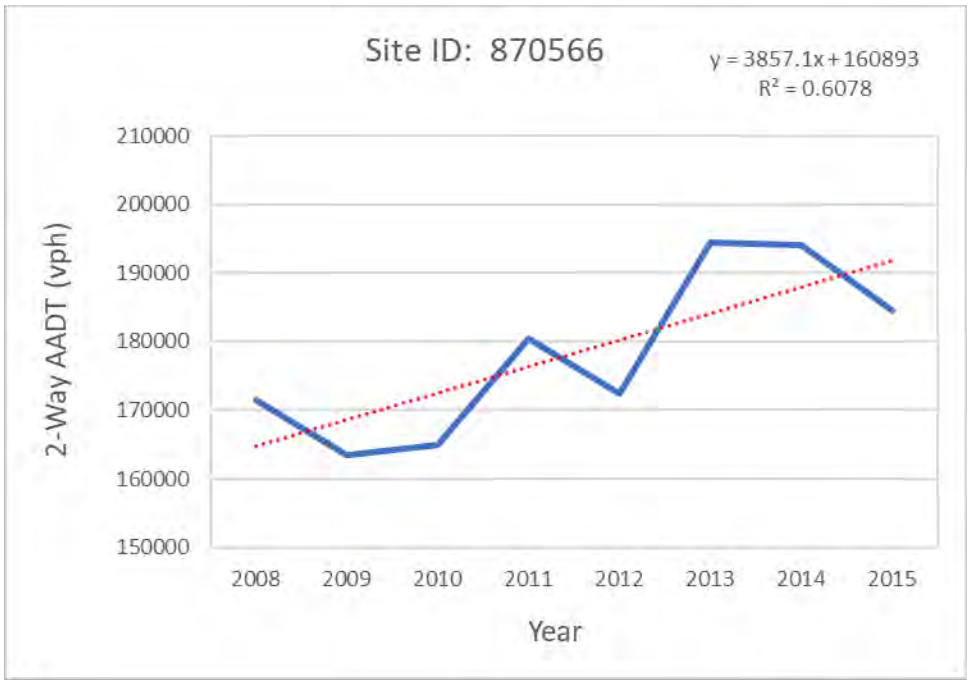


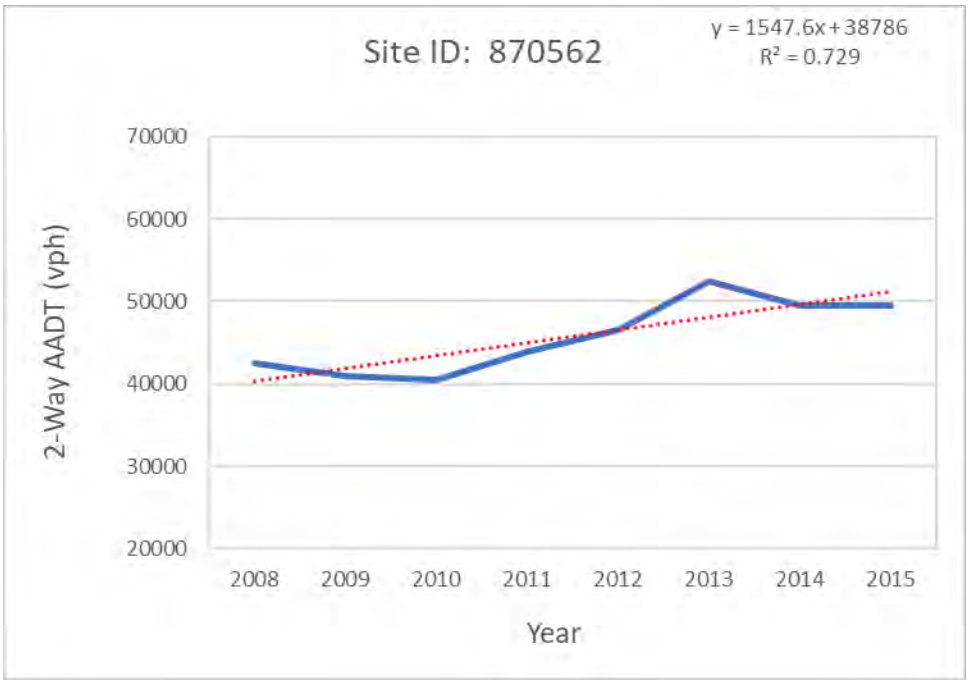

Site ID: 870568
y = 1750x + 145417
R² = 0.8547
2-Way AADT (vph)
200000
190000
180000
170000
160000
150000
140000
2008
2009
2010
2011
2012
2013
2014
2015
Year


Site ID: 870564
y = 3071.4x + 87304
R² = 0.7499
2-Way AADT (vph)
130000
120000
110000
100000
90000
80000
70000
2008
2009
2010
2011
2012
2013
2014
2015
Year


Site ID: 870567
y = 4726.2x + 170232
R² = 0.6522
2-Way AADT (vph)
230000
220000
210000
200000
190000
180000
170000
160000
2008
2009
2010
2011
2012
2013
2014
2015
Year


Site ID: 870563
y = 1756x + 77661
R² = 0.6617
2-Way AADT (vph)
110000
100000
90000
80000
70000
60000
2008
2009
2010
2011
2012
2013
2014
2015
Year


Site ID: 870566
y = 3857.1x + 160893
R² = 0.6078
2-Way AADT (vph)
210000
200000
190000
180000
170000
160000
150000
2008
2009
2010
2011
2012
2013
2014
2015
Year


Site ID: 870562
y = 1547.6x + 38786
R² = 0.729
2-Way AADT (vph)
70000
60000
50000
40000
30000
20000
2008
2009
2010
2011
2012
2013
2014
2015
Year

Location	Site ID	FTI Data								Trendline Forecast					
		2008	2009	2010	2011	2012	2013	2014	2015	2015 Trend	Correction	2045 Trend	Corrected 2045	Rounded 2045	Growth Rate
SR 836	870569	188,500	176,500	174,500	207,000	193,000	189,000	193,300	194,000	195,808	0.99	248,284	245,991	246,000	0.79%
W Flagler St	870568						155,500	158,500	159,000	150,667	1.06	201,417	212,557	213,000	0.97%
SW 8th St	870567	175,500	175,500	176,500	195,500	195,500	212,000	207,000	194,500	208,042	0.93	345,101	322,638	323,000	1.70%
SW 24th St	870566	171,500	163,500	165,000	180,500	172,500	194,500	194,000	184,500	191,750	0.96	303,606	292,127	292,000	1.54%
SR 874	870565	106,000	106,000	106,000	108,000	108,000	124,500	114,000	122,500	120,666	1.02	193,511	196,452	196,000	1.59%
SW 56th St	870564	97,000	90,000	90,000	98,000	104,000	111,000	107,500	111,500	111,875	1.00	200,946	200,272	200,000	1.97%
SW 72nd St	870563	80,000	82,500	82,500	83,500	81,500	90,500	95,000	89,000	91,709	0.97	142,633	138,420	138,000	1.48%
SW 88th St	870562	42,500	41,000	40,500	44,000	46,500	52,500	49,500	49,500	51,167	0.97	96,047	92,918	93,000	2.12%

SR 826/Palmetto Expressway PD&E Study

From US 1/SR 5/Dixie Highway to SR 836/Dolphin Expressway
Miami-Dade County, Florida