

CITY OF DORAL

SUBAREA FREIGHT MOBILITY IMPROVEMENT PLAN

FM# 437945-1-22-01

FINAL REPORT

APRIL 2018

Prepared for:
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District Freight Coordinator
Modal Development Office
FDOT District 6

Prepared by:
MARLIN Engineering, Inc.

Subconsultants:
Connetics Transportation Group
Infinite Source Communications Group
Iteris, Inc.
Martin Associates
TranSystems, Inc.



DISTRICT 6



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Contract No. C-9S79

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APRIL 26th, 2018

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EXECUTIVE SUMMARY

This study is part of a series of projects initiated by Florida Department of Transportation (FDOT) District 6 to implement the FDOT Freight Mobility and Trade Plan (FMTP). The strategy is to advance the implementation of the freight and logistics transportation system by partnering with local communities and stakeholders to develop subarea freight plans and leverage public and private resources for implementation. This effort identifies and analyzes freight corridors in the City of Doral Area for the specific purpose of advancing project proposals from a planning phase to environmental, design and construction. The results include 6 FDOT projects proposed for advancement to a condensed Project Development and Environment (PD&E) Phase.

PURPOSE AND NEEDS

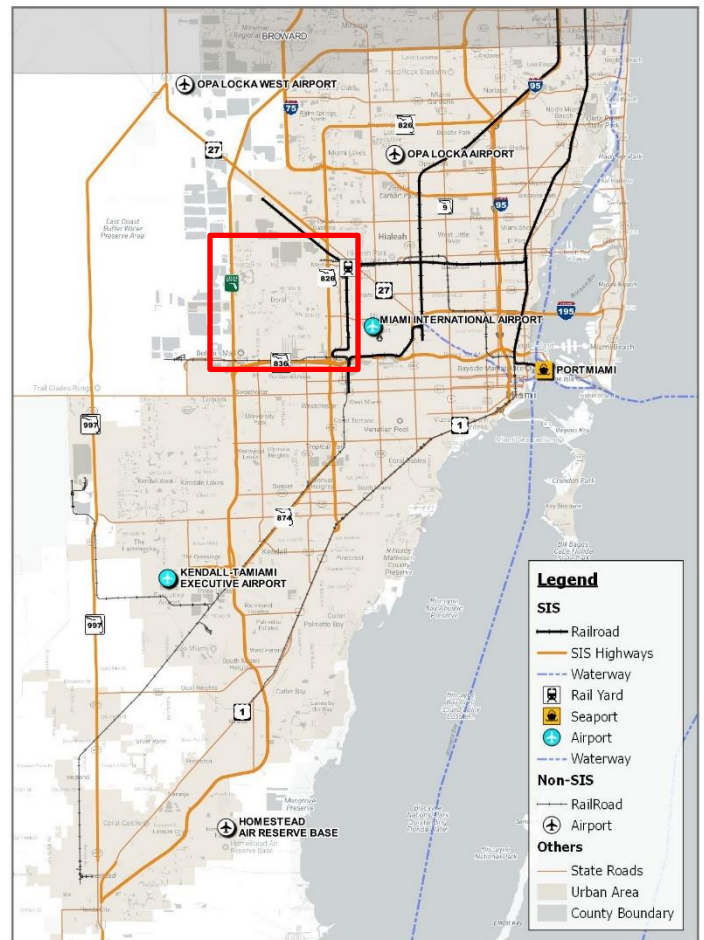
In the crosswinds of uncertainty due to the Great Recession and an unforeseen dynamism due to new technologies, Florida’s public and private leaders identified a “once-in-a-generation opportunity” to revitalize and catalyze the State’s economy by becoming a “global hub for trade, logistics, and export-oriented manufacturing actives” (Florida Trade and Logistics Study, 2010). This opportunity came in the completion of the procurement process for the Panama Canal Expansion Project in 2010; a project which promised the world safe passage of container ships carrying approximately 150% to 200% more cargo than before (The Geography of Transport Systems, 2012). This promise and vision of growth comprised the essence of an overarching need for an improved freight infrastructure and logistics system that ensured the mobility of goods and enhanced the economic prosperity of the State.

Since then, Florida has seized this opportunity with major investments in strategic transportation projects such as the \$667 million PORTMiami Tunnel, its first-ever statewide Freight Mobility and Trade Plan (FMTP) fully adopted in 2014 and supported by the Fixing America’s Surface Transportation (FAST) Act (Pub. L. No. 114-94), innovative programs for employer-driven training and company-specific export developments (Florida: Made for Trade – Florida Trade and Logistics Study 2.0, 2013), and multiple other efforts of statewide, regional, and county scope.

At a granular level, this subarea freight study is the ultimate step in identifying specific needs and improvements that support the State’s vision in becoming a global hub. Miami-Dade County is the most populous of Florida’s 67 counties with a 2016 estimated population of 2.7 million people living

in just over 2,400 square miles (approximately 13% of the total state population living on approximately 4.5% of the total area) and an increasing population. Today, the main freight movement within the County runs along an axis that extends from PORTMiami in the east to the rock quarries in the west. This east-west freight belt is comprised of the Miami International Airport (MIA), the Florida East Coast (FEC) Rail Yard, and major warehouse districts along the Dolphin Expressway (SR 836). This freight belt is further supported by major north-south roadways such as SR 9A/ I-95, SR 821/Homestead Extension of Florida’s Turnpike (HEFT), SR 826/Palmetto Expressway and SR 992/Krome Avenue that further distribute goods to adjacent counties and beyond. This unique study, along with its counterparts, will help extract the full potential out of Miami’s existing freight assets while recognizing local opportunities for growth.

Doral Subarea Freight Plan Study Area



The study area for this project is shown above centered on Doral including the surrounding area generally bounded by NW 122nd Avenue to the west, SR 836/CSX Railroad Lehigh Branch to the south, Miami International Airport (MIA) to the

east and NW 90th Street to the north. The graphic shows the study area boundary in red on a map of the Miami-Dade County Freight Plan Network.

This study area represents the largest agglomeration of industrial freight related warehousing and distribution center locations in the State of Florida with more than 65 million square feet of freight related uses. The area also has outstanding access to regional, state and global markets as it is surrounded by FDOT Strategic Intermodal System (SIS) highways and railroads that directly connect to SIS Airport, Seaport, Waterway and Railyard Hubs. The area has a long history of development and growth of freight related uses and now faces challenges to maintain freight mobility including:

Traffic congestion in a highly congested, growing mixed use urban area. Throughout the day truck, rail and intermodal activity is in motion in mixed traffic and experiencing severe congestion during peak travel periods. During the morning and evening peak periods there is an influx of commuter work trips entering and exiting the study area significantly degrading network operations. Traffic speed data was collected for this study using Bluetooth technology. The results show that East/West and North/South travel speeds through the community are as slow as 10.8 and 6.1 miles per hour respectively.

Growth in freight and non-freight related uses. Growth in the freight industry continues to place greater demand on the transportation network due to the opening of the new locks at the Panama Canal and the completion of major freight projects in the area including public and private investments at PORTMiami, the on-port FEC rail restoration, Flagler Railyard investments, SR 826/836 interchange improvements and the NW 25th Street Viaduct connection between the Doral Logistics area and the MIA Cargo Area. At the same time the area has become increasingly attractive for residential, commercial and hotel/resort development. Doral's population has grown from 3,126 residents in 1996 to more than 56,000 residents in 2015 and could reach 90,000 persons by 2021.

The Public, Cities and Miami-Dade County continue to seek out innovative methods for smart growth through transportation and land use policies. The list of transportation projects planned for this community is significant including projects from multiple stakeholders.

At the outset of this project FDOT reached out to the Public,

Stakeholders and local Governments to convene a Freight Summit on June 8, 2017. The Summit brought together all interests for a day of information and discussion on how to move forward with a consensus plan to achieve freight and livability goals. The event resulted in a broader understanding of the FDOT Subarea Planning efforts and identified action items for local jurisdictions and FDOT to implement.

POTENTIAL ACTION ITEMS FOR THE STAKEHOLDERS

- Participate in Turnpike Federal AV Grant to GATHER INFORMATION ON NEW TECHNOLOGIES and EXTEND THE TRUCK PLATOONING EFFORT from Palm Beach County to Miami-Dade County
- COORDINATE on transportation projects at the local level through the FDOT sponsored subarea studies
- SUPPORT THE DEVELOPMENT OF TRUCK PARKING in Miami-Dade County
- Work together to LEVERAGE FUNDING OPPORTUNITIES from the National Freight Network
- REDUCE 10% empty miles and idle hours
- SUPPORT TRANSIT INVESTMENTS to increase mobility and allow for more growth
- PROVIDE EXPOSURE for South Florida startup companies
- PARTICIPATE & SUPPORT the development of the Miami-Dade TPO Freight Plan Update and the Long Range Plan
- CONTINUED IMPROVEMENT of incident management strategies and protocols
- ENGAGE MILLENNIALS for careers in freight and logistics and for us to better understand the future workplace in order to be successful
- SUPPORT THE DEVELOPMENT of a Miami-Dade Inland Terminal
- INCREASE TRADING with Southeast Asia
- SUPPORT TRUCK DRIVER RECRUITING and how to leverage technology to recruit

2017 WEST MIAMI-DADE FREIGHT MOBILITY SUMMIT SUMMARY

On June 8th, 2017 the Florida Department of Transportation sponsored a summit focused on freight mobility in relationship to maintaining and expanding economic development in the West Miami-Dade area and the South Florida Region as a whole. The event was hosted by the City of Doral and we had an audience of local, regional and international stakeholders from the private and public sector. Discussions were interactive and a number of opportunities and challenges were discussed that could/should be further explored and championed by the South Florida Freight Community.

Two themes evolved throughout the event – continued coordination and collaboration with partners at the local level is critical to success and the idea of “Dreaming Big” given that freight knows no borders.

This pamphlet provides a listing of highlights from the event. To access the presentation slides, summary of the event and a listing of the entire event please visit www.fdot.com/FLHJKWPRYHVARULGD.com

FDOT **DORAL**

The process of developing alternatives and performing analysis was completed for this study through coordination, information and analyses. A list of all planned and programmed improvements was developed and alternatives proposed through stakeholder coordination meetings were added to that list. Existing Freight Corridors were identified based on existing conditions where significant freight supportive land uses and/or roadways with 7% or higher truck percentages. A travel demand model was used to assess projects under low, medium and high freight growth planning scenarios. Future freight corridors were then identified using the same process as existing Roadways with significant adjacent planned freight supportive uses and/or truck traffic higher than 7%. Figure E-1 shows the identified existing and future Freight Corridors.

FDOT is implementing context sensitive approaches to project development and it is recommended that arterial design incorporate Freight Roadway Design Considerations (FRDC) for this study area. FRDC identifies 4 context types

when planning for freight projects that are based on the levels of freight activity and non-freight livability uses. Doral has emerged as a vibrant urban center with dense residential development, schools, businesses and commercial uses that define a live, work play community. The community also embraces freight activity and development as its economic base and transportation projects and arterial design must accommodate both. Figure E-1 also shows that 2 FRDC area types exist in the Doral Area – Freight Diverse and Freight Oriented. A Freight Diverse Area recognizes that there is a mix of freight and non-freight traffic and Freight Oriented Areas have dominant freight land uses and accommodations for high percentages of heavy truck movements is recommended for arterials and collectors.

RECOMMENDATIONS

The results of this study include a list of projects to enhance freight mobility addressing short-, mid- and long range needs. For the purposes of future programming Short Range projects were identified for construction from Fiscal Years (FY) 2019 to 2025. This time frame was selected for several reasons as it is inclusive of the current City Capital Improvement Plan (CIP), the TPO Transportation Improvement Plan (TIP), the FDOT, Turnpike and MDX Work Programs and for consistency with the First 5 Years of the TPO 2045 Long Range Transportation Plan (2045 LRTP) when it is adopted in Fiscal Year 2020. Following this reasoning the 2nd Five Year time frame is from FY 2026 to FY 2030 and the Long Range time frame is proposed for consistency with the outer years of the 2045 LRTP from FY 2031 to FY 2045. These time frames are also consistent with the TPO Freight Set Aside Program.

Table E-1 presents the list of freight mobility projects on the identified Freight Corridors and Table E-2 provides the list of projects that have been identified on other roadways in the study area and should be developed using FRDC for Diverse Freight Areas.

Projects were placed into the 3 programming time frames based on existing programming documents, current phase of development, existing and future needs and level of complexity in project development. A review of the Short Range projects shows relatively smaller scale projects that can have significant impact at a specific intersection or roadway link. Many of these projects came from the City documents including the CIP, Transportation Master Plan and a recent study to identify turning radius needs to accommodate trucks. Recommendations from a Draft FDOT Report focused on National Highway System Intermodal Connectors is also included.

The Mid Range and Long Range Projects were identified mostly focusing in on the results of the travel demand forecasting effort performed for this study. Project conditions were analyzed for the Limited Access, Arterial and Collector roadways in the study area for: Existing Network Conditions, Existing Conditions Plus Committed (programmed for construction funding) Projects Funding and 2040 Conditions under Low, Medium and High freight growth scenarios. Projects identified for the Mid Range FY 2026 to FY 2030 time frame were typically those that were roadways over capacity under Existing Plus Committed Conditions and/or 2040 Low Planning scenario. Mid Range projects were also identified using the FDOT Second 5 Year SIS Plan and if the review of programming documents showed that a PD&E was already underway for the corridor and construction funding had not yet been programmed.

Long Range FY 2031 to FY 2045 projects were identified from the FDOT 2045 Unfunded Needs plan and recommended if they were tested as an alternative in the 2040 scenarios and mitigated an overcapacity condition or if the analysis of 2040 scenarios showed that a new recommendations over and above the alternatives tested was required.

RECOMMENDATIONS FOR ADVANCEMENT OF FDOT FREIGHT PROJECTS TO PD&E

Note that the Table E-1 and E-2 include many projects that are under the jurisdiction of local agencies. FDOT will continue to coordinate with locals on various funding opportunities to implement these freight and mobility initiatives, however there are a number of key corridors under FDOT. Table E-1 was reviewed for projects under FDOT jurisdiction and currently in a planning phase and the results are recommendations for advancement into a Project Development and Environmental Study (PD&E). This is the first step in the post-planning phases of project development and implementation. A list of FDOT projects recommended for advancement is provided below and shown in Figure E-2.

1. **NW 74th Street/Hialeah Expressway from SR 826 to Okeechobee Boulevard** is recommended to be expanded to an 8 lane divided arterial with Transportation Systems Management technology.
2. **West Extension of the NW 25th Street Viaduct from NW 117th Street to 82nd Avenue** – analyze alternatives for a grade separated viaduct extension along the 25th Street Corridor. NW 25th Street is not a State Road however this project, if proposed through the PD&E process, would become an extension of an FDOT SIS Connector.

Table E-1. Doral Subarea Freight Corridor Recommended Improvements

FREIGHT CORRIDOR CANDIDATE	FROM	TO	RECOMMENDATION (Assumes Committed Projects)	CURRENT PHASE	MAINTAIN- ING AGENCY	ESTIMATED COST
Short Term FY 2019 to FY 2024						
NW 12th St	@NW 107th Ave		Add WB turn lane, signal optimization	Planning	County	\$ 43,100
NW 12th St	@NW 97th Ave		Add WB turn lane, Intersection Imp	Planning	County	\$ 60,000
NW 12th St	@NW 87th Ave		Add NB,SB turn lane, signal optimize	Planning	County	\$ 83,100
NW 12th St	@NW 82nd Ave		Connect to SB NW 82nd Ave	Planning	City Doral	\$ 20,000
NW 25th St	NW 87th Ave	NW 74 Ave	Signal Timing Improvement (Draft*)	Planning	County	\$ 31,700
NW 25th St	NW 74th Ave	MIA Cargo Area	Signal Timing Improvement (Draft*)	Planning	County	\$ 19,300
NW 34th St	@NW 117th St		NB Right Turning Radius	Planning	City	\$ 12,000
NW 33rd St	@NW 107th St		Signal Optimization	Planning	City Doral	\$ 3,100
NW 34th St	@NW 112th Ave		Turning Radius Improvements	Planning	City	\$ 7,400
NW 36th St	NW 7100 Block	NW 79th Ave	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
NW 58th St	@84th Ave		SB, EB, WB Right Turning Radius	Planning	County	\$ 79,500
NW 58th St	@82nd Ave		SB,WB, EB Right Turning Radius	Planning	County	\$ 53,200
NW 74th St	NW 74th Ave	SR 826	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
US 27/Okeechobee Rd	W 8th Ave	NW 74th St	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 16,200
NW 72nd Ave	Corporate Way	NW 25th St	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
NW 72nd Ave	NW 74th St	74th St Connector	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 16,200
NW 102nd Ave	NW 62nd St	Roadway widen	Widen 300' N and '660 E	Design	City Doral	\$ 1,022,920
NW 117th Ave	NW 12th St	NW 25th St	+2 Lanes 4 Lane Divided	Design	City/FTE	\$ 4,799,400
NW 117th Ave	NW 25th St	NW 41st St	+2 Lanes 4 Lane Divided	Design	City/FTE	\$ 5,052,000
Mid Term FY 2025 to FY 2029						
NW 12th St	NW 127th Ave	TURNPIKE	+2 Lanes 6 Lane Divided with TSM&O**	Planning	County	\$ 5,087,000
NW 25th St	NW 137th Ave	NW 127th Ave	New 2 Lane Divided	Planning	County	\$ 4,800,400
NW 25th St	NW 127th Ave	TURNPIKE	+2 Lanes 6 Lane Divided with TSM&O**	Planning	County	\$ 5,045,700
NW 25th St	@NW 67th Ave		Intersection Modification (Draft*)	Planning	County	\$ 167,443
NW 33rd St	NW 117th Ave	NW 107th Ave	+4 Lane New Construction and +2 Lanes to 4 & 6 Lane Divided	Planning	City	\$ 6,602,000
NW 36th St	@NW 79th Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 95,682
NW 36th St	@NW 72nd Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 119,602
NW 36th St	@NW 7100 Block		Traffic Signal	Planning	County	\$ 50,000
NW 41st St	NW 127th Ave	HEFT	+2 Lanes 4 Lane Divided	Planning	County	\$ 5,052,000
NW 58th St	East of FL-826	NW 72nd Street	+1 Lane 6 Lane Divided with TSM&O**	Planning	County	\$ 1,578,750
NW 74th St	NW 87th Ave	FL-826	TSM&O**	Planning	FDOT/County	\$ 500,000
NW 74th St	FL-826	Okeechobee Rd	+2 Lanes 8 Lane Divided with TSM&O**	Planning	FDOT	\$ 6,509,888
NW 74th St	@ NW 77th Ct		Intersection Modification (Draft*)	Planning	FDOT	\$ 119,602
NW 74th St	@NW 72nd Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 181,795
NW 74th St	@NW 69th Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 5,000
NW 90th St	NW 117th Ave	NW 112th Ave	New 4 Lane Divided	Planning	City Medley	\$ 3,444,500
NW 90th St	NW 112th Ave	NW 107th Ave	+2 Lanes 4 Lane Divided	Planning	City Medley	\$ 2,526,000
NW 90th St	NW 107th Ave	NW 97th Ave	+2 Lanes 4 Lane Divided	Planning	City Medley	\$ 5,052,000
NW 90th St	NW 97th Ave	NW 87th Ave	New 4 Lane Divided	Planning	City Medley	\$ 6,889,000
NW 90th St	NW 84th St	NW 79th Ave	New 4 Lane Divided	Planning	City Medley	\$ 3,444,500
NW 137th Ave	NW 25th St	NW 41st St	New 2 Lane Divided	Planning	County	\$ 4,800,400
NW 127th Ave	NW 25th St	NW 41st St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 12th St	NW 25th St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 25th St	NW 41st St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 41st St	NW 58th St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 117th Ave	NW 41st St	NW 58th St	+2 Lanes 4 Lane Divided	Planning	FTE/City	\$ 5,052,000
NW 117th Ave	NW 41st St	NW 58th St	+2 Lanes 4 Lane Divided	Planning	FTE/City	\$ 5,284,000
NW 97th Ave	NW 12th St	NW 25th St	+2 Lanes 6 Lane Divided	Planning	County	\$ 6,315,000
Long Term FY 2030 to FY 2045						
SR 836	NW 137th Ave	NW 127th Ave	+2 Managed Use Lanes	PDE	FDOT	\$ 8,758,200
SR 836	NW 127th Ave	TURNPIKE	+2 Lanes	PDE	FDOT	\$ 7,962,000
NW 12th St	TURNPIKE	NW 107th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Sweetwater	\$ 5,137,000
NW 12th St	NW 107th Ave	NW 97th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Doral	\$ 5,045,700
NW 12th St	NW 97th Ave	NW 79th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Doral	\$ 6,880,500
NW 25th St	NW 117th Ave	NW 107th Ave	+2 Lanes or Viaduct	Planning	City Sweetwater	\$ 4,800,400
NW 25th St	FL-826	MIA Cargo Area	+ SB Left Intersection Study	Planning	County	\$ 50,000
NW 25th St	@NW 75th Ave		Intersection Modification (Draft*)	Planning	County	\$ 71,761
NW 25th Street Viaduct	NW 117th Ave	NW 107th Ave	+Viaduct	Planning	SIS Connector	\$ 110,941,059
NW 25th Street Viaduct	NW 107th Ave	NW 97th Ave	+Viaduct	Planning	SIS Connector	\$ 110,941,059
NW 25th Street Viaduct	NW 97th Ave	NW 82nd Ave	+Viaduct	Planning	SIS Connector	\$ 166,411,589
NW 25th Street Viaduct	MIA Cargo Area	New Intermodal	+ Viaduct Ext	Planning	SIS Connector	\$ 36,328,995
NW 36th St	@NW 79th Ave		Lane Reconfiguration (Draft*)	Planning	FDOT	\$ 95,682
NW 36th St	@NW 67th & 66th Ave & Perimeter Rd		Intersection Modifications (Draft*)	Planning	FDOT	\$ 239,205
NW 74th St	@NW 72nd Ave		Access Management (Draft*)	Planning	FDOT	\$ 239,205
HEFT	SR 836	NW 41st St	AV/CV Technology***	Study	FTE	\$ 100,000
HEFT	NW 41st St	NW 74th St	AV/CV Technology***	Study	FTE	\$ 100,000
HEFT	NW 74th St	NW 106th St	AV/CV Technology***	Study	FTE	\$ 100,000
NW 117th Ave	NW 58th St	NW 74th St	+2 L 4LD	Planning	City/FTE	\$ 16,889,000
NW 117th Ave w/Interchange Improvements at NW 74th Street	NW 74th St	NW 90th St	Interchange Reconstruction New Construction 4LD	Planning	City/FTE	\$ 65,104,000
NW 107th Ave	NW 90th St	NW 122th St	+2 Lanes 4 Lane Divided	Planning	County	\$ 10,104,000
NW 102nd Ave	NW 58th St	NW 74th St	New 4 Lane Divided	Planning	City Doral	\$ 6,889,000
NW 102nd Ave	NW 74th St	NW 90th St	New 4 Lane Divided	Planning	City Doral	\$ 6,889,000
NW 97th Ave	NW 12th St	NW 25th St	TSM&O**	Planning	County	\$ 4,799,400
NW 87th Ave	NW 12th St	NW 25th St	TSM&O**	Planning	County	\$ 450,000
NW 87th Ave	NW 25th St	NW 36th St	TSM&O**	Planning	County	\$ 500,000
NW 87th Ave	NW 36th St	NW 58th St	TSM&O**	Planning	County	\$ 500,000
NW 87th Ave	NW 58th St	NW 74th St	+2 Lanes 6 Lane Divided with TSM&O	Planning	City Doral	\$ 6,946,500
SR 826	SR 836	Okeechobee Rd	AV/CV Technology***	Study	FDOT	\$ 100,000
NW 72nd Ave	SR 836	NW 25th St	+2 Lanes 8 Lane Divided with TSM&O**	Planning	FDOT	\$ 7,714,640
NW 72nd Ave	NW 25th St	Okeechobee Rd	TSM&O**	Planning	FDOT	\$ 1,750,000

* At the time of publishing this report the FDOT National Highway Systems (NHS) Intermodal Connectors Report was in Draft format
 ** Transportation Systems Management & Operations (TSM&O)
 *** Autonomous Vehicle/Connected Vehicle (AV/CV)

Table E-2. Doral Subarea Non-Freight Corridor Recommended Improvements

ROADWAY	LIMITS	TYPE OF WORK	MAINTAINING AGENCY
Short Range FY 2019 to FY 2025			
NW 34th Street	@ NW 117th Avenue	Improve NB right turn	City Doral
NW 34th Street	@ NW 112th Avenue (curved Rd)	Improvement	City Doral
NW 36th Street	@ NW 82nd Avenue	Add turn lanes N/S/E/WB, signal optimization	County
NW 41st Street	@ NW 115th Avenue	Add dual left NB turn lanes, signal optimization	County
NW 41st Street	@ NW 87th Avenue	Improvement NB right turn	County
NW 58th Street	@ NW 84th Avenue	Improve SB/EB/WB right turn	County
NW 102nd Avenue	From NW 66th Street to NW 74th Street	New Road Construction	City Doral
NW 117th Avenue Bridge	Over Doral Boulevard	Roadway Connectivity	City Doral
NW 82nd Avenue	From NW 27th Street to NW 33rd Street	Roadway Improvements	City Doral
NW 112th Avenue	From NW 25th Street to NW 34th Street	Roadway Improvements	City Doral
NW 87th Avenue	From NW 74th Street to NW 103rd Street	New Road Construction- Add 2 lanes	County
NW 99th Avenue	From NW 64th Street to NW 66th street	New Road Construction	City Doral
NW 102nd Avenue	From NW 62nd Street (300'N) & NW 62nd Street (660' E)	Roadway widen capacity	City Doral
NW 112th Avenue & NW 114th Avenue	From NW 41st Street- NW 58th Street Two-Way pair	Roadway Improvements	City Doral
NW 114th Avenue	Extension of NB NW 114th Ave Right Turn Lane @ NW 58th	Roadway Improvements	City Doral
NW 114th Avenue	SB NW 114th Ave Right Turn Lane @ NW 59th	Roadway Improvements	City Doral
NW 33rd Street	@ NW 97th Avenue	add NB turn lane, signal optimization	County
NW 33rd Street	@ NW 87th Avenue	add EB, WB turn lanes, signal optimization	County
NW 41st Street	@ NW 115th Avenue	add NB turn lanes, signal optimization	County
NW 41st Street	@ NW 114th Avenue	add EB, WB turn lanes, signal optimization	County
NW 41st Street	@ NW 107th Avenue	Signal optimization	County
NW 41st Street	@ NW 87th Avenue	add SB, WB turn lanes, NB Turn Radius signal optimization	County
NW 36th Street	@ NW 82nd Avenue	add turn lanes, N/S/E/WB, signal optimization	County
NW 36th Street	@ NW 79th Avenue	Split phase removal, add EB turn lane, add SB @WB turn lanes, signal optimization	County
NW 58th Street	@ NW 114th Street	add E/WB turn lanes	County
NW 58th Street	@ NW 107th Avenue	add turn lanes, N/S/E/WB, signal optimization	County
NW 58th Street	@ NW 97th Avenue	Remove split phase, add turn lanes N/S/E/WB, signal optimization	County
NW 58th Street	@ NW 87th Avenue	add turn lanes, N/E/WB, signal optimization	County
NW 74th Street	@ NW 114th Avenue	Add N/S/E/WB turn lanes	County
NW 74th Street	@ NW 107th Avenue	add S/E/W turn lanes, signal optimization	County
NW 74th Street	NW 97th Avenue	Signalize	County
NW 36th Street	@ NW 70th Avenue	WB right turning radius	County
NW 34th Street	From NW 117th Ave to NW 112th Ave	Roadway Improvements	City Doral
NW 36th Street	@ NW 82nd Avenue	NB right turn radius	County
NW 58th Street	@ NW 82nd Avenue	EB right turn radius	County
NW 107th Avenue	From NW 25th Street to NW 33rd Street	Expand from 4 to 6 lanes	County
NN 114th Avenue	From NW 34th Street to NW 50th Street	Expand from 2 to 4 lanes	City Doral
NW 41st Street	From 79th Ave to NW 97th Ave	Expand from 6 to 8 lanes	County
Mid Range FY 2026 to FY 2030			
NW 102nd Ave	From NW 58th St to NW 74th St	New 4 Lane Divided Arterial	City Doral
NW 102nd Ave	From NW 74th St to New 90th St	New 4 Lane Divided Arterial	City Doral
Long Range FY 2031 to FY 2045			
NW 36th Street	From NW 97th Avenue to NW 107th Avenue	Expand from 6 to 8 lanes	County
NW 58th Street	From NW 87th Avenue to NW 97th Avenue	Expand from 4 to 6 lanes	County



Figure E-2. FDOT Projects Recommended for Advancement to PD&E

performed for the 6 FDOT proposals and is included in

Table E-3. Intermodal Alternatives

SITE INDEX	LIMITS of WORK	OWNER-SHIP	TOTAL ACRES	ROADWAY ACCESS	PROXIMITY TO RAIL	COST ESTIMATE
Site 1B Proposal	Intermodal Facility	Private	975	74th St, 90th St, 93rd St, 97th Ave, 87th Ave	900' from FEC	\$ 43,300,000
Site 4 Proposal	Intermodal Facility	Public	2350	HEFT/74th St, HEFT/106th St	3,260' to FEC and 2.13 miles to CSX	\$ 50,980,000
	Transload Facility					\$ 14,900,000
	Total					\$ 65,880,000
Site 9 Proposal	Transload Facility	Private	316	NW 114 Street, HEFT/106th St	1000' from FEC	\$ 11,910,000

- Earthwork and grading are not included in the cost estimates. Pricing of this will vary and has the potential to drastically increase the estimated probable cost.
- Cost to purchase the property private is not included in the cost estimates.
- Cost of equipment for the facilities were not included.
- Design services for the facilities were not included.
- A 25% contingency fund was included within the estimate.

Appendix K.

3. **East Extension of the NW 25th Street Viaduct into the proposed New MIA Intermodal Center** –analyze a grade separated roadway along the 25th Street Corridor. NW 25th Street is not a State Road however the viaduct is a SIS Connector. If recommended through the PD&E process the extension would also become a SIS Connector.
4. **NW 117th Avenue Extension from NW 58th Street to NW 74th Street** – construct a new 4 lane divided arterial that will require some canal reconfiguration. Note the NW 117th Avenue is within Florida’s Turnpike Enterprise Right of Way.
5. **Reconstruct the NW 74th Street Interchange at the HEFT and extend NW 117th Avenue to NW 90th Street** – reconstruct the interchange to allow for a new 4 lane divided arterial extension on the NW 117th Street alignment from NW 74th Street to NW 90th Street Note the NW 117th Avenue is within Florida’s Turnpike Enterprise Right of Way.
6. **NW 72nd Avenue/Milam Dairy Road from SR 836 to Okeechobee Road** – construct an 8 Lane Divided Arterial from SR 836 to NW 25th Street and explore other alternatives for capacity AND drainage solutions from NW 25th Street to Okeechobee Road. Include TSM&O technologies for the entire corridor.

INTERMODAL FREIGHT RECOMMENDATIONS

Three (3) intermodal projects were also proposed in Section 5 of the report and are summarized in Table E-3. PORTMiami is actively studying the development of an Inland Terminal in Miami-Dade County with roadway and rail connections. The Port has identified 16 sites and several are located in or in close proximity to this report’s study area. Three (3) sites were selected for the development of concepts based on the size of the property, appropriate land use designation and proximity to rail and highway access. A summary of the concepts is provided on Table E-3.

IMPLEMENTATION STRATEGIES

A review of Tables E-1 and E-2 show many projects and many different Maintaining Agencies. The preparation of this report included utilizing many programming and planning documents including:

- City of Doral CIP
- City of Doral Transportation Master Plan
- City of Doral Turning Radius Improvement Program
- FDOT Town of Medley Subarea Freight Mobility Plan
- Miami-Dade TPO Transportation Improvement Plan
- Miami-Dade TPO 2040 Long Range Transportation Plan
- Florida’s Turnpike Enterprise Work Program
- Florida’s Turnpike Enterprise Master Plan
- MDX Master Plan
- FDOT Tentative Work Program

Following the FDOT District 6 strategy, this document includes much of the data and information required for a PD&E study and an Area Of Interest Report has been

- FDOT First 5 Year SIS Plan
- FDOT Second 5 Year SIS Plan
- FDOT 2045 SIS Unfunded Multimodal Needs Plan

The results indicate that there are many overlapping efforts by different jurisdictions and inconsistency in terminology, project limits and timing. This study vetted those issues and prepared a project construction plan for Freight Corridor Projects and Non-Freight Corridor projects as shown in Tables E-1 and E-2.

The recommended first step for implementation is for the City, County and State Agencies to coordinate closely with each other and the TPO on the development of the next round of programming documents. It is recommended that the stakeholders breakdown each recommendation into the required project phasing and create a consistent Subarea Work Program that identifies the environmental, right of way, design, construction and post construction phasing for each project.

Project stakeholders should also work together to leverage funding. Table E-1 identifies almost \$700,000,000 million in Freight Corridor improvements - \$10,500,000 in Short Range projects, \$106,500,000 in Mid Range Projects and \$580,000,000 in Long Range projects. Beginning in the summer of 2018 FDOT and the TPO will start the cycle of developing the FY 2020 to FY 2024 Tentative Work Program and subsequently the FY 2020 to FY 2024 TIP. Coordination with these documents would be ideal for the Short Range Program.

The TPO now is preparing the 2018 Freight Plan Update that includes the recommendations from this study and the other 3 completed FDOT Subarea Freight Mobility studies including Medley, Opa Locka and the Miami River study. A recommended next step in the planning process will be for stakeholders to track these projects as they are submitted for consideration in the TPOs 2045 LRTP which is just

starting up and is due for adoption in late 2019. Identification of need and inclusion of projects in the cost feasible plan are critical to implementation.

The TPO identified a “Freight Set Aside Program” in its current LRTP that identifies \$126,780,000 for projects that directly benefit freight mobility as follows:

• FY 2020	\$6,500,000
• FY 2021 to FY 2025	\$30,200,000
• FY 2026 to FY 2030	\$29,000,000
• FY 2031 to FY 2040	\$61,800,000

These funds are a good opportunity for many of the projects identified on Table E-1. In addition to the Freight Set Aside Program and traditional funding sources the cost feasible can identify project for State and Federal Grants. The INFRA Grant and Grants associated with the National Highway Freight Network (NHFN) are a great opportunity for projects on the designated system.

Finally, the private sector, including private property owners and the FEC and CSX Railroads, are major stakeholders in this area and their participation is critical to the success of freight mobility in the study area. Many of the projects identified are located adjacent to vacant property or where quarries exist now. The City, County and Town of Medley should adopt developer dedication requirements that when a quarry is filled that ½ mile and ¼ section line collector roadways be built to support the development of a grid network and any property built along vacant property participation the cost of planned improvements through a mobility fee. Private property owners and The FEC and CSX railroads will also be key players in the successful development of potential intermodal and/or transload facilities. Coordination between public agencies these stakeholders is key to successful implementation.

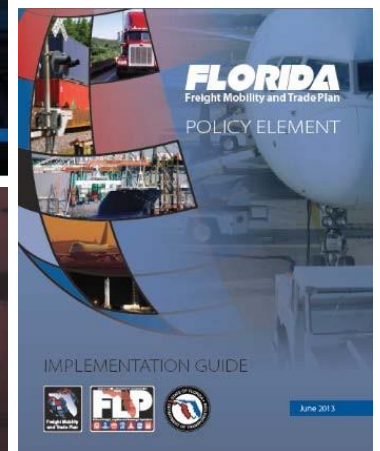
SECTION 1: INTRODUCTION AND BACKGROUND

INTRODUCTION

The Florida Department of Transportation (FDOT) has strategically developed policies and investment strategies for freight transportation. FDOT has effectively collaborated with the public and private sectors as well as transportation stakeholders to develop guiding documents including the 2060 Florida Transportation Plan (FTP) the Florida Strategic Intermodal System (SIS) Plan and a subset of guiding documents specifically targeting freight movement including the Florida Freight Mobility and Trade Plan (FMTP) Policy Element and the FMTP Implementation Guide. The purpose of this report is to follow these guiding documents and practices at the local level to identify and advance projects that maintain mobility and foster growth of cargo movement and for economic development.

The highest level document is the 2060 Transportation Plan which sets the stage for how Florida will evolve over the next 50 years. The Plan proactively supports the transformation of Florida's economy and communities and has a significant focus on trade and cargo movement. The FTP defines transportation goals, objectives, and strategies to make Florida's economy more competitive, Florida's communities more livable, and Florida's environment more sustainable for future generations. In 2016, the State's transportation system will be as profoundly different as today's system is from the one 50 years ago, including:

- A statewide, multi-modal transportation system which supports Florida's economic and livability goals by providing
- Better connectivity to both urban and rural areas;
- Greater reliance on public transportation systems for moving people, including a statewide passenger rail network and enhanced transit systems in Florida's major urban areas;
- A statewide, multimodal system of trade gateways, logistics centers, and transportation corridors to position Florida as a global hub for commerce and investment;
- An evolving air and space transportation system enabling Florida to remain a global leader for moving people and cargo between Florida and destinations in other states, nations, and orbit; and
- A new generation of infrastructure, vehicles, fuels, and technologies to enable travel with fewer crashes, reduced delay, and fewer emissions.



The SIS Plan identifies Florida's high priority network of transportation facilities important to the state's economy. The purpose of the SIS is to focus the state's limited transportation resources on the facilities most significant for interregional, interstate, and international travel and is the primary tool for implementing the FTP. The SIS consists of transportation facilities that meet a strategic and essential state interest and it focuses the State's limited resources to prioritize statewide and interregional transportation improvements. The system includes the State's most critical highways, airports, seaports, spaceports, railroads, waterways and select intermodal passenger and freight facilities. SIS objectives include Interregional Connectivity, Intermodal Connectivity and Economic Development.

The FDOT and its partners completed the Policy Element of the FMTP and it was adopted on June 19, 2013. As part of the development of the Policy Element, stakeholders helped FDOT develop a set of objectives and strategies to guide the State in the process of making strategic investments in freight. The Investment Element freight project prioritization process will implement these objectives and strategies. The Investment Plan of the FMTP builds upon the Policy Element by identifying criteria for prioritizing investment and encouraging stakeholder input in the development of statewide investment priorities.

- 1 Capitalize on the Freight Transportation Advantages of Florida Through Collaboration on Economic Development, Trade, and Logistics Programs**
- 2 Increase Operational Efficiency of Goods Movement**
- 3 Minimize Costs in the Supply Chain**
- 4 Align Public and Private Efforts for Trade and Logistics**
- 5 Raise Awareness and Support for Freight Movement Investments**
- 6 Develop a Balanced Transportation Planning and Investment Model That Considers and Integrates All Forms of Transportation**
- 7 Transform the FDOT's Organizational Culture to Include Consideration of Supply Chain and Freight Movement Issues**

FDOT DISTRICT 6 SUB-AREA FREIGHT PLANNING EFFORTS

FDOT District 6 is home to many diverse communities with unique transportation needs, highlighted with some of the State's leading freight facilities and international trade gateways. Significant investments have been made to compete for new cargo opportunities stemming from the expansion of the Panama Canal, increased use of the Suez Canal, and growing North/South trade. These investments will generate demand for new capacity of regional warehouses, distribution centers, cold treatment facilities, foreign trade zones, and truck parking facilities. With an anticipated doubling in cargo activity handled at PORTMiami, Port Everglades, and Miami International Airport (MIA), these investments will be critical.

In response, it is critical that District 6 and industrial based communities identify and invest in infrastructure improvements to position themselves for economic development and growth in cargo. Key developments and tools should be incorporated such as ITS/technologies, truck

parking needs, economic impact analyses, innovative funding programs, and land use and redevelopment opportunities - helping market these industrial based communities as competitive global logistics service center.

District 6 has identified a strategy to help advance its freight and logistics system focused on partnering with local communities to develop subarea freight plans; these freight focused plans will help identify freight mobility strategies at the project level.

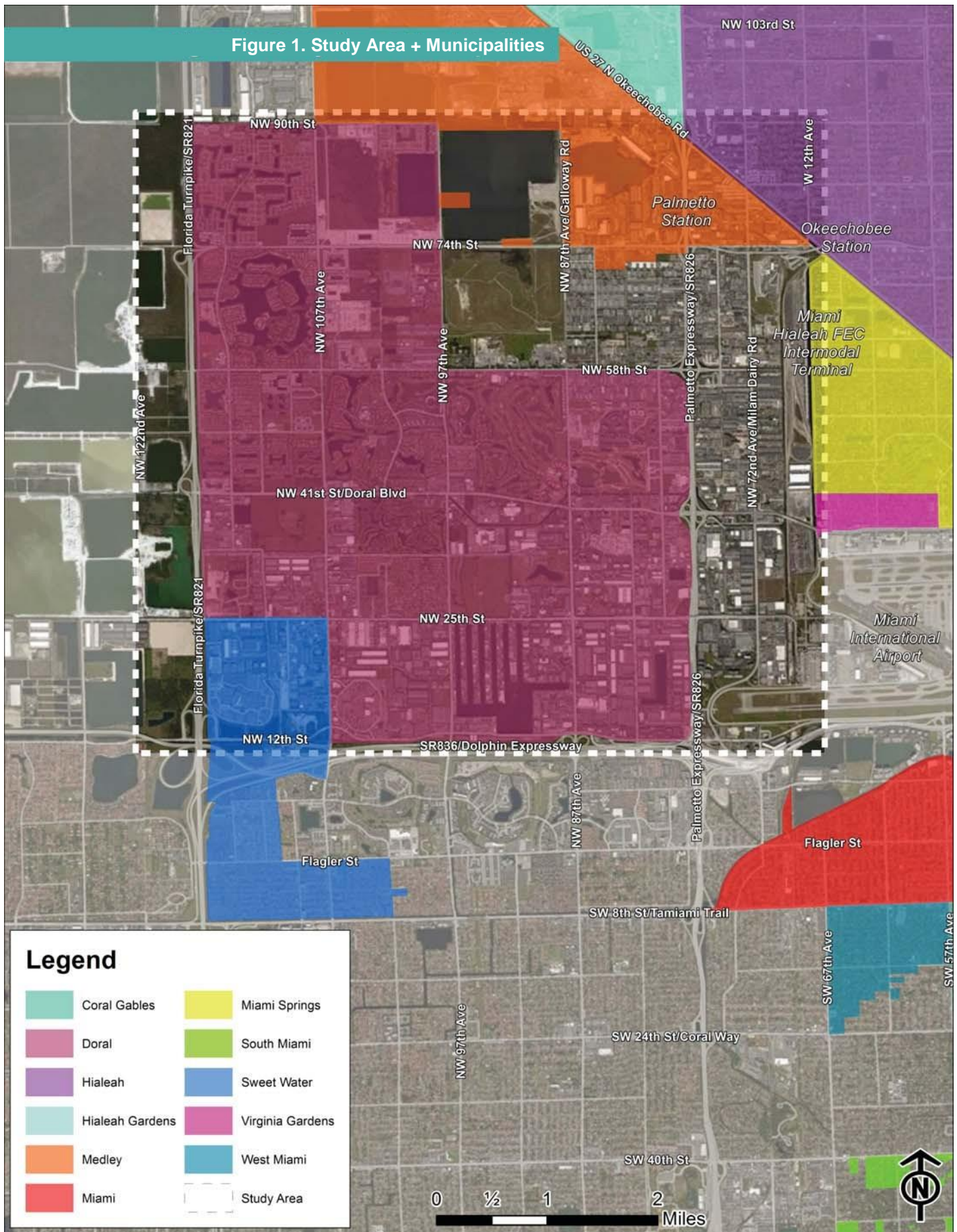
These planning level studies will assess freight accessibility to and from each sub-area and will develop strategies to enhance access and improve freight mobility. The District has completed 3 other studies: the Town of Medley Subarea Freight Mobility Plan, the City of Opa Locka Subarea Freight Mobility Plan and the Miami River Subarea Freight Mobility Plan. Note that all of these efforts are located in West-Central Miami-Dade County.

DORAL SUB-AREA PLANNING EFFORT

This proposal is the 4th in the series of projects. The strategy is to advance the implementation of freight and logistics projects by partnering with local communities and stakeholders to develop subarea freight plans. The main objective of this study is to identify transportation projects to advance or implement with partners.

The study area and municipalities is shown in **Figure 1**. The figure shows that the study area is centered on the City of Doral and includes parts of the City of Sweetwater, the Town of Medley and unincorporated Miami-Dade County. The area is generally bounded by NW 122nd Avenue to the west, SR 836/CSX Lehigh Branch to the south, MIA to the east and NW 90th Street to the north. The project will be performed within the framework of a Planning and Conceptual Engineering (PACE) study with the purpose of advanced programming of short-, mid-, and long-range projects through various State, Federal, and Local funding programs.

The study will deliver a list of priority projects with vetted alternatives, a concise Purpose and Needs Report, documentation of transportation, environmental, and social impacts to support the ETDM screening process, and Area Of Interest Reports for key recommendations. The recommendations from the study will be supported by stakeholders and local communities so that major projects will be identified for a condensed path to National Environmental Protection Act (NEPA) compliance through the PD&E phase.



EXISTING PLANNING DOCUMENTS

Many documents were reviewed as part of the scope of services. For the purposes of this report the following section provides a summary of those documents related to projects and programming. Note, consistency with Regional and Local plans is critical for Federal and State funding. Projects are required at a minimum to be included in the State Transportation Improvement Plan (STIP), Transportation Planning Organization (TPO) Long Range Transportation Plan (LRTP) and the TPO Transportation Improvement Plan (TIP) in order to program, encumber, and execute funds. There are many transportation projects programmed and planned for this area that will have a significant impact on relieving congestion, and impacting travel behavior and freight flows. Altogether, the projects have a significant impact on improving transportation conditions. The difficulty is in the sequencing of the projects to prioritize implementation. Our team will use a subarea model tool to game different phasing and sequencing scenarios to develop the best results for short-, mid-, and long- term scenarios.

SOUTHEAST FLORIDA REGIONAL PLAN UPDATE

The Miami-Dade, Broward, and Palm Beach Transportation/ Metropolitan Planning Organizations (T/MPOs) coordinated with FDOT to develop and adopted their first regional freight plan for Southeast Florida in 2010. The Plan was completed in close coordination with the Southeast Florida Regional Transportation Plan (RTP) and the 2035 Long Range Transportation Plans (LRTP) of each T/MPO. Since 2010 the region has made significant progress in advancing key freight infrastructure projects. The Southeast Florida Regional Freight Plan, 2014 Update (SFRFP), provides an opportunity to tell Southeast Florida’s freight story and highlight the importance of the Doral Area Freight Plan in relation to the regions freight network.

The plan begins by documenting recent accomplishments that have had a significant influence on the region and several of those projects are within the study area.

- **PORTMiami Dredging** – The port harbor and channel was deepened to -50/-52 feet to accommodate the larger class of cargo vessels operating through the Suez and expanded Panama Canals. This project was completed in 2015 prior to the opening of the expanded Panama Canal.
- **Intermodal Container Transfer Facility (ICTF) at PORTMiami** – The port in partnership with Florida East Coast (FEC) Railway, developed an on-port

ICTF; this allows the port to directly load containers on rail for shipment to the Flagler Rail Yard inside this freight improvement plan’s study area.

- **NW 25th Street Viaduct** – Is in the Doral Study Area and was completed in August 2016. The Viaduct provides a direct connection between the MIA Cargo Area and the warehousing/distribution facilities in Doral. This study provides an opportunity to monitor and assess existing and future performance of the investment.
- **SR 826/836 Interchange Reconstruction** – FDOT D6 reconstructed the interchange of SR 826 and SR 836 which is adjacent to the study are. This is a critical interchange for trucks moving from PORTMiami to the warehouse and distribution center in western Miami-Dade County.
- **Connection of the South Florida Rail Corridor (SFRC) and FEC Railway** – South Florida’s two key rail corridors will be connected in Miami-Dade County by the Iris Connection. This project will allow the movement of freight and passenger service between the two corridors, streamlining overall operational efficiency and flexibility. The project is anticipated to be completed in 2018.

The document exemplifies the importance of this study area as the center of freight movement in the region. **Figure 2** (page 10) shows the central Miami-Dade County area, including major SIS hubs and the convergence of highways and railroads within the study area. The prioritized regional needs identified in the Southeast Florida Regional Freight Plan further indicates the importance of the study area of this freight improvement plan. The final recommendations show that 9 of the top 15 highway projects are in, or very close to, this study area as well as the 3rd ranked regional rail project. The projects are listed below.

RANK	PROJECT DESCRIPTION
1	SR 826/Palmetto Expressway – add Managed Lanes from I-75/87 th Avenue to SR 836
5	SR 826/Palmetto Expressway – Interchange improvements between US 27 and SR 874
6	NW 12 th Street – widen from 4 lanes to 6 lanes from NW 107 th Avenue to SR 826
8	SR 826/Palmetto Expressway – develop barrier separated truck lane from Golden Glades to Dadeland
10	US 27 Bridge/Canal Improvements to Medley

- bridge/canal improvements including NW 79th Avenue
- 11 NW 25th Street - widen from 4 lanes to 6 lanes from NW 89th Court to SR 826 (complete)
- 13 US 27/NW 79th Avenue – new interchange/grade separation
- 14 US 27 – convert to a toll facility from Krome Avenue to SR 826
- 15 SR 821/HEFT – widen from 6/8 lanes to 10 lanes from Kendall Drive to I-75
- 3 Rail FEC Miami Freight Forwarding Yard

potential alignments.

2014 MIAMI-DADE COUNTY FREIGHT PLAN UPDATE

The development of the 2014 Miami-Dade County Freight Plan Update (MDCFP) was funded and managed by the TPO. At the time of the development of the plan many of the highest priority freight projects in the region were underway or complete. The MDCFP undertook the task of setting priorities of the remaining needs and identified additional needs. The result was a list of priorities to be incorporated into the Miami-Dade 2040 LRTP, the Southeast Florida Regional Plan, the Southeast Florida Regional Freight Plan, and the Florida Freight Mobility and Trade Plan. Ensuring consistency and compatibility with these larger plans helps FDOT and Miami-Dade qualify and compete for all available funding programs. Again, the plan highlights the significance of the Doral Area. **Figures 4 and 5** show the study area in relation to the County SIS System and the County Land Use Plan.

Figure 4 shows that the study area includes passenger rail and freight hubs, multiple SIS highways, 2 SIS railroads, and is adjacent to MIA. **Figure 5** clearly shows that the study area includes a large portion of the County's designated industrial land uses.

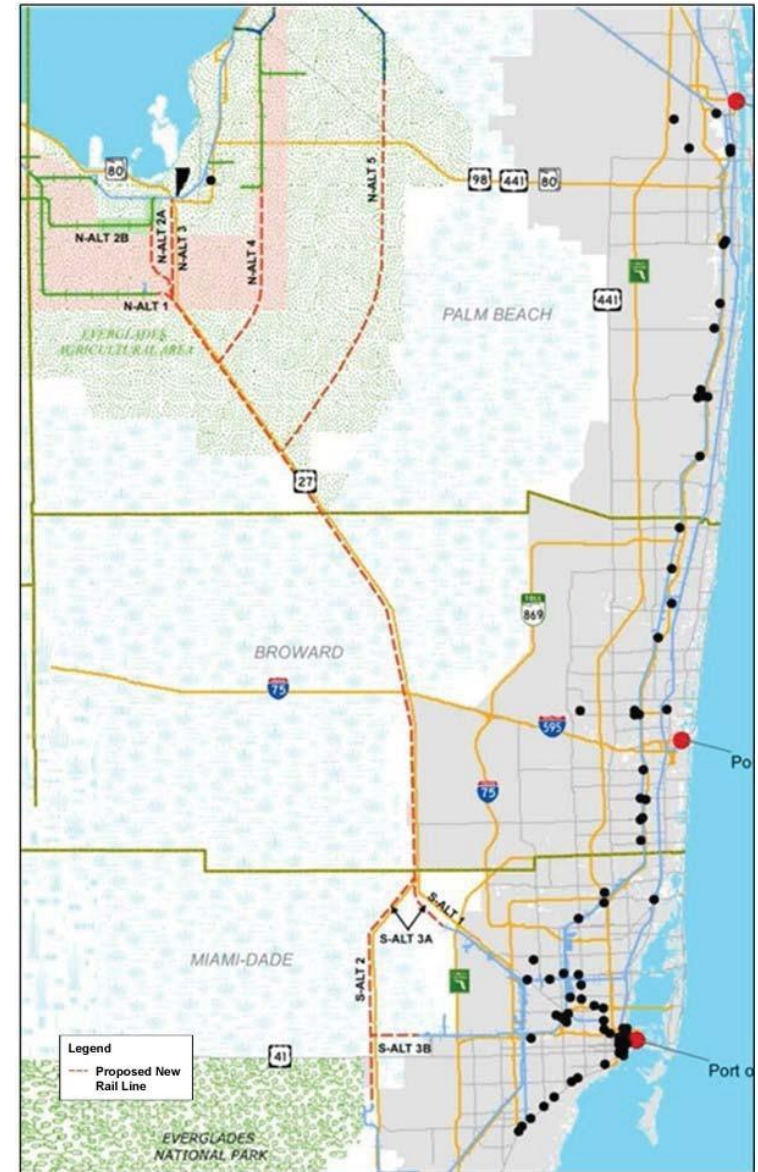
The SFRFP also documents potential regional planned improvements for the US 27 corridor. The roadway is a SIS facility that connects Miami-Dade County with the South Florida Region, Florida's Heartland and the I-4 Corridor. FDOT projects a potential significant increase in truck traffic along this corridor as a result of increased traffic at PORTMiami. To alleviate some of this truck traffic, one proposed alternative is to build a rail link between Western Miami-Dade County and the Glades Area in Western Palm Beach County. The proposed rail link would run from the HEFT in Miami-Dade County to a connection with the South Central Florida Express (SFCE) Railroad in Palm Beach County. One of the alternates in the feasibility study shows that the Lehigh Branch of the CSX Railroad could be the extension that connects to the HEFT. **Figure 3** shows the

FIGURE 2. SOUTHEAST FLORIDA REGIONAL SIS PLAN



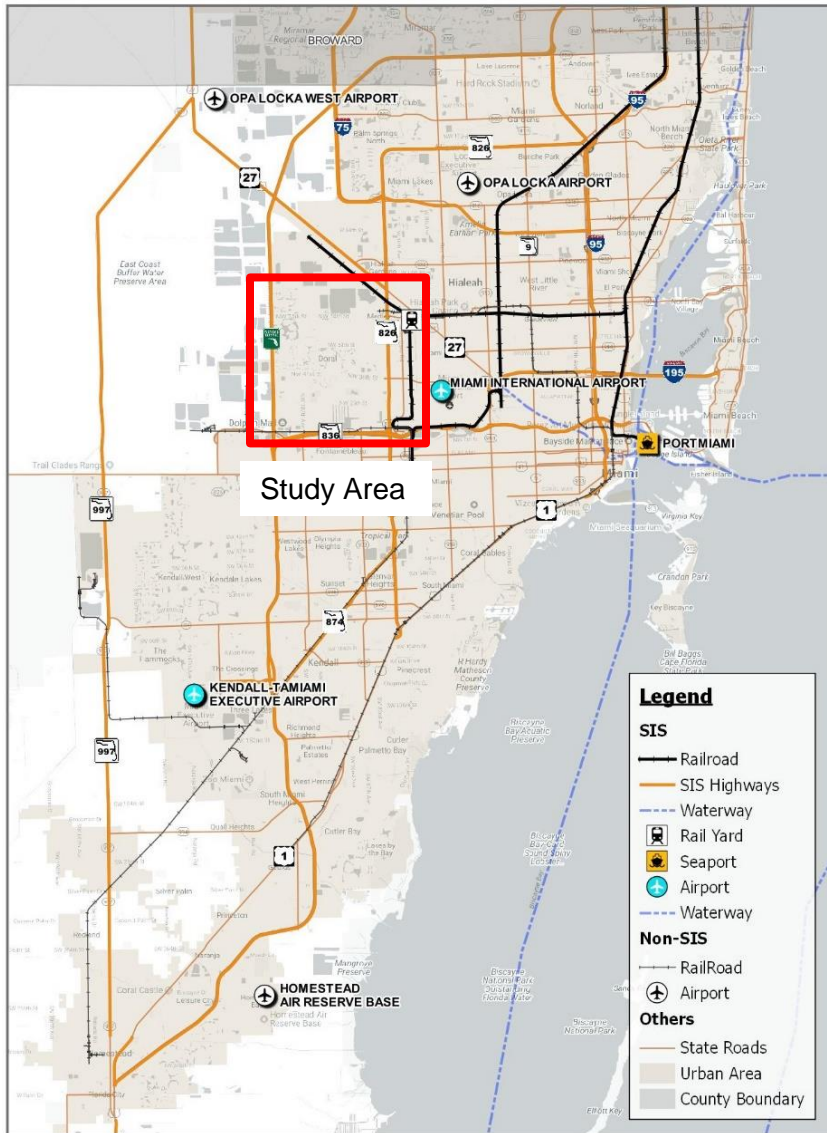
Source: MARLIN Engineering

FIGURE 3. US 27 RAIL ALTERNATIVES



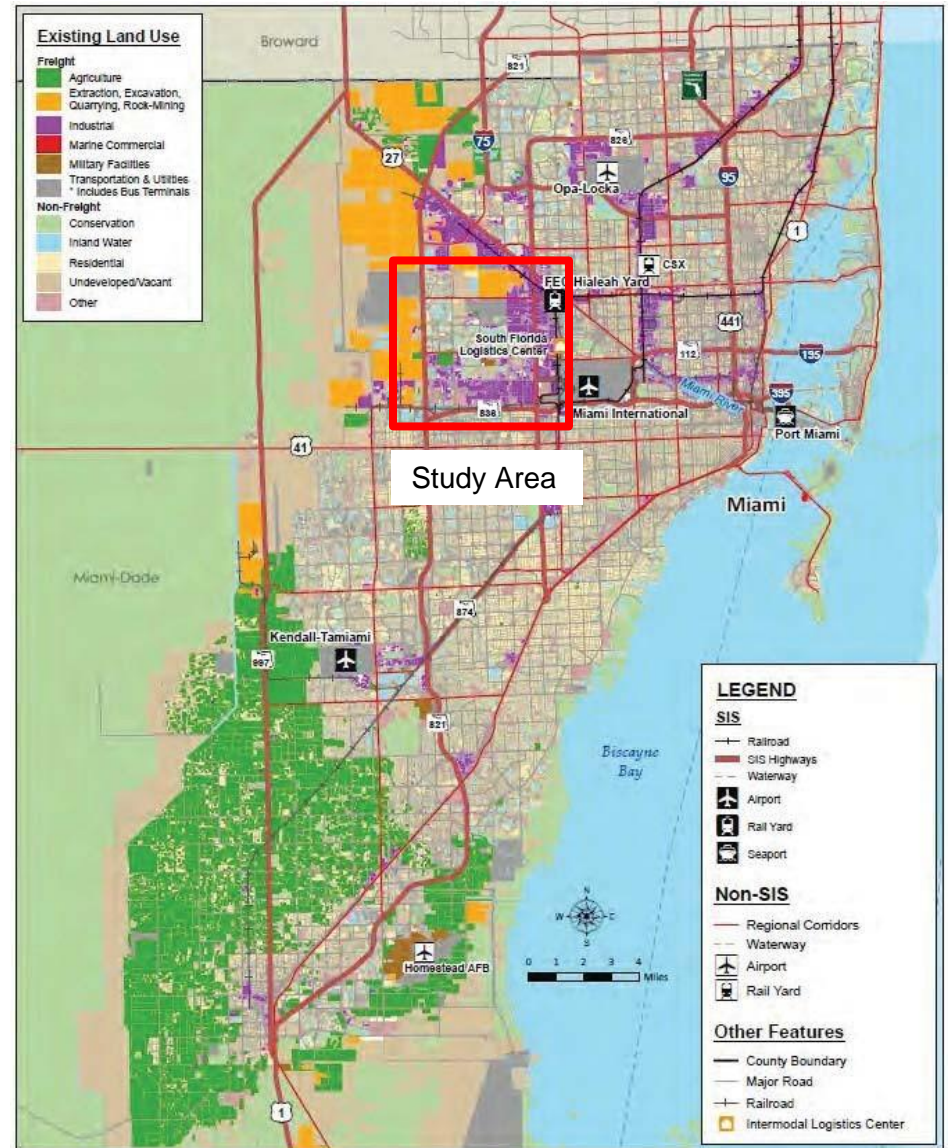
Source: FDOT US 27 Feasibility Assessment Rail Corridor Study

FIGURE 4. MIAMI-DADE COUNTY SIS NETWORK



Source: MARLIN Engineering

FIGURE 5. MIAMI-DADE COUNTY SIS NETWORK + EXISTING LAND USE



Source: 2014 Miami-Dade Freight Plan Update

FREIGHT ONLY PROJECTS

As part of the MDCFP, numerous highway infrastructure needs were identified throughout the County that have an impact on freight and commuter traffic simultaneously. The Miami-Dade TPO strategically set aside funding for freight specific, congestion management and bicycle/pedestrians projects. Projects were identified based on those located in areas in the County that are exclusively industrial, with predominant warehousing activity including the area that is the subject of this study. A list of projects was prioritized

based on: Facility Type, Adjacent Freight Center Density, Truck ADT, Project Cost, Attraction to General Traffic, and Type of Project. The plan identified high, medium, and low ranking projects, many of which are specifically located in this plan's study area including 5 of the 10 high ranking projects, 10 of the 17 medium ranking projects and 5 of the 10 low ranking projects. Truck parking improvement at the HEFT is no longer a priority for the County. The projects and rankings are as follows:

RANK	PROJECT DESCRIPTION
High	NW 72 nd Avenue – Traffic Operations Improvements from SR 836 to NW 58 th Street
High	NW 74 th Street – Traffic Operations Improvements from NW 84 th Avenue to NW 74 th Avenue
High	NW 25 th Street – Arterial Capacity Improvements from NW 87 th Court to SR 826
High	NW 72 nd Avenue – Traffic Operations Improvements from NW 58 th Street to NW 74 th Street
High	NW 58 th Street – Intersection Traffic Operations Improvement at NW 74 th Avenue
Medium	NW 12 th Street - Intersection Traffic Operations Improvement at NW 87 th Avenue
Medium	US 27 - Traffic Operations Improvements from NW 138 th Avenue to NW 79 th Avenue
Medium	NW 58 th Street - Traffic Operations Improvements from NW 82 nd Avenue to NW 74 th Avenue
Medium	NW 87 th Avenue - Arterial Capacity Improvements from US 27 to NW 58 th Street
Medium	NW 82 nd Avenue - Arterial Capacity Improvements from NW 41 st Street to NW 25 th Street
Medium	Truck Parking Improvement – at NW 12 th /HEFT
Medium	NW 25 th Street - Arterial Capacity Improvements from NW 89 th Court to SR 826
Medium	NW 12 th Street - Arterial Capacity Improvements from NW 107 th Avenue to SR 826
Medium	NW 36 th / 41 st Street - Traffic Operations Improvements from HEFT to LeJuene Road
Medium	SR 826 – Freeway Capacity Improvements from Dadeland to Golden Glades
Low	79 th Avenue – Intersection Traffic Operations Improvement at US 27
Low	NW 25 th Street - Traffic Operations Improvements from HEFT to NW 89 th Court
Low	NW 107 th Avenue - Arterial Capacity Improvements from NW 25 th Street to 41 st Street
Low	NW 25 th Street/117 th Avenue to the HEFT - Arterial Capacity Improvements
Low	NW 117 th Avenue - Traffic Operations Improvements from NW 12 th Street to NW 58 th Street

MIAMI-DADE COUNTY LONG RANGE TRANSPORTATION PLAN

As mentioned above, the Miami Dade County 2040 Long Range Transportation Plan (LRTP) emphasized the importance of freight recognizing the value of moving goods within and through an area as a necessary component of a well-functioning regional economy. The area's established,

and expanding, freight transportation system in the greater Miami metropolitan area serves as the cornerstone of the region's economy and connects the region to the global economy through major sea and air gateways. **Table 1** shows the funding for freight specific projects.

TABLE 1. 2040 LRTP PLAN FUNDING FOR FREIGHT SPECIFIC PROJECTS

2040 Freight Set Aside (Millions)	2020	2021-2025	2026-2030	2031-2040	Total
TMA (5%)	\$ 1.7	\$ 8.4	\$ 8.4	\$ 16.8	\$ 35.3
Other Arterials (5%)	\$ 4.8	\$ 21.5	\$ 20.3	\$ 44.4	\$ 91.0
TRIP (5%)	\$ -	\$ 0.3	\$ 0.3	\$ 0.6	\$ 1.2
Total	\$ 6.5	\$ 30.2	\$ 29.0	\$ 61.8	\$ 127.5

Many of the priority freight projects are included in the study area and were prioritized into the plans top 2 tiers as shown in Tables 2 and 3.

TABLE 2. PRIORITY I PROJECTS 2015-2020

Street	Location	Description	Project Cost (2013 \$)
NW 72nd Avenue	NW 74th Avenue to SR-836 (dolphin)	The intersection at 12th, 25th, 36th and 58th Streets need improvement for turning radii, left turn storage and signal timing	1.841 million

TABLE 3. PRIORITY II PROJECTS 2020-2025

Street	Location	Description	Project Cost (2013 \$)
NW 72nd Avenue (Milam Dairy)	NW 58th Street to NW 74th Street	High number of access points and side streets on the west side. Merge and reduce access points, extend right turn radius onto side streets.	0.197 million
NW 58th Street	NW 82nd Avenue to NW 74th Avenue	High number of access points on the south side of NW 58th Street. Merge and reduce access points close to busy intersections if possible.	2.268 million
NW 58th Street	at NW 74th Avenue	Extend right turn radius at this location. Truck backing up at NB downstream; move the access/egress point further downstream.	0.460 million
NW 74th Street	NW 84th Avenue to NW 74th Avenue	Merge and close some access points on south side of NW 74th Street if possible. Provide advance signage WN lane drop after NW 79th Place.	0.594 million
NW 82nd Avenue	NW 41st Street to NW 25th Street	Widen from 4 to 6 lanes.	5.700 million
US-27	at NW 79th Avenue	Signal timing improvements, improve access and improve signing to provide better flow.	0.131 million
NW 12th Street/ HEFT	Dolphin Station Transit Terminal	Truck parking facility adjacent to Dolphin station transit terminal park and ride	16.700 million

MULTIMODAL RELATED DOCUMENTS

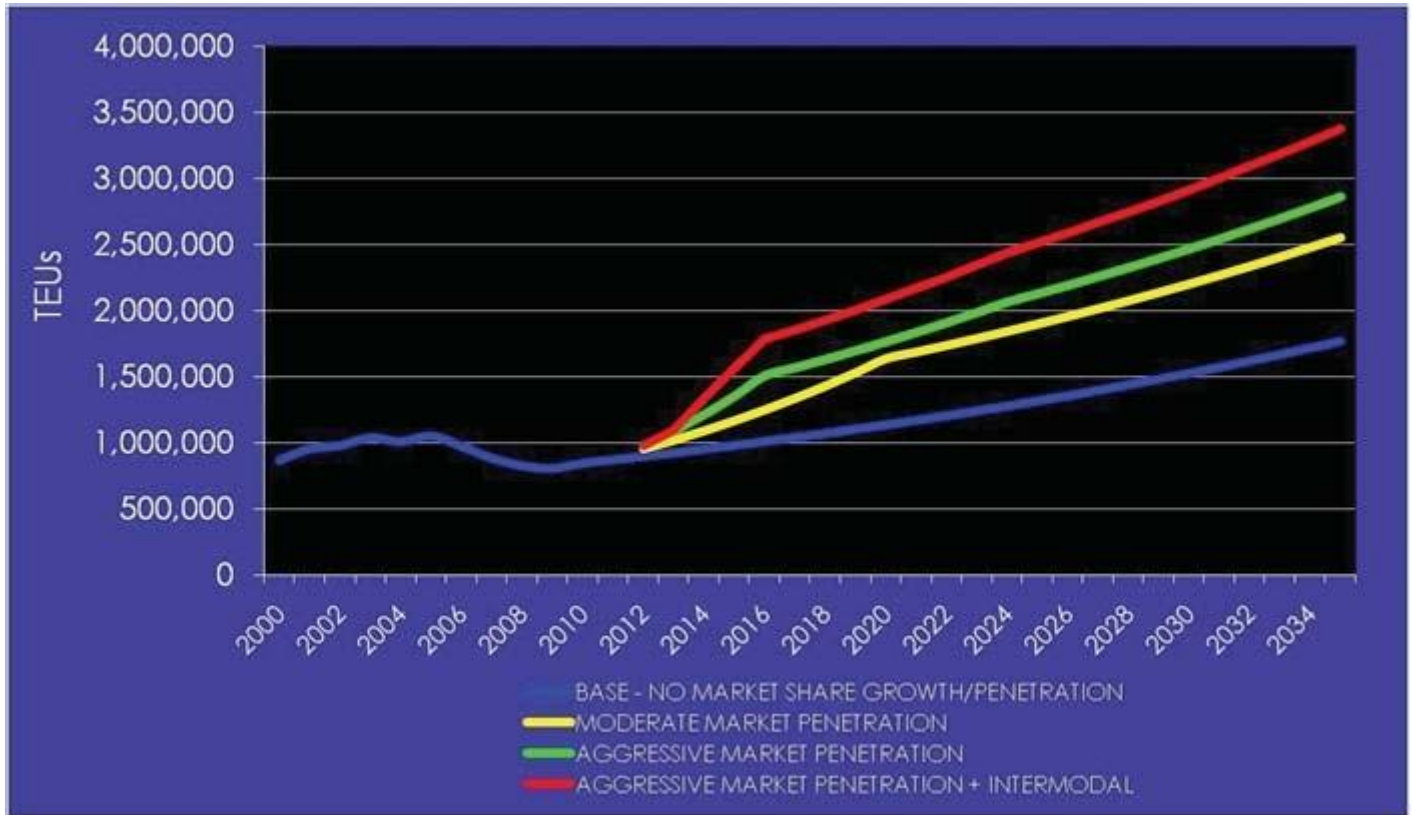
The PORTMiami 2035 Master Plan (POM Master Plan) is included as a Sub-element of the County’s Comprehensive Development Master Plan (CDMP). The document was prepared simultaneously with the County’s Evaluation and Appraisal Report which analyzes if the Port is meeting its goals, policies, and objectives. By incorporating a market analysis for both cruise and cargo, and a financial analysis of capital infrastructure, the master plan clarifies the direction to guide Port development. This study documents the port projections for Twenty Equivalent Units (TEUs) which has a direct correlation to the number of trucks and rail cars that may impact the Doral Study Area. The plan identifies multiple scenarios for growth including cargo projections that range from 847,249 TEUs in 2010 to 1.7 – 3.3 million in 2035. These scenarios will assist the team in the development of similar scenarios as the scope calls for analysis of high, medium, and low growth in the study area.

- The moderate growth penetration scenario incorporates the estimated 500,000 potential TEU market that the PORTMiami can capture; 50% of the local truck hinterland market and 25% of the Central Florida market by 2020, with a 3% growth thereafter.
- The aggressive market penetration scenario assumes the same 500,000 potential TEU market is captured by 2016, with a 4.5% growth through 2025 and 3% thereafter.
- The aggressive market penetration plus intermodal scenario assumes the same rate of capture of the local truck hinterland and Central Florida market as described in the aggressive scenario as well as an 18% intermodal share, assuming the Port deepens the channel to -50’ (complete), allowing for the ability to market to global carriers and handle a fully-laden first-inbound call.

- Low scenario container forecast, with no new market penetration, assumes a 3 percent growth from the FY2010 base cargo.

Figure 6 shows the results of the growth scenarios documented in the POM Master Plan.

FIGURE 6. PORTMIAMI TEU PROJECTIONS BY SCENARIO

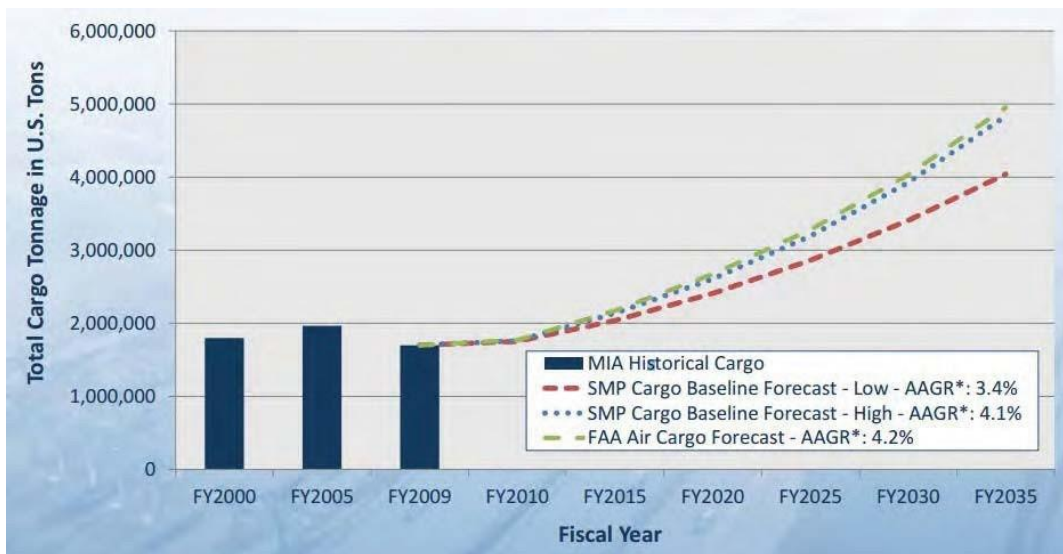


Source: PORTMiami 2035 Master Plan

The MIA Strategic Airport Master Planning Study 2015-2050 also developed multiple scenarios for growth in cargo based on tonnage. The scenarios include a low-growth scenario at

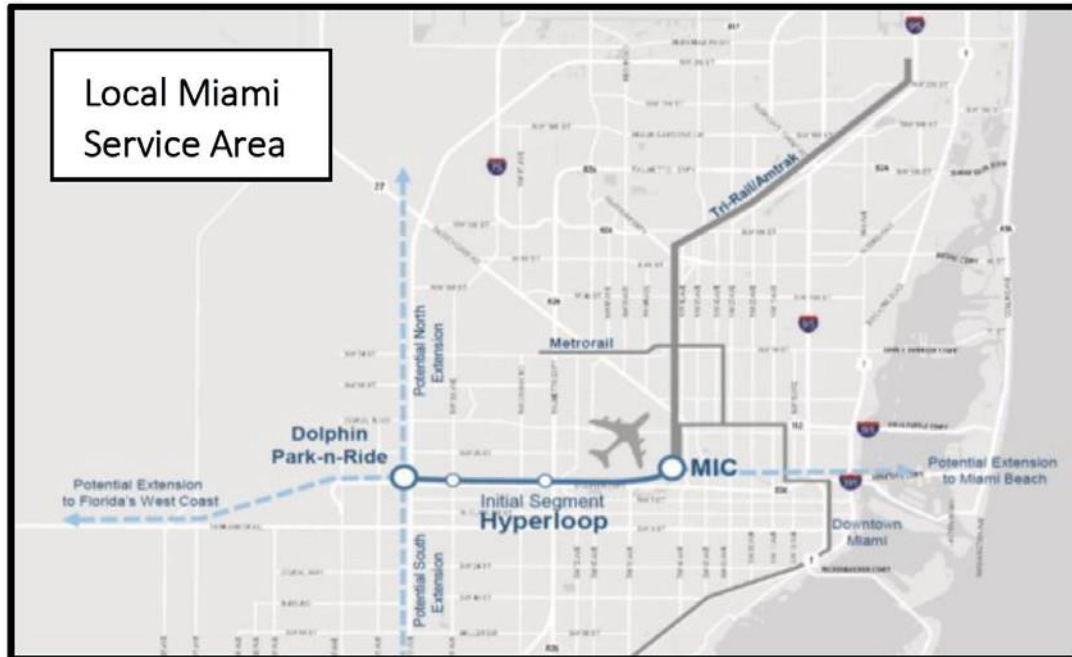
3.3% per year, a medium growth rate at 4.1% per year and a high scenario at 4.2% per year. The results are shown on **Figure 7** below.

FIGURE 7. MIA STRATEGIC MASTER PLAN PROJECTIONS



Source: MIA Strategic Airport Master Planning Study 2015-2050

FIGURE 8. HYPERLOOP PILOT PROJECT



Source: Miami-Dade County Hyperloop Application

On April 6, 2017 the Miami-Dade County's application for a Hyperloop Pilot Project was shortlisted with 11 other proposals for potential Hyperloop projects. **Figure 8** above show the Hyperloop pilot project for the local Miami service area. Two or three will be selected for project development. Hyperloop One is a company in Los Angeles, California that is working to advance technology for moving passengers and/or cargo at airline speeds at a fraction of the cost of air travel. The team including MDPW, the TPO and FDOT propose to initiate the Hyperloop in Miami with the goal of moving goods and people within the primary US 27 travel corridor connecting Miami to Orlando. The corridor is then envisioned to connect Miami and Orlando with the large metropolitan areas of Atlanta, Nashville, Louisville, Cincinnati, Indianapolis and Chicago and nearby cities once it's fully developed.

The initial segment is a 240-mile Hyperloop segment connecting Miami with Orlando, Florida with potential extension to the North, South, West and East. The initial segment will include this project's study area generally following the SR 836 corridor. Phase 1 will begin from MIC and go west to the Dolphin Mall for approximately 10 miles and then move north along the rural areas of South Florida to the Orlando/Disney World area, connecting South Florida to the Greater Orlando area by less than a 20 minute Hyper-

loop ride, as opposed to the existing 4 hour trip by road and even longer by rail.

CITY OF DORAL TRANSPORTATION MASTER PLAN

The City of Doral adopted a Transportation Master Plan in July, 2017. The traffic analysis shows that approximately 20% of the roadway network will exceed standards by 2025, and over 35% by 2040. The City proposes a plan to address the issue with a multimodal approach. The analysis indicates that a 5% modal shift towards alternative modes will reduce most of the need for roadway widening on all but one roadway segment in 2025 projects, and a 30% modal shift will reduce the need to widen 80% of the projected roadways requiring additional capacity however specific analysis of increased mode split is not provided.

The proposed Master Plan provides multimodal, roadway, "complete roadway grid" and transit projects in a prioritized program to build local multimodal capacity and relieve congestion. The roadway element includes projects to develop a more robust grid system. Doral's roadway network is not complete and the lack of an urban grid forces local traffic onto key arterial roadways. The plan identifies a number of projects to fill-in gaps that can help relieve congestion on the higher level system. **Tables 4, 5, and 6** provide the proposed roadway improvements.

TABLE 4. PROPOSED ROADWAY IMPROVEMENTS

	ROADWAY	FROM	TO	IMPROVEMENT	NOTES	THRESHOLD ADDRESS
1	NW 25th Street	NW 79th Avenue	NW 97th Avenue	Expand from 4 to 6 lanes	Class I	2025
2	NW 36th Street	NW 79th Avenue	NW 97th Avenue	Expand from 6 to 8 lanes	Class I, also addresses deficiency in 2040	2025
3	NW 107th Avenue	NW 25th Street	NW 33rd Street	Expand from 4 to 6 lanes	Class I	2025
4	NW 114th Avenue	NW 34th Street	NW 50th Street	Expand from 2 to 4 lanes	Class II, can change speed limit but reclassifying does not address LOS F in this case	2025
5	NW 12th Street	NW 87th Avenue	NW 79th Avenue	Expand from 4 to 6 lanes	Class I	2025
6	NW 12th Street	NW 97th Avenue	NW 107th Avenue	Expand from 4 to 6 lanes	Class I, also addresses deficiency in 2040	2025
7	NW 33rd Street	NW 107th Avenue	NW 112th Avenue	Raise speed limit to 40, reclass to Class I	Class II, alternatively, can retain class II but expand by 2 lanes	2025
8	NW 34th Street	NW 112th Avenue	NW 117th Avenue	Raise speed limit to 40, reclass to Class I	Class II, alternatively, can retain class II but expand by 2 lanes	2025
9	NW 36th Street/NW 41st Street	NW 87th Avenue	NW 87th Avenue	Expand from 6 to 8 lanes	Class I	2025
10	NW 97th Avenue	NW 12th Street	NW 25th Street	Expand from 4 to 6 lanes	Class I	2025
11	NW 117th Avenue	NW 34th Street	NW 25th Street	Raise speed limit to 40, reclass to Class I	Class II, alternatively, can retain class II but expand by 2 lanes	2025
12	NW 12th Street	NW 87th Avenue	NW 107th Avenue	Expand from 4 to 6 lanes	Class I	2040
13	NW 25th Street	NW 97th Avenue	NW 107th Avenue	Expand from 4 to 6 lanes	Class I	2040
14	NW 33rd Street	NW 97th Avenue	NW 107th Avenue	Raise speed limit to 40, reclass to Class I	Class II, alternatively, can retain class II but expand by 2 lanes	2040
15	NW 36th Street	NW 97th Avenue	NW 107th Avenue	Expand from 6 to 8 lanes	Class I	2040
16	NW 58th Street	NW 87th Avenue	NW 97th Avenue	Expand from 4 to 6 lanes	Class I	2040
17	NW 33rd Street	NW 79th Avenue	NW 87th Avenue	Raise speed limit to 40, reclass to Class I	Class II, alternatively, can retain class II but expand by 2 lanes	2040

Source: City of Doral Transportation Master Plan

TABLE 5. PROPOSED “COMPLETE ROADWAY GRID” PROJECTS

	ROADWAY	FROM	TO	IMPROVEMENT	NOTES	THRESHOLD ADDRESS
1	NW 112th Avenue	NW 33rd Street	NW 41st Street	New 2 lane facility	Class II	Complete Grid
2	NW 92nd Avenue	NW 27th Street	NW 33rd Street	New 2 lane facility	Class II	Complete Grid
3	NW 102nd Avenue	NW 58th Street	NW 90th Street	New 4 lane facility	Class I	Complete Grid
4	NW 66th Street	NW 97th Avenue	NW 107th Avenue	New 2 lane facility	Class II	Complete Grid
5	NW 62nd Street	NW 99th Avenue	NW 107th Avenue	New 2 lane facility	Class II	Complete Grid
6	NW 104th Avenue	NW 58th Street	NW 62nd Street	New 2 lane facility	Class II	Complete Grid
7	NW 104th Avenue	NW 66th Street	NW 82nd Street	New 2 lane facility	Class II	Complete Grid
8	NW 99th Avenue	NW 58th Street	NW 66th Street	New 2 lane facility	Class II	Complete Grid
9	NW 78th Terrace	NW 97th Avenue	NW 107th Avenue	New 2 lane facility	Class II	Complete Grid
10	NW 82nd Street	NW 104th Avenue	NW 107th Avenue	New 2 lane facility	Class II	Complete Grid
11	NW 88th Street	NW 104th Avenue	NW 107th Avenue	New 2 lane facility	Class II	Complete Grid
12	NW 82nd Avenue	NW 41st Street	Geneva Court	New 4 lane facility	Class I	Complete Grid
13	NW 84th Avenue	NW 41st Street	NW 51st Terrace	New 4 lane facility	Class I	Complete Grid
14	NW 48th Street	NW 79th Avenue	NW 87th Avenue	New 4 lane facility	Class I	Complete Grid
15	NW 46th Street	NW 82nd Avenue	NW 87th Avenue	New 4 lane facility	Class I	Complete Grid
16	NW 43rd Street	NW 79th Avenue	NW 84th Avenue	New 2 lane facility	Class I	Complete Grid
17	NW 80th Avenue	NW 48th Street/ Geneva Court	NW 41st Street	New 2 lane facility	Class II	Complete Grid

Source: City of Doral Transportation Master Plan

TABLE 6. PROPOSED INTERSECTION IMPROVEMENTS

INTERSECTION IMPROVEMENTS		
	INTERSECTION	IMPROVEMENT
1	NW 12th Street and NW 107th Avenue	Add westbound turn lane, signal optimization
2	NW 12th Street and NW 97th Avenue	Add westbound/northbound turn lane, access to SB NW 97th Avenue from NW 12th Street
3	NW 12th Street and NW 87th Avenue	Add northbound turn lane, add southbound turn lane, signal optimization
4	NW 12th Street and NW 82nd Avenue	Connect to southbound NE 82nd Avenue
5	NW 25th Street and NW 117th Avenue	Split phase removal/realignment, signal optimization
6	NW 25th Street and NW 107th Avenue	Add southbound turn lane, signal optimization
7	NW 25th Street and NW 97th Avenue	Add turn lanes, north/south/east/westbound
8	NW 25th Street and NW 82nd Avenue	Add turn lanes, south/east/westbound, signal optimization
9	NW 25th Street and NW 179th Avenue	Remove split phase by changing the southbound approach to 2 lefts, one thru, and one right turn lane; add eastbound turn lane, signal optimization
10	NW 33rd Street and NW 107th Avenue	Remove split phase, signal optimization
11	NW 33rd Street and NW 97th Avenue	Add northbound turn lane, signal optimization
12	NW 33rd Street and NW 87th Avenue	Add eastbound and westbound turn lanes, signal optimization
13	NW 41st Street and NW 115th Avenue	Add dual left northbound turn lanes, signal optimization
14	NW 41st Street and NW 114th Avenue	Add eastbound and westbound turn lanes, signal optimization
15	NW 41st Street and NW 107th Avenue	Remove split phase, signal optimization
16	NW 41st Street and NW 102nd Avenue	Remove split phase, signal optimization
17	NW 36th Street and NW 87th Avenue	Add southbound and westbound turn lanes, signal optimization
18	NW 36th Street and NW 82nd Avenue	Add turn lanes, North/South/East/Westbound, signal optimization
19	NW 36th Street and NW 79th Avenue	Split phase removal, add eastbound thru lane, add southbound and westbound turn lanes, signal optimization
20	NW 58th Street and NW 114th Avenue	Add east/westbound turn lanes
21	NW 58th Street and NW 107th Avenue	Add turn lanes, north/south/east/westbound, signal optimization
22	NW 58th Street and NW 97th Avenue	Remove split phase, add north/south/west/eastbound turn lanes, signal optimization
23	NW 58th Street and NW 87th Avenue	Add turn lanes, north/east/westbound, signal optimization
24	NW 74th Street and NW 114th Avenue	Add north/south/east/westbound turn lanes
25	NW 74th Street and NW 107th Avenue	Add south/east/westbound turn lanes, signal optimization
26	NW 74th Street and NW 97th Avenue	Signalize

Source: City of Doral Transportation Master Plan

CITY OF DORAL INTERSECTION TRUCK TURNING ASSESSMENT

Throughout the City of Doral, there is evidence that trucks are unable to negotiate right turns at corner intersections including broken curbs and sidewalks, damaged swale areas, visible tire tracks on curb and sidewalk, damage to infrastructure, streetscape and private property, knocked-down/dents of pedestrian signal heads signal mast arm columns and traffic signs, encroachment into adjacent lanes, and damage to guardrails among others. These conditions are all indicative that right turn geometry at intersections may not be appropriately designed for the type of trucks that turn at that location, which consequently affects the overall operation and safety of the intersection.

In 2016 the City prepared an assessment of the locations and needs for truck turning radii improvements. The objective of the assessment was to conduct a field review of intersections for right turn truck operations to identify deficiencies related to freight movement and determine if safety and operational improvements are necessary. **Table 7** shows the prioritized improvement recommendations from the study.

TABLE 7. INTERSECTION RIGHT TURN RADII PROPOSE IMPROVEMENTS

RIGHT TURN INTERSECTION IMPROVEMENT PRIORITY MATRIX													
RIGHT TURN INTERSECTION LOCATION	ADJACENT TO INDUSTRIAL AREA	> 10 TRUCKS/HR.*	CRASHES REPORTED**	ENCROACHMENT ONTO ADJACENT LANE	ENCROACHMENT ONTO OPPOSING LANE	ENCROACHMENT ONTO PED. FACILITIES	DAMAGE IN ADJACENT R/W	SECTION LINE RD./ SECTION LINE RD.	TURN SW/ LESS THAN (2) ADJACENT LANES	TURN W/ LESS THAN (2) RECEIVING LANES	NO. OF FACTORS AFFECTING TRUCK TURNING	PRIORITY LEVEL OF IMPROVEMENT	BUDGETARY COST ESTIMATE OF IMPROVEMENTS***
NW 25 St./NW 97 Ave. SBRT	✓	✓	✓	✓	✓	✓	✓	✓			8	1	\$ 47,000.00
NW 25 St./NW 97 Ave. NBRT	✓	✓	✓	✓	✓	✓	✓	✓			8		\$ 36,400.00
NW 36 St./NW 82 Ave. WBRT		✓	✓	✓	✓	✓	✓			✓	7		\$ 40,900.00
NW 58 Ave./NW 97 Ave. WBRT	✓	✓		✓			✓	✓		✓	6	2	\$ 39,700.00
NW 58 St./NW 82 Ave. WBRT	✓	✓		✓	✓		✓			✓	6		\$ 16,900.00
NW 41 St./NW 87 Ave. NBRT		✓		✓	✓	✓	✓			✓	6		\$ 54,900.00
NW 36 St./NW 87 Ave. WBRT		✓	✓	✓		✓	✓	✓			6		\$ 39,400.00
NW 36 St./NW 82 Ave. EBRT		✓	✓	✓	✓	✓				✓	6		\$ 43,200.00
NW 36 St./NW 79 Ave. WBRT		✓	✓	✓	✓	✓	✓				6		\$ 38,000.00
NW 34 St./NW 117 Ave. NBRT	✓	✓			✓		✓		✓	✓	6		\$ 12,000.00
NW 58 St./NW 84 Ave. SBRT	✓	✓		✓	✓		✓				5	3	\$ 43,400.00
NW 58 St./NW 82 Ave. SBRT	✓	✓		✓	✓		✓				5		\$ 1,600.00
NW 36 St./NW 82 Ave. NBRT		✓	✓	✓		✓	✓				5		\$ 2,800.00
NW 34 St./NW 112 Ave. (curved rd.)	✓	✓		✓	✓		✓				5		\$ 7,400.00
NW 58 St./NW 82 Ave. EBRT	✓	✓			✓					✓	4		\$ 35,600.00
NW 58 St./NW 84 Ave. EBRT	✓	✓			✓					✓	4		\$ 33,500.00
NW 58 St./NW 84 Ave. WBRT	✓	✓					✓			✓	4		\$ 2,600.00

Source: City of Doral Truck Turning Assessment

PROGRAMMING/FUNDING DOCUMENTS

This section documents many planned projects from State, County and City government agency plans. In order for projects to move to construction, they must be prioritized and funded and/or programmed through several Federal, State and locally required documents including:

- FDOT Work Program Fiscal for both District 6 and the Turnpike
- Miami-Dade TPO Transportation Improvement Program
- Miami-Dade TPO Long Range Transportation Plan
- City of Doral Capital Improvement Plan
- FDOT SIS 2nd Five-Year Plan
- FDOT SIS Unfunded Multi-Modal Needs Plan

Table 8 provides a summary of all the projects in the study area that have funds programmed and/or are in one or more of the required fiscal planning documents. As part of the next steps of the study the programming plans shown on **Table 8** will be cross referenced to all of the planning documents discussed earlier in this section to identify projects that are

planned – but have not been through the environmental phase. These projects will be candidates for recommended short-, mid-, or long range recommendations for advancement from this study.

The candidate projects will also be cross referenced between fiscal documents to assess consistency on scheduling, projects limits, type of work, and the requirements for proposed advancement. Consistency between documents – especially the TIP and the LRTP are a requirement to receive Federal funding. In addition projects proposed for advancement from outer years may also require a LRTP Amendment if they are advanced multiple planning horizons.

The TPO TIP is the five year plan and is shown on **Figure 9**. The TIP will be used to build the Team’s analysis network for Existing plus Committed transportation infrastructure scenario. Projects to be constructed in the TIP and the City CIP be considered as committed as they are most likely not to change and coded into the travel demand model for analysis.

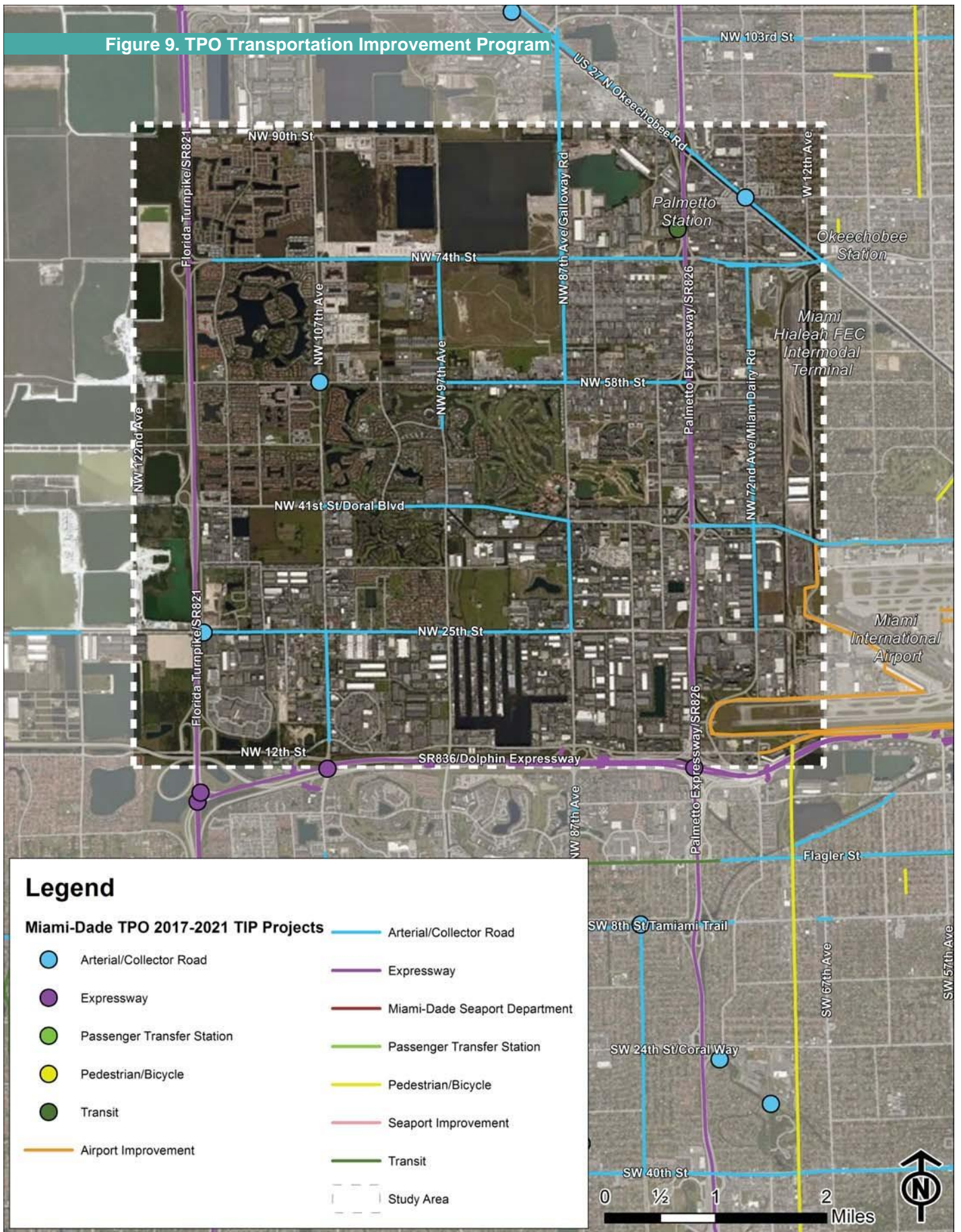
TABLE 8. ROADWAY IMPROVEMENTS INCLUDED IN PLANNING AND PROGRAMMING DOCUMENTS

Facility	Limits of Work	Type of Work	Phase	FY
Florida Department of Transportation				
SR 826/Palmetto Expressway	From East of NW 17th Ave to West of NW 32th Ave	Add Lanes & Reconstruct	Preliminary Engineering	2018
SR 826/Palmetto Expressway	From East of NW 57th Ave to I-75 to North of Canal C-8 Bridge	Add Lanes & Reconstruct	Preliminary Engineering	2018
SR 93/I-75 Express Lane System	From NW 170 St to HEFT Interchange	Add Special Use Lane	Under Construction	2018
SR 826/Palmetto Expressway	From East of NW 32nd Ave to East of NW 57th Ave	Add Lanes & Reconstruct	Preliminary Engineering	2018
I-75 Express Bus	I-75 Express Bus to Palmetto Station	Operation & Maintenance	Operation & Maintenance	2018
SR 826/Palmetto Expressway	From NW 154th St to NW 17th Ave	Add Special Use Lane	Right of Way & Utilities	2019
SR 973/NW 87th Ave	From NW 7th St to NW 800 Block	Intersection Improvement	Under Construction	2019
SR 826/Palmetto Expressway	From West of NW 17th Ave to I-95 Express Lanes	Add Lanes & Reconstruct	Preliminary Engineering	2020
SR 25/Okeechobee Rd	From East of NW 87th AVE to NW 79th AVE	Add 2 to 8 Lanes & Reconstruct	Planned	2024
SR 25/Okeechobee Rd	From East of NW 116th Way to East of NW 87th Ave	Add Lanes & Rehab Pavement - Modify Intersection	Planned	2025
Truck Parking Facility Site V	From Turnpike to NW 74th St	Truck Parking Facility	Planned Construction	2025
Truck Parking Facility Site X	At Dolphin / Palmetto Expressway Int	Truck Parking Facility	Planned Construction	2025
SR 826 / Okeechobee Rd Intersection	From SR 826 to US 27th/Okeechobee Rd		Construction	2035
NW 25th St Viaduct	From NW 82nd to Turnpike	Potential SIS Facility	Planned	2045
Florida Department of Transportation - Rail				
CSX - Tri-Rail Dolphin Extension (Phase 1)	From Miami Intermodal Center to SW 137th Ave	Potential SIS Facility - New Rail Service	Planned	2025
Okeechobee Link	From Miami Intermodal Center to American Dream Mall	New Rail Service	Planned	2025
Palmetto Metrorail Intermodal Terminal	At SR 826 & NW 74th St	Potential SIS Facility - Transit Improvements	Planned	2025
Palmetto Metrorail Intermodal Terminal	At SR 826 & NW 74th St	Potential SIS Facility - Transit Improvements	Planned	2035
I-75 / Gragny Pkwy	From Miami - Dade College North Campus to SR 821 / HEFT	Potential SIS Facility - New Rail Service	Planned	2045
Kendall / Homestead Extension	From Miami Intermodal Center to Homestead	Potential SIS Facility - New Rail Service	Planned	2045
Palmetto Metrorail Intermodal Terminal	At SR 826 & NW 74th St	Potential SIS Facility - Transit Improvements	Planned	2045
Miami-Dade County				
NW 41st St/117 Ave	NW 41st St / NW 117th Ave Flyover & connection to HEFT		Preliminary Engineering	2018
NW 58 St	From NW 97th Ave to SR 826	Road Reconstruction	Preliminary Engineering	2018
NW 82nd Ave	NW 82nd Ave to SR 826/838 Interchange	New Connection	Preliminary Engineering	2018
NW 25th St	Widen + 2/4 Lanes Widen to 6 Lanes		Preliminary Engineering	2019
NW 87th Ave	From NW 74th St to NW 103rd St	New Road Construction - Add 2 Lanes	Preliminary Engineering	2019
NW 82nd Ave	Widen from 2 to 4 Lanes - NW 25th St to NW 41th St	Add 2 Lanes & Reconstruct	Planned	2040
NW 82nd Ave	Widen to 3 Lane Rd to NW 10th St, New 4 Lane Rd to NW 12th St	Add 4 Lanes & Reconstruct	Planned	2040
NW 117th Ave	Widen NW 25th St to NW 41st St & part NW 25th St connect to HEFT		Planned	2040
NW 122 Ave	From NW 12th St - NW 41th St - New 2 Lane Rd to support the flow of truck traffic From SR-821 (HEFT)	Add 2 Lanes & Reconstruct	Planned	2040

TABLE 8. ROADWAY IMPROVEMENTS INCLUDED IN PLANNING AND PROGRAMMING DOCUMENTS - CONTINUED

Miami-Dade Expressway Authority				
NW 12th St Park & Ride Lot	Park & Ride Lot	Park & Ride Lots	Under Construction	2018
SR 836 EBS Park & Ride Lot	Park & Ride Lot at SW 8th St & SW 147th Ave	Park & Ride Lots	Under Construction	2018
SR 924 Extension	From SR 924 to I-95	Added Lanes	Planned	2025
SR 836 Managed Lanes	From NW 87th Ave to HEFT	Add Managed Lanes	Planned	2035
SR 836 Managed Lanes	From East of SR 826 to West of SW 27 Ave	Add Managed Lanes	Planned	2035
SR 836 Managed Lanes	From SR 836 to US 1	Add Managed Lanes	Planned	2035
SR 836 SW Extension	From NW 137th Ave to SW Kendall	Add Managed Lanes	Planned	2035
SR 836 Access Ramp	From West of NW 107th Ave WB to SR 836 Extension	Design & Construction of an Access Ramp	Planned	2040
Turnpike Authority				
HEFT	From NW 106th St to I-75 (Mile Post 34 to MP39)	Add 6 to 10 Lanes W/EXP Lanes & Reconstruct	Preliminary Engineering	2019
HEFT	From SR836 to NW 106th St (Mile Post 26 to 34)	Add 6 to 8 LNS to 10 INC EXP Lanes & Reconstruct Include NW 41st Street NB Ramp	Design Build	2020
City of Doral				
NW 102nd Ave	From NW 66th St to NW 74th St	New Road Construction	Construction	2018
NW 117th Ave Bridge	Over Doral Boulevard	Roadway Connectivity	Construction	2018
NW 82nd Ave	From NW 27th St to NW 33rd St	Roadway Improvements	Construction	2018
NW 112th Ave	From NW 25th St to NW 34th St	Roadway Improvements	Construction	2018
Citywide Sidewalk & NW 102nd Ave	From NW 17th St - NW 25th St Bike Path	Bicycle / Pedestrian Connectivity	Construction	2018
Turnpike Trail Bridge	Turnpike Trail Bridge Over Doral Boulevard	Bicycle / Pedestrian Connectivity	Construction	2018
NW 99th Ave	From NW 64th St to NW 66th St	New Road Construction	Construction	2019
NW 102nd Ave	From NW 62th St (300' N) & NW 62th St (660' E)	Roadway widen capacity	Construction	2019
NW 112th Ave & NW 114th Ave	From NW 41st St - NW 58th St Two-Way Pair	Roadway Improvements	Construction	2019
NW 114th Ave	Southbound NW 114th Ave Right Turn Lane @ NW 58th St	Roadway Improvements	Construction	2019
NW 114th Ave	Extension of NB NW 114th Ave Right Turn Lane @ NW 58th St	Roadway Improvements	Construction	2019
Traffic Monitoring Cameras	Traffic Monitoring Cameras	Congestion Management	Construction	2019
NW 114th Ave	From NW 34th St to NW 39th St	Roadway Improvements	Construction	2020
NW 117th Ave	From NW 58th St to North	New Road Construction	Construction	2020
NW 34th St	From NW 117th Ave to NW 112th Ave	Roadway Improvements	Construction	2021

Figure 9. TPO Transportation Improvement Program



SECTION 2: STUDY AREA CHARACTERISTICS

SIS FACILITIES

Figure 1 (page 3) shows the project study area which is generally bounded by SR 836 to the South, NW 122nd Avenue to the West and NW 90th Street to the North. **Figure 10** shows the study area in relation to the FDOT SIS. The study area is surrounded by SIS roadway facilities including the HEFT, SR 826, SR 836, and Okeechobee Road. In addition, the eastern study area includes the most active SIS Freight Terminal Hub in the State and is adjacent to the busiest SIS Airport in the State. Note that **Figure 10** also shows the 25th Street Viaduct as a SIS Connector from the MIA Cargo area to SR 826. The 2nd phase of the viaduct was completed in 2016 and we recommend that SIS maps and tables be updated to show the Connector's western termini be extended from SR 826 to NW 84th Avenue.

It also should be noted that the SIS Unfunded Needs Plan includes a proposed year 2045 project to extend NW 25th Street from NW 82nd Avenue to the Turnpike. The project is recommended for PD&E in this study. If an elevated viaduct alternative is recommended the SIS Connector designation could be extended the length of the improvement.

FUNCTIONAL CLASSIFICATION

The Federal Highway Administration (FHWA) requires that the roadway network be classified by functionality. **Figure 11** shows the study area street and highway network and its designated functional classification. The designations are the responsibility of FDOT in coordination with partners where the system components are grouped into classes, or systems, according to the character of service they provide. **Figure 11** shows that for the most part there is a one mile grid system of Freeways and Expressways that are classified as Principal Arterials and supported and connected to a system of other Principal Arterials and Minor Arterials.

Figure 11 also shows some Major and Minor Collector roadways that are intended to connect local uses to the higher level Arterial system. The system of collectors should form a ½ mile grid to relieve arterials from carrying some local trips. **Figure 11** shows that the presence of collectors are inconsistent from section to section and that a number of collectors do not connect between arterials. Note that it was documented in the background planning documents section of this report that the City has identified a number of locations to reconnect the grid.

CONTEXT CLASSIFICATION

FDOT recognizes that its transportation system must be developed based on the context of its surroundings. The goal is to routinely plan, design, construct, reconstruct and operate a context-sensitive system of Complete Streets. To this end, a context classification system comprising eight context classifications has been adopted. The context classification of a roadway, together with its transportation characteristics, will provide information about who the users are along the roadway, the regional and local travel demand of the roadway, and the challenges and opportunities of each roadway user including freight/trucks. The context classification and transportation characteristics of a roadway will determine key design criteria for all non-limited-access state roadways. **Figure 12** shows the designated classification for the study area.

RAILROAD NETWORK

There is an extensive railroad network in the study. **Figure 13** shows that there are 4 railroad systems in the study area including the Florida East Coast Railway, the CSX, MetroRail and the South Florida Rail Corridor (SFRC) which is owned by FDOT. The Figure also shows that there are 24 at grade railroad crossings and the southeast corner of the study area appears to have opportunities for connections as the SFRC, CSX and FEC all converge.

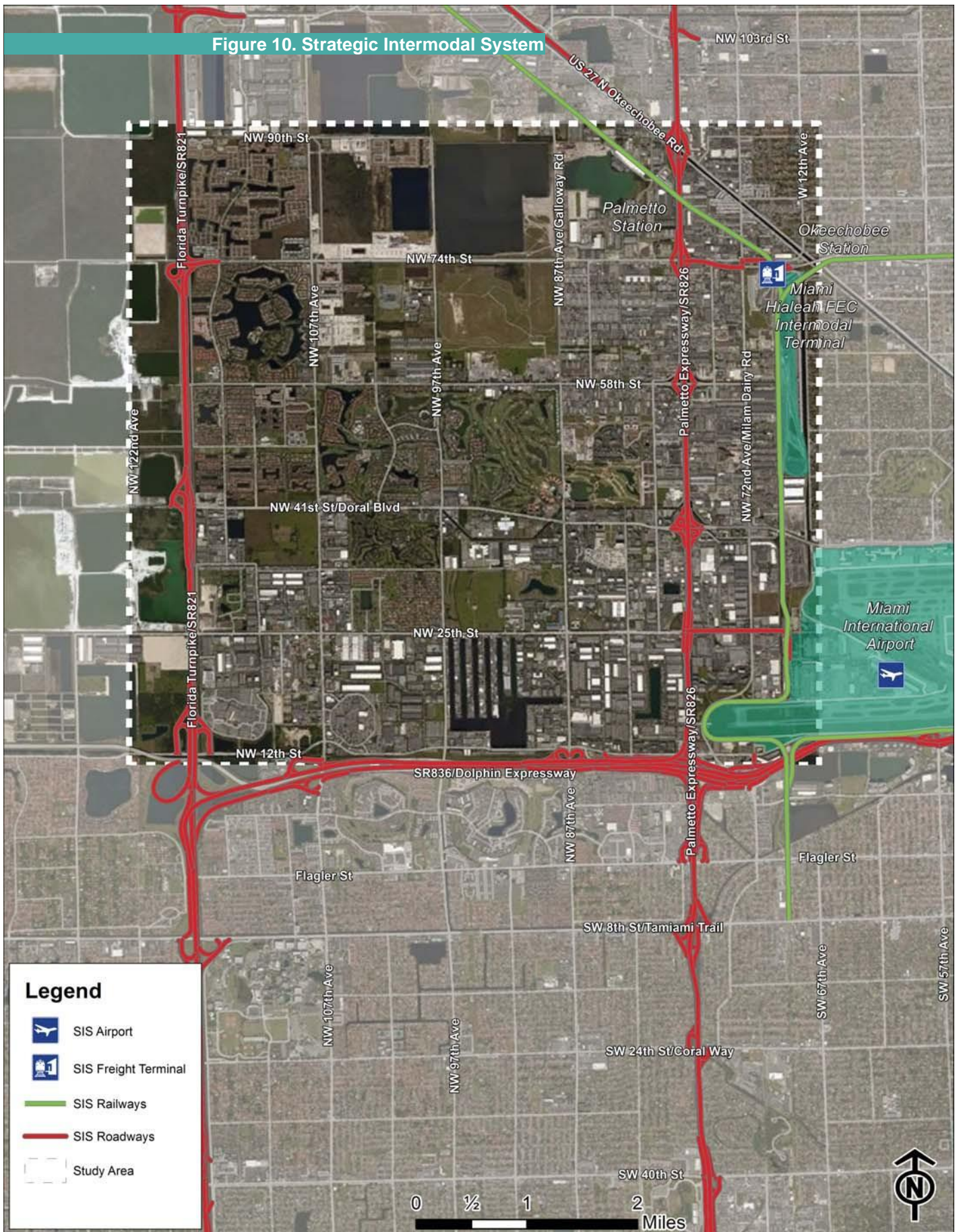


PORTMiami



SFRC - Train Station

Figure 10. Strategic Intermodal System



Legend

- SIS Airport
- SIS Freight Terminal
- SIS Railways
- SIS Roadways
- Study Area



Figure 11. Functional Classification

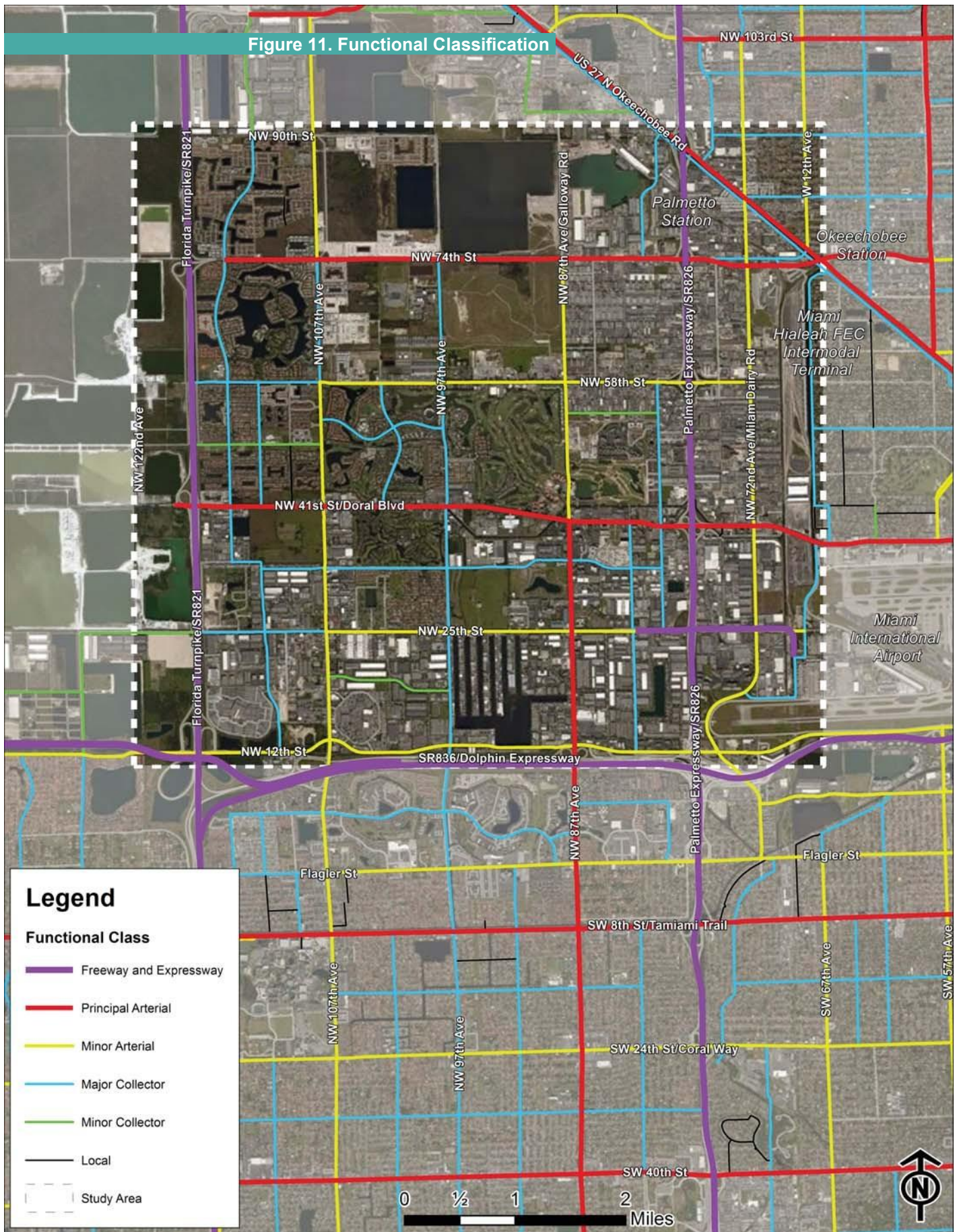
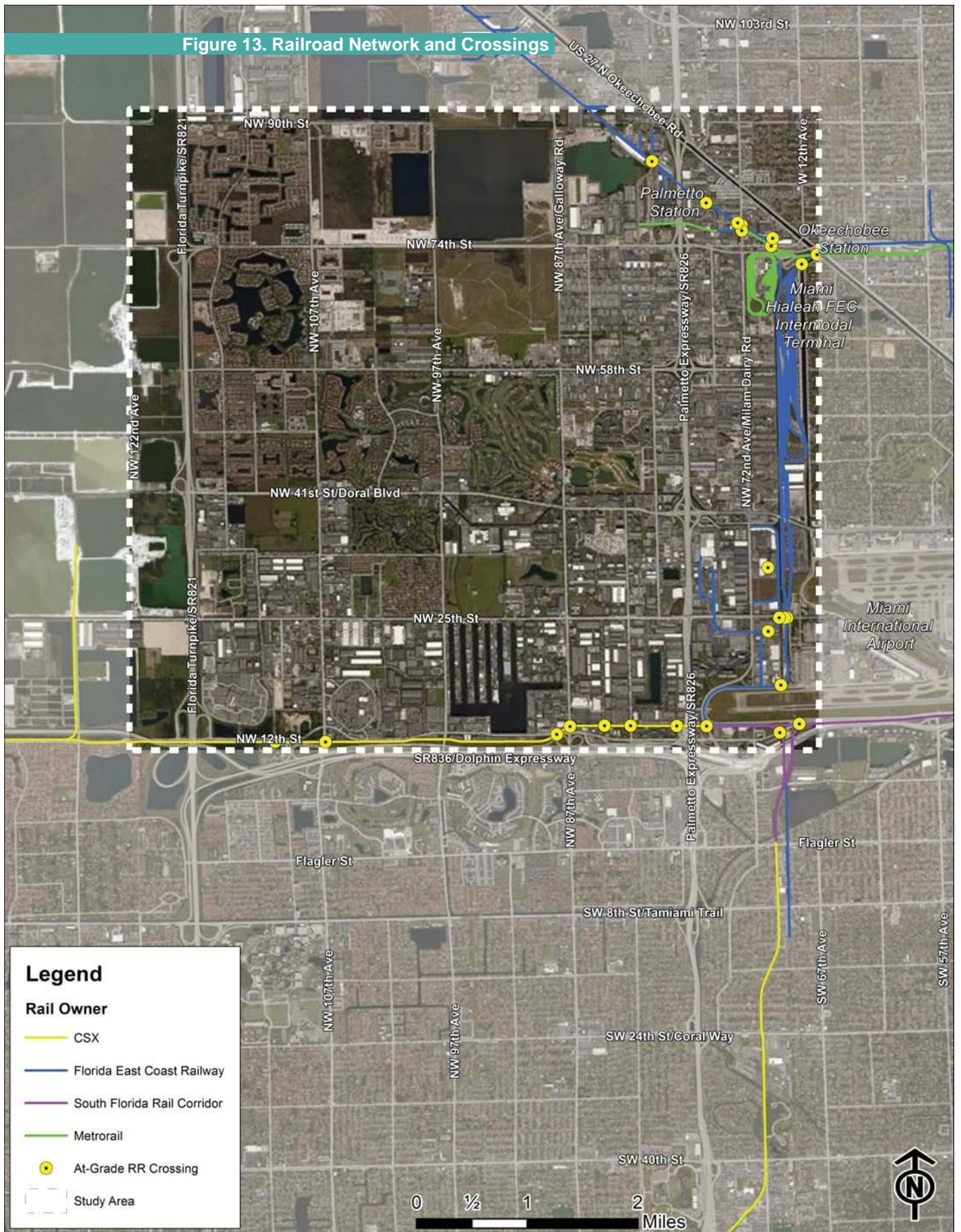


Figure 12. FDOT Context Classification



Figure 13. Railroad Network and Crossings



LAND USE

One of the most significant challenges for this study will be maintaining freight mobility in a highly congested, growing mixed use urban area. The Doral Area is a center of regional and global logistics activity. Throughout the day truck, rail, and intermodal activities are in motion. During the morning and evening peak periods the area experiences congestion as the influx of commuter work trips degrades network operations. In addition to freight and commuter traffic the transportation network also supports additional truck traffic generated by the County Resource Recovery Center and Solid Waste Department and the South Florida Water Management District Field Office.

Growth in the freight industry is expected to place greater demand on the transportation network in a short time frame due to the opening of the new locks at the Panama Canal and the completion of major freight projects in the area including public and private investments at PORTMiami, the on-port FEC rail restoration, Flagler Rail yard investments, SR 826/836 interchange improvements, and most recently the 25th Street Viaduct connection between the Doral Logistics area and the MIA Cargo Area.

At the same time the area has become increasingly attractive for residential, commercial, and hotel/resort development. In the last 19 years Doral’s population has grown from 3,126 residents in 1996 to more than 56,000 residents in 2015 and the area in general has seen growth in regional shopping malls and hotels. **Table 9** provides the breakdown of Doral’s approved development. Growth is expected to continue as the City moves forward with the development of a dense mixed use downtown core. Our Team has coordinated with City of Doral staff and tabulated approved developments through 2021. The Table shows that there will be large increases in non- freight related land uses and that the population in Doral will grow by an estimated 37,000 residents to almost 92,000 in 2021. **Figures 14, 15, and 16** show the specific locations of each project by Non- Residential, Mixed Use, and Residential Development. Note that the approved development for warehousing in the study area is very small in comparison to other uses.

TABLE 9. DORAL APPROVED DEVELOPMENT

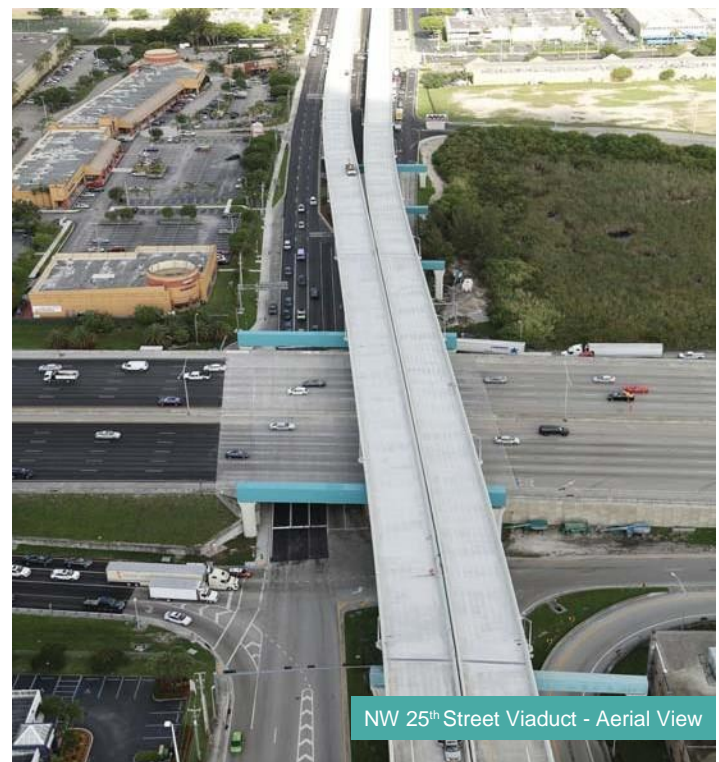
APPROVED DEVELOPMENT	
Sq feet Commercial	4,135,211
Sq feet Warehouse	13,650
Sq feet Municipal	224,790
Hotel Rooms	812
Dwelling Units	14,784

Figures 17 through 23 provide a series of maps on land uses, drainage and soils. **Figure 17** shows the Miami-Dade Existing Land Use Map indicating that the core of the study includes non-freight uses and the edges and adjacent areas are freight-centric as designated Airports, Freight Terminals, Industrial Extensive and Railroads. **Figure 18** highlights sensitive land uses in the study area that may need to be addressed as part of project development and environment study. **Figure 19** highlights existing freight specific uses and square footage, **Figure 20** identifies vacant parcels in industrial areas and **Figure 21** shows the Miami-Dade Future Land Use Map. **Figure 22** shows the Stormwater Drainage Infrastructure and **Figure 23** shows Soils Types.

The series of maps exemplifies the importance of Industrial and Intermodal uses in the area and will be the basis for developing growth scenarios in the travel demand model.



NW 25th Street Viaduct - Road View



NW 25th Street Viaduct - Aerial View

Figure 14. Approved Mixed Use Development

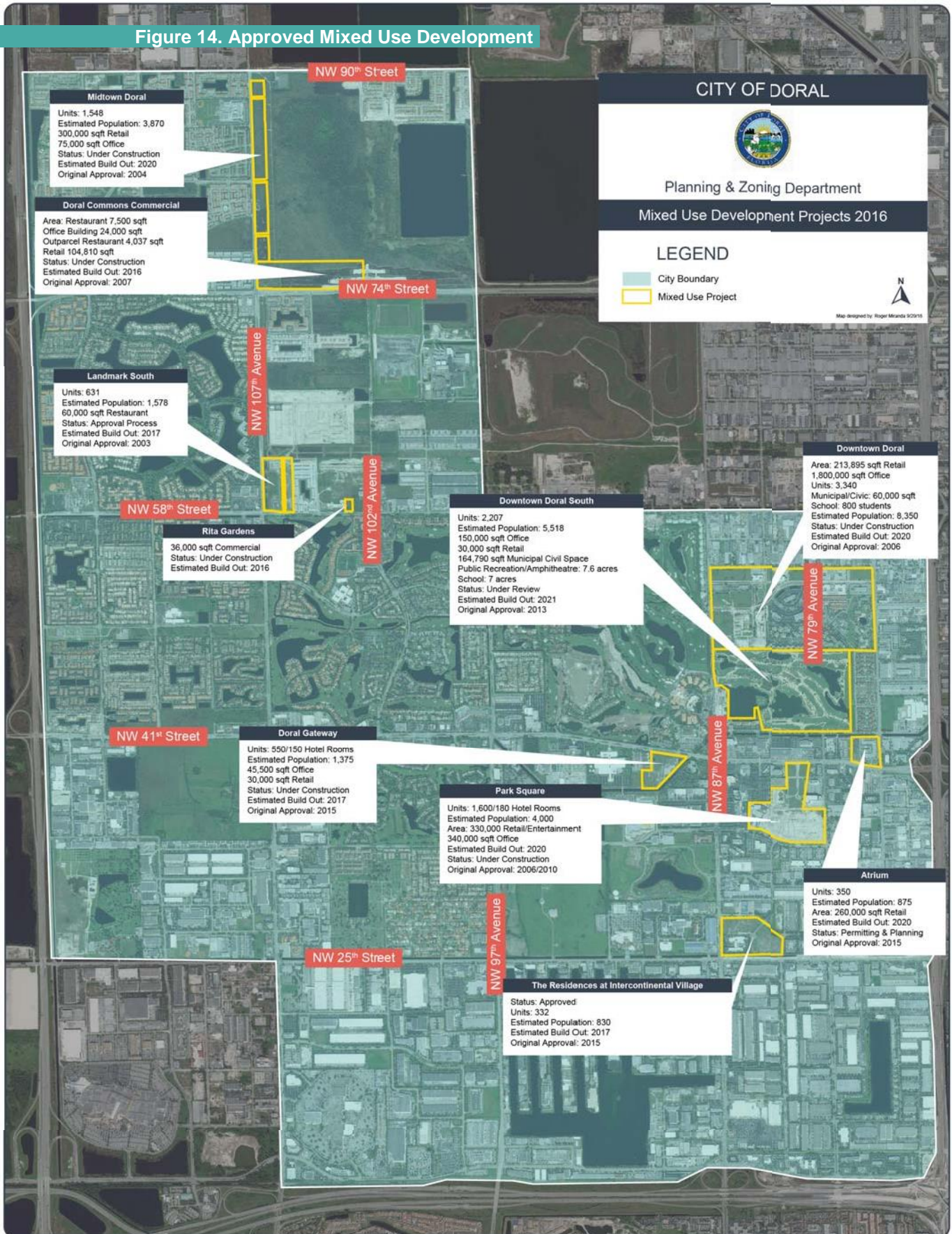


Figure 15. Approved Non-Residential Development

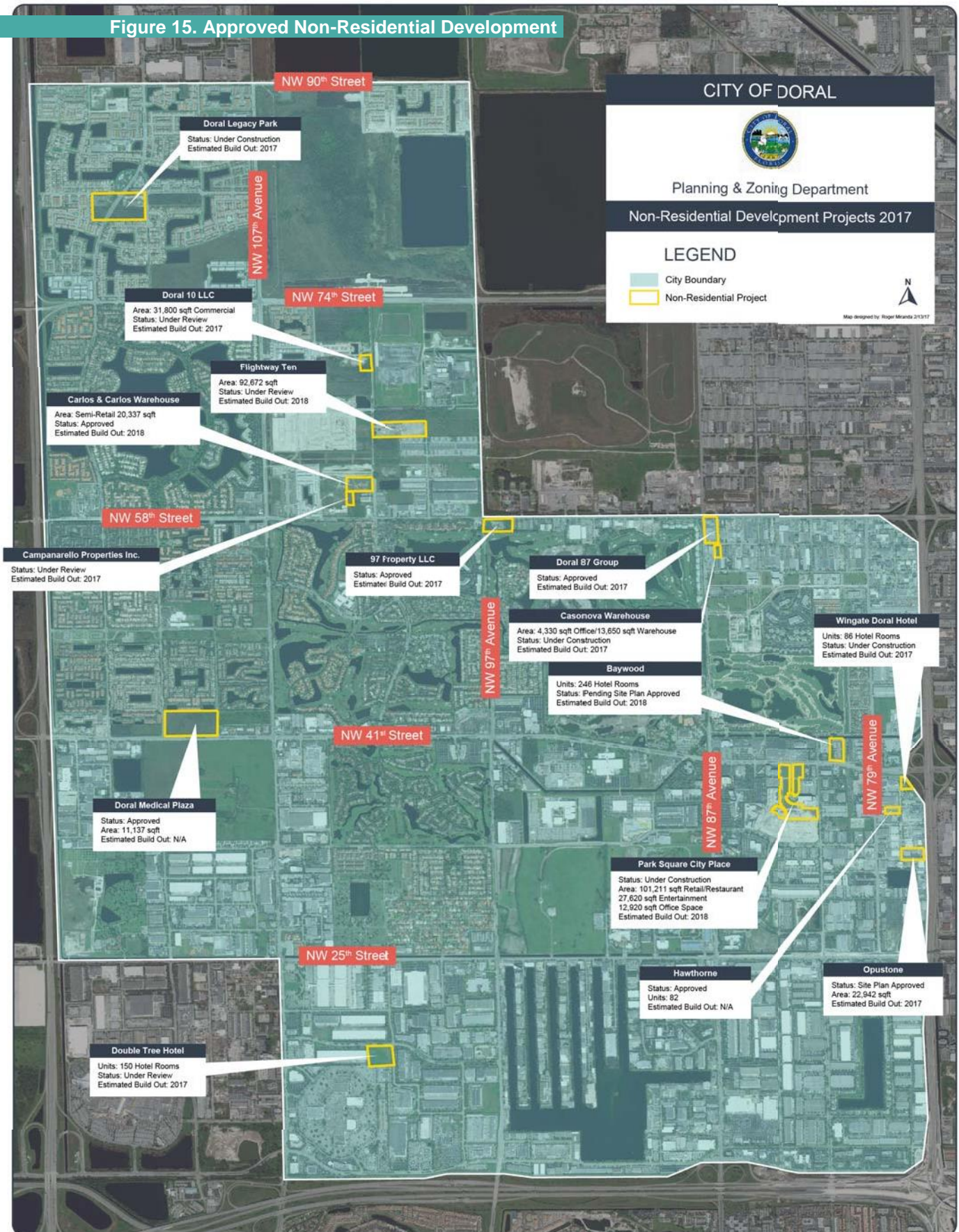
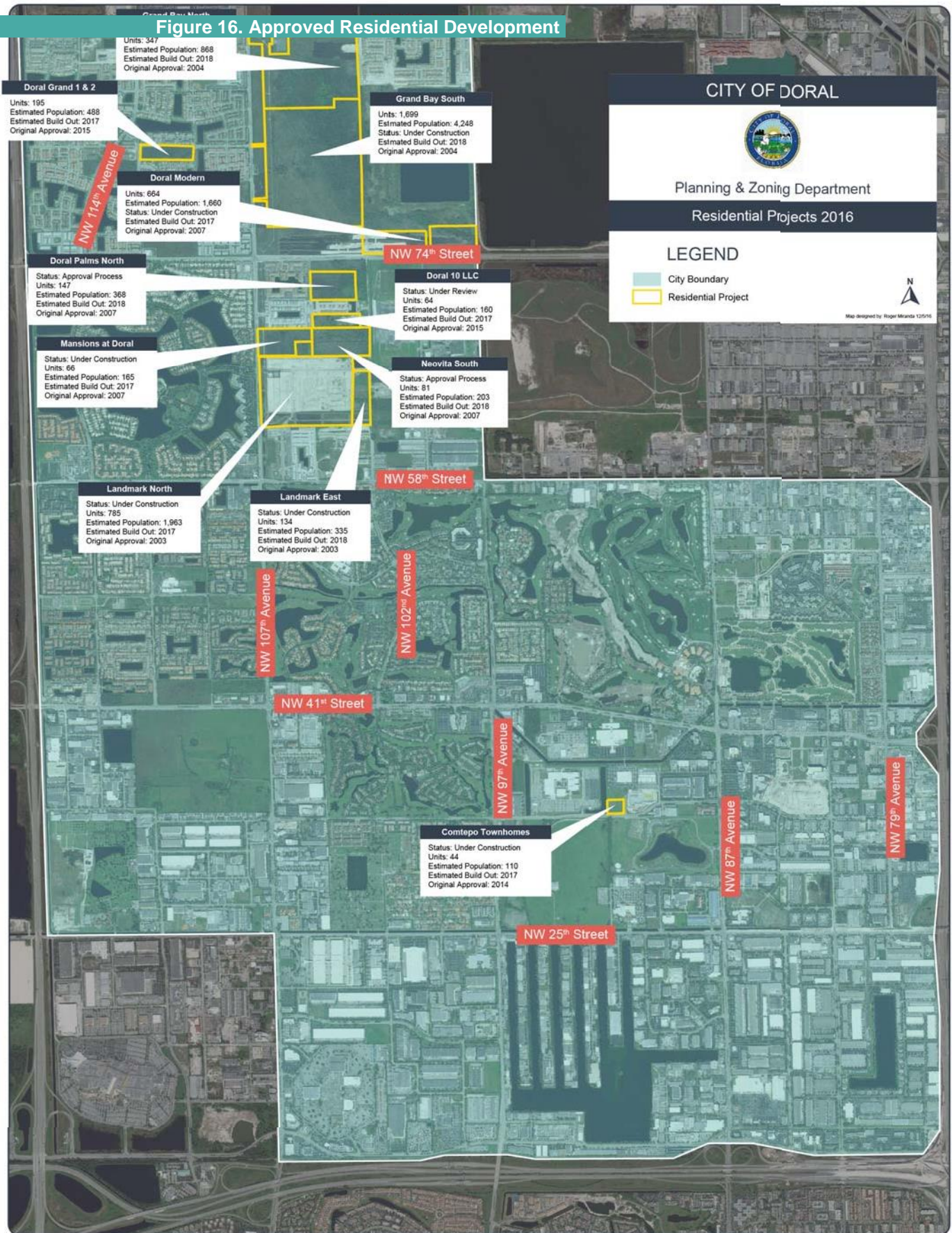


Figure 16. Approved Residential Development



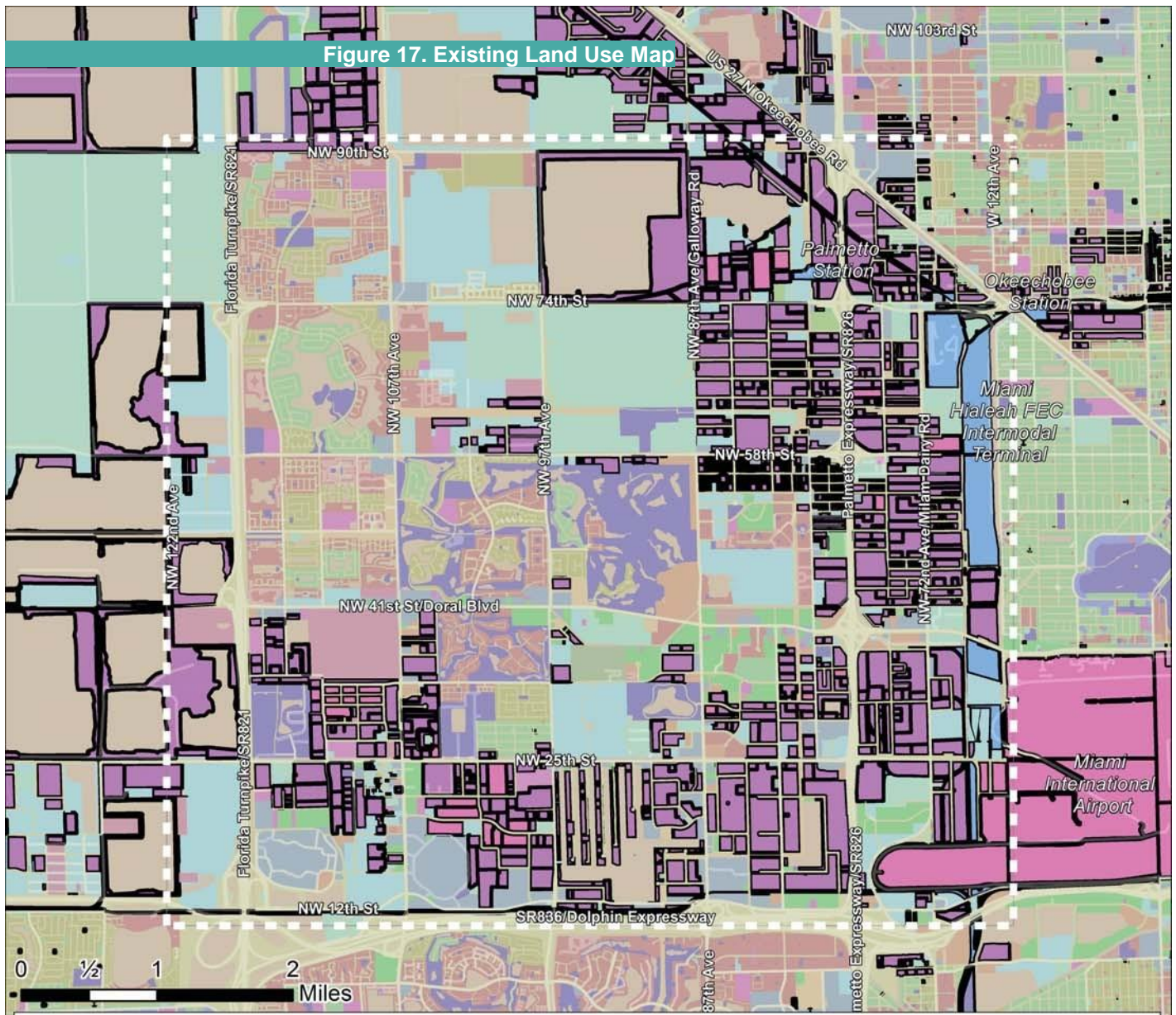


Figure 17. Existing Land Use Map

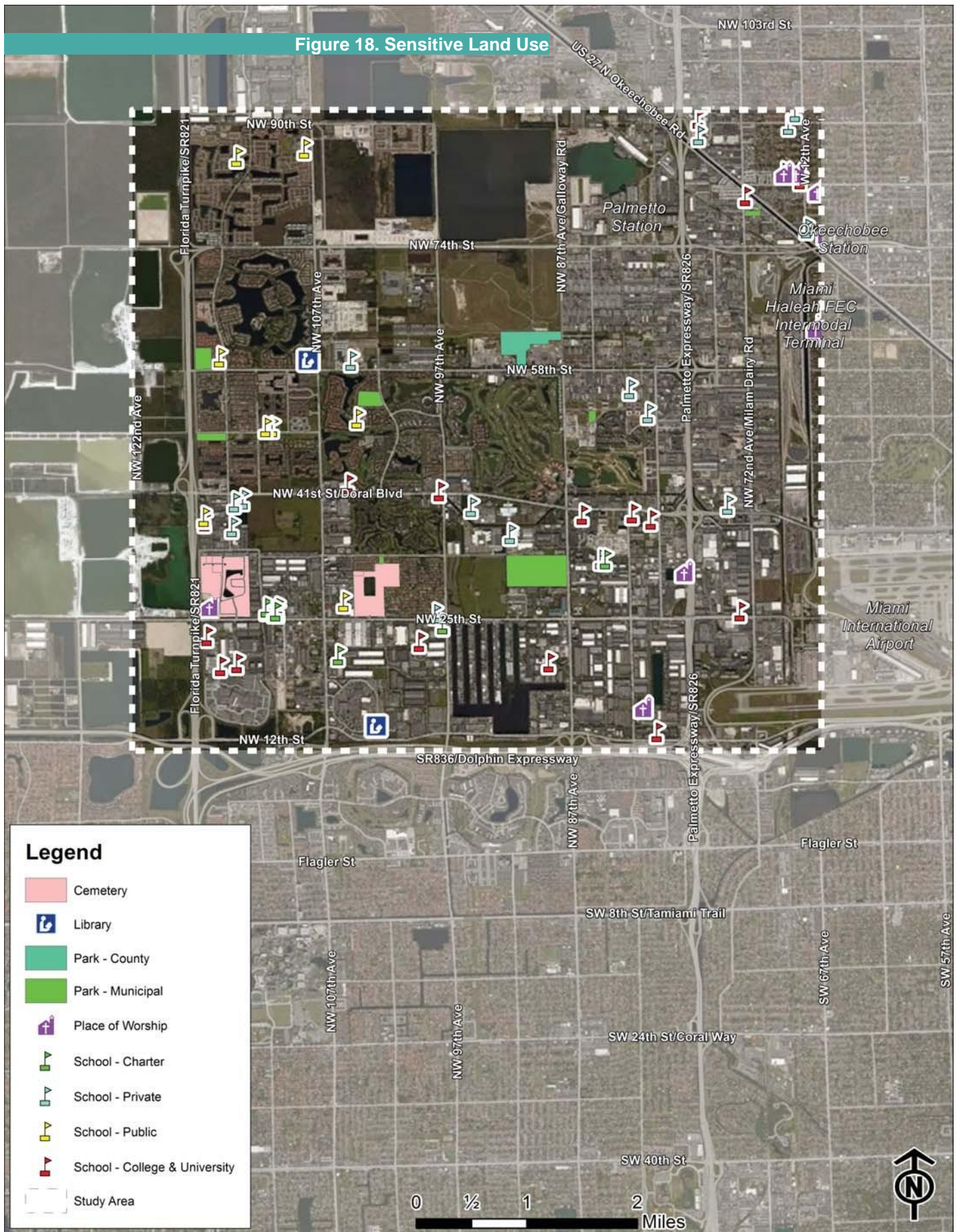
Legend

Current Land Use

- | | | |
|--|----------------------|--|
| Agricultural and Animal Facilities | Industrial Extensive | Roadways and Right of Way |
| Airports and Freight Terminals | Military Facilities | Single-Family - Low-Density |
| Communications | Multi-Family Housing | Single-Family Housing - Medium Density |
| Cultural, Parks and Recreation and Houses of Worship | Office Building | Single-Family - High Density |
| Educational Facilities | Oil and Gas Storage | Transient Residential (Hotel/Motel) |
| Government, Corrections and Public Services | Parking | Vacant |
| Hospitals and Nursing Homes | Shopping Centers | Water and Water Facilities |
| | Railroads | Study Area |



Figure 18. Sensitive Land Use



Legend

-  Cemetery
-  Library
-  Park - County
-  Park - Municipal
-  Place of Worship
-  School - Charter
-  School - Private
-  School - Public
-  School - College & University
-  Study Area

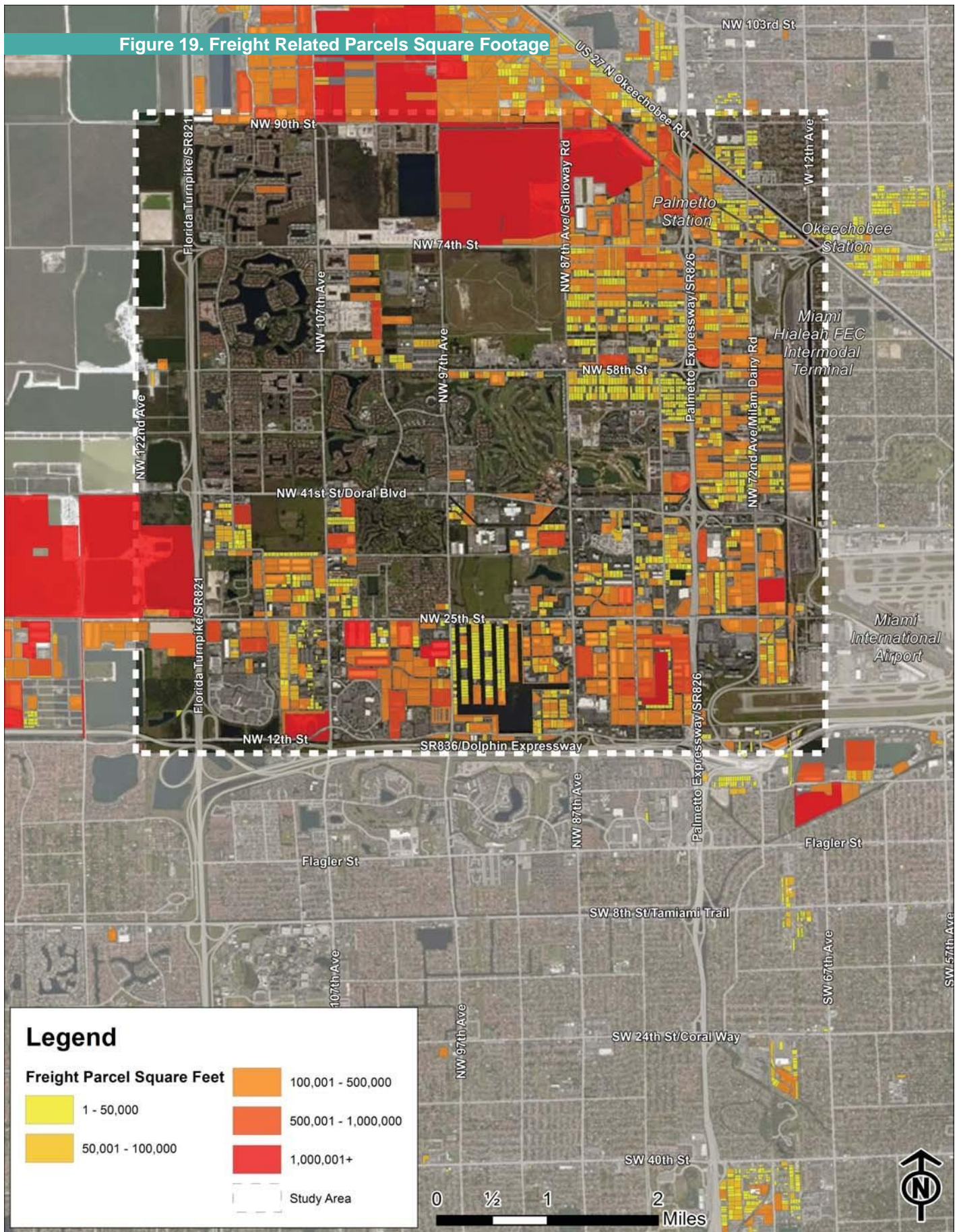


Figure 20. Vacant Parcels in Industrial Areas

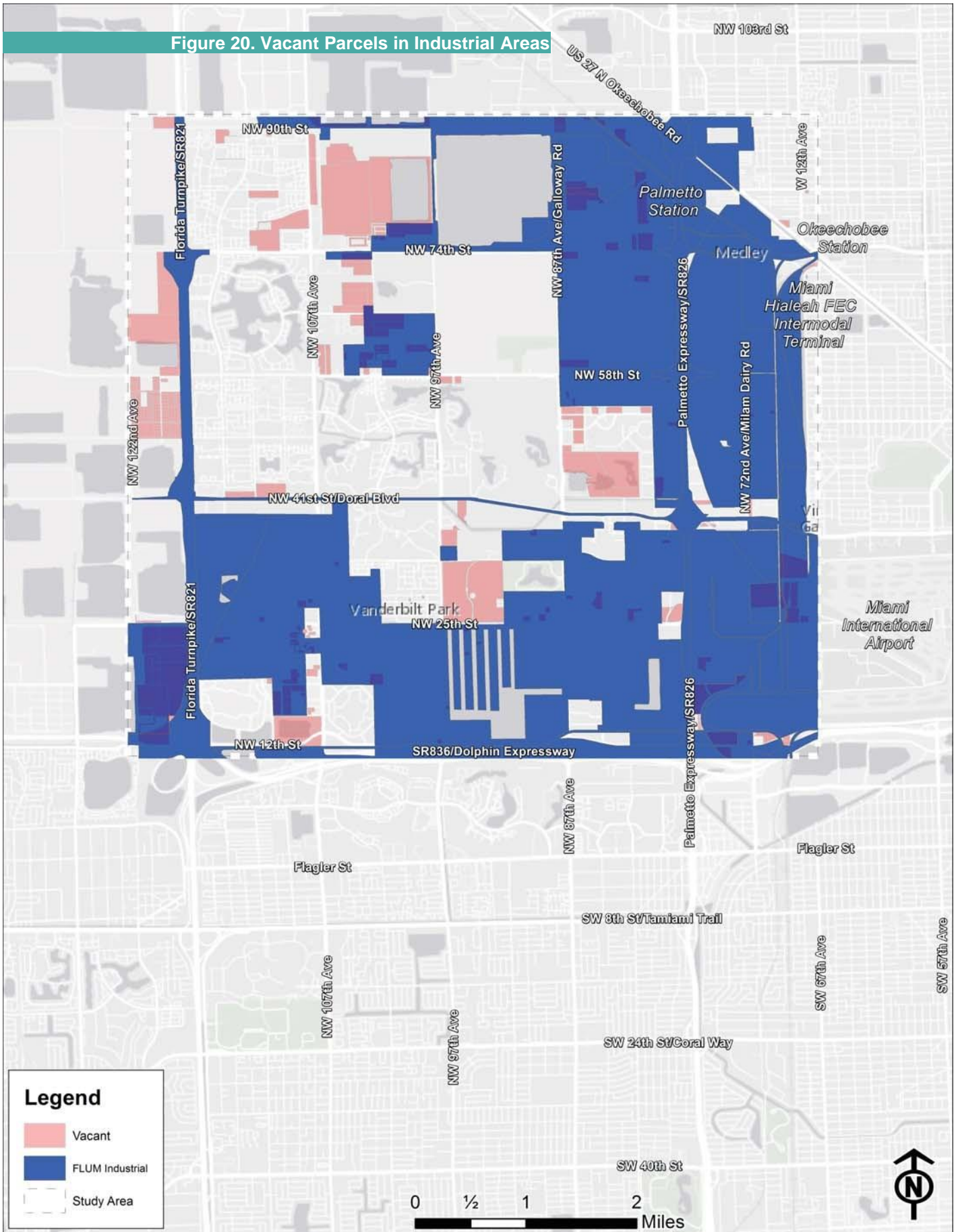
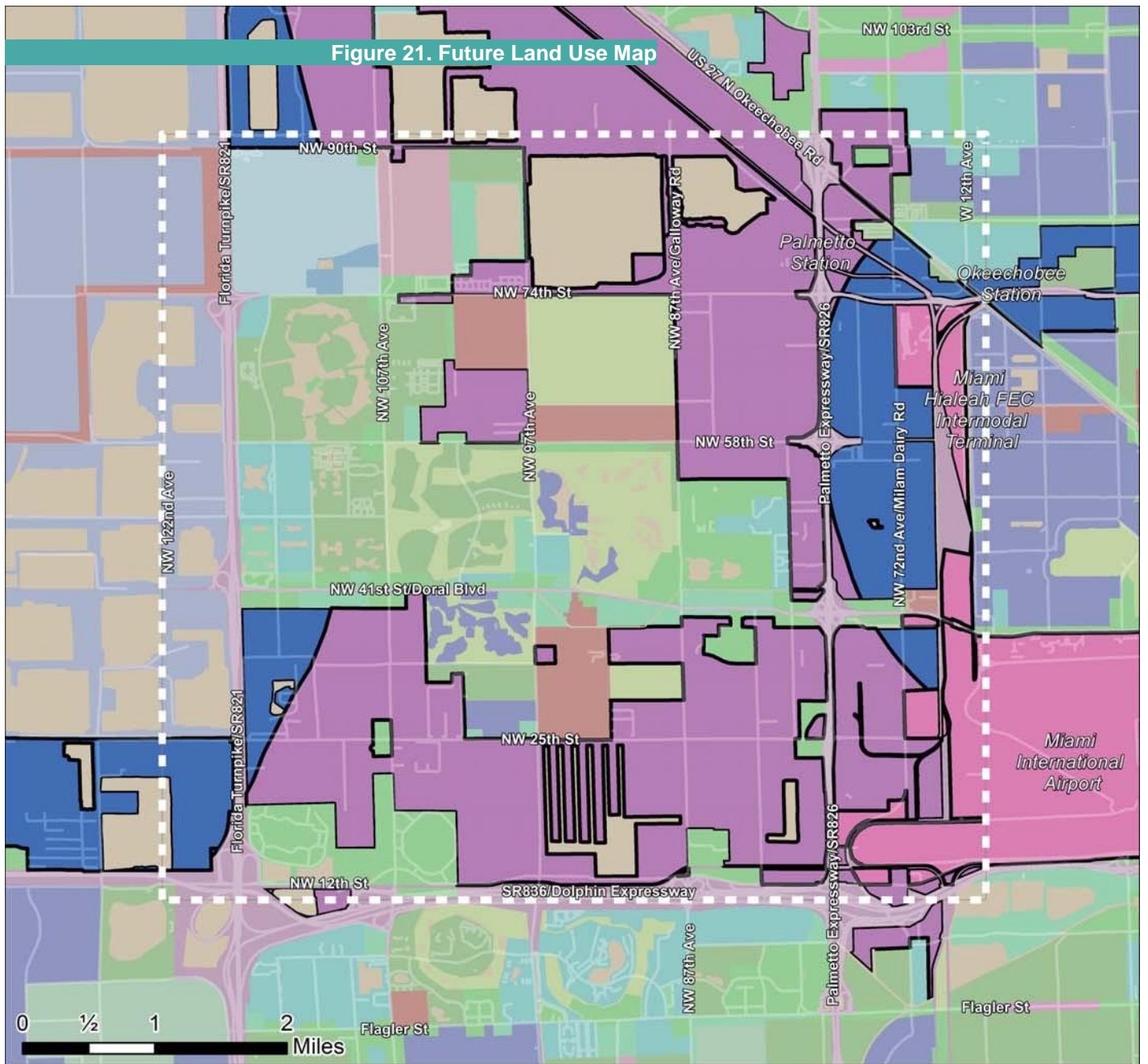


Figure 21. Future Land Use Map



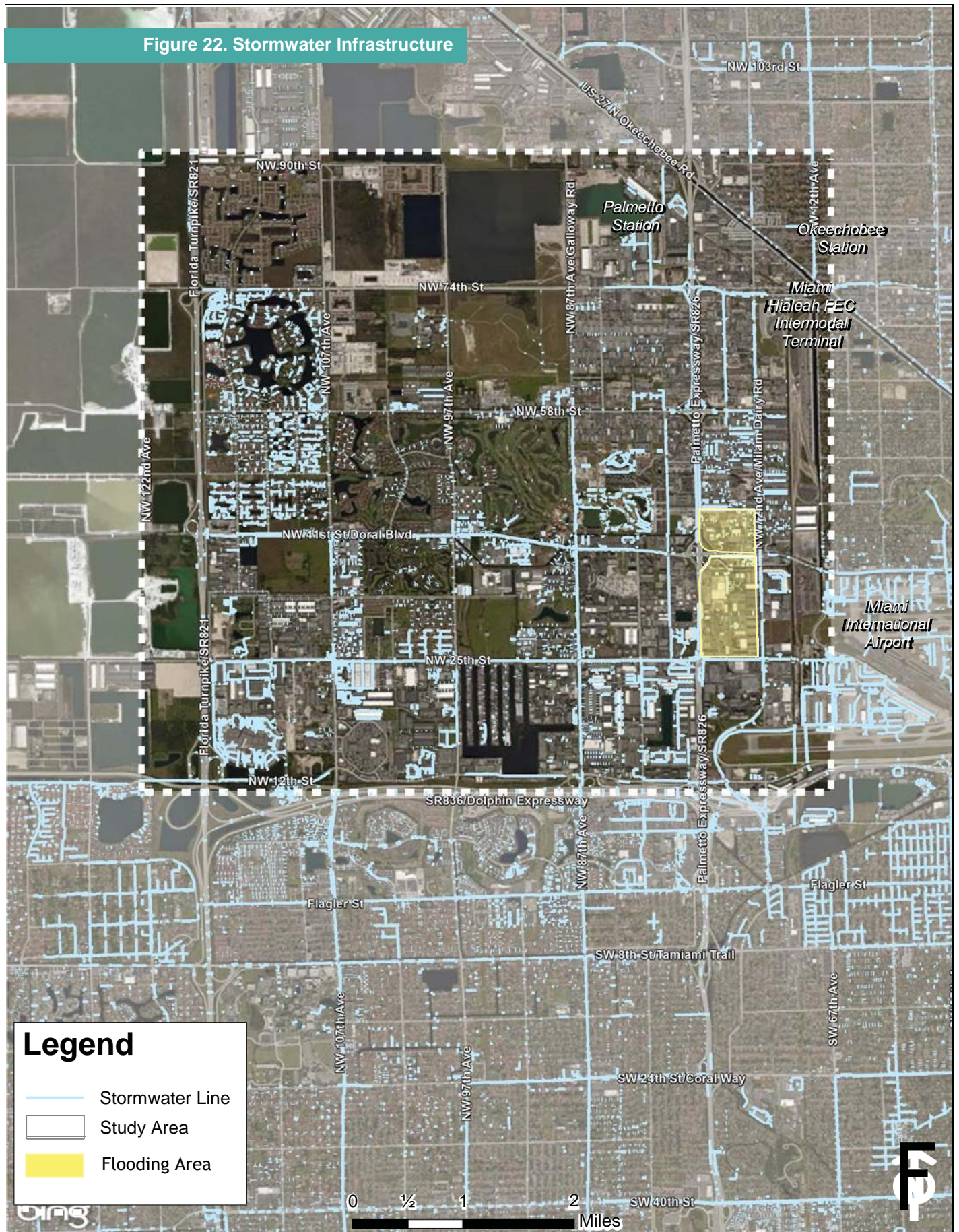
Legend

Miami-Dade CDMP Future Land Use

- | | | |
|---|--|----------------------------------|
| Agriculture | Low Density Residential 2.5-6 DU/AC | Open Land |
| Business and Office | Low Density Residential with Density Increase | Parks and Recreation |
| Environmentally Protected Parks | Low-Medium Density Residential with Density Increase | Restricted Industrial and Office |
| Estate Density Residential 1-2.5 DU/AC | Low-Medium Density Residential 6-13 DU/AC | Terminals |
| Industrial and Office | Medium Density Residential 13-25 DU/AC | Transportation (ROW, Rail, Etc.) |
| Institutions, Utilities and Communication | Medium-High Density Residential 25-60 DU/AC | Water |
| | Office/Residential | Study Area |



Figure 22. Stormwater Infrastructure

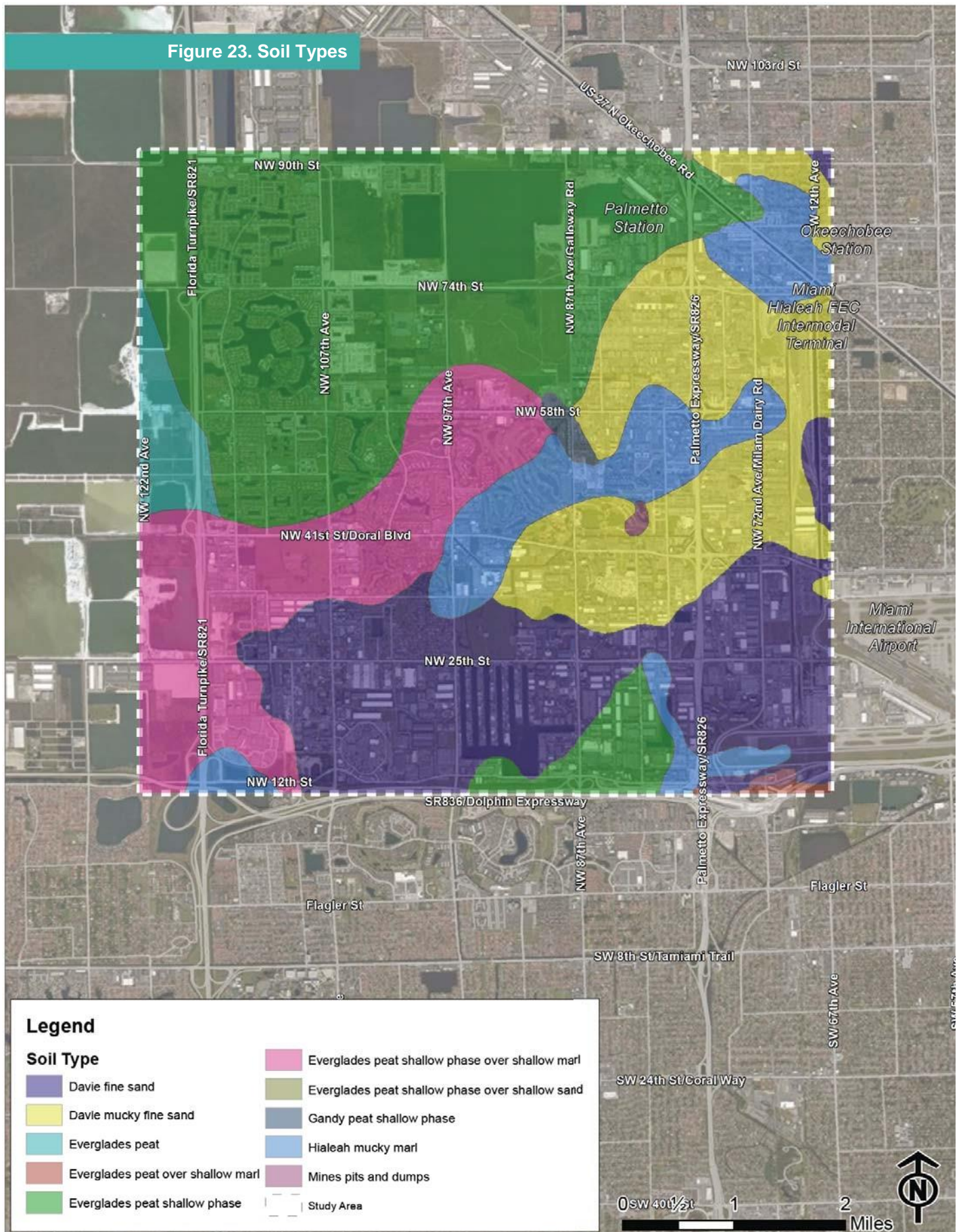


Legend

- Stormwater Line
- Study Area
- Flooding Area



Figure 23. Soil Types



Utilizing the Miami-Dade County GIS database we were able to ascertain the following information:

Existing Land Use Acreage:

Total Study Area = 23,103.7 Acres

- Airports/Freight Terminal uses = 460.2 Acres
- Industrial uses = 4,279.8 Acres
- Rail = 506.9 Acres

Existing Vacant Acreage:

- All vacant uses = 1,743.69 Acres
- Industrial uses = 622.2 Acres

Future Land Use Acreage:

- Total Study Area = 23,103.7 Acres
- Airports/Freight Terminal uses = 794.89 Acres
- Industrial and Office uses = 5,556.6 Acres
- Restricted Industrial and Office uses = 1,514.7

Tables 10 and 11 provide a comparison of 2015 and 2040 population and employment in the area based on the South East Regional Planning Model data. The tables show that the Doral study area will grow faster than Miami-Dade County as a whole for non-freight uses and slower than Miami-Dade County in freight related employment.

This information will influence the development of the future growth scenarios where low, medium, and high economic scenarios will be coded into the travel demand model. This review of land use also provides insight as to the Freight Corridors that will be the focus of the study. The following roadways are candidates for Freight Corridor designation and analysis:

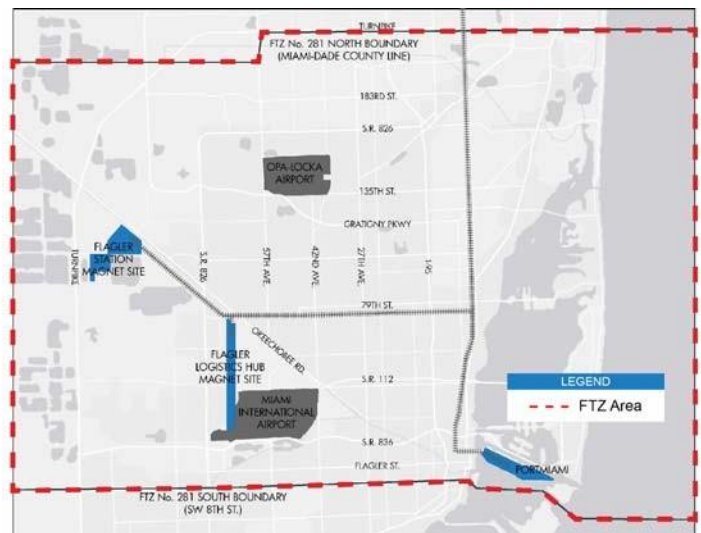
- SR 826/Palmetto Expressway through the study area
- NW 25th Street from NW 117th Ave to MIA Cargo Area
- NW 58th Street from NW 87th Ave to FEC
- NW 74th Street from NW 97th Ave to US 27
- NW 90th Street from E of FTE o NW 87th Ave
- NW 122nd Avenue from NW 12th Street to 74th Street
- SR 821/HEFT through the study area
- NW 97th Avenue from NW 12th St to NW 41st St
- NW 87th Avenue from NW 12th St to NW 41st St
- SR 836/Dolphin Expressway through the study area
- NW 72nd Avenue NW 12th Street to US 27
- NW 12th Street NW 122 Ave to 72 nd Ave

FOREIGN TRADE ZONE

Foreign Trade Zone (FTZ) 281 is the most recent trade zone designation in Miami-Dade County. **Figure 24** shows the zone boundaries. The entire study area is included within the zone as it covers all of North Miami-Dade County from SW 8th Street to the Broward County line.

This FTZ will be operated under the Alternative Site Framework’s (ASF) process. ASF is a streamlined process allowing Magnet and Usage-Driven sites. Magnet sites operate the same way that FTZs work today by designating an area in advance to attract business to the area. The South Florida Logistics Center is a magnet site located within the Study Area. Usage-Driven sites are for companies seeking to pursue FTZ business activity. In this case, the FTZ designation is tied to a specific company rather than an area and the designation is limited to the space needed by that company. In the event of a company relocating, the facility will no longer be designated as a Usage-Driven site and a new occupant would need to reapply. The FTZ is important to this study particularly for the development of the growth scenarios.

FIGURE 24. FOREIGN TRADE ZONE 281



Source: Miami-Dade County Foreign Trade Zone 281 Guidebook

TRANSIT

The study area is served by Miami-Dade Department of Transportation and Public Works (MDDTPW) Routes 7, 36, 71, 87, 132, 137, 238, Earlington Heights Route (952), Metrorail, and the City of Doral Trolley. The services provide a menu of options including:

- Light Rail (MetroRail)
- Limited Stop Service
- Express Service
- Local Bus
- Local Circulator

Figure 25 shows the routes and services in the study area. **Figure 26** shows some bus stop information and pedestrian and bicycle facilities.

Figure 25. Study Area Transit Services

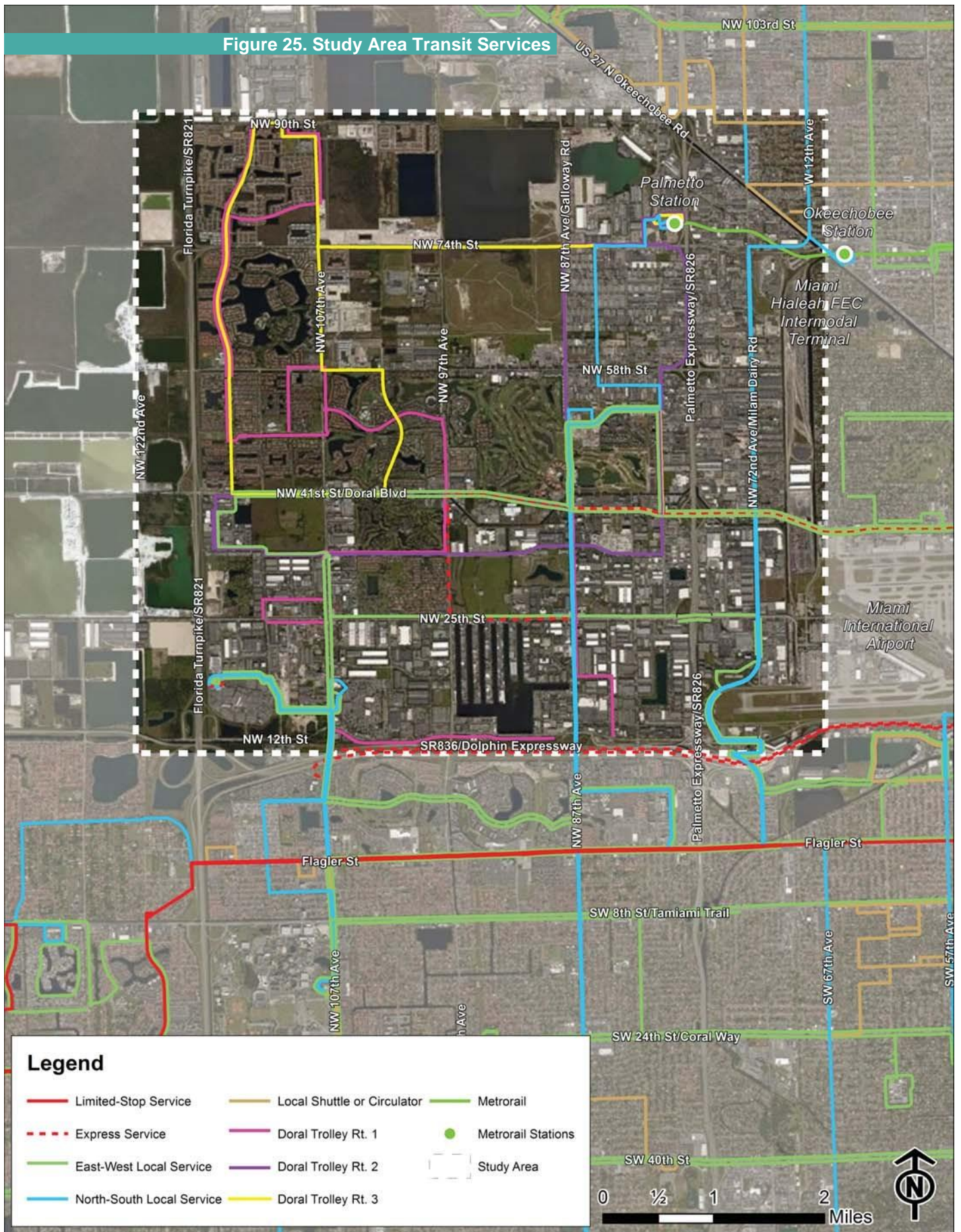


Figure 26. Transit, Pedestrian and Bike Facilities

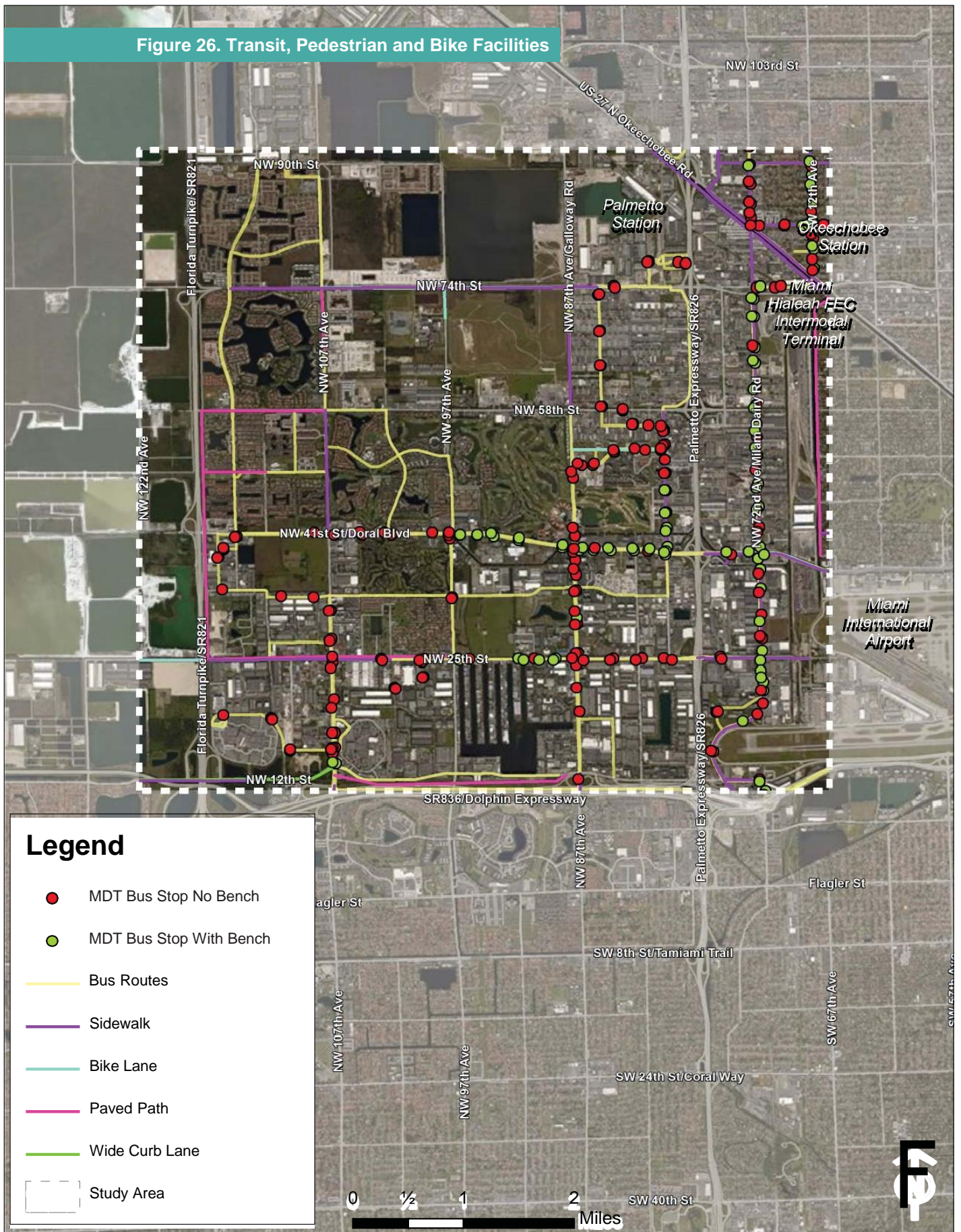


TABLE 10. DORAL STUDY AREA

Doral Study Area	2015	2040	Growth
Total Number of Households	19,828	27,936	41%
Total Population	59,896	89,103	49%
Total Employment	135,821	173,378	28%
Manufacturing Production Employment	14,901	17,575	18%
Manufacturing Office Support Employment	-	-	
Wholesale and Warehousing Employment	26,767	31,412	17%
Transportation Activity Employment	10,610	12,892	22%
Services Employment	49,149	67,618	38%

TABLE 11. MIAMI-DADE COUNTY

Miami Dade County	2015	2040	Growth
Total Number of Households	915,706	1,156,802	26%
Total Population	2,605,328	3,251,556	25%
Total Employment	1,210,464	1,636,614	35%
Manufacturing Production Employment	70,167	82,928	18%
Manufacturing Office Support Employment	-	-	
Wholesale and Warehousing Employment	82,061	100,121	22%
Transportation Activity Employment	44,780	54,896	23%
Services Employment	646,891	922,565	43%

Source: SERPM 7.062

EMPLOYMENT AND POPULATION CHARACTERISTICS

Figures 27 through 34 provide a series of population and employment maps for 2015 and 2040 based on population, employment and density. The population maps show that the central study area has significant number of people and that the NW corner of study will experience very significant growth at high density. The employment maps do not show a lot of growth or densification which is reflective of the built out nature of the freight related uses in the study area.

Services Employment (as shown on Table 11) includes the following categories defined in SERPM 7.062: Professional and Building Services, Professional and Building Services (Building Maintenance), Health Services, Personal

Services Office Based, Amusement Services, Hotel and Motel Services, Restaurant and Bar Services and Personal Services Retail Based

Figure 35 shows that the area is predominantly minority, Figure 36 shows that the residential areas have medium to high incomes and Figure 37 shows that people living in the study area have significant travel to times to work in the 30 to 40 minute range. Also note the figure shows that the travel times south of SR 836 appear to longer than those north of SR 836.

Figure 27. 2015 Population Density

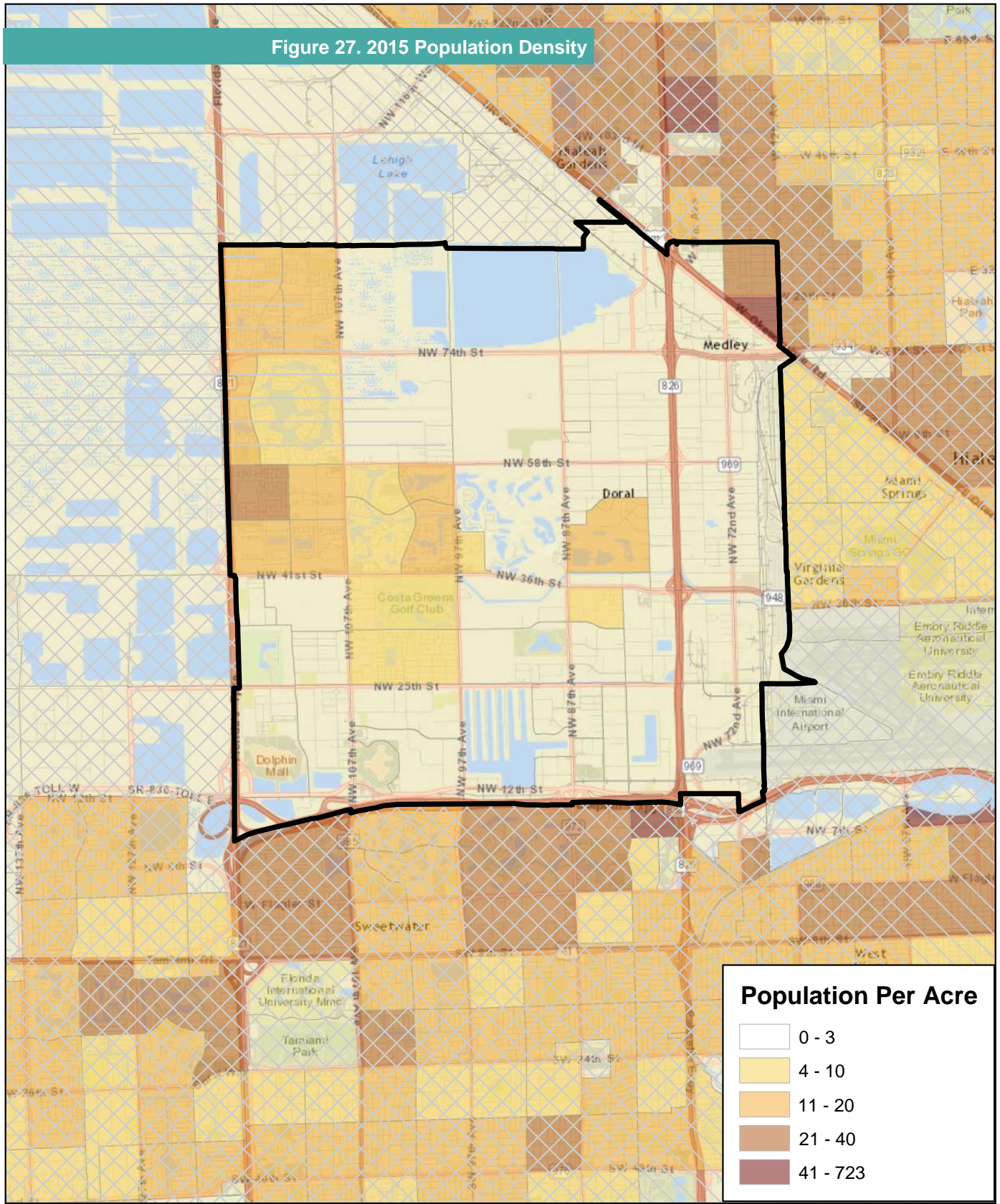


Figure 28. 2040 Population Density

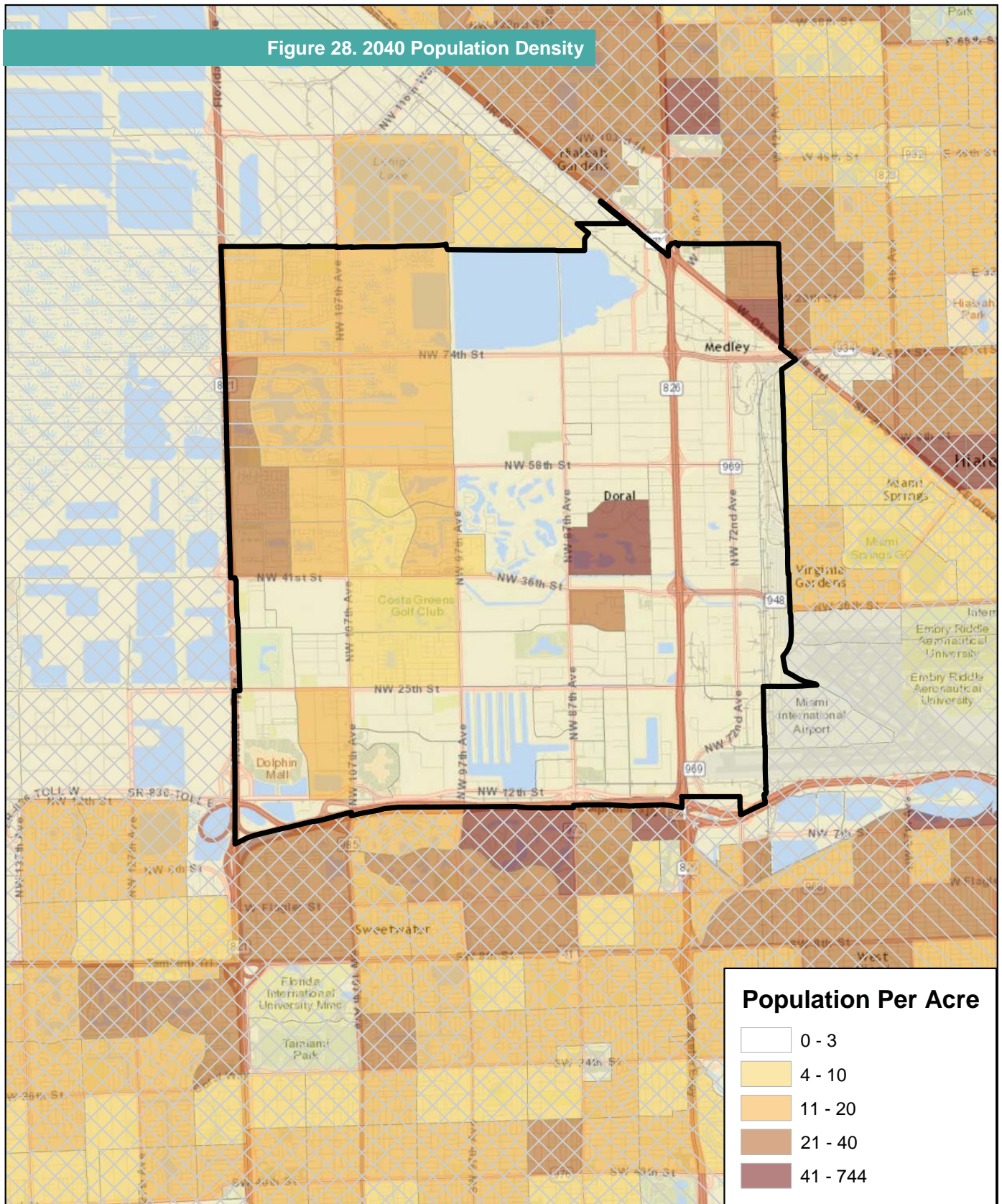


Figure 29. 2015 Employment Density

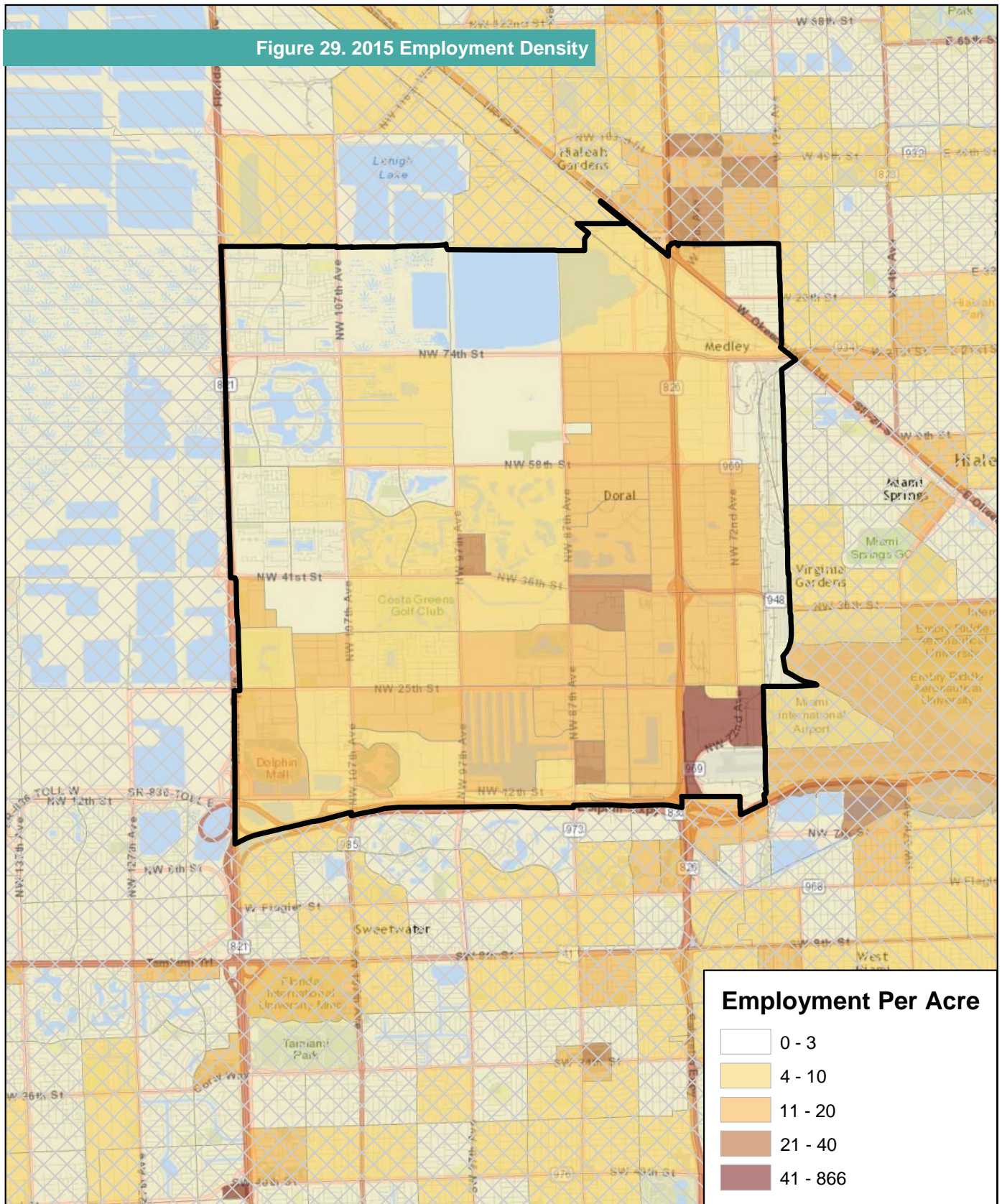


Figure 30. 2040 Employment Density

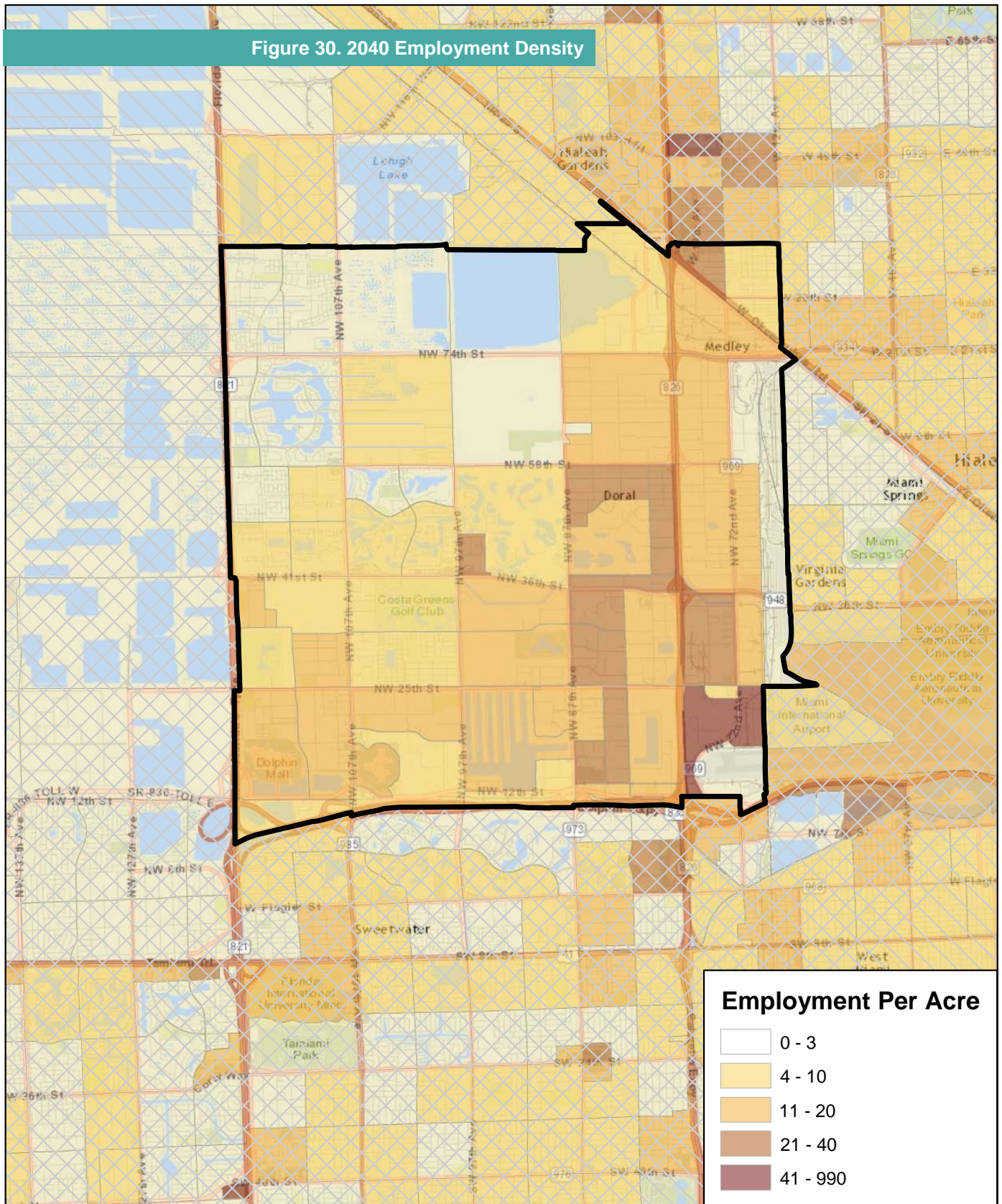


Figure 31. 2015 Population

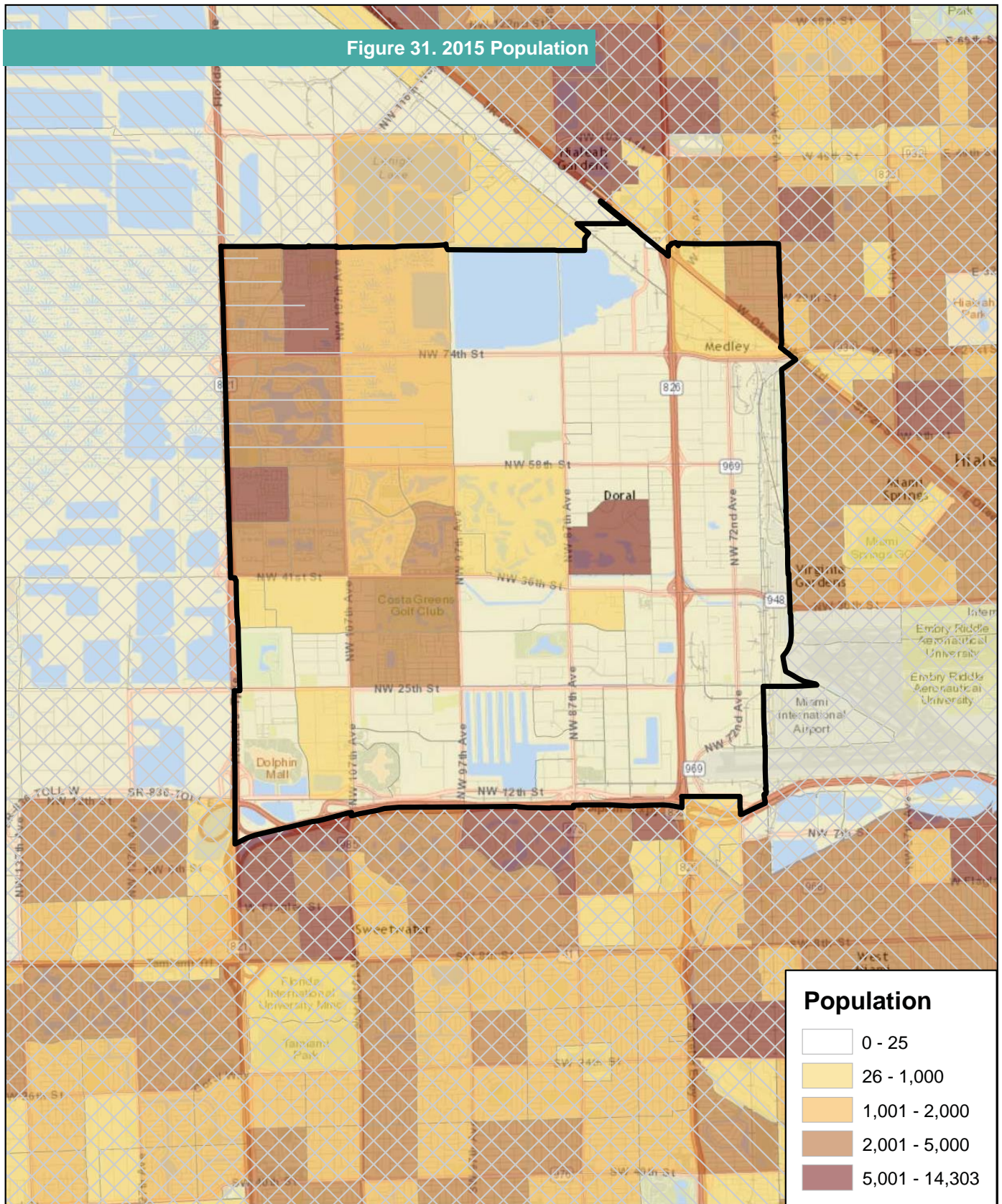


Figure 33. 2015 Employment

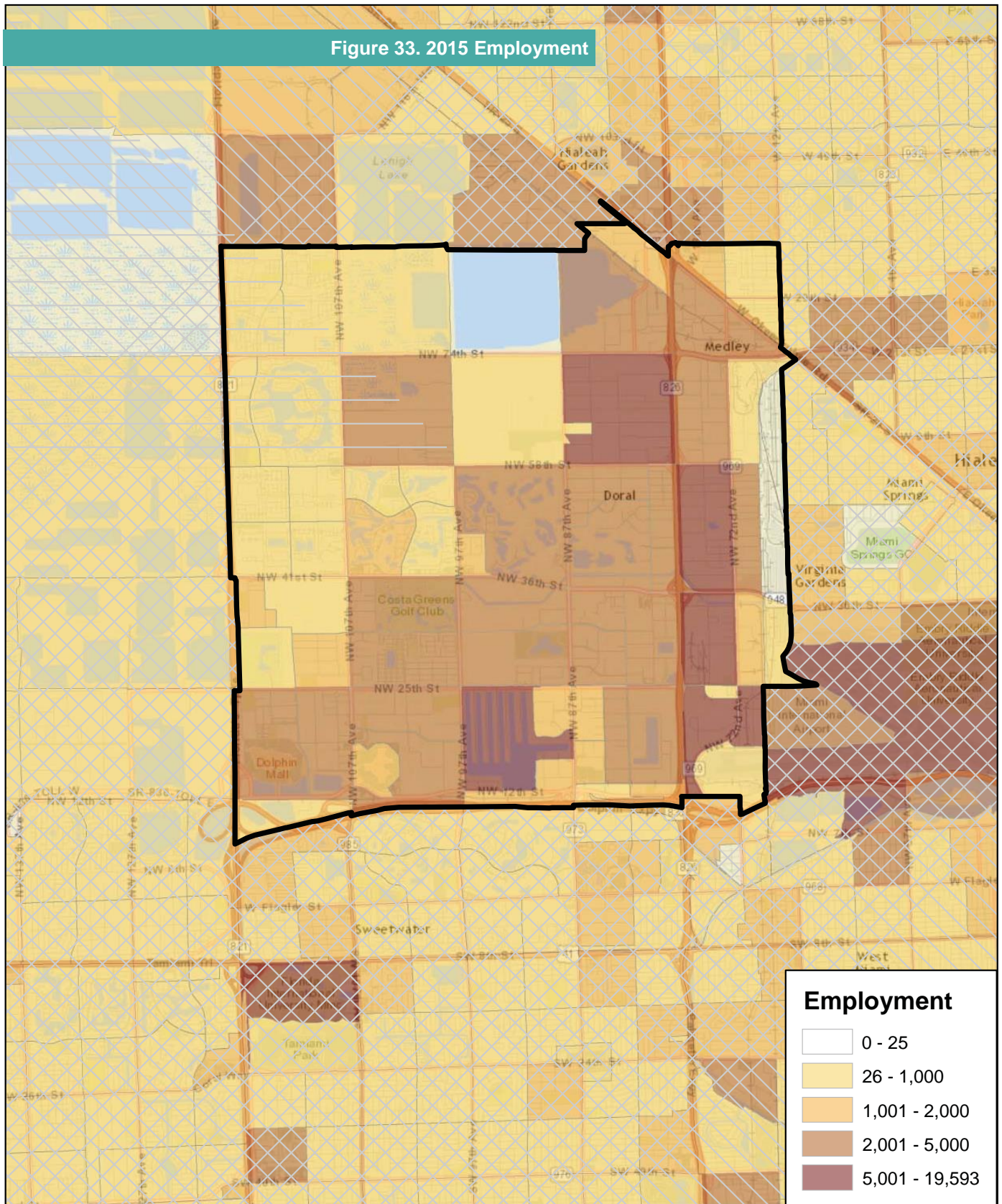


Figure 34. 2040 Employment

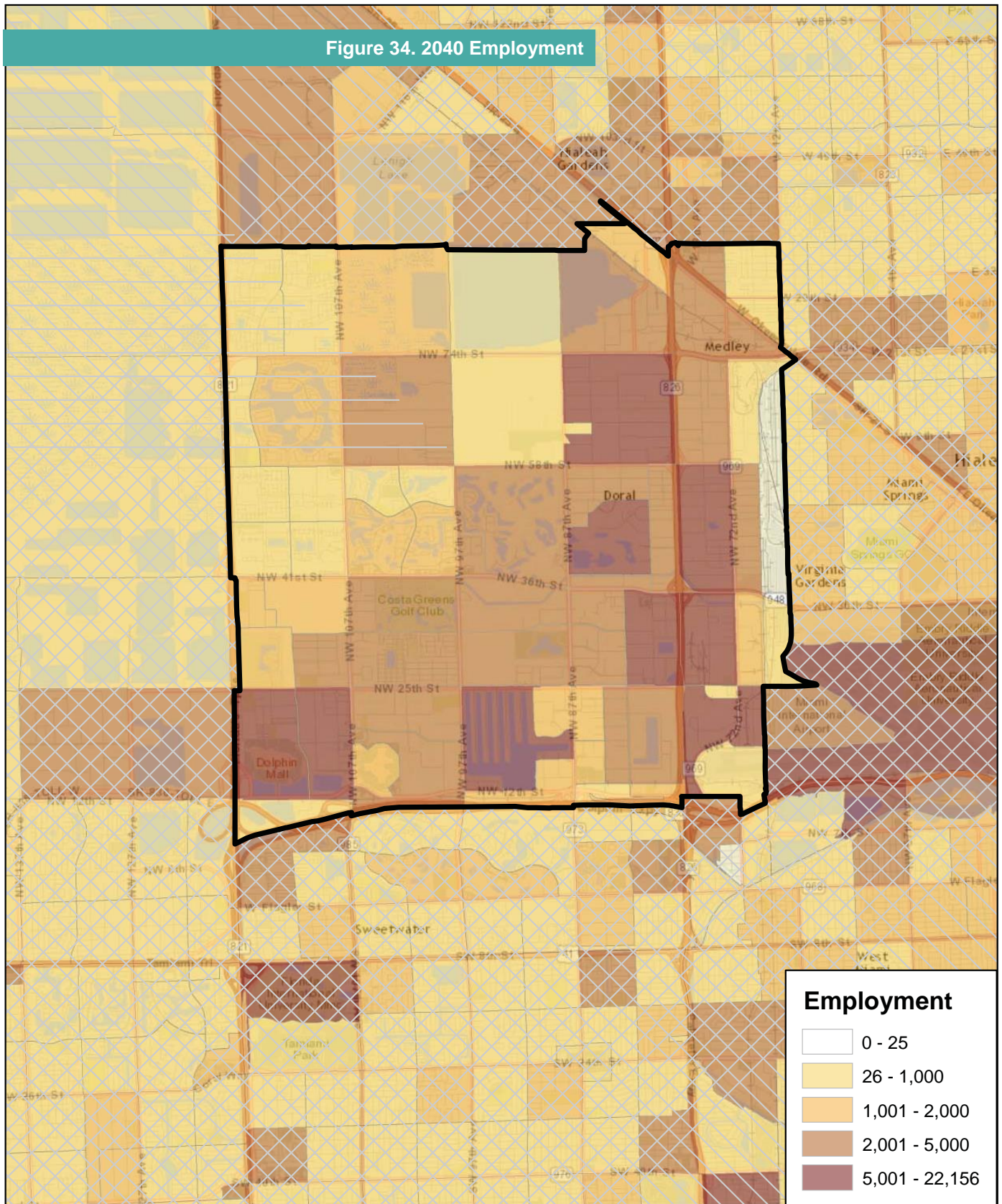


Figure 35. Minority Percentage



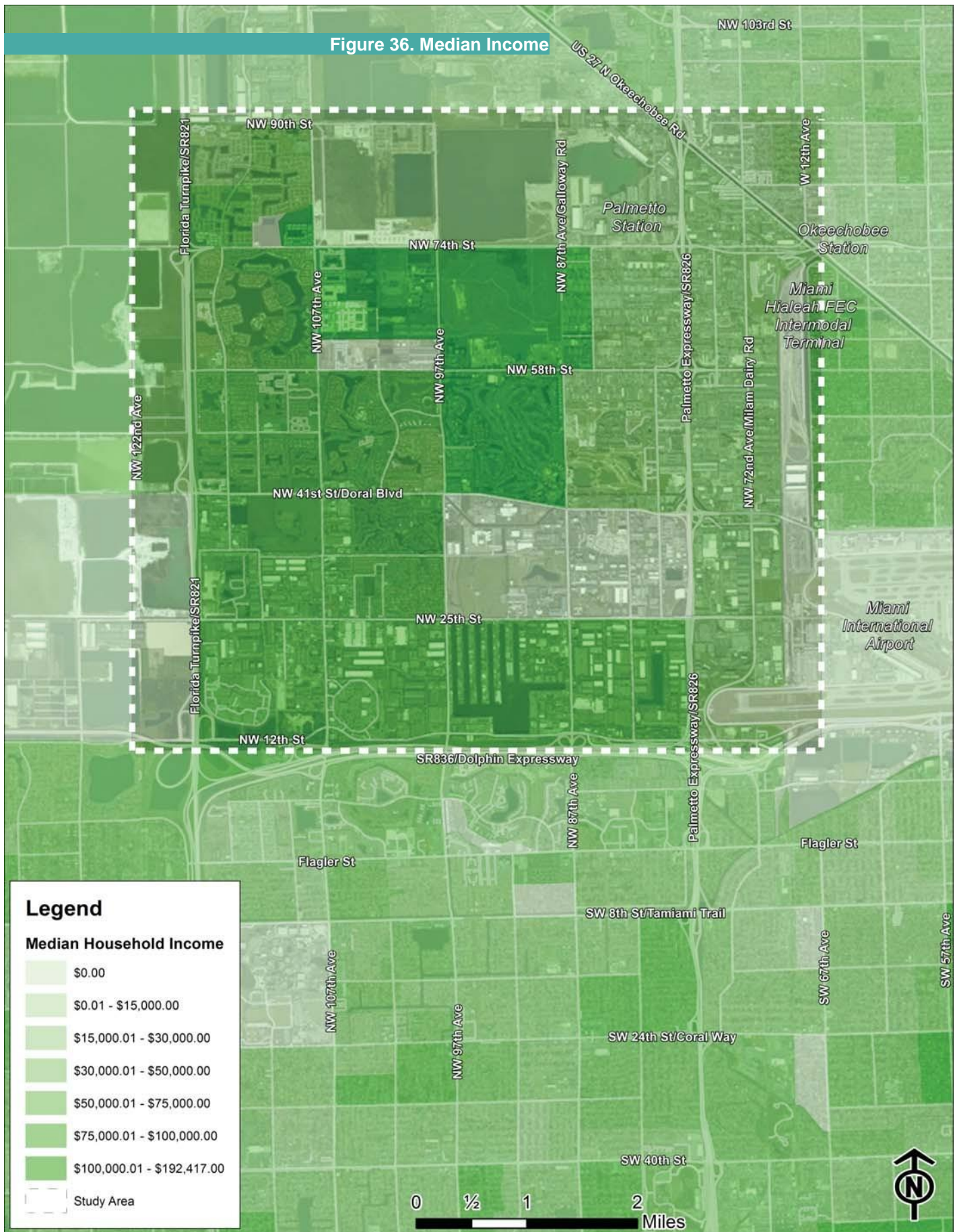
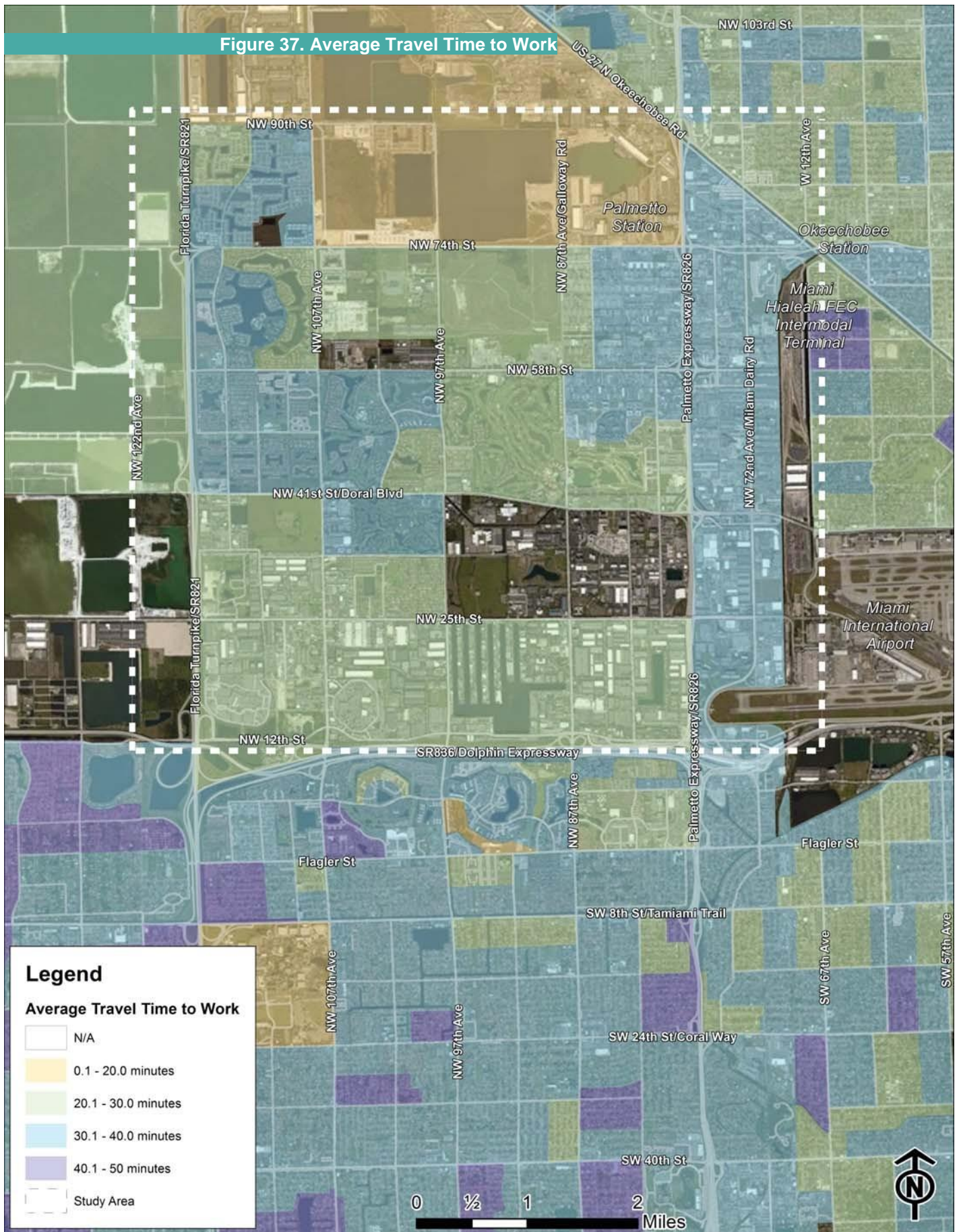


Figure 37. Average Travel Time to Work



SECTION 3: HISTORIC AND EXISTING TRANSPORTATION CONDITIONS

HISTORIC TRAFFIC CONDITIONS

This section of the report provides the analysis of existing traffic and rail conditions. Historic AADT and truck data were analyzed for 5 years from 2011 to 2015. A summary of the results are provided on **Table 12** and the full spreadsheet showing data for all 5 years is provided in **Appendix A**.

The FDOT Florida Traffic Online system was used to collect traffic and truck data and the FDOT Traffic Trends Version 3.0 was utilized to analyze both AADT growth rates and truck traffic growth rates for all the FDOT count stations in the study area. The data was first gamed utilizing the linear and compound projection models. The linear model provided annual growth rates that were not reasonable as they were very high with some locations showing over 50% and 100% annual growth. The Compound Method was selected and **Table 12** provides the results which are still very significant for annual growth in AADT and Truck Traffic.

Highlighted on the Table in green are those roadway segments that showed that truck traffic was growing faster than all traffic. This was very significant on the HEFT where truck growth rate ranged from 4.7% to 15.0% and were from 1.2% to 7.8% higher than growth in all traffic. SR 836 exhibited similar historic patterns where trucks grew at rates from 0.0 % to 25.7% per year and 0.5% to 26.9% higher than all traffic.

It also appears that trucks and vehicles trended away from SR 826 which may attributed to the severe congestion on the roadway, and favorable conditions such as less congestion and additional capacity on the HEFT. Finally, future T Factors will be developed for the travel demand model and candidate freight corridors using this information.

Historic crash data was also collected and analyzed: **Figure 38** provides a heat map of all crashes between 2011 and 2015 for the study area; **Figure 39** provides the analysis of 2011 to 2015 truck crashes, **Figure 40** shows crashes in relation to land use, and **Figure 41** provides a 2011 to 2015 bicycle pedestrian crash map.

A comparison of the maps shows that there appears to be a lot of crashes throughout the study area for all modes. In retrospect this could be the result of using 5 years of data and perhaps in the final report the study will document 3 years of crashes. A review of **Figure 40** shows a direct correlation of truck crashes within the industrial designated areas. Almost all of the crashes occur there and it is rare to see them occur elsewhere. Finally a review of the Bicycle Pedestrian crashes also appears to be more prevalent in the industrial areas. The study should pay special attention to this when developing alternatives for the candidate Freight Corridors.



Florida East Coast Railroad



PORTMiami

TABLE 12. SUMMARY OF 2011 – 2015 AADT AND TRUCK GROWTH RATES

ROADWAY NAME	STATION	ROADWAY DESCRIPTION	2015 AADT	2015 T Factor	2015 Truck Volume	2011 - 2015 Historic AADT % Growth Rate	2011 - 2015 Historic Truck % Growth Rate	Truck Rate Minus AADT Rate	Future T Factor
NORTH/SOUTH ROADWAY									
HEFT	972526	HEFT/SR-821 M/L, N OF NW 12ST BRIDGE	115,000	7.3%	8,395	6.0%	12.2%	6.2%	6.9%
	970276	HEFT SB ON RAMP FROM NW 12TH ST, M27F	5,850	7.3%	428	5.4%	10.1%	4.6%	5.7%
	970272	HEFT NB CD/NB OFF RAMP TO NW 12TH ST, M27B	5,850	7.3%	428	5.4%	10.1%	4.6%	5.7%
	970273	HEFT NB ON RAMP FROM NW 12TH ST, M27D	9,600	7.3%	701	8.0%	15.0%	7.0%	6.9%
	970275	HEFT SB OFF RAMP TO NW 12TH ST, M27E	9,600	7.3%	701	-3.8%	3.9%	7.8%	6.9%
	972230	HEFT/SR-821 M/L, S OF NW 41ST STREET	121,900	7.3%	8,899	6.1%	12.3%	6.1%	6.9%
	970267	HEFT/SR-821, S OF NW 25TH ST/SR-836	127,592	6.3%	8,039	5.5%	8.8%	3.3%	6.2%
	970291	HEFT NB OFF RAMP TO NW 41ST ST, M29A	8,700	7.3%	636	3.0%	6.3%	3.3%	5.7%
	970294	HEFT SB ON RAMP FROM WB NW 41ST ST TO 87471534 GORE, M29D	8,500	7.3%	621	5.0%	6.3%	1.2%	5.7%
	970292	HEFT NB ON RAMP FROM NW 41ST ST, M29B	8,300	7.3%	606	0.3%	4.7%	4.3%	6.9%
	970293	HEFT SB OFF RAMP TO NW 41ST ST, M29C	8,300	7.3%	606	-2.4%	0.0%	2.4%	6.9%
	972269	HEFT/SR-821 M/L, S OF NW 74TH STREET	120,600	7.3%	8,804	6.4%	12.5%	6.1%	6.9%
	970311	HEFT NB OFF RAMP TO NW 74TH ST, M30A	8,700	7.3%	636	3.0%	6.3%	3.3%	5.7%
	970314	HEFT SB ON RAMP FROM NW 74TH ST, M30D	8,700	7.3%	636	3.0%	6.3%	3.3%	5.7%
	970312	HEFT NB ON RAMP FROM NW 74TH ST, M30B	8,300	7.3%	606	10.0%	9.5%	-0.5%	6.9%
	970313	HEFT SB OFF RAMP TO NW 74TH ST, M30C	8,300	7.3%	606	10.0%	9.5%	-0.5%	6.9%
972268	HEFT/SR-821 M/L, AT OKEECHOBEE PLAZA	111,500	7.3%	8,140	4.9%	11.2%	6.3%	6.9%	
NW 112th AVE	878584	NW 111 AVE, 200' SOUTH OF NW 17 ST	12,300	7.3%	898	5.2%	-10.0%	-15.2%	9.5%
	878699	NW 112 AVENUE 300' SOUTH OF NW 50 STREET	7,200	10.2%	735	2.8%	-12.5%	-15.3%	4.4%
NW 107th AVE	878228	NW 107TH AVE, 200' NORTH OF SR-836	71,000	13.7%	9,727	5.8%	0.3%	-5.5%	12.7%
	878229	NW 107TH AVE, 200' NORTH OF NW 12TH STREET	45,000	10.2%	4,590	1.7%	-11.5%	-13.3%	7.7%
	878230	NW 107TH AVE, 200' NORTH OF NW 25TH STREET	19,500	13.7%	2,672	8.2%	2.6%	-5.6%	12.7%
	878227	NW 107TH AVE, 200' NORTH OF NW 41ST STREET	27,000	13.7%	3,699	1.9%	-3.3%	-5.1%	12.7%
	878682	NW 107 AVENUE 1000' SOUTH OF NW 74 STREET	12,000	10.2%	1,224	4.3%	-57.1%	-61.5%	4.4%
NW 102nd AVE	878698	NW 102 AVENUE 350' SOUTH OF NW 52 STREET	7,200	10.2%	735	2.9%	-12.5%	-15.4%	4.4%
NW 87th AVE	877051	SR & CR 973 200 FEET SOUTH OF NW 33RD ST	37,500	13.5%	5,063	0.0%	2.2%	2.2%	9.2%
	878704	NW 87th AVE	21,500	10.2%	2,193	N/A	N/A	N/A	2.0%
	878626	NW 87 AVE, 200' SOUTH OF NW 66 ST (2011 OFF SYSTEM CYCLE)	14,100	10.2%	1,439	-0.7%	-14.5%	-13.8%	10.9%
NW 82nd AVE	878496	NW 82 AVE, 200 FT S OF NW 25TH ST (DORAL)	14,600	10.2%	1,490	-8.8%	-19.8%	-11.1%	10.9%
NW 79th AVE	878183	NW 79TH AVE, 200' SOUTH OF NW 36 STREET	22,300	13.7%	3,056	0.9%	-3.9%	-4.8%	12.7%
	878181	NW 79TH AVENUE, 200' NORTH OF NW 36TH STREET	23,500	13.7%	3,220	62.2%	3.3%	-58.9%	12.7%
	878658	NW 79 AVE, 200' NORTH OF NW 80 ST	10,600	13.9%	1,474	-0.3%	-3.9%	-3.5%	12.1%
SR 826/PALMETTO EXPRESSWAY	876294	RAMP 87260537 FROM EB NW 25 ST TO SB SR826, 400' S OF NW 25 ST	10,500	8.4%	882	5.5%	7.5%	1.9%	6.7%
	876296	RAMP 87260539 FROM NB SR826 TO NW 25 ST, 300' N OF SR 826	14,000	4.5%	630	9.8%	10.7%	0.9%	4.4%
	876295	RAMP 87260538 FROM SB SR826 TO WB NW 25 ST, 100' S OF SR 826	11,500	15.2%	1,748	-5.8%	10.2%	16.0%	11.2%
	876297	RAMP 87260640 FROM NW 25 ST TO NB SR826, 600' N OF NW 25 ST	13,000	17.4%	2,262	5.8%	14.1%	8.3%	12.9%
	872525	SR 826/PALMETTO EXPWY, 1000' N NW 25 ST	238,000	6.3%	14,994	1.1%	1.0%	0.0%	6.4%
	876210	RAMP 87260249 FROM NB SR826 TO EB NW 36 ST, 200' N OF SR 826	20,500	9.3%	1,907	7.1%	10.0%	2.8%	7.5%
	876208	RAMP 87260247 FROM EB NW 36 ST TO SB SR826, 200' S OF NW 36 ST	8,100	4.8%	389	0.6%	10.7%	10.1%	3.6%
	876240	RAMP 87260391 FROM EB NW 36 ST TO NB SR826, 400' E OF NW 36 ST	12,000	5.7%	684	1.4%	9.1%	7.8%	8.8%
	876239	RAMP 87260390 FROM WB NW 36 ST TO SB SR826, 400' W OF NW 36 ST	10,500	7.0%	735	-1.8%	0.0%	1.8%	5.6%
	876211	RAMP 87260250 FROM WB NW 36 ST TO NB SR826, 300' N OF NW 36 ST	7,500	9.8%	735	-3.3%	-6.9%	-3.7%	9.2%
	876209	RAMP 87260248 FROM SB SR826 TO WB NW 36 ST, 100' S OF SR 826	22,000	12.7%	2,794	0.2%	14.4%	14.2%	9.2%
	870571	SR 826/PALMETTO EXPWY, 1000' N NW 36 ST	232,000	6.3%	14,616	2.5%	2.2%	-0.4%	6.4%
	876244	RAMP 87260395 FROM NB SR826 TO EB NW 58 ST, 200' N OF SR 826	12,500	10.6%	1,325	2.6%	-6.3%	-8.9%	9.1%
	876242	RAMP 87260393 FROM EB NW 58 ST TO SB SR826, 400' S OF NW 58 ST	9,800	12.2%	1,196	1.6%	6.3%	4.7%	9.6%
	876243	RAMP 87260394 FROM SB SR826 TO WB NW 58 ST, 150' S OF SR 826	16,500	13.5%	2,228	1.6%	7.0%	5.4%	10.7%
	876245	RAMP 87260396 FROM WB NW 58 ST TO NB SR826, 700' N OF NW 58 ST	14,000	10.9%	1,526	-0.4%	-2.7%	-2.4%	14.7%
	870572	SR 826/PALMETTO EXPWY, 1000' N NW 58 ST	231,000	6.1%	14,091	-1.0%	-2.1%	-1.1%	7.9%
	876248	RAMP 87260400 FROM NB SR826 TO EB NW 74 ST, 150' N OF SR 826	14,000	8.5%	1,190	-0.4%	-5.9%	-5.5%	8.3%
	876246	RAMP 87260397 FROM EB NW 74 ST TO SB SR826, 500' S OF NW 74ST	12,500	7.0%	875	-0.4%	0.0%	0.4%	8.7%
	876249	RAMP 87260402 FROM WB NW 74 ST TO NB SR826, 500' N OF NW 74 ST	16,000	12.2%	1,952	4.8%	-2.2%	-7.1%	12.7%
	876247	RAMP 87260399 FROM SB SR826 TO WB NW 74 ST, 200' S OF SR 826	17,500	12.8%	2,240	12.6%	5.1%	-7.5%	12.2%
	870573	SR 826/PALMETTO EXPWY, 1000' N NW 74 ST	232,000	9.6%	22,272	0.0%	16.5%	16.4%	8.2%
	876252	RAMP 87260405 FROM NB SR826 TO EB S RIVER DR, 200' N SR 826	20,500	13.7%	2,809	3.1%	3.0%	-0.1%	12.1%
	876250	RAMP 87260403 FROM EB S RIVER DR TO SB SR826, 300' S OF S RIVER DR	12,500	18.4%	2,300	-0.4%	-3.9%	-3.5%	17.2%
	876254	RAMP 87260407 FROM WB US 27 TO SB SR826, 300' N OF RAMP 87260412	7,800	4.0%	312	-16.6%	-17.0%	-0.5%	9.1%
	876257	RAMP 87260412 FROM WB US 27 TO NB SR826, 700' N OF US 27	16,500	10.2%	1,683	-0.9%	2.8%	3.7%	10.7%
	870553	SR 826/PALMETTO EXPWY, 600' N OKEECHOBEE RD	228,000	6.3%	14,364	0.9%	0.9%	0.0%	6.4%
	876255	RAMP 87260408 FROM SB SR826 TO WB OKEECHOBEE RD, 200' S OF SR 826	17,500	14.2%	2,485	0.0%	11.8%	11.8%	12.8%

TABLE 12. SUMMARY OF 2011 – 2015 AADT AND TRUCK GROWTH RATES - CONTINUED

ROADWAY NAME	STATION	ROADWAY DESCRIPTION	2015 AADT	2015 T Factor	2015 Truck Volume	2011 - 2015 Historic AADT % Growth Rate	2011 - 2015 Historic Truck % Growth Rate	Truck Rate Minus AADT Rate	Future T Factor
NW 72nd AVE	871202	SR 969/MILAM DAIRY RD, 200' N NW 12 ST	34,500	8.0%	2,760	-2.8%	1.9%	4.7%	6.2%
	871203	SR 969/MILAM DAIRY RD, 500' S NW 25 ST	34,500	8.5%	2,933	2.9%	12.9%	10.0%	7.0%
	871204	SR 969/MILAM DAIRY RD, 200' S NW 36 ST	31,500	12.3%	3,875	0.0%	11.4%	11.4%	9.4%
	871205	SR 969/MILAM DAIRY RD, 200' S NW 41 ST	36,500	12.3%	4,490	1.8%	3.2%	1.4%	11.0%
	870039	SR 969/MILAM DAIRY RD, 200' S NW 74 ST	18,400	10.3%	1,896	-9.3%	2.8%	12.2%	8.1%
	878619	NW 72 AVE, 200' SOUTH OF NW 78 TER (2011 OFF SYSTEM CYCLE)	15,600	15.4%	2,403	7.6%	4.6%	-3.0%	13.6%
EAST/WEST ROADWAY									
DOLPHIN EXPRESSWAY	876115	RAMP 87200073 FROM EB SR836 TO SB NW 107 AVE, 800' E OF SR 836	6,600	5.9%	390	7.7%	7.5%	-0.2%	8.2%
	876168	RAMP 87200500 FROM WB SR836 TO SB NW 107 AVE, 200' W OF SR 836	4,900	4.4%	216	6.1%	0.0%	-6.1%	4.6%
	876169	NW 58 STREET 500' EAST NW 114 AVENUE	5,500	6.4%	352	-2.3%	0.0%	2.3%	7.3%
	872242	SR 836/DOLPHIN EXPWY, 300' W NW 107 AVE	93,500	3.4%	3,179	3.4%	14.3%	10.9%	3.0%
	876114	RAMP 87200072 FROM SB NW 107 AVE TO WB SR836, 300' W OF NW 107 AVE	8,800	12.1%	1,065	6.2%	13.6%	7.5%	10.1%
	876174	RAMP 87200606 FROM NB NW 107AVE TO EB SR836, 600' E OF NW 107 AVE	5,600	4.5%	252	9.3%	10.7%	1.4%	4.5%
	876173	RAMP 87200605 FROM WB SR836 TO NB NW 107AVE, 400' E OF NW 107 AVE	8,700	4.9%	427	10.7%	0.0%	-10.7%	7.2%
	872243	SR 836/DOLPHIN EXPWY, 300' E NW 107 AVE	127,500	3.4%	4,335	2.7%	8.6%	5.9%	3.0%
	870187	SR-836, 1.4 MI E OF NW 107TH AVE UNDERPASS,DADE CO.	139,914	3.8%	5,317	4.4%	15.3%	10.9%	4.5%
	876117	RAMP 87200075 FROM EB SR836 TO SB NW 87 AVE, 500' E OF SR 836	7,100	11.0%	781	-0.6%	18.9%	19.6%	8.6%
	876116	RAMP 87200074 FROM SB NW 12 ST TO WB SR836, 450' S OF NW 12 ST	6,300	12.1%	763	5.1%	0.0%	-5.1%	8.0%
	876063	RAMP 87047200 FROM WB SR836 TO SB NW 87 AVE, 300' NW OF SR 836	5,300	4.1%	218	-7.7%	18.9%	26.6%	3.7%
	876064	RAMP 87047201 FROM NB NW 87 AVE TO WB SR836, 300' NE OF NW 87 AVE	2,600	5.3%	138	4.5%	0.0%	-4.5%	5.6%
	876170	RAMP 87200502 FROM NB NW 87 AVE TO EB SR836, 700' E OF NW 87 AVE	19,500	12.4%	2,418	7.7%	25.7%	18.0%	15.2%
	872244	SR 836/DOLPHIN EXPWY, 1600' E NW 87 AVE	96,000	3.4%	3,264	-1.3%	1.0%	2.3%	3.0%
	876387	SR836 OFF RAMP87200324 TO NW12 ST,300'W OF RAMP87200324	14,000	2.7%	378	6.0%	-9.6%	-15.7%	3.5%
	876414	RAMP 87200324 FROM SR 836 TO NW 87 AVE, 800 FT W OF SR 836	34,000	9.6%	3,264	-0.5%	0.0%	0.5%	4.4%
	872188	SR 836/DOLPHIN EXPWY,200' E SR 826/PALMETTO EXPWY	200,000	3.4%	6,800	-1.2%	0.5%	1.7%	3.0%
	876127	RAMP 87200086 FROM NB NW 72 AVE TO EB SR836, 600' E OF NW 72 AVE	5,500	9.6%	528	5.2%	7.5%	2.2%	7.3%
	876126	RAMP 87200285 FROM WB SR836 TO NB NW 72 AVE, 1000' W OF SR 836	54,500	9.6%	5,232	40.0%	-2.1%	-42.1%	5.6%
NW 12th ST	878245	NW 12TH ST, 200' WEST OF TURNPIKE	24,500	13.7%	3,357	0.7%	3.9%	3.2%	12.7%
	878246	NW 12TH ST, 200' WEST OF NW 111TH AVENUE	30,000	13.7%	4,110	0.0%	-2.8%	-2.8%	12.7%
	878654	NW 12TH ST, 0.3 MI E OF NW 107TH ST, DORAL	26,000	10.2%	2,652	0.0%	-13.0%	-13.0%	10.9%
	878497	NW 12 ST, 200 FT E OF NW 93 CT (2011 OFF SYSTEM CYCLE)	26,000	10.2%	2,652	-2.8%	-15.5%	-12.6%	10.9%
	878164	NW 12TH STREET, 200' WEST OF PALMETTO/SR-826	27,500	13.7%	3,768	6.2%	1.8%	-4.4%	12.7%
	878163	NW 12TH STREET, 200' EAST OF NW 87TH AVENUE	35,500	10.2%	3,621	2.2%	-20.2%	-22.4%	7.7%
NW 19th ST	878668	NW 19 STREET 400' WEST OF NW 102 AVE	6,400	10.2%	653	0.0%	-11.8%	-11.8%	7.3%
NW 25th ST	878692	NW 25 STREET 600' WEST OF NW 21 COURT	20,900	7.7%	1,610	-3.8%	-11.1%	-7.3%	3.3%
	878110	NW 25TH STREET, 200' WEST OF NW 107TH AVE	23,500	13.7%	3,220	8.1%	2.2%	-5.9%	12.7%
	877025	NW 25TH ST 100 FT. WEST OF NW 94TH AVE	31,000	15.8%	4,898	-4.6%	-1.5%	3.1%	14.7%
	877026	NW 25TH ST 150 FT WEST OF NW 84TH AVE	29,000	17.9%	5,191	-6.5%	0.0%	6.5%	15.4%
	873000	NW 25TH ST, 1000' W OF NW 72 AVE.	30,500	10.3%	3,142	4.9%	2.6%	-2.3%	10.7%
	877095	NW 25th St	4,000	15.8%	632	N/A	N/A	N/A	3.2%
NW 33rd ST	878202	NW 33RD ST/NW 97TH AVE, 200' SOUTH OF NW 101 AVE	11,600	10.2%	1,184	9.6%	-1.8%	-11.4%	13.8%
NW 36th ST	878359	NW 36TH ST, 200' WEST OF NW 87TH AVENUE	44,000	13.7%	6,028	0.4%	2.9%	2.5%	12.7%
	871173	SR 948/NW 36 ST, 200' E SR 826	52,000	6.8%	3,536	-7.8%	-2.4%	5.3%	7.9%
NW 41st ST	877081	NW 41 ST -- NW 41ST. STREET, 250' EAST OF NW 114 AVE	44,000	7.2%	3,168	5.1%	6.2%	1.1%	5.5%
	878196	NW 41 ST, 200' WEST OF NW 104TH AVENUE	44,000	10.2%	4,488	-0.8%	-22.1%	-21.4%	6.9%
	877022	NW 41ST STREET 500 FT WEST OF NW 97TH AVE	48,500	5.2%	2,522	2.9%	20.4%	17.5%	6.1%
NW 50th ST	878669	NW 50 STREET 900' EAST OF 112 AVE	3,800	10.2%	388	2.8%	-18.4%	-21.1%	7.7%
NW 52nd ST	878697	NW 52 STREET 300' WEST OF NW 102 AVENUE	6,800	10.2%	694	3.0%	-12.5%	-15.5%	4.4%
NW 54th ST	878670	NW 54 STREET 380' WEST OF NW 82 AVE	2,900	10.2%	296	0.0%	73.2%	73.2%	5.1%
	878700	58 STREET 500' EAST NW 114 AVENUE	11,900	10.2%	1,214	3.5%	-14.3%	-17.8%	4.4%
	878235	NW 58TH ST, 200' WEST OF NW 97TH AVENUE	18,200	13.7%	2,494	-3.9%	1.5%	5.3%	12.7%
	878236	NW 58 ST -- NW 58TH ST, 200' WEST OF NW 87TH AVENUE	28,500	13.7%	3,905	8.5%	2.7%	-5.7%	12.7%
NW 58th ST	878705	NW 74th ST	29,000	10.2%	2,958	N/A	N/A	N/A	2.0%
	878618	NW 74 ST, 200' EAST OF NW 102 AVE	28,500	15.8%	4,503	8.9%	6.4%	-2.4%	12.6%
	878334	NW 74TH STREET, 200' WEST OF NW 77TH COURT	17,400	13.7%	2,384	1.0%	1.8%	0.8%	12.7%
	878335	NW 74TH STREET, 200' WEST OF SR-826	7,300	13.7%	1,001	0.0%	0.0%	0.0%	12.7%
	878583	NW 74 ST -- NW 74 ST, 200' EAST OF MEDLEY POLICE DEPRT	5,700	13.9%	793	4.1%	0.0%	-4.1%	12.1%

Figure 38. 2011 – 2015 All Crashes Heat Map

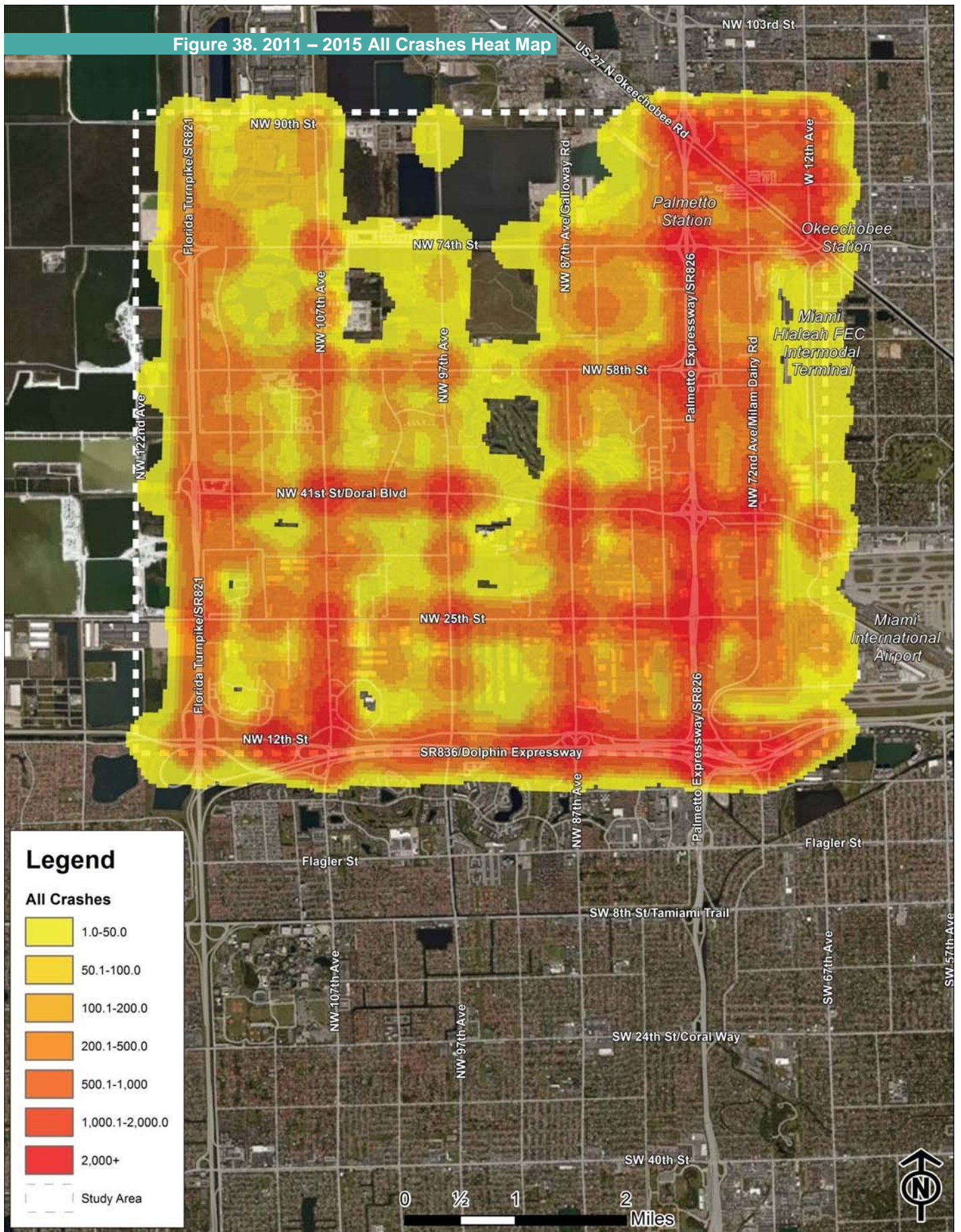


Figure 39. 2011 – 2015 Truck Crashes Heat Map

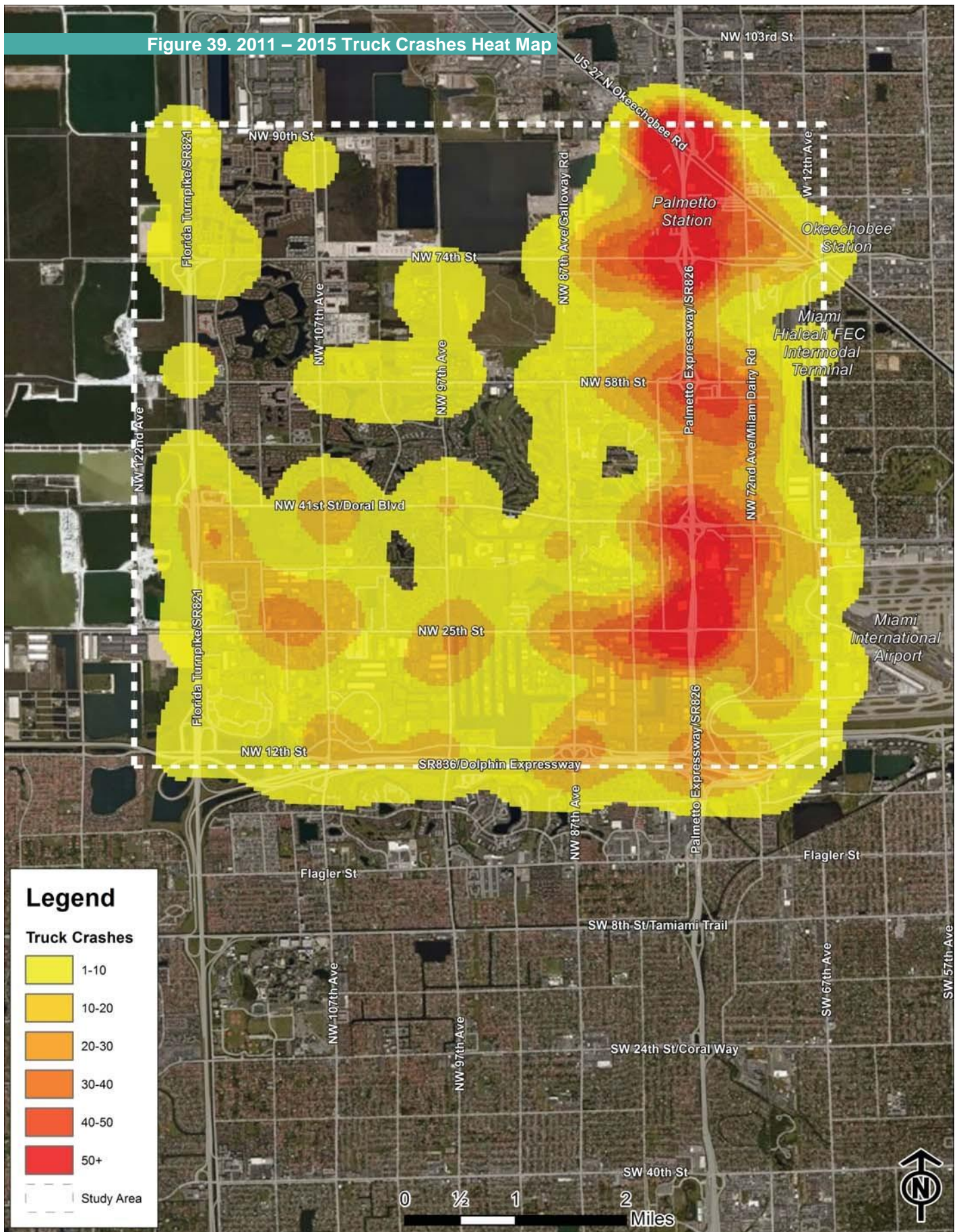
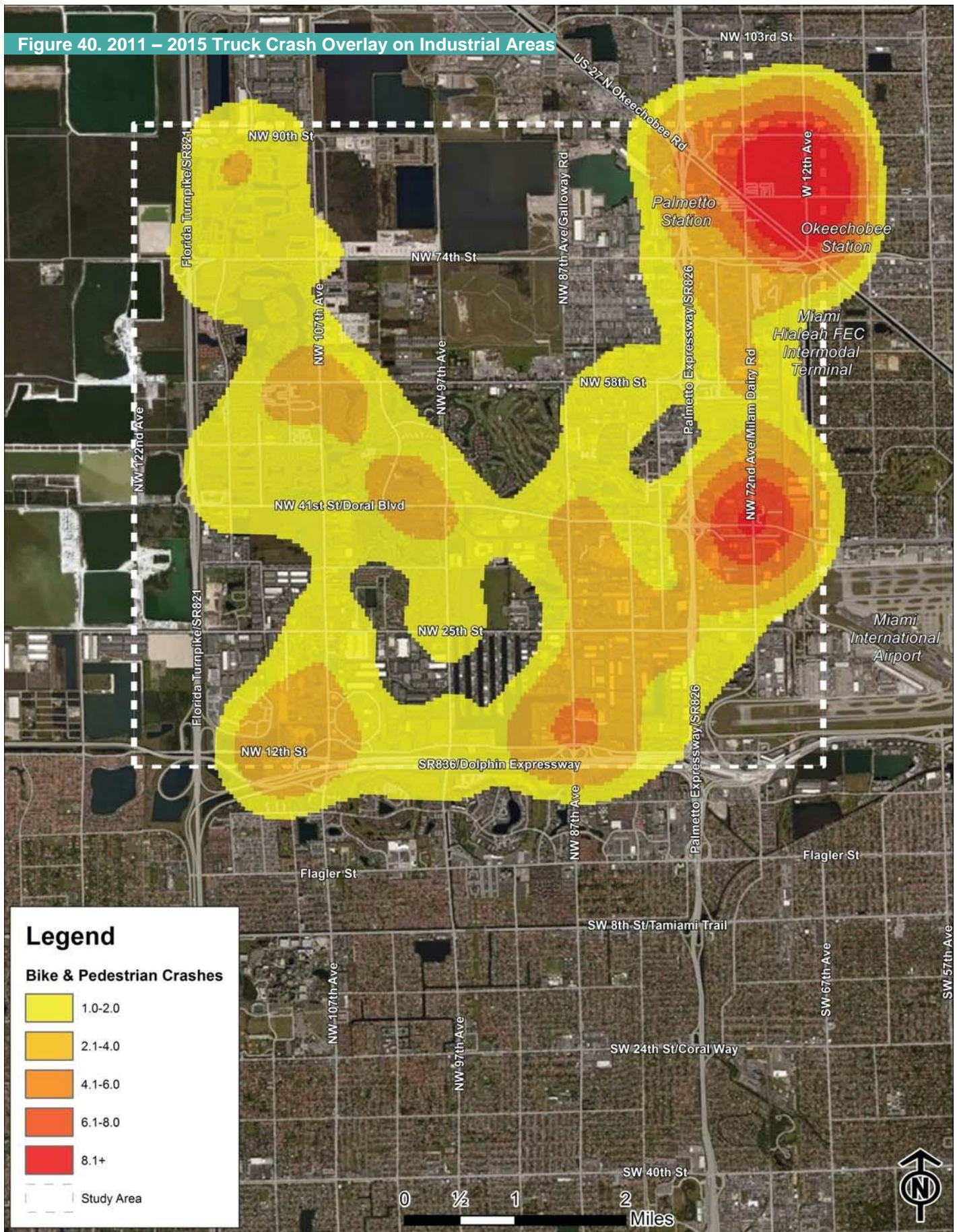


Figure 40. 2011 – 2015 Truck Crash Overlay on Industrial Areas



Legend

Bike & Pedestrian Crashes

- 1.0-2.0
- 2.1-4.0
- 4.1-6.0
- 6.1-8.0
- 8.1+

Study Area

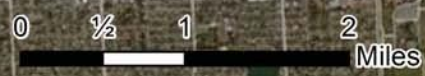
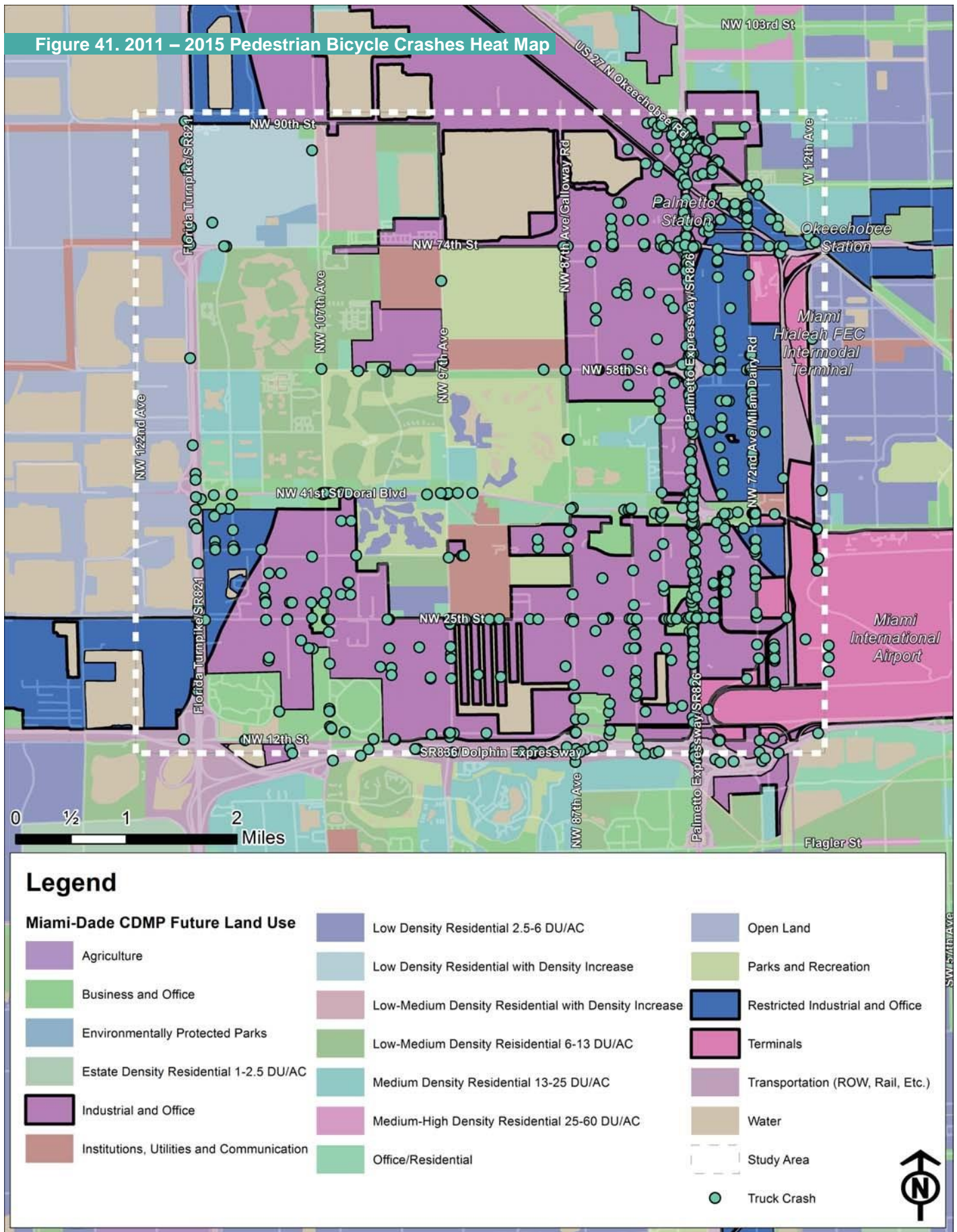


Figure 41. 2011 – 2015 Pedestrian Bicycle Crashes Heat Map



The City of Doral has been addressing the issue of trucks and conflicts with adjacent land uses on local streets. They have been adopting and implementing truck restricted routes where there were conflicts, particularly residential, for overall mobility and to enhance pedestrian and bicycling environments. **Figure 42** shows the roadway segments where restrictions are being implemented.

EXISTING CONDITIONS

A range of data was available for use in this analysis including 2015 data from FDOT traffic count stations, 2016 counts provided by the City and 2017 classification counts collected specifically for this effort. Wherever possible the most current data was used. **Figure 43** shows ranges of 2015 Average Annual Daily Traffic (AADT) and **Figure 44** shows ranges of 2015 average daily truck traffic. A comparison of the two maps shows that they are somewhat similar however the southeast corner of the study area west of the SR 826 is showing heavier ranges of trucks than for all traffic as is NW 74th Street between SR 826 and US 27 and NW 41st Street. These result are reasonable considering the adjacent land uses except for NW 41st Street/Doral Boulevard where truck traffic is in the 5,000 to 10,000 a day range and adjacent uses are not compatible.

A daily level of service analysis was performed for the entire study and it is shown on **Tables 13 and 14**. The results indicate that on a 24 basis almost all roadways perform well.

The City of Doral provided 2016 daily traffic counts on many of streets in the City. An analysis was performed to determine directional factors for each roadway and for consideration of alternatives and inclusion in the travel demand model and are found on **Tables 15 to 19** and in **Appendix B** and a summary of findings is found below.

Roadways segments with Directional Factors 60%+ in opposing directions in the AM and PM peaks:

- NW 25th Street West of 92nd Avenue
- NW 25th Street East of 112th Street
- NW 33rd Street West of NW 107th Avenue
- NW 41st Street from East of NW 112th Avenue to West of 102nd Avenue

- NW 50th Street West of 109th Avenue
- NW 52nd Street East of 107th Avenue

Roadways segments with Directional Factors 60%+ in opposing directions in the AM and PM peaks (continued):

- NW 53rd Street West of NW 79th Avenue
- NW 58th Street West of NW 109th Avenue
- NW 74th Street West of NW 97th Avenue
- NW 78th Street West of NW 107th Avenue to West of NW 109th Avenue
- NW 82nd Street West of NW 109th Avenue
- NW 76th Street West of NW 107th Avenue
- NW 84th Avenue North of NW 17th Street
- NW 87th Avenue North of NW 17th Street
- NW 97th Avenue South of NW 17th Street
- NW 97th Avenue South of NW 52nd Street
- NW 109th Avenue South of NW 82nd Street
- NW 112th Avenue South of NW 41st Street to North of 74th Street
- NW 114th Avenue North of NW 36th Terrace to North of NW 50th Street
- NW 117th Avenue South of NW 3th Street

Roadway segments with a failing peak direction at LOS F:

- NW 33rd Street West of NW 107th Ave PM Peak
- NW 114th Avenue North of NW 36th Terrace to North of NW 50th Street AM Peak
- NW 114th Avenue North of NW 36th Terrace to North of NW 50th Street PM Peak
- NW 117th Avenue South of NW 34th Street AM Peak

Figure 42. Roads with Truck Restrictions



Figure 43. 2015 Average Annual Daily Traffic



Figure 44. 2015 Truck Average Annual Daily Traffic



TABLE 13. 2015 DAILY LEVEL OF SERVICE NORTH/SOUTH ROADWAYS

ROADWAY NAME	Station	ROADWAY DESCRIPTION	2015 AADT	Posted Speed	# of lanes	LOS
NORTH/SOUTH ROADWAY						
HEFT	972526	HEFT/SR-821 M/L, N OF NW 12ST BRIDGE	115,000	70	6LD+Aux	C
	972230	HEFT/SR-821 M/L, S OF NW 41ST STREET	121,900	70	6LD+Aux	C
	970267	HEFT/SR-821, S OF NW 25TH ST/SR-836	127,592	70	6LD+Aux	C
	972269	HEFT/SR-821 M/L, S OF NW 74TH STREET	120,600	70	6LD+Aux	C
	972268	HEFT/SR-821 M/L, AT OKEECHOBEE PLAZA	111,500	70	6LD+Aux	B
NW 112th AVE	878584	NW 111 AVE, 200' SOUTH OF NW 17 ST (OFF SYSTEM CYCLE)	12,300	35	4LD	C
	878699	NW 112 AVENUE 300' SOUTH OF NW 50 STREET	7,200	35	2LU	C
NW 107th AVE	878228	NW 107TH AVE, 200' NORTH OF SR-836	71,000	40	6LD	E
	878229	NW 107TH AVE, 200' NORTH OF NW 12TH STREET	45,000	40	6LD	C
	878230	NW 107TH AVE, 200' NORTH OF NW 25TH STREET	19,500	40	6LD	C
	878227	NW 107TH AVE, 200' NORTH OF NW 41ST STREET	27,000	40	4LD	C
	878682	NW 107 AVENUE 1000' SOUTH OF NW 74 STREET	12,000	40	4LD	C
NW 102nd AVE	878698	NW 102 AVENUE 350' SOUTH OF NW 52 STREET	7,200	35	4LD	C
NW 87th AVE	878626	NW 87 AVE, 200' SOUTH OF NW 66 ST	14,100	35	2LU	C
NW 82nd AVE	878496	NW 82 AVE, 200 FT S OF NW 25TH ST	14,600	40	4LD	C
NW 79th AVE	878183	NW 79TH AVE, 200' SOUTH OF NW 36 STREET	22,300	45	4LD	C
	878161	NW 79TH AVENUE, 200' NORTH OF NW 36TH STREET	23,500	45	4LD	C
	878658	NW 79 AVE, 200' NORTH OF NW 80 ST	10,600	35	2LU	D
PALMETTO EXPRESSWAY	872525	SR 826/PALMETTO EXPWY, 1000' N NW 25 ST	238,000	55	10LD+Aux	D
	870571	SR 826/PALMETTO EXPWY, 1000' N NW 36 ST	232,000	55	10LD+Aux	D
	870572	SR 826/PALMETTO EXPWY, 1000' N NW 58 ST	231,000	55	10LD+Aux	D
	870573	SR 826/PALMETTO EXPWY, 1000' N NW 74 ST	232,000	55	10LD+Aux	D
	870553	SR 826/PALMETTO EXPWY, 600' N OKEECHOBEE RD	228,000	55	10LD+Aux	D
NW 72nd AVE	871202	SR 969/MILAM DAIRY RD, 200' N NW 12 ST	34,500	45	6LD	C
	871203	SR 969/MILAM DAIRY RD, 500' S NW 25 ST	34,500	45	6LD	C
	871204	SR 969/MILAM DAIRY RD, 200' S NW 36 ST	31,500	45	6LD	C
	871205	SR 969/MILAM DAIRY RD, 200' S NW 41 ST	36,500	45	6LD	C
	870039	SR 969/MILAM DAIRY RD, 200' S NW 74 ST	18,400	40	4LU	C
	878619	NW 72 AVE, 200' SOUTH OF NW 78 TER	15,600	30	4LU	C

TABLE 14. 2015 DAILY LEVEL OF SERVICE EAST/WEST ROADWAYS

ROADWAY NAME	Station	ROADWAY DESCRIPTION	2015 AADT	Posted Speed	# of lanes	LOS
EAST/WEST ROADWAYS						
Dolphin Expressway	872242	SR 836/DOLPHIN EXPWY, 300' W NW 107 AVE	93,500	55	10LD	B
	872243	SR 836/DOLPHIN EXPWY, 300' E NW 107 AVE	127,500	55	8LD	C
	870187	SR-836, 1.4 MI E OF NW 107TH AVE UNDERPASS, DADE CO.	139,914	55	8LD	C
	872244	SR 836/DOLPHIN EXPWY, 1600' E NW 87 AVE	96,000	55	6LD	D
	872188	SR 836/DOLPHIN EXPWY, 200' E SR 826/PALMETTO EXPWY	200,000	55	8LD	E
NW 12th ST	878245	NW 12TH ST, 200' WEST OF TURNPIKE	24,500	40	4LD	C
	878246	NW 12TH ST, 200' WEST OF NW 111TH AVENUE	30,000	40	6LD	C
	878164	NW 12TH STREET, 200' WEST OF PALMETTO/SR-826	27,500	40	4LD	C
	878163	NW 12TH STREET, 200' EAST OF NW 87TH AVENUE	35,500	40	4LD	D
NW 19th ST	878668	NW 19 STREET 400' WEST OF NW 102 AVE	6,400	30	4LD	C
NW 25th ST	878692	NW 25 STREET 600' WEST OF NW 21 COURT	20,900	35	4LD	D
	878110	NW 25TH STREET, 200' WEST OF NW 107TH AVE	23,500	40	4LD	C
	877025	NW 25TH ST 100 FT. WEST OF NW 94TH AVE	31,000	40	4LD	C
	877026	NW 25TH ST 150 FT WEST OF NW 84TH AVE	29,000	40	6LD	D
	873000	NW 25TH ST, 1000' W OF NW 72 AVE.	30,500	35	6LD	C
NW 33rd ST	878202	NW 33RD ST/NW 97TH AVE, 200' SOUTH OF NW 101 AVE	11,600	35	4LD	C
NW 36th ST	878359	NW 36TH ST, 200' WEST OF NW 87TH AVENUE	44,000	40	6LD	C
	871173	SR 948/NW 36 ST, 200' E SR 826	52,000	45	6LD	C
NW 41st ST	877081	NW 41 ST -- NW 41ST. STREET, 250' EAST OF NW 114 AVE	44,000	40	6LD	C
	878196	NW 41 ST, 200' WEST OF NW 104TH AVENUE	44,000	40	6LD	C
	877022	NW 41ST STREET 500 FT WEST OF NW 97TH AVE	48,500	40	6LD	C
NW 50th ST	878669	NW 50 STREET 900' EAST OF 112 AVE	3,800	35	4LD	C
NW 52nd ST	878697	NW 52 STREET 300' WEST OF NW 102 AVENUE	6,800	35	4LD	C
NW 54th ST	878670	NW 54 STREET 380' WEST OF NW 82 AVE	2,900	30	2LU	C
NW 58th ST	878700	58 STREET 500' EAST NW 114 AVENUE	11,900	35	4LD	C
	878235	NW 58TH ST, 200' WEST OF NW 97TH AVENUE	18,200	35	4LD	D
	878236	NW 58 ST -- NW 58TH ST, 200' WEST OF NW 87TH AVENUE	28,500	40	4LD	C
NW 74th ST	878618	NW 74 ST, 200' EAST OF NW 102 AVE	28,500	30	4LD	C
	878334	NW 74TH STREET, 200' WEST OF NW 77TH COURT	17,400	30	6LD	C
	878335	NW 74TH STREET, 200' WEST OF SR-826	7,300	30	6LD	C
	878583	NW 74 ST -- NW 74 ST, 200' EAST OF MEDLEY POLICE DEPT	5,700	35	4LD	C

Sixteen (16) vehicle classification counts were performed for this study for the purposes of identifying the most current data on the peaking characteristics of all traffic and truck traffic and to collect 2017 percent (%) Truck information. **Table 19** provides a summary of the information. **Table 19** shows that truck traffic is peaking outside of commuter traffic peak periods at all but 1 location. A histogram of the average of all traffic and truck traffic for all locations was prepared and is shown in **Figure 45**. The figure shows that peak truck

traffic in the study area is peaking through the midday. This may be the result of normal business operations where employees/drivers load in the morning, deliver midday and return for the end of the work day or it shows that trucking operations are avoiding peak hour traffic. **Table 20** provides a summary of the classification counts per location for this study. **Appendix C** provides the classification count data for all locations. **Table 21** provides a summary of K, D, and T factors for roadway segments in the study area.

TABLE 15. AM PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (NORTH/SOUTH)

TABLE 15. AM. PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (NORTH/SOUTH)										
PRINCIPAL ROADWAY	LOCATION		# of LANES	Median Type	Direction	Peak Hour Total Volume (V)	Peak Directional Factor	Peak Hour Directional Vehicular	Peak Hour Level of Service	
						Vehicles	Vehicles	Vehicles	V/C	LOS
NW 79 AV	SOUTH OF	NW 37 ST	4LD	TWLTL	NB	603	42%	1,710	0.35	C
					SB	825	58%	1,710	0.48	C
NW 79 AV	SOUTH OF	NW 53 ST	4LD	TWLTL	NB	603	44%	1,710	0.35	C
					SB	772	56%	1,710	0.45	C
NW 82 AV	SOUTH OF	NW 21 ST	4LD	RAISED	NB	541	55%	1,800	0.30	C
					SB	441	45%	1,800	0.25	C
NW 82 AV	SOUTH OF	NW 31 ST	2LU	TWLTL	NB	472	47%	752	0.63	C
					SB	529	53%	752	0.70	C
NW 84 AV	NORTH OF	NW 17 ST	4LD	RAISED	NB	587	72%	1,530	0.38	C
					SB	223	28%	1,530	0.15	C
NW 87 AV	NORTH OF	NW 17 ST	6LD	RAISED	NB	2,171	62%	2,718	0.80	C
					SB	1,311	38%	2,718	0.48	C
NW 87 AV	SOUTH OF	NW 33 ST	6LD	RAISED	NB	1,533	56%	2,718	0.56	C
					SB	1,221	44%	2,718	0.45	C
NW 87 AV	SOUTH OF	NW 52 ST	4LD	RAISED	NB	901	49%	1,800	0.50	C
					SB	937	51%	1,800	0.52	C
NW 97 AV	SOUTH OF	NW 17 ST	4LD	TWLTL	NB	1,578	70%	1,710	0.92	C
					SB	676	30%	1,710	0.40	C
NW 97 AV	SOUTH OF	NW 33 ST	4LD	RAISED	NB	1,357	56%	1,800	0.75	C
					SB	1,074	44%	1,800	0.60	C
NW 97 AV	NORTH OF	NW 33 ST	4LD	RAISED	NB	889	48%	1,800	0.49	C
					SB	949	52%	1,800	0.53	C
NW 97 AV	SOUTH OF	NW 52 ST	4LD	RAISED	NB	637	39%	1,800	0.35	C
					SB	1,013	61%	1,800	0.56	C
NW 97 AV	NORTH OF	NW 58 ST	2LU	NONE	NB	316	47%	634	0.50	C
					SB	362	53%	634	0.57	C
NW 102 AV	NORTH OF	NW 52 ST	4LD	RAISED	NB	564	55%	1,530	0.37	C
					SB	455	45%	1,530	0.30	C
NW 107 AV	NORTH OF	NW 19 ST	6LD	RAISED	NB	1,884	61%	2,718	0.69	C
					SB	1,182	39%	2,718	0.43	C
NW 107 AV	SOUTH OF	NW 29 TR	4LD	RAISED	NB	1,427	57%	1,800	0.79	C
					SB	1,070	43%	1,800	0.59	C
NW 107 AV	SOUTH OF	NW 52 ST	4LD	RAISED	NB	955	54%	1,800	0.53	C
					SB	830	46%	1,800	0.46	C
NW 107 AV	NORTH OF	NW 66 ST	4LD	RAISED	NB	814	42%	1,800	0.45	C
					SB	1,129	58%	1,800	0.63	C
NW 107 AV	NORTH OF	NW 78 ST	4LD	RAISED	NB	977	46%	1,800	0.54	C
					SB	1,132	54%	1,800	0.63	C
NW 109 AV	SOUTH OF	NW 82 ST	2LU	NONE	NB	8	20%	576	0.01	C
					SB	32	80%	576	0.06	C
NW 112 AV	SOUTH OF	NW 30 ST	2LD	TWLTL	NB	423	41%	752	0.56	C
					SB	602	59%	752	0.80	C
NW 112 AV	NORTH OF	NW 41 ST	2LD	TWLTL	NB	372	34%	684	0.54	C
					SB	710	66%	684	1.04	E
NW 112 AV	NORTH OF	NW 74 ST	2LD	RAISED	NB	94	31%	684	0.14	C
					SB	205	69%	684	0.30	C
NW 112/114 AV	NORTH OF	NW 86 ST	4LD	RAISED	NB	476	55%	1,530	0.31	C
					SB	394	45%	1,530	0.26	C
NW 114 AV	NORTH OF	NW 36 TR	2LD	TWLTL	NB	536	37%	684	0.78	D
					SB	921	63%	684	1.35	F
NW 114 AV	NORTH OF	NW 50 ST	2LD	TWLTL	NB	490	39%	684	0.72	D
					SB	765	61%	684	1.12	F
NW 114 AV	NORTH OF	NW 60 ST	4LD	RAISED	NB	549	40%	1,530	0.36	C
					SB	816	60%	1,530	0.53	D
NW 114 AV	SOUTH OF	NW 78 ST	4LD	RAISED	NB	734	42%	1,530	0.48	D
					SB	1,018	58%	1,530	0.67	D
NW 117 AV	SOUTH OF	NW 34 ST	2LU	NONE	NB	647	63%	576	1.12	F
					SB	378	37%	576	0.66	D
NW 117 AV	SOUTH OF	NW 58 ST	2LU	NONE	NB	126	51%	576	0.22	C
					SB	120	49%	576	0.21	C

TABLE 16. PM PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (NORTH/SOUTH)

TABLE ? P.M. PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (NORTH/SOUTH)										
PRINCIPAL ROADWAY	LOCATION		JURISDICTION	Median Type	Direction	Peak Hour Total Volume (V)	Peak Period D Factor	Peak Hour Directional Vehicular Capacity	Peak Hour Level of Service	
						Vehicles	Vehicles	Vehicles	V/C	LOS
NW 79 AV	SOUTH OF	NW 37 ST	CITY	TWLTL	NB	775	53%	1,710	0.45	C
					SB	680	47%	1,710	0.40	C
NW 79 AV	SOUTH OF	NW 53 ST	CITY	TWLTL	NB	774	53%	1,710	0.45	C
					SB	680	47%	1,710	0.40	C
NW 82 AV	SOUTH OF	NW 21 ST	CITY	RAISED	NB	475	48%	1,800	0.26	C
					SB	509	52%	1,800	0.28	C
NW 82 AV	SOUTH OF	NW 31 ST	CITY	TWLTL	NB	438	37%	752	0.58	C
					SB	752	63%	752	1.00	D
NW 84 AV	NORTH OF	NW 17 ST	CITY	RAISED	NB	361	36%	1,530	0.24	C
					SB	655	64%	1,530	0.43	C
NW 87 AV	NORTH OF	NW 17 ST	COUNTY	RAISED	NB	1,572	47%	2,718	0.58	C
					SB	1,765	53%	2,718	0.65	C
NW 87 AV	SOUTH OF	NW 33 ST	COUNTY	RAISED	NB	1,583	50%	2,718	0.58	C
					SB	1,564	50%	2,718	0.58	C
NW 87 AV	SOUTH OF	NW 52 ST	COUNTY	RAISED	NB	1,218	52%	1,800	0.68	C
					SB	1,116	48%	1,800	0.62	C
NW 97 AV	SOUTH OF	NW 17 ST	COUNTY	TWLTL	NB	894	35%	1,710	0.52	C
					SB	1,665	65%	1,710	0.97	D
NW 97 AV	SOUTH OF	NW 33 ST	COUNTY	RAISED	NB	1,205	51%	1,800	0.67	C
					SB	1,157	49%	1,800	0.64	C
NW 97 AV	NORTH OF	NW 33 ST	COUNTY	RAISED	NB	1,029	51%	1,800	0.57	C
					SB	989	49%	1,800	0.55	C
NW 97 AV	SOUTH OF	NW 52 ST	COUNTY	RAISED	NB	1,258	63%	1,800	0.70	C
					SB	750	37%	1,800	0.42	C
NW 97 AV	NORTH OF	NW 58 ST	COUNTY	NONE	NB	338	44%	634	0.53	C
					SB	430	56%	634	0.68	C
NW 102 AV	NORTH OF	NW 52 ST	CITY	RAISED	NB	568	50%	1,530	0.37	C
					SB	567	50%	1,530	0.37	C
NW 107 AV	NORTH OF	NW 19 ST	COUNTY	RAISED	NB	1,499	48%	2,718	0.55	C
					SB	1,592	52%	2,718	0.59	C
NW 107 AV	SOUTH OF	NW 29 TR	COUNTY	RAISED	NB	1,133	49%	1,800	0.63	C
					SB	1,175	51%	1,800	0.65	C
NW 107 AV	SOUTH OF	NW 52 ST	COUNTY	RAISED	NB	1,026	48%	1,800	0.57	C
					SB	1,099	52%	1,800	0.61	C
NW 107 AV	NORTH OF	NW 66 ST	COUNTY	RAISED	NB	1,099	52%	1,800	0.61	C
					SB	999	48%	1,800	0.56	C
NW 107 AV	NORTH OF	NW 78 ST	COUNTY	RAISED	NB	1,459	61%	1,800	0.81	C
					SB	945	39%	1,800	0.53	C
NW 109 AV	SOUTH OF	NW 82 ST	CITY	NONE	NB	11	31%	576	0.02	C
					SB	24	69%	576	0.04	C
NW 112 AV	SOUTH OF	NW 30 ST	CITY	TWLTL	NB	609	56%	752	0.81	C
					SB	482	44%	752	0.64	C
NW 112 AV	NORTH OF	NW 41 ST	CITY	TWLTL	NB	575	48%	684	0.84	D
					SB	631	52%	684	0.92	D
NW 112 AV	NORTH OF	NW 74 ST	CITY	RAISED	NB	62	36%	684	0.09	C
					SB	110	64%	684	0.16	C
NW 112/114 AV	NORTH OF	NW 86 ST	CITY	RAISED	NB	406	34%	1,530	0.27	C
					SB	778	66%	1,530	0.51	D
NW 114 AV	NORTH OF	NW 36 TR	CITY	TWLTL	NB	835	52%	684	1.22	F
					SB	583	44%	684	0.85	D
NW 114 AV	NORTH OF	NW 50 ST	CITY	TWLTL	NB	754	56%	684	1.10	F
					SB	707	40%	684	1.03	F
NW 114 AV	NORTH OF	NW 60 ST	CITY	RAISED	NB	1,056	60%	1,530	0.69	D
					SB	758	49%	1,530	0.50	D
NW 114 AV	SOUTH OF	NW 78 ST	CITY	RAISED	NB	783	51%	1,530	0.51	D
					SB	1,023	74%	1,530	0.67	D
NW 117 AV	SOUTH OF	NW 34 ST	CITY	NONE	NB	364	26%	576	0.63	D
					SB	404	53%	576	0.70	D
NW 117 AV	SOUTH OF	NW 58 ST	CITY	NONE	NB	45	29%	576	0.08	C
					SB	110	71%	576	0.19	C

TABLE 17. AM PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (EAST/WEST)

TABLE 17. AM PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS (EAST/WEST)											
PRINCIPAL ROADWAY	LOCATION		# of LANES	Median Type	Speed Limit (MPH)	Direction	Peak Hour Total Volume (V)	Peak Hour % (D)	Peak Hour Directional Vehicular Capacity (C) ^(A)	Peak Hour Level of Service	
							Vehicles	Vehicles	Vehicles	V/C	LOS
NW 12 ST	EAST OF	NW 84 AV	4LD	RAISED	40	EB	1,977	71%	1800	1.10	E
						WB	811	29%	1800	0.45	C
NW 12 ST	EAST OF	NW 93 CT	4LD	TWLTL	40	EB	1,611	67%	1710	0.94	C
						WB	795	33%	1710	0.46	C
NW 12 ST	EAST OF	NW 107 AV	4LD	RAISED	40	EB	1,888	70%	1800	1.05	E
						WB	806	30%	1800	0.45	C
NW 17/19 ST	EAST OF	NW 107 AV	4LD	RAISED	35	EB	661	68%	1530	0.43	C
						WB	311	32%	1530	0.20	C
NW 25 ST	WEST OF	NW 79 AV	4LD	TWLTL	40	EB	1,120	45%	1710	0.65	C
						WB	1,378	55%	1710	0.81	C
NW 25 ST	WEST OF	NW 92 AV	4LD	TWLTL	40	EB	1,075	44%	1710	0.63	C
						WB	1,341	56%	1710	0.78	C
NW 25 ST	WEST OF	NW 102 AV	4LD	TWLTL	40	EB	1,537	70%	1710	0.90	C
						WB	672	30%	1710	0.39	C
NW 25 ST	EAST OF	NW 112 AV	4LD	TWLTL	40	EB	741	39%	1710	0.43	C
						WB	1,149	61%	1710	0.67	C
NW 33 ST	WEST OF	NW 79 AV	2LU	TWLTL	35	EB	367	46%	576	0.64	D
						WB	435	54%	576	0.76	D
NW 33 ST	WEST OF	NW 84 AV	4LD	RAISED	35	EB	874	59%	1530	0.57	D
						WB	616	41%	1530	0.40	C
NW 33 ST	WEST OF	NW 87 AV	4LD	RAISED	35	EB	1,037	62%	1530	0.68	D
						WB	632	38%	1530	0.41	C
NW 33 ST	EAST OF	NW 104 AV	4LD	RAISED	35	EB	889	61%	1530	0.58	D
						WB	574	39%	1530	0.38	C
NW 33 ST	WEST OF	NW 107 AV	2LU	TWLTL	35	EB	492	53%	576	0.85	D
						WB	442	47%	576	0.77	D
NW 34 ST	WEST OF	NW 114 AV	2LU	TWLTL	35	EB	653	72%	576	1.13	F
						WB	259	28%	576	0.45	C
NW 36 ST	WEST OF	NW 82 AV	6LD	RAISED	40	EB	1,714	48%	2718	0.63	C
						WB	1,843	52%	2718	0.68	C
NW 36/41 ST	EAST OF	NW 94 AV	6LD	RAISED	40	EB	2,310	62%	2718	0.85	C
						WB	1,437	38%	2718	0.53	C
NW 41 ST	WEST OF	NW 102 AV	6LD	RAISED	40	EB	2,318	65%	2718	0.85	C
						WB	1,266	35%	2718	0.47	C
NW 41 ST	EAST OF	NW 112 AV	6LD	RAISED	40	EB	2,315	70%	2718	0.85	C
						WB	1,012	30%	2718	0.37	C
NW 50 ST	WEST OF	NW 109 AV	2LU	NONE	35	EB	407	53%	576	0.71	D
						WB	360	47%	576	0.63	D
NW 52 ST	EAST OF	NW 107 AV	4LD	RAISED	35	EB	523	61%	1530	0.34	C
						WB	333	39%	1530	0.22	C
NW 53 ST	WEST OF	NW 79 AV	4LD	RAISED	35	EB	296	42%	1530	0.19	C
						WB	409	58%	1530	0.27	C
NW 58 ST	EAST OF	NW 84 AV	4LD	TWLTL	40	EB	1,293	55%	1454	0.89	D
						WB	1,040	45%	1454	0.72	D
NW 58 ST	WEST OF	NW 92 AV	4LD	TWLTL	40	EB	769	72%	1454	0.53	D
						WB	292	28%	1454	0.20	C
NW 58 ST	EAST OF	NW 102 AV	4LD	RAISED	40	EB	1,493	70%	1530	0.98	E
						WB	655	30%	1530	0.43	C
NW 58 ST	WEST OF	NW 109 AV	4LD	RAISED	40	EB	1,103	68%	1530	0.72	D
						WB	523	32%	1530	0.34	C
NW 74 ST	WEST OF	NW 97 AV	6LD	RAISED	40	EB	1,804	69%	2718	0.66	D
						WB	812	31%	2718	0.30	D
NW 74 ST	WEST OF	NW 107 AV	4LD	RAISED	40	EB	1,377	72%	1800	0.77	D
						WB	527	28%	1800	0.29	D
NW 78 ST	WEST OF	NW 107 AV	2LU	NONE	30	EB	92	44%	576	0.16	C
						WB	118	56%	576	0.20	C
NW 78 ST	WEST OF	NW 109 AV	2LU	NONE	30	EB	68	47%	576	0.12	C
						WB	78	53%	576	0.14	C
NW 82 ST	WEST OF	NW 109 AV	2LU	NONE	30	EB	204	39%	576	0.35	C
						WB	318	61%	576	0.55	D
NW 86 ST	WEST OF	NW 107 AV	2LU	NONE	30	EB	147	48%	576	0.26	C
						WB	160	52%	576	0.28	C
NW 90 ST	WEST OF	NW 107 AV	2LU	NONE	35	EB	106	40%	1530	0.07	C
						WB	157	60%	1530	0.10	C

TABLE 18. PM PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS

TABLE ? P.M. PEAK HOUR TRANSPORTATION CORRIDOR SEGMENT EXISTING CONDITIONS											
PRINCIPAL ROADWAY	LOCATION		# of LANES	Median Type	Speed Limit (MPH)	Direction	Peak Hour Total Volume (V)	Peak Hour D Factor	Peak Hour Directional Vehicular Capacity (C) ⁽¹⁾	Peak Hour Level of Service	
							Vehicles	Vehicles	Vehicles	V/C	LDS
NW 12 ST	EAST OF	NW 84 AV	4LD	RAISED	40	EB	1,132	51%	1,800	0.63	C
						WB	1,068	49%	1,800	0.59	C
NW 12 ST	EAST OF	NW 93 CT	4LD	TWLTL	40	EB	912	50%	1,710	0.53	C
						WB	917	50%	1,710	0.54	C
NW 12 ST	EAST OF	NW 107 AV	4LD	RAISED	40	EB	914	42%	1,800	0.51	C
						WB	1,258	58%	1,800	0.70	C
NW 17/19 ST	EAST OF	NW 107 AV	4LD	RAISED	35	EB	397	49%	1,530	0.26	C
						WB	414	51%	1,530	0.27	C
NW 25 ST	WEST OF	NW 79 AV	4LD	TWLTL	40	EB	1,430	52%	1,710	0.84	C
						WB	1,306	48%	1,710	0.76	C
NW 25 ST	WEST OF	NW 92 AV	4LD	TWLTL	40	EB	1,586	64%	1,710	0.93	C
						WB	907	36%	1,710	0.53	C
NW 25 ST	WEST OF	NW 102 AV	4LD	TWLTL	40	EB	1,032	48%	1,710	0.60	C
						WB	1,139	52%	1,710	0.67	C
NW 25 ST	EAST OF	NW 112 AV	4LD	TWLTL	40	EB	1,297	64%	1,710	0.76	C
						WB	727	36%	1,710	0.43	C
NW 33 ST	WEST OF	NW 79 AV	2LU	TWLTL	35	EB	517	58%	576	0.90	D
						WB	370	42%	576	0.64	D
NW 33 ST	WEST OF	NW 84 AV	4LD	RAISED	35	EB	798	57%	1,530	0.52	D
						WB	610	43%	1,530	0.40	C
NW 33 ST	WEST OF	NW 87 AV	4LD	RAISED	35	EB	908	50%	1,530	0.59	D
						WB	906	50%	1,530	0.59	D
NW 33 ST	EAST OF	NW 104 AV	4LD	RAISED	35	EB	682	44%	1,530	0.45	D
						WB	883	56%	1,530	0.58	D
NW 33 ST	WEST OF	NW 107 AV	2LU	TWLTL	35	EB	588	61%	576	1.02	F
						WB	377	39%	576	0.65	D
NW 34 ST	WEST OF	NW 114 AV	2LU	TWLTL	35	EB	349	44%	576	0.61	D
						WB	453	56%	576	0.79	D
NW 36 ST	WEST OF	NW 82 AV	6LD	RAISED	40	EB	1,391	48%	2,718	0.51	C
						WB	1,522	52%	2,718	0.56	C
NW 36/41 ST	EAST OF	NW 94 AV	6LD	RAISED	40	EB	1,219	41%	2,718	0.45	C
						WB	1,729	59%	2,718	0.64	C
NW 41 ST	WEST OF	NW 102 AV	6LD	RAISED	40	EB	1,223	40%	2,718	0.45	C
						WB	1,861	60%	2,718	0.68	C
NW 41 ST	EAST OF	NW 112 AV	6LD	RAISED	40	EB	1,245	40%	2,718	0.46	C
						WB	1,870	60%	2,718	0.69	C
NW 50 ST	WEST OF	NW 109 AV	2LU	NONE	35	EB	212	34%	576	0.37	C
						WB	418	66%	576	0.73	D
NW 52 ST	EAST OF	NW 107 AV	4LD	RAISED	35	EB	284	37%	1,530	0.19	C
						WB	476	63%	1,530	0.31	C
NW 53 ST	WEST OF	NW 79 AV	4LD	RAISED	35	EB	503	68%	1,530	0.33	C
						WB	239	32%	1,530	0.16	C
NW 58 ST	EAST OF	NW 84 AV	4LD	TWLTL	40	EB	1,186	52%	1,454	0.82	D
						WB	1,083	48%	1,454	0.75	D
NW 58 ST	WEST OF	NW 92 AV	4LD	TWLTL	40	EB	350	42%	1,454	0.24	C
						WB	485	58%	1,454	0.33	C
NW 58 ST	EAST OF	NW 102 AV	4LD	RAISED	40	EB	738	37%	1,530	0.48	D
						WB	1,257	63%	1,530	0.82	D
NW 58 ST	WEST OF	NW 109 AV	4LD	RAISED	40	EB	629	35%	1,530	0.41	C
						WB	1,194	65%	1,530	0.78	D
NW 74 ST	WEST OF	NW 97 AV	6LD	RAISED	40	EB	814	37%	2,718	0.30	C
						WB	1,415	63%	2,718	0.52	C
NW 74 ST	WEST OF	NW 107 AV	4LD	RAISED	40	EB	814	52%	1,800	0.45	C
						WB	739	48%	1,800	0.41	C
NW 78 ST	WEST OF	NW 107 AV	2LU	NONE	30	EB	226	71%	576	0.39	C
						WB	92	29%	576	0.16	C
NW 78 ST	WEST OF	NW 109 AV	2LU	NONE	30	EB	51	27%	576	0.09	C
						WB	137	73%	576	0.24	C
NW 82 ST	WEST OF	NW 109 AV	2LU	NONE	30	EB	158	38%	576	0.27	C
						WB	257	62%	576	0.45	C
NW 86 ST	WEST OF	NW 107 AV	2LU	NONE	30	EB	268	89%	576	0.47	C
						WB	141	34%	576	0.24	C
NW 90 ST	WEST OF	NW 107 AV	2LU	NONE	35	EB	109	44%	1,530	0.07	C
						WB	139	56%	1,530	0.09	C

TABLE 19. DAILY TRAFFIC AND TRUCK OPERATIONS

ROADWAY	LOCATION	ALL VEHICLES		TRUCKS		24 HOUR TRUCK % T FACTOR
		AM PEAK BEGIN	PM PEAK BEGIN	AM PEAK BEGIN	PM PEAK BEGIN	
NW 12 th Street	East of Turnpike	7:45 AM	5:00 PM	8:15 AM	3:00 PM	3.17%
NW 36 th Street	East of NW 79 th Avenue	8:15 AM	3:45 PM	10:30 AM	1:30 PM	3.97%
NW 58 th Street	East of NW 117 th Avenue	7:45 AM	1:30 PM	10:00 AM	12:45 PM	2.09%
NW 58 th Street	East of NW 97 th Avenue	8:00 AM	4:30 PM	10:00 AM	1:45 PM	4.63%
NW 58 th Street	East of NW 79 th Avenue	7:45 AM	12:15 PM	10:45 AM	1:30 PM	7.78%
NW 74 th Street	West of SR 826	7:30 AM	5:00 PM	11:00 AM	12:00 PM	12.78%
NW 87 th Avenue	North of SR 836/Dolphin Expressway	11:00 AM	4:30 PM	11:00 AM	12:15 PM	1.98%
NW 87 th Avenue	North of NW 25 th Street	8:30 AM	4:15 PM	10:15 AM	2:30 PM	4.00%
NW 87 th Avenue	North of NW 58 th Street	8:00 AM	5:00 PM	10:00 AM	2:30 PM	8.25%
NW 97 th Avenue	North of SR 836/Dolphin Expressway	7:30 AM	5:00 PM	9:45 AM	2:30 PM	0.78%
NW 97 th Avenue	North of NW 58 th Street	7:30 AM	4:45 PM	9:30 AM	12:15 PM	11.65%
NW 97 th Avenue	at NW 33 rd Street	8:00 AM	5:15 PM	8:45 AM	1:00 PM	1.43%
NW 107 th Avenue	at NW 14 th Street	8:00 AM	4:15 PM	11:00 AM	1:00 PM	2.80%
NW 107 th Avenue	North of NW 27 th Street	7:45 AM	4:30 PM	9:45 AM	2:30 PM	3.35%
NW 107 th Avenue	at NW 66 th Street	7:45 AM	5:15 PM	9:45 AM	12:00 PM	1.12%
NW 107 th Avenue	North of NW 74 th Street	7:00 AM	5:15 PM	9:00 AM	12:15 PM	1.76%

FIGURE 45. COMPARISON OF ALL TRAFFIC PEAKING TO TRUCK TRAFFIC PEAKING FOR 16 LOCATIONS

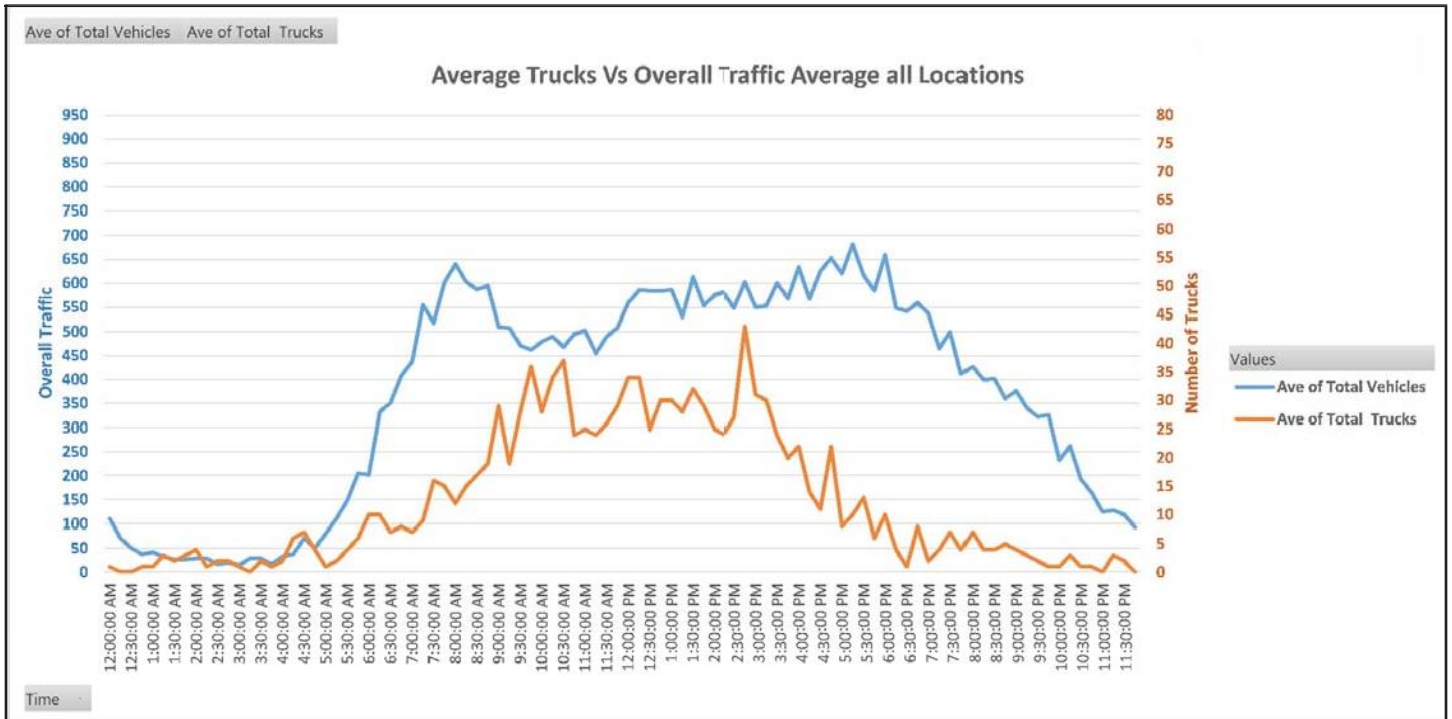


TABLE 20. 24-HOUR CLASSIFICATION COUNT SUMMARY

Roadway	Location	Motorcycles	Cars	Light Goods Vehicles	Buses	Single-Unit Trucks	Articulated Trucks	Bicycles on Road	Total Vehicles	Total Trucks
NW 58 St	East of NW 79 Ave	52	18,625	3,157	25	1,437	408	2	23,706	1,845
NW 87 Ave	North of 836 Dolphin Expy	192	42,062	4,196	94	753	188	14	47,499	941
NW 12 St	East of Turnpike	71	34,530	3,035	35	827	405	0	38,903	1,232
NW 107 Ave	at NW 14 St	128	42,141	3,644	288	1,026	306	19	47,552	1,332
NW 107 Ave	North of NW 27 St	99	31,477	2,737	92	809	384	24	35,622	1,193
NW 58 St	East of NW 117Ave	9	983	189	1	25	1	37	1,245	26
NW 36 St	East of NW 79 Ave	181	67,788	6,592	125	2,346	740	16	77,788	3,086
NW 97Ave	at NW 33 St	78	17,068	1,663	54	228	47	29	19,167	275
NW 58 St	East of NW 97 Ave	81	23,680	3,014	33	873	429	10	28,120	1,302
NW 97 Ave	North 836 Dolphin Expy	89	22,783	1,791	35	184	11	2	24,895	195
NW 87 Ave	North of NW 25 St	126	35,655	3,363	107	1,289	349	35	40,924	1,638
NW 107 Ave	at NW 66 St	104	26,343	2,279	65	286	41	1	29,119	327
NW 97 Ave	North of NW 58th St	39	7,134	855	14	633	429	10	9,114	1,062
NW 74 St	West of SR 826	111	27,416	5,344	46	3,241	1,586	14	37,758	4,827
NW 107 Ave	North of NW 74 St	86	18,641	1,983	112	330	43	7	21,202	373
NW 87 Ave	North of NW 58 th St	67	14,888	2,353	46	1,215	346	5	18,920	1,561

TABLE 21. TRAFFIC TABLE WITH K, D, & T FACTORS

ROADWAY NAME	STATION	ROADWAY DESCRIPTION	2016 AADT	2016 K Factor %	2016 D Factor %	2016 T Factor %	2016 Truck Volume
NORTH/SOUTH ROADWAY							
HEFT	972526	HEFT/SR-821 M/L, N OF NW 12ST BRIDGE	121,000	9.5	55.5	7.7	9,317
	970276	HEFT SB ON RAMP FROM NW 12TH ST, M27F	6,250	9	99.9	7.7	481
	970272	HEFT NB CD/NB OFF RAMP TO NW 12TH ST, M27B	6,250	9	99.9	7.7	481
	970273	HEFT NB ON RAMP FROM NW 12TH ST, M27D	9,200	9	99.9	7.7	708
	970275	HEFT SB OFF RAMP TO NW 12TH ST, M27E	9,200	9	99.9	7.7	708
	972230	HEFT/SR-821 M/L, S OF NW 41ST STREET	127,200	9.5	55.5	7.7	9,794
	970267	HEFT/SR-821, S OF NW 25TH ST/SR-836	127,592	9.7	55.8	6.3	8,038
	970291	HEFT NB OFF RAMP TO NW 41ST ST, M29A	9,100	9	99.9	7.7	701
	970294	HEFT SB ON RAMP FROM WB NW 41ST ST TO 87471534 GORE, M29D	8,500	9	99.9	7.7	655
	970292	HEFT NB ON RAMP FROM NW 41ST ST, M29B	8,400	9	99.9	7.7	647
	970293	HEFT SB OFF RAMP TO NW 41ST ST, M29C	8,400	9	99.9	7.7	647
	972269	HEFT/SR-821 M/L, S OF NW 74TH STREET	125,900	9.5	55.5	7.7	9,694
	970311	HEFT NB OFF RAMP TO NW 74TH ST, M30A	6,700	9	99.9	7.7	516
	970314	HEFT SB ON RAMP FROM NW 74TH ST, M30D	6,700	9	99.9	7.7	516
	970312	HEFT NB ON RAMP FROM NW 74TH ST, M30B	2,900	9	99.9	7.7	223
	970313	HEFT SB OFF RAMP TO NW 74TH ST, M30C	2,900	9	99.9	7.7	223
	972268	HEFT/SR-821 M/L, AT OKEECHOBEE PLAZA	118,400	9.5	55.5	7.7	9,117
NW 112th AVE	878584	NW 111 AVE, 200' SOUTH OF NW 17 ST	12,800	9	56.1	4.6	589
	878699	NW 112 AVENUE 300' SOUTH OF NW 50 STREET	7,700	9	54.5	8	616
NW 107th AVE	878228	NW 107TH AVE, 200' NORTH OF SR-836	74,500	9	54.5	13.5	10,058
	878229	NW 107TH AVE, 200' NORTH OF NW 12TH STREET	47,000	9	54.5	8	3,760
	878230	NW 107TH AVE, 200' NORTH OF NW 25TH STREET	20,500	9	54.5	13.5	2,768
	878227	NW 107TH AVE, 200' NORTH OF NW 41ST STREET	28,000	9	54.5	13.5	3,780
	878682	NW 107 AVENUE 1000' SOUTH OF NW 74 STREET	25,000	9	54.5	8	2,000
	N/A	NW 14 St	47,552	9	54.5	2.8	1,332
	N/A	North of NW 27 St	35,622	9	54.5	3.3	1,193
	N/A	NW 66 St	29,119	9	54.5	1.1	327
N/A	North of NW 74 St	21,202	9	54.5	1.8	373	
NW 102nd AVE	878698	NW 102 AVENUE 350' SOUTH OF NW 52 STREET	7,600	9	54.5	8	608
NW 87th AVE	877051	SR & CR 973 200 FEET SOUTH OF NW 33RD ST	41,500	9	56.1	6.1	2,532
	878704	NW 87th AVE	21,500	9	56.1	8	1,720
	878626	NW 87 AVE, 200' SOUTH OF NW 66 ST (2011 OFF SYSTEM CYCLE)	16,000	9	56.1	8	1,280
	N/A	North of 836 Dolphin Expy	47,499	9	56.1	2.0	941
	N/A	North of NW 25 St	40,924	9	56.1	4.0	1,638
N/A	North of NW 58 th St	18,920	9	56.1	8.3	1,561	
NW 82nd AVE	878496	NW 82 AVE, 200 FT S OF NW 25TH ST (DORAL)	14,400	9	56.1	8	1,152
NW 79th AVE	878183	NW 79TH AVE, 200' SOUTH OF NW 36 STREET	22,500	9	54.5	13.5	3,038
	878161	NW 79TH AVENUE, 200' NORTH OF NW 36TH STREET	24,500	9	54.5	13.5	3,308
	878658	NW 79 AVE, 200' NORTH OF NW 80 ST	11,500	9	56.1	10.1	1,162
SR 826/PALMETTO EXPRESSWAY	876294	RAMP 87260537 FROM EB NW 25 ST TO SB SR826, 400' S OF NW 25 ST	11,000	9	99.9	8.4	924
	876296	RAMP 87260539 FROM NB SR826 TO NW 25 ST, 300' N OF SR 826	14,500	9	99.9	4.5	653
	876295	RAMP 87260538 FROM SB SR826 TO WB NW 25 ST, 100' S OF SR 826	12,000	9	99.9	15.2	1,824
	876297	RAMP 87260640 FROM NW 25 ST TO NB SR826, 600' N OF NW 25 ST	13,500	9	99.9	17.4	2,349
	872525	SR 826/PALMETTO EXPWY, 1000' N NW 25 ST	261,000	8	51.3	5.1	13,311
	876210	RAMP 87260249 FROM NB SR826 TO EB NW 36 ST, 200' N OF SR 826	20,500	9	99.9	9.4	1,927
	876208	RAMP 87260247 FROM EB NW 36 ST TO SB SR826, 200' S OF NW 36 ST	8,300	9	99.9	4.8	398
	876240	RAMP 87260391 FROM EB NW 36 ST TO NB SR826, 400' E OF NW 36 ST	12,500	9	99.9	5.7	713
	876239	RAMP 87260390 FROM WB NW 36 ST TO SB SR826, 400' W OF NW 36 ST	11,000	9	99.9	7	770
	876211	RAMP 87260250 FROM WB NW 36 ST TO NB SR826, 300' N OF NW 36 ST	7,700	9	99.9	9.8	755
	876209	RAMP 87260248 FROM SB SR826 TO WB NW 36 ST, 100' S OF SR 826	22,500	9	99.9	12.7	2,858
	870571	SR 826/PALMETTO EXPWY, 1000' N NW 36 ST	256,000	8	51.3	5.1	13,056
	876244	RAMP 87260395 FROM NB SR826 TO EB NW 58 ST, 200' N OF SR 826	13,000	9	99.9	10.6	1,378
	876242	RAMP 87260393 FROM EB NW 58 ST TO SB SR826, 400' S OF NW 58 ST	10,000	9	99.9	12.2	1,220
	876243	RAMP 87260394 FROM SB SR826 TO WB NW 58 ST, 150' S OF SR 826	17,000	9	99.9	13.5	2,295
	876245	RAMP 87260396 FROM WB NW 58 ST TO NB SR826, 700' N OF NW 58 ST	14,500	9	99.9	10.9	1,581
	870572	SR 826/PALMETTO EXPWY, 1000' N NW 58 ST	267,000	8	51.3	6.1	16,287
	876248	RAMP 87260400 FROM NB SR826 TO EB NW 74 ST, 150' N OF SR 826	14,500	9	99.9	8.5	1,233
	876246	RAMP 87260397 FROM EB NW 74 ST TO SB SR826, 500' S OF NW 74ST	13,000	9	99.9	7	910
	876249	RAMP 87260402 FROM WB NW 74 ST TO NB SR826, 500' N OF NW 74 ST	16,500	9	99.9	12.2	2,013
	876247	RAMP 87260399 FROM SB SR826 TO WB NW 74 ST, 200' S OF SR 826	18,000	9	99.9	12.8	2,304
	870573	SR 826/PALMETTO EXPWY, 1000' N NW 74 ST	243,000	8	51.3	8.7	21,141
	876252	RAMP 87260405 FROM NB SR826 TO EB S RIVER DR, 200' N SR 826	21,000	9	99.9	13.7	2,877
876250	RAMP 87260403 FROM EB S RIVER DR TO SB SR826, 300' S OF S RIVER DR	13,000	9	99.9	18.4	2,392	
876254	RAMP 87260407 FROM WB US 27 TO SB SR826, 300' N OF RAMP 87260412	7,800	9	99.9	7.3	569	

TABLE 21. TRAFFIC TABLE WITH K, D, & T FACTORS - CONTINUED

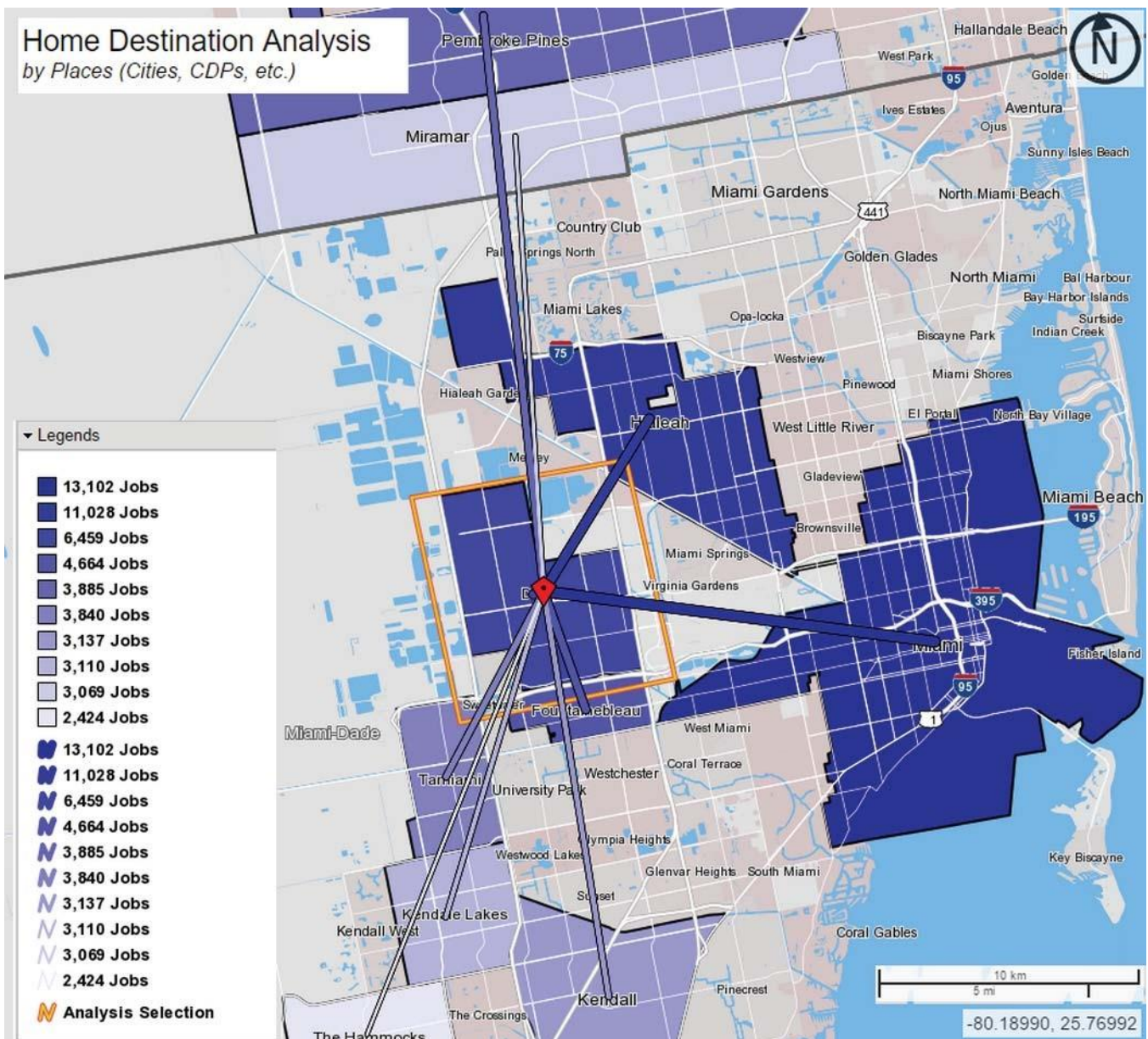
ROADWAY NAME	STATION	ROADWAY DESCRIPTION	2016 AADT	2016 K Factor %	2016 D Factor %	2016 T Factor %	2016 Truck Volume
	876257	RAMP 87260412 FROM WB US 27 TO NB SR826, 700' N OF US 27	17,000	9	99.9	10.2	1,734
	870553	SR 826/PALMETTO EXPWY, 600' N OKEECHOBEE RD	210,000	8	51.3	5.1	10,710
	876255	RAMP 87260408 FROM SB SR826 TO WB OKEECHOBEE RD, 200' S OF SR 826	19,000	9	99.9	11.7	2,223
NW 72nd AVE	871202	SR 969/MILAM DAIRY RD, 200' N NW 12 ST	33,500	9	54.5	9.1	3,049
	871203	SR 969/MILAM DAIRY RD, 500' S NW 25 ST	36,500	9	54.5	6.6	2,409
	871204	SR 969/MILAM DAIRY RD, 200' S NW 36 ST	33,500	9	54.5	11	3,685
	871205	SR 969/MILAM DAIRY RD, 200' S NW 41 ST	34,500	9	54.5	12.3	4,244
	870039	SR 969/MILAM DAIRY RD, 200' S NW 74 ST	16,800	9	54.5	9.8	1,646
	878619	NW 72 AVE, 200' SOUTH OF NW 78 TER (2011 OFF SYSTEM CYCLE)	15,700	9	56.1	10.6	1,664
NW 97 AVE	N/A	NW 33 St	19,167	9	56.1	1.4	275
	N/A	North 836 Dolphin Expy	24,895	9	56.1	0.8	195
	N/A	North of NW 58th St	9,114	9	56.1	11.7	1,062
EAST/WEST ROADWAY							
DOLPHIN EXPRESSWAY	876115	RAMP 87200073 FROM EB SR836 TO SB NW 107 AVE, 800' E OF SR 836	6,000	9	99.9	6.2	372
	876168	RAMP 87200500 FROM WB SR836 TO SB NW 107 AVE, 200' W OF SR 836	7,800	9	99.9	3.1	242
	876169	NW 58 STREET 500' EAST NW 114 AVENUE	5,600	9	99.9	8.6	482
	872242	SR 836/DOLPHIN EXPWY, 300' W NW 107 AVE	84,000	8	66.1	3.1	2,604
	876114	RAMP 87200072 FROM SB NW 107 AVE TO WB SR836, 300' W OF NW 107 AVE	10,500	9	99.9	5	525
	876174	RAMP 87200606 FROM NB NW 107AVE TO EB SR836, 600' E OF NW 107 AVE	5,100	9	99.9	80.9	4,126
	876173	RAMP 87200605 FROM WB SR836 TO NB NW 107AVE, 400' E OF NW 107 AVE	12,500	9	99.9	7.9	988
	872243	SR 836/DOLPHIN EXPWY, 300' E NW 107 AVE	113,000	8	66.1	3.1	3,503
	870187	SR-836, 1.4 MI E OF NW 107TH AVE UNDERPASS,DADE CO.	139,914	8.5	63.6	3.8	5,317
	876117	RAMP 87200075 FROM EB SR836 TO SB NW 87 AVE, 500' E OF SR 836	10,000	9	99.9	5.6	560
	876116	RAMP 87200074 FROM SB NW 12 ST TO WB SR836, 450' S OF NW 12 ST	6,100	9	99.9	4.4	268
	876063	RAMP 87047200 FROM WB SR836 TO SB NW 87 AVE, 300' NW OF SR 836	6,800	9	99.9	3.3	224
	876064	RAMP 87047201 FROM NB NW 87 AVE TO WB SR836, 300' NE OF NW 87 AVE	2,500	9	99.9	6.6	165
	876170	RAMP 87200502 FROM NB NW 87 AVE TO EB SR836, 700' E OF NW 87 AVE	16,500	9	99.9	4.5	743
	872244	SR 836/DOLPHIN EXPWY, 1600' E NW 87 AVE	97,500	8	66.1	3.1	3,023
	876387	SR836 OFF RAMP87200324 TO NW12 ST,300'W OF RAMP87200324	6,400	9	99.9	5.2	333
	876414	RAMP 87200324 FROM SR 836 TO NW 87 AVE, 800 FT W OF SR 836	34,000	9	99.9	8.7	2,958
872188	SR 836/DOLPHIN EXPWY,200' E SR 826/PALMETTO EXPWY	194,000	8	66.1	3.1	6,014	
876127	RAMP 87200086 FROM NB NW 72 AVE TO EB SR836, 600' E OF NW 72 AVE	5,500	9	99.9	8.7	479	
876126	RAMP 87200285 FROM WB SR836 TO NB NW 72 AVE, 1000' W OF SR 836	55,000	9	99.9	8.7	4,785	
NW 12th ST	878245	NW 12TH ST, 200' WEST OF TURNPIKE	33,500	9	54.5	13.5	4,523
	878246	NW 12TH ST, 200' WEST OF NW 111TH AVENUE	26,000	9	54.5	13.5	3,510
	878654	NW 12TH ST, 0.3 MI E OF NW 107TH ST, DORAL	25,000	9	56.1	8	2,000
	878497	NW 12 ST, 200 FT E OF NW 93 CT (2011 OFF SYSTEM CYCLE)	26,000	9	56.1	8	2,080
	878164	NW 12TH STREET, 200' WEST OF PALMETTO/SR-826	28,500	9	54.5	13.5	3,848
	878163	NW 12TH STREET, 200' EAST OF NW 87TH AVENUE	37,000	9	54.5	8	2,960
	N/A	East of Turnpike	38,903	9	54.5	3.2	1,232
NW 19th ST	878668	NW 19 STREET 400' WEST OF NW 102 AVE	6,200	9	56.1	8	496
NW 25th ST	878692	NW 25 STREET 600' WEST OF NW 21 COURT	22,000	9.5	54.5	4.5	990
	878110	NW 25TH STREET, 200' WEST OF NW 107TH AVE	24,500	9	54.5	13.5	3,308
	877025	NW 25TH ST 100 FT. WEST OF NW 94TH AVE	30,500	9	56.1	15.8	4,819
	877026	NW 25TH ST 150 FT WEST OF NW 84TH AVE	30,500	9	54.5	17.9	5,460
	873000	NW 25TH ST, 1000' W OF NW 72 AVE.	33,000	9	54.5	11.1	3,663
	877095	NW 25th St	6,200	9	54.5	23.2	1,438
	N/A	Viaduct	5,598	9	54.5	29	1,621
NW 33rd ST	878202	NW 33RD ST/NW 97TH AVE, 200' SOUTH OF NW 101 AVE	12,200	9	54.5	8	976
NW 36th ST	878359	NW 36TH ST, 200' WEST OF NW 87TH AVENUE	42,500	9	54.5	13.5	5,738
	871173	SR 948/NW 36 ST, 200' E SR 826	45,000	9	54.5	7	3,150
	N/A	East of NW 79 Ave	77,788	9	54.5	4.0	3,086
NW 41st ST	877081	NW 41 ST -- NW 41ST. STREET, 250' EAST OF NW 114 AVE	46,000	9	54.5	7.2	3,312
	878196	NW 41 ST, 200' WEST OF NW 104TH AVENUE	46,000	9	54.5	8	3,680
	877022	NW 41ST STREET 500 FT WEST OF NW 97TH AVE	47,500	9	56.1	5.2	2,470
NW 50th ST	878669	NW 50 STREET 900' EAST OF 112 AVE	4,000	9	54.5	8	320
NW 52nd ST	878697	NW 52 STREET 300' WEST OF NW 102 AVENUE	7,200	9	54.5	8	576
NW 54th ST	878670	NW 54 STREET 380' WEST OF NW 82 AVE	2,900	9	56.1	8	232
	878700	58 STREET 500' EAST NW 114 AVENUE	12,500	9	54.5	8	1,000
NW 58th ST	878235	NW 58TH ST, 200' WEST OF NW 97TH AVENUE	19,000	9	54.5	13.5	2,565
	878236	NW 58 ST -- NW 58TH ST, 200' WEST OF NW 87TH AVENUE	29,500	9	54.5	13.5	3,983
	878705	NW 74th ST	28,500	9	56.1	8	2,280
	N/A	East of NW 79 Ave	23,706	9	54.5	7.8	1,845
	N/A	East of NW 117Ave	1,245	9	54.5	2.1	26
	N/A	East of NW 97 Ave	28,120	9	54.5	4.6	1,302
NW 74th ST	878618	NW 74 ST, 200' EAST OF NW 102 AVE	28,500	9	56.1	8.7	2,480
	878334	NW 74TH STREET, 200' WEST OF NW 77TH COURT	18,200	9	54.5	13.5	2,457
	878335	NW 74TH STREET, 200' WEST OF SR-826	7,700	9	54.5	13.5	1,040
	878583	NW 74 ST -- NW 74 ST, 200' EAST OF MEDLEY POLICE DEPRT	5,700	9	56.1	10.1	576
	N/A	West of SR 826	37,758	9	54.5	12.8	4,827

This study further analyzed traffic and peak period operations by using Bluetooth technology to track speeds through the area and to/from PORTMiami. Fifteen (15) Bluetooth detection devices were deployed throughout the study area and for a 2 week period from March 14, 2017 to March 31, 2017

Figures 46 and 47 provide information on commuter trips in 2014. Figure 46 shows that approximately 162,000 employees lives throughout the county and a little further north who are employed in the study area. Majority of the

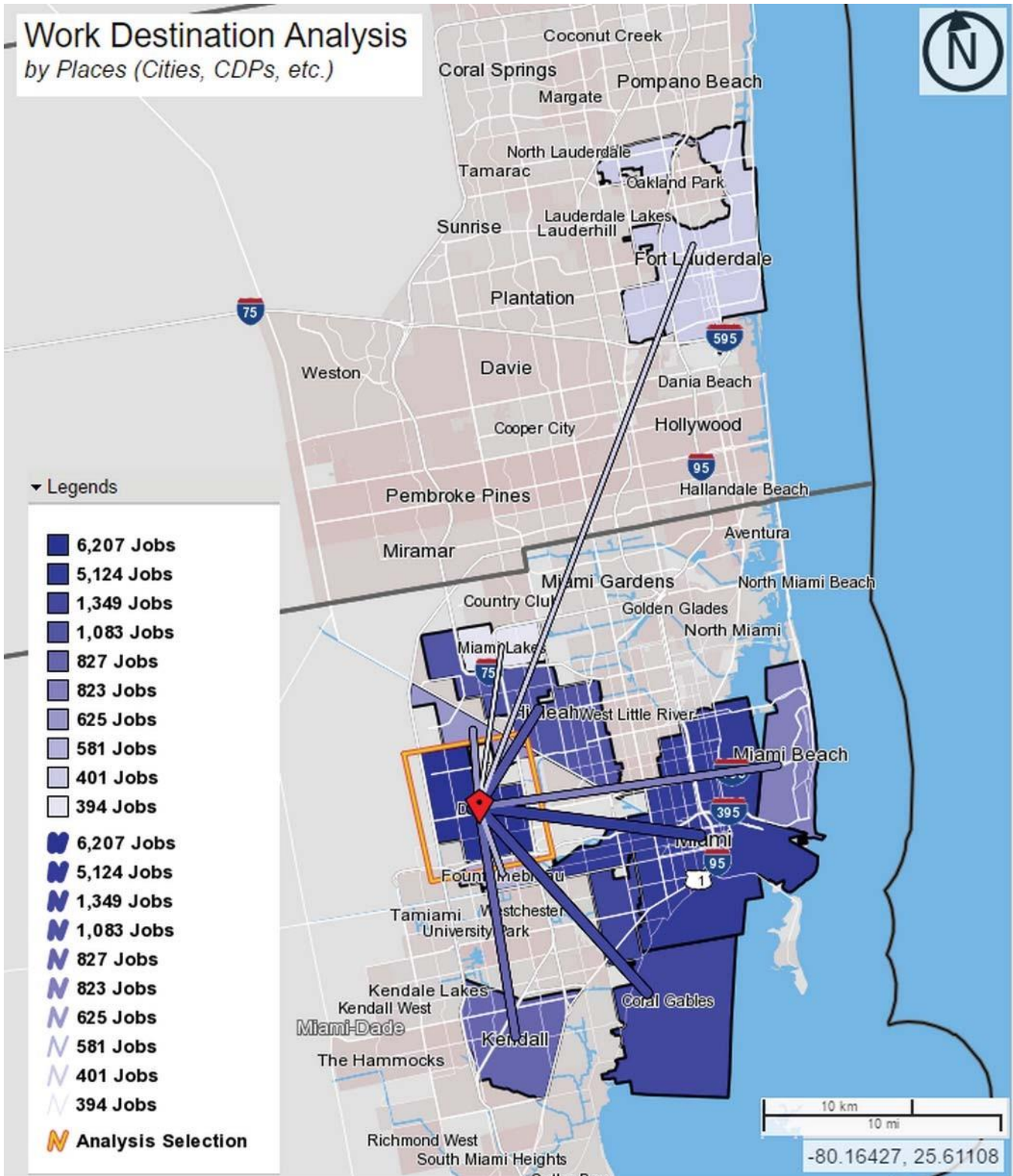
employees lives in Miami which is represented by the darkest purple line with an approximate 10% of the total number. Employees lives as far north as Pembroke Pines in the next county over. Figure 47 shows that approximately 46,000 employees who lives in the study area and their location of employment. Similar to Figure 46, it also shows that the majority of the employees who lives in the selected area are employed in Miami city with an approximate 16% of the total number. It shows that some people who live in the area travel as far north as Fort Lauderdale in the next county over.

FIGURE 46. WHERE WORKERS LIVE WHO ARE EMPLOYED IN THE ANALYSIS SELECTION AREA



Source: US Census Longitudinal Employer-Household Dynamics

FIGURE 47. WHERE WORKERS ARE EMPLOYED WHO LIVE IN THE ANALYSIS SELECTION AREA



Source: US Census Longitudinal Employer-Household Dynamics

FIGURE 48. BLUETOOTH DETECTION DEVICE DEPLOYMENT



Figure 48 displays the desire lines from and to all device locations and indicates the devices on SR 826 are showing the most interaction between each other. Two types of analyses were performed using the data collected from the Bluetooth devices – travel speeds and origins and destinations between points. Travel time windows were restricted to 1 hour to reduce interment stops. The travel speeds were reviewed for both east/west and north/south movements through the study area for both the AM and PM peak hours. **Figure 49** shows the results for the east/west analysis and **Figure 50** shows the results for the north/south analysis. **Figure 49** indicates that there is significant congestion during the peak periods on both NW 41st Street and NW 25th Street. Travel speeds on NW 41st Street for a trip between the HEFT and SR 836 are as low as an average of 8.2 mph for the average weekday westbound, meaning a trip takes more than 23 minutes. Per Highway Capacity Manual Special Report 202 roadways with posted speed limits of 35 mph or lower operate at LOS F below 10 mph.

Figure 50 shows that traffic conditions are more significant on the north/south roads than on the east/west roadways. The Figure shows that all of the north/south movements monitored in this study are operating at severely congested speeds in the PM peak. Examples include:

- NW 114th Avenue operating at an average of 6.3 mph northbound from NW 41st Street to NW 74th Street
- NW 107th Street operating at an average of 8.2 mph northbound from SR 836 to NW 58th Street
- SR 836 operating at an average speed of 5.4 mph southbound between SR 836 to NW 58th Street

- NW 72nd Avenue operating at an average speed of 8.7 mph northbound from NW 25th Street to NW 74th Street

Two analyses were performed to summarize the origin destination data including the top 5 origin and destination pairs through the study area and origins and destinations between PORTMiami and the study area. **Figure 51** shows that east/west roads have the highest incidence of traffic traversing most of the study area including NW 25th Street, NW 41st Street and NW 74th Street. Not shown on the graphic, but further reviewed by the team, was that these movements were significantly associated with SR 826 north of the study area. **Figure 51** also shows that one of the top 5 movements in the study area from the 25th Street Viaduct to NW 87th Avenue. **Figure 52** shows the activity between Miami and the study area. Devices were deployed at both the Tunnel Entrance and on the Bridge connecting to US1. The results of the analysis show that the highest level of activity was between the Port Tunnel and NW 107th Avenue, NW 25th Street, and NW 74th Street. Travel speeds between the Port and the study area are shown on **Table 22**. All origin destination pairs are shown in **Appendix D**.

TABLE 22. PORT TO STUDY AREA TRAVEL TIMES

O/D PAIR		TRAVEL TIMES (MPH)			
		AM PEAK		PM PEAK	
		EB	WB	EB	WB
Port Tunnel	NW 74 th Street	15.6	22.5	21.3	15
Port Tunnel	NW 25 th Street	20.1	11.7	23.5	N/A
Port Tunnel	NW 107 th Avenue	21.2	43.8	31.4	17

Figure 49. East West Peak Period Travel Times and Speeds

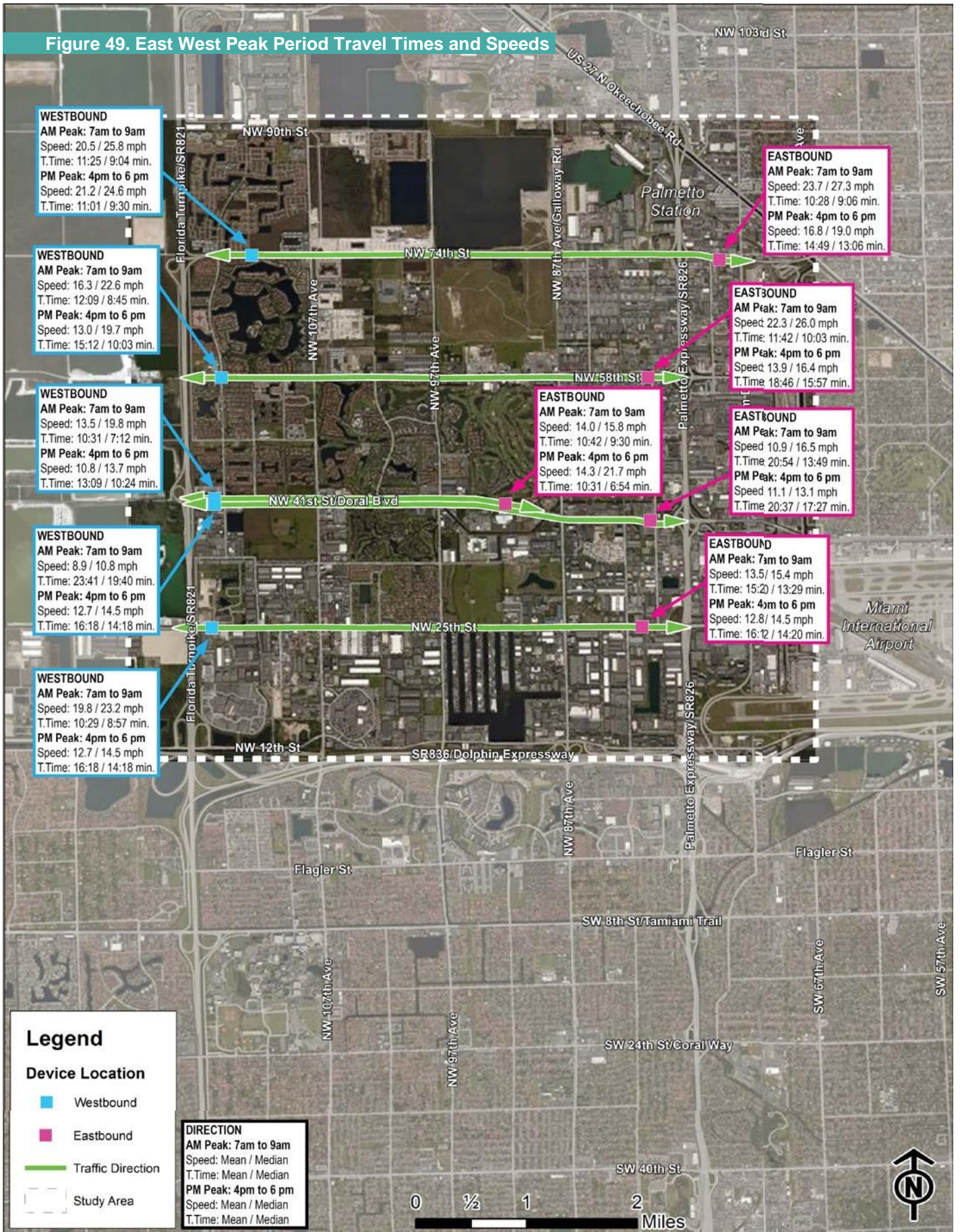


Figure 50. North South Peak Period Travel Speed and Time

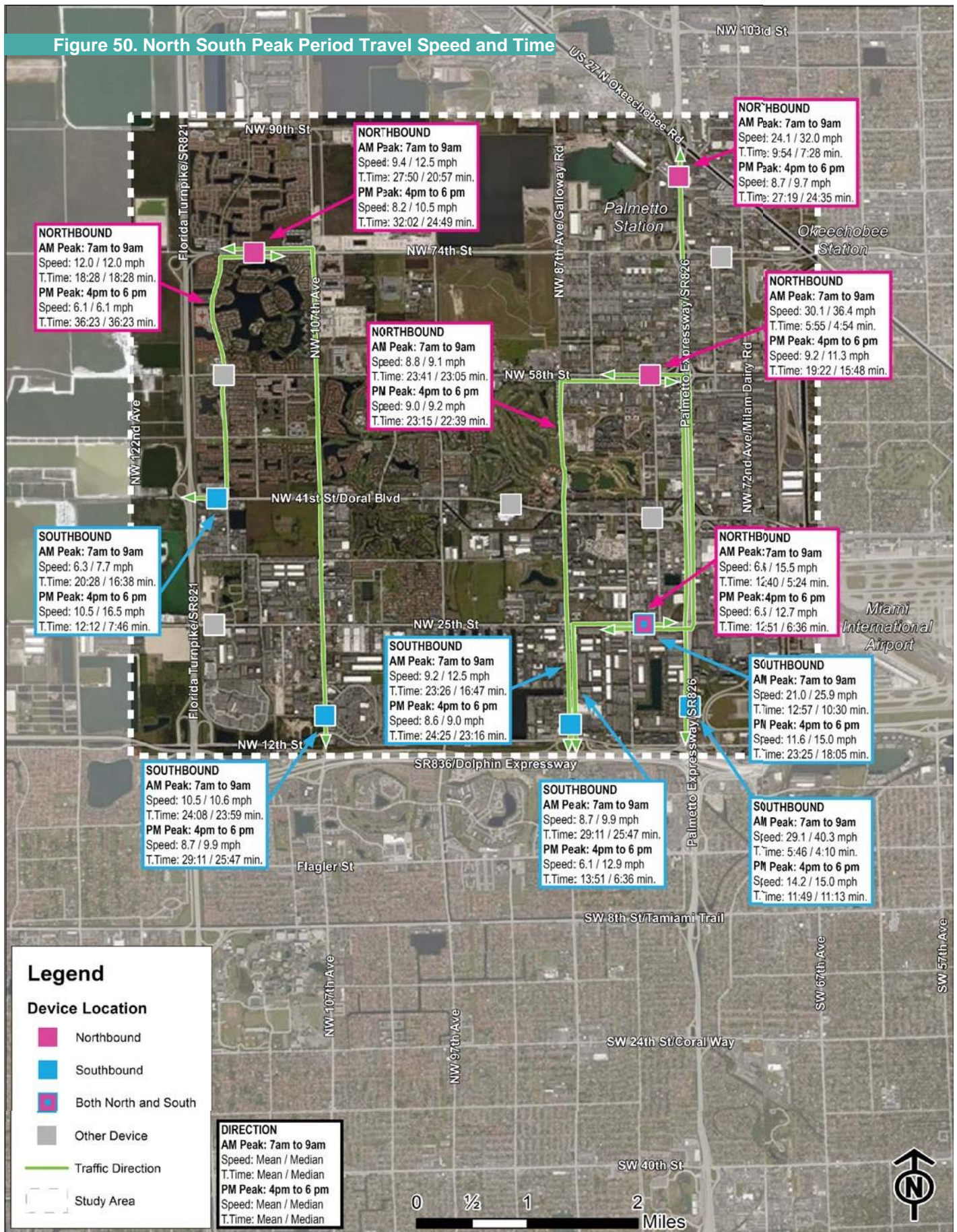


FIGURE 51. FIVE HIGHEST ORIGINS/DESTINATIONS IN CITY OF DORAL

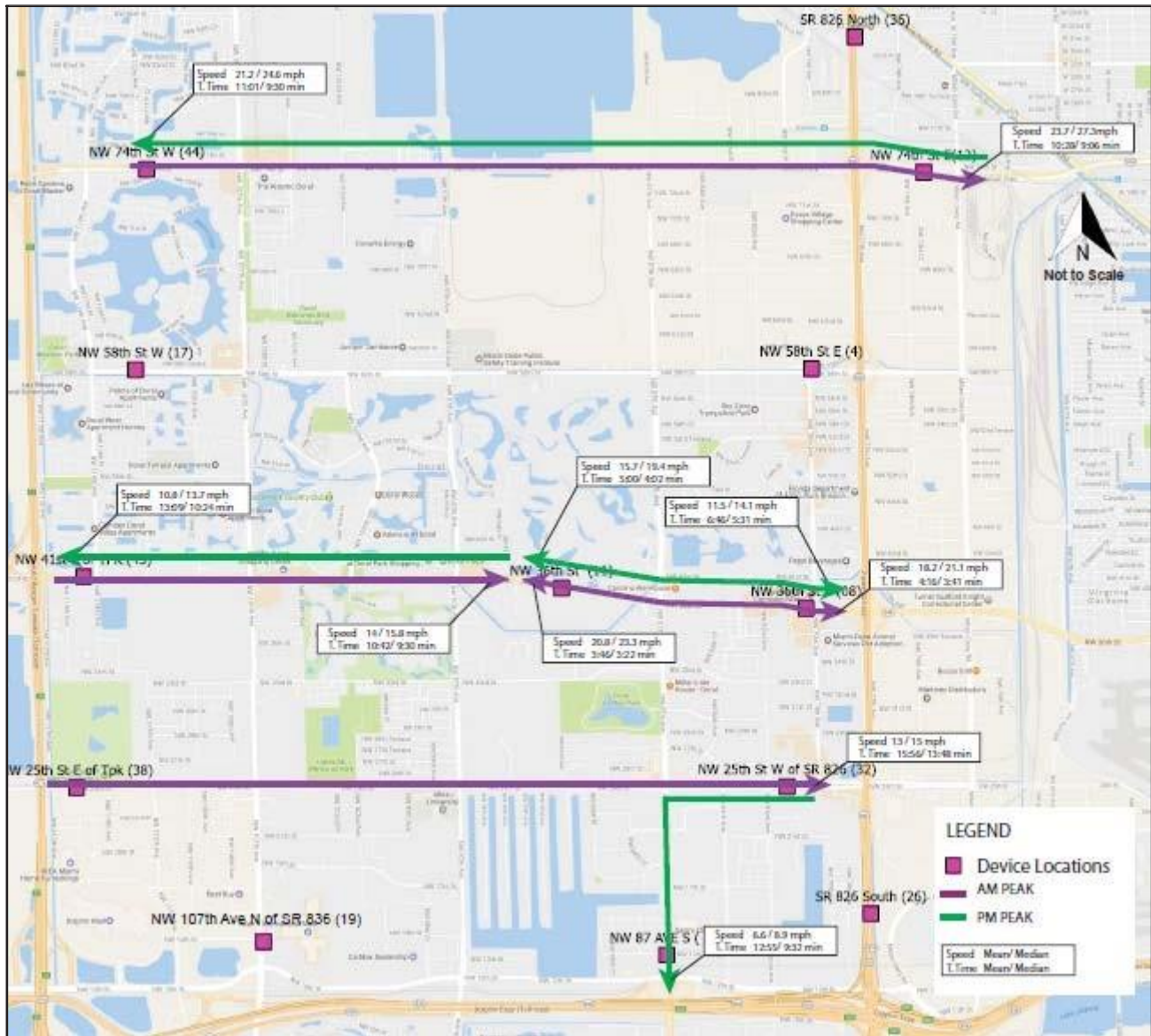
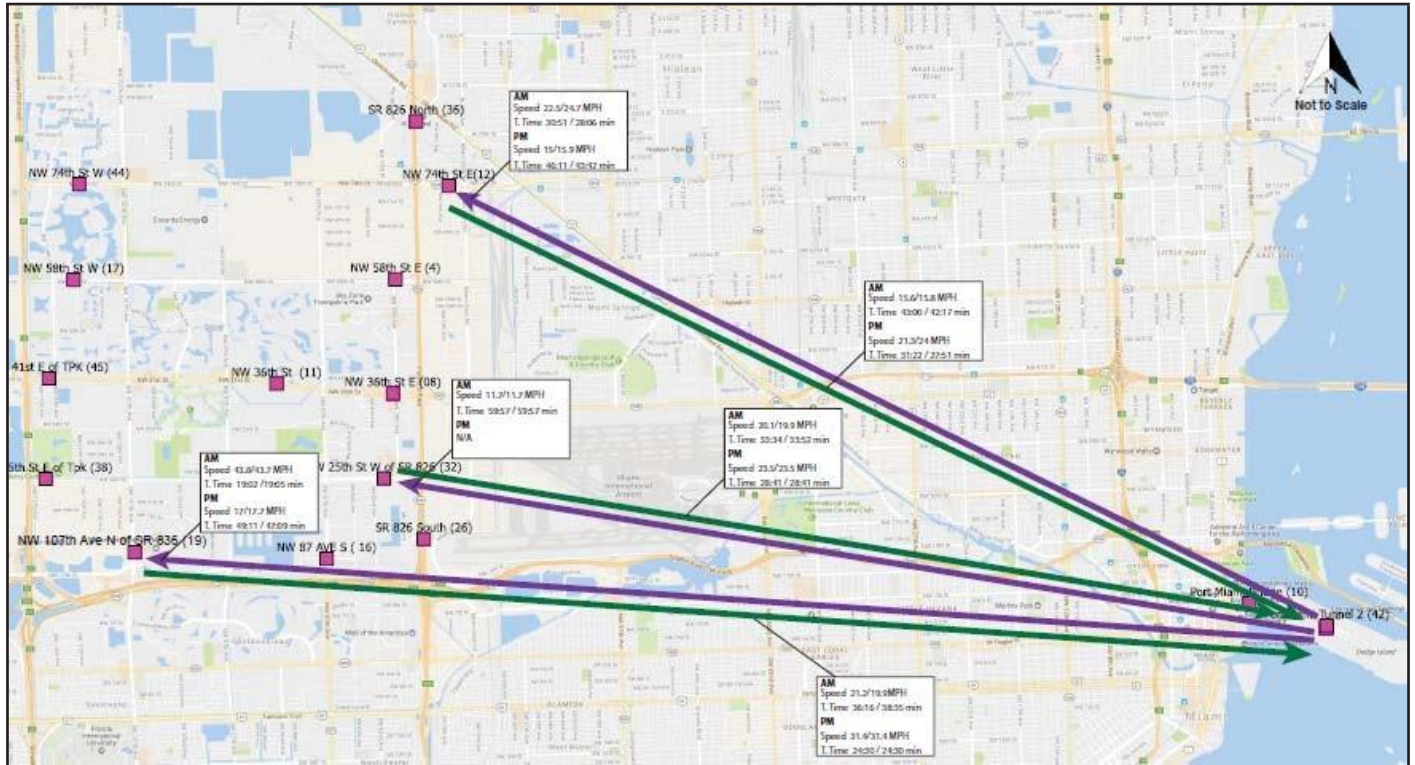


FIGURE 52. TOP FIVE ORIGINS/DESTINATION TO/FROM PORTMIAMI



RAIL OPERATIONS

Figure 13 (page 22) shows the map of the network. There are a total of 24 crossing in the study area and a majority of the crossing are associated with the industrial uses in the MIA Cargo Area and in Medley. Many of the crossings are on minor streets as sidetracks and spurs connect with local businesses.

Rail operations information was obtained from the Federal Railroad Administration (FRA) and FDOT and is summarized on Table 23. The table indicates that the most active crossings are on the FEC with crossings at:

- NW 74th Street with 18 trains per day
- NW 72nd Avenue with 16 trains per day
- NW 72nd Avenue (again) with 16 trains per day
- NW 77th Avenue with 20 trains per day
- NW 74th Avenue with 16 trains per day
- NW 79th Avenue with 18 trains per day

Maximum speeds for these crossings are set by the FRA and they are slow in context with the area and due to the condition of the tracks. The speed limits on all of the crossing are between 10 and 25 mph.

Safety criteria were taken from the FRA and FDOT

resources for the years 2011 to 2015 including the 2016 Accident Prediction Report. The Accident Prediction system generates reports listing public roadway/rail crossings ranked by predicted collisions per year and provides a 5 and 10 year history of available crash information by geographic location. The information provided on the Table reflects the FRAs prediction of a likely vehicle/rail crash at a crossing based on the historic information. The results show the NW 74th Avenue crossing as having the highest rate predicting that .029, or 2.9% expectancy, crashes with a train will occur this year. Based on existing conditions this could be extrapolated to indicate that there is a 58% chance there will be a crash involved with a train in 20 years. The report also shows that there has been 0 crashes on any of the crossings from 2011 to 2015

Finally, the safety data criteria section also includes the FDOT Railroad Crossing Safety Ranking for each crossing in the study area. The rankings are based the a statewide level of need at each crossing from the most to the least need out of approximately 4,000 crossings in the state. Table 23 shows that the crossing ranked with the most need in the study area is NW 107th Street at CSX ranked at #550 in the State and all the rest rank below #1,041.

Appendix E provides all of the Rail information collected for this study.

TABLE 23. RAIL OPERATIONS

Street Crossing	Crossing #	Mile Post	Position	Entity	Type	RR Xing 2011-2015 Crashes	FRA Rail Crossing Crash Prediction Index	FDOT Ranking	Exist Rail Speed Max	Total Day Trains	Total Night Trains	Switching Trains
Florida East Coast Railway												
Perimeter Road	628511Y	1040.86	At Grade	CSX	PUB	N/A	N/A	2494	10 mph	0	0	4
Milam Dairy Road	628536U	42.37	At Grade	CSX	PUB	0	0.000524	1235	10 mph	0	0	1
NW 78th Street	628538H	42.61	At Grade	CSX	PUB	0	0.000121	3134	10 mph	0	0	1
NW 82nd Street	915147E	43.1	At Grade	CSX	PUB	N/A	N/A	2306	10 mph	0	0	1
NW 84th Street	621464U	42.98	At Grade	CSX	PUB	0	0.000459	2067	10 mph	0	0	1
NW 12th Street	641457N	1043.6	At Grade	CSX	PUB	0	0.01946	1432	10 mph	0	0	1
NW 12th Street	936071J	43.7	At Grade	CSX	PUB	N/A	N/A	N/A	10 mph	0	0	0
NW 107th Street	628543E	45.52	At Grade	CSX	PUB	N/A	N/A	550	20 mph	0	0	0
NW 52 - 85111th Ave	643808S	45.91	At Grade	CSX	PUB	0	0.009762	2883	10 mph	0	0	1
CSX												
NW 17th Street	272788G	11.09	At Grade	FEC	PUB	0	0.010698	2984	20 mph	1	1	4
NW 17th Street	272778B	11	At Grade	FEC	PUB	0	0.008805	2782	20 mph	0	0	6
NW 25th Street	272776M	11.01	At Grade	FEC	PUB	0	0.022403	1748	20 mph	3	3	0
NW 68th Avenue	272787A	11	At Grade	FEC	PRI	N/A	N/A	3888	10 mph	0	0	2
NW 70th Avenue	272927A	N/A	At Grade	FEC	N/A	N/A	N/A	2529	N/A	N/A	N/A	N/A
NW 36th Street Ext	272773S	9.24	At Grade	FEC	PUB	N/A	N/A	5408	N/A	0	0	0
NW 69th Avenue	272948T	368.58	At Grade	FEC	PRI	N/A	N/A	3747	N/A	N/A	N/A	N/A
NW 74th Street	272755U	0.39	At Grade	FEC	PUB	0	0.022208	1041	20 mph	8	8	2
Pedestrian Walk	273266M	366.37	At Grade	FEC	PUB	N/A	N/A	3730	N/A	0	0	0
NW 72nd Avenue	272756B	0.67	At Grade	FEC	PUB	0	0.01988	3887	20 mph	0	0	16
NW 69th Avenue	272760R	8.08	At Grade	FEC	PUB	0	0.02141	2644	15 mph	0	0	2
NW 72nd Avenue	272775H	8.08	At Grade	FEC	PUB	0	0.017863	1583	20 mph	0	0	16
NW 77th Avenue	272758P	0.70	At Grade	FEC	PUB	0	0.007193	3252	20 mph	0	0	20
NW 74th Avenue	272759W	8.08	At Grade	FEC	PUB	0	0.029135	2873	20 mph	0	0	16
NW 79th Avenue	272971M	1.58	At Grade	FEC	PUB	0	0.025261	N/A	25 mph	8	8	2

SUMMARY

The review of traffic and truck volumes and operations in context with existing and planned land uses have identified roadways that are recommended for analysis as freight corridors for this study area. The following roadways are recommended as candidates for Freight Corridor designation and analysis:

- SR 826/Palmetto Expressway through the study area
- NW 25th Street from NW 117th Ave to MIA Cargo Area
- NW 58th Street from NW 87th Ave to FEC
- NW 74th Street from NW 97th Ave to US 27
- NW 90th Street from E of FTE o NW 87th Ave
- NW 122nd Avenue from NW 12th Street to 74th Street
- SR 821/HEFT through the study area
- NW 97th Avenue from NW 12th St to NW 41st St
- NW 87th Avenue from NW 12th St to NW 41st St
- SR 836/Dolphin Expressway through the study area
- NW 72nd Avenue NW 12th Street to US 27
- NW 12th Street NW 122 Ave to 72nd Ave

Programming and funding documents including the FDOT 5 Year Work Program, the MPO TIP, and the LRTP will be further vetted to identify planned projects for these corridors that have not yet been programmed for PD&E or have been programmed for PD&E outside of the first 3 years of the work program. Again the purpose of this effort is to identify planned or new freight projects that can be advanced to the PD&E phase.

In the Final Recommendations Section of this report the programming and funding documents will be cross referenced to assess consistency with scheduling, projects limits, type of work, and the requirements for proposed advancement. Consistency between documents, especially the TIP and the LRTP, are critical to advancing projects.

ISSUES

Other issues identified in the existing conditions analysis include:

- The most significant issue for this study is maintaining freight mobility in a highly congested, growing mixed use urban area. The Doral Area is a center of regional and global logistics activity and at the same time is a growing City. This technical memorandum documented a significant amount of growth will occur in the next 5 years. The project Team will need to work closely with the City to plan projects that allow freight and non-freight uses to coexist.

- The analysis of truck crashes and land use show that almost all the truck crashes occurred in the industrial designated areas. A special safety study may be needed for detailed analysis of the numbers and types of crashes.
- A review of the Bicycle/Pedestrian crashes shows that they are prevalent in the industrial areas where the freight corridors will be analyzed for investment. This could be employees commuting to work by bike. The development of future alternatives should be wary of this issue and include non-motorized infrastructure and context sensitive design when developing alternatives for Freight Corridors.
- This study includes the City of Doral Transportation Master Plan adopted in July, 2017. The Master Plan is transformational in its policies as it proposes a policy to achieve a 5% modal shift towards alternative modes to reduce most of the need for roadway widening on all but one roadway segment in 2025, and a 30% modal shift to reduce the need to widen 80% of the projected roadways requiring additional capacity.
- The Master Plan documents that while the City has significantly reduced its percentage of failing roadways in recent years, additional projected growth will, without countermeasures, result in approximately 20% of the network failing to meet standards by 2025, and over 35% failing by 2040. The focus of this study will be on mobility on the Freight Corridors identified in this section.
- There are many of transportation projects programmed and planned for this area that will have a significant impact on relieving congestion, and impacting travel behavior and freight flows. All together the projects have a significant impact on improving transportation conditions, the issue will be in the details of developing the sequencing of the projects to prioritize implementation.
- The analysis of truck growth shows that on some roadways trucks are growing faster than all traffic. This was very significant on the HEFT where truck growth rate ranged from 4.7% to 15.0% and were 1.2% to 7.8% higher than growth in all traffic. SR 836 exhibited similar historic patterns where trucks grew at rates from 0.0 % to 25.7% per year and 0.5% to 26.9% higher than all traffic.

- The analysis of truck traffic indicated that they were operating outside the peak periods for all traffic. It is not known if this is a reflection of regular daily freight movements or whether the industry is limiting its operations to midday. Outreach to the trucking community is needed to ascertain this and, if so, alternatives need to be developed to address the issue.

The analysis shows that North/South peak period movement in this area is severely congested. All of the peak period North/South movements monitored in this study were operating at highly congested speeds. Examples include:

- NW 114th Avenue operating at an average of 6.3 mph northbound from NW 41st Street to NW 74th Street
- NW 107th Avenue operating at an average of 8.2 mph northbound from SR 836 to NW 74th Street
- NW 87th Avenue operating at an average of 8.8 mph northbound from SR 836 to NW 58th Street
- SR 836 operating at an average speed of 5.4 mph southbound between SR 836 to NW 58th Street
- NW 72nd Avenue operating at an average speed of 8.7 mph northbound from NW 25th Street to NW 74th Street

SECTION 4: MODELING METHODOLOGY

This section describes the travel demand modeling methodology adopted for the analysis of freight mobility planning alternatives for the purposes of identifying deficiencies in the highway network. The results from the travel alternative model runs will be utilized in identifying recommendations for roadway projects as well as prioritizing them. The following general steps were followed as part of modeling effort for the study.

- Step 1: Create a subarea model for Doral study area and perform study area-level calibration and validation
- Step 2: Develop alternatives representing a range of freight growth scenarios
- Step 3: Perform model runs and identify failing segments under each scenario with a focus on Freight Corridors

SUBAREA MODEL

This section provides an overview of the travel demand model used for this analysis, subarea model creation, the highway network adjustments done specifically for this study and the model validation results.

MODEL BACKGROUND

Southeast Florida Regional Planning Model (SERPM) version 7.0 is the latest regionally adopted travel demand model. It covers Miami-Dade, Broward and Palm Beach Counties and has a base year of 2010. The adopted model was recently updated by FDOT D6 to a base year of 2015 for the Miami-Dade SMART Plan transit corridor studies. The model update was primarily focused on the Flagler Street, Kendall Drive and NW 27th Avenue corridors. The model update also allows for specific subarea modeling and uses CUBE Analyst features to adjust traffic volumes in a subarea.

This 2015 SERPM 7.0 model is used as the basis for the Doral Subarea Freight Mobility Improvement Plan. The horizon year for the model is 2040, which is also the year of the adopted long range transportation plan (LRTP).

MODEL ADJUSTMENTS

The study team reviewed and made the following updates to the model:

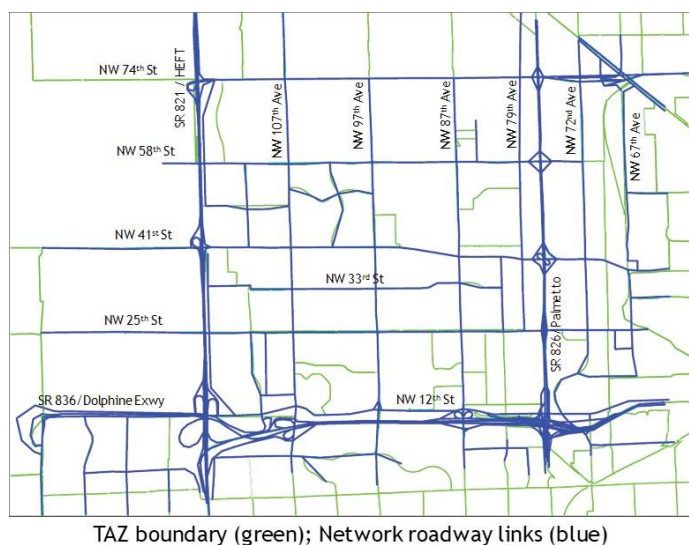
- **Highway network:** The 2015 modeled highway network in the Doral subarea was updated to be consistent with the highway network in that year. The focus was primarily on the number of lanes, speed limits, facility types, signal locations and new roads

(built between 2010 and 2015) in the subarea. The major network change in the Doral subarea since 2010 was updating the network to reflect the SR-826/ SR-836 interchange reconstruction.

- **Truck restrictions:** Truck restrictions identified in Section 3 Existing Conditions of this study were also implemented in the subarea model to prevent modeled trucks from using these restricted roads. This was done by tagging the specific highway network links with truck restrictions and then using CUBE's highway assignment "exclude group" feature where on those links to prohibit trucks.
- **Truck trips:** Preliminary model runs showed that the model was under-estimating the number of trucks going to and from MIA West Cargo Area on NW 82nd Avenue and from PORT Miami. The team adjusted the model so that these two centers are modeled as special generators to correctly represent the existing truck traffic. This was accomplished in the model by factoring selected row and columns of the heavy truck trip table to specified values. The target values at MIA and PORTMiami for the base year are 2,150 and 3,650 trucks respectively, which is based on the 2015 Florida Transportation Information (FTI) DVD and the data collected as part of this study.

Figure 53 shows the study area traffic analysis zones (TAZ) and the 2015 highway links.

FIGURE 53. STUDY AREA TAZS AND 2015 HIGHWAY LINKS



TAZ boundary (green); Network roadway links (blue)

Model validation is a process where model output for the base year is compared with observed traffic counts and through an iterative process the model is calibrated to match those counts as well as possible. The study team incorporated daily and time-of-day counts wherever available within the study area. The count data was also from the 2015 FDOT FTI DVD consistent with truck volume counts. Further, counts collected as part of this study, observed counts from the city of Doral and observed counts obtained from the SERPM version 8.0 model development team were also incorporated at locations within the subarea that didn't have counts from the FTI DVD. The highway network links with traffic counts are shown in the Appendix F.

MODEL VALIDATION RESULTS

The performance measures for model validation are the Root Mean Square Error (RMSE) and volume-to-count (V/C) ratios for different volume groups and facility types. Table 24 shows the daily RMSE and the V/C ratio for the 2015 Doral subarea model “Before” and “After” the subarea validation.

The “After” subarea validation results show an improvement in the RMSE across all volume groups, except for the volume group with a count range of 1 to 5,000 vehicles on the link. Further, the RMSE is within the allowable RMSE range specified by FDOT in their Model Calibration and Validation Standards report. The low volume (1 to 5,000 vehicles) links where the RMSE is outside the allowable range are primarily located in the residential areas west of NW 97th Avenue between NW 41st Street and NW 58th Street. In general, it is inherently difficult for the model to properly represent daily traffic on low volume links. Further, this will not have any impact on our freight analysis in this study because trucks are already restricted from using the roads in these residential areas.

Table 25 shows the daily RMSE by facility type for the Doral subarea model. The table shows an improvement in the RMSE across all facility types. The RMSE and V/C ratios by time-of-day are shown in the Appendix G.

TABLE 24. DAILY RMSE AND VOLUME-TO-COUNT RATIO BY VOLUME GROUP FOR DORAL SUBAREA MODEL

Volume Group	Count Range	Model RMSE (%)			Volume/Count		No. of Links
		Before Subarea Validation	After Subarea Validation	Allowable RMSE Range	Before Subarea Validation	After Subarea Validation	
1	1 - 5,000	126.0%	133.2%	45 - 55%	1.76	1.62	33
2	5,000 - 10,000	71.9%	34.5%	35 - 45%	1.16	0.97	51
3	10,000 - 20,000	36.3%	23.1%	27 - 35%	0.96	0.98	76
4	20,000 - 30,000	39.2%	27.0%	24 - 27%	0.84	0.82	22
5	30,000 - 40,000	18.6%	12.4%	22 - 24%	0.92	0.94	8
7	50,000 - 60,000	26.1%	8.8%	18 - 20%	0.79	0.95	4
8	60,000 - 70,000	17.4%	11.0%	17 - 18%	0.84	0.94	6
12	100,000 - 500,000	9.4%	4.0%	< 14%	0.98	0.99	12
ALL	1 - 500,000	31.2%	18.9%	32 - 39%	0.97	0.97	212

TABLE 25. DAILY RMSE AND VOLUME-TO-COUNT RATIO BY FACILITY TYPE FOR DORAL SUBAREA MODEL

Facility Type	Model RMSE (%)		Volume/Count		No. of Links
	Before Subarea Validation	After Subarea Validation	Before Subarea Validation	After Subarea Validation	
Freeway	9.4%	4.0%	0.98	0.99	12
High Speed Arterials	33.9%	21.0%	0.94	0.91	50
Low Speed Collectors	55.9%	36.6%	1.14	1.09	90
Ramps	53.5%	38.9%	0.88	0.89	46
Toll Roads	22.0%	11.4%	0.84	0.95	14
ALL	31.2%	18.9%	0.97	0.97	212

Overall, the subarea “After” model provides a much better representation of traffic counts in the study area compared to the “Before” regional model subarea. This subarea model and procedures will be used to test alternatives for the roadways shown on the network map including all FDOT, MDX, Florida’s Turnpike and County Roads but will not be able to test alternatives on most local streets.

PLANNING SCENARIOS

This section describes the methodology adopted for the development and analysis of low, expected and high freight growth scenarios in the study area. The use of the scenarios analyses will assist the review of deficiencies in the roadway network within the study area above and beyond the network that exists and that are planned.

The proposed low, expected and high growth scenarios for the study area are based on four primary data sources:

- PORTMiami 2035 Master Plan

- MIA Strategic Airport Master Planning Study 2015- 2050
- Historical automobile and truck traffic counts (from 2015 FDOT FTI DVD)
- SERPM 7.0 estimates

Both PORTMiami and MIA master plans identify multiple scenarios for growth in cargo. These growth scenarios assisted the team in the development of similar scenarios as the scope of services for this study calls for analysis of high, expected and low growth in the study area. The MIA Master Plan includes a low-growth scenario in cargo based on tonnage at 3.4% per year, a medium growth rate at 4.1% per year and a high scenario at 4.2% per year. The PORTMiami Master Plan growth scenarios are summarized in Table 26. The average annual growth rates for the moderate and the two aggressive market penetration scenarios are calculated based on the 2035 Twenty Equivalent Units (TEU) estimates.

TABLE 26. PORTMIAMI GROWTH SCENARIOS

Port of Miami scenarios	2010 TEUs (millions)	2035 TEU Estimates (millions)	Average Annual growth rate
Low	0.85	1.77	3.0%
Moderate market penetration		2.55	4.5%
Aggressive market penetration		2.85	5.0%
Aggressive market penetration + Intermodal		3.40	5.7%

The growth rates derived from 2010 and 2035 TEUs were assumed to hold true till 2040. The study team used the average annual growth rates in the two Master Plans to grow the heavy truck trips at the model TAZs corresponding to MIA (SERPM TAZ #3653) and Port of Miami (SERPM TAZ #3436). This assumes truck trips at the two freight centers

grow in proportion to the cargo growth. Specifically, the average daily model truck trips at MIA and Port of Miami are grown using the growth rates shown in Table 27. The average daily heavy and 4-tire truck trips with at least one trip end in the study area were grown differently under the three scenarios as shown in the table.

TABLE 27. MODELED TRUCK GROWTH SCENARIOS

Scenarios	Annual growth rate at MIA TAZ #3653	Annual growth rate at Port of Miami TAZ #3436	Annual growth rate of heavy truck trips with one trip end in Doral study area	Annual growth rate of 4-tire truck trips with one trip end in Doral study area
SERPM Default Growth	0.4%**	1.0%	1.2%	0.8%
Low Growth Scenario	3.4%	3.0%	1.2% (same as SERPM)	0.8% (same as SERPM)
Expected Growth Scenario	4.1%	4.5%	2.3% (based on a simple average of low vs. expected increase in growth rates between MIA and Port of Miami)	1.9% (based on a simple average of low vs. expected increase in growth rates between MIA and Port of Miami)
High Growth Scenario	4.2%	5.0%	2.6% (based on a simple average of low vs. high increase in growth rates between MIA and Port of Miami)	2.2% ((based on a simple average of low vs. high increase in growth rates between MIA and Port of Miami)
Scenarios	Heavy truck trips at MIA TAZ #3653	Heavy truck trips at PortMiami TAZ #3436	Heavy truck trips with at least one trip end in Doral study area	4-tire truck trips with at least one trip end in Doral study area
2015 Truck Trips (Aggregate Trips)	2,150 (Observed*)	3,650 (Observed*)	42,600 (SERPM)	23,200 (SERPM)
Projected 2040 Truck Trips				
Low Growth Scenario	4,950	7,650	57,400	28,300
Expected Growth Scenario	5,850	10,950	75,200	37,150
High Growth Scenario	6,000	12,350	80,950	39,950

As previously discussed in the validation effort the SERPM model does not explicitly model PORTMiami or MIA differently from other truck/freight generating centers in the region. In order to adjust the team modeled the two centers as special generators to best represent the expected truck traffic based on planned growth mentioned in the master plans. This same process was used in the development of the future models following the same process in the validation. The rows and columns of the heavy truck table was factored to the target values of the three scenarios. Similarly, the heavy and 4-tire truck trip tables with at least one trip end in the study area were also factored to match the target totals specified in **Table 27**.

MODELING NETWORK ALTERNATIVES

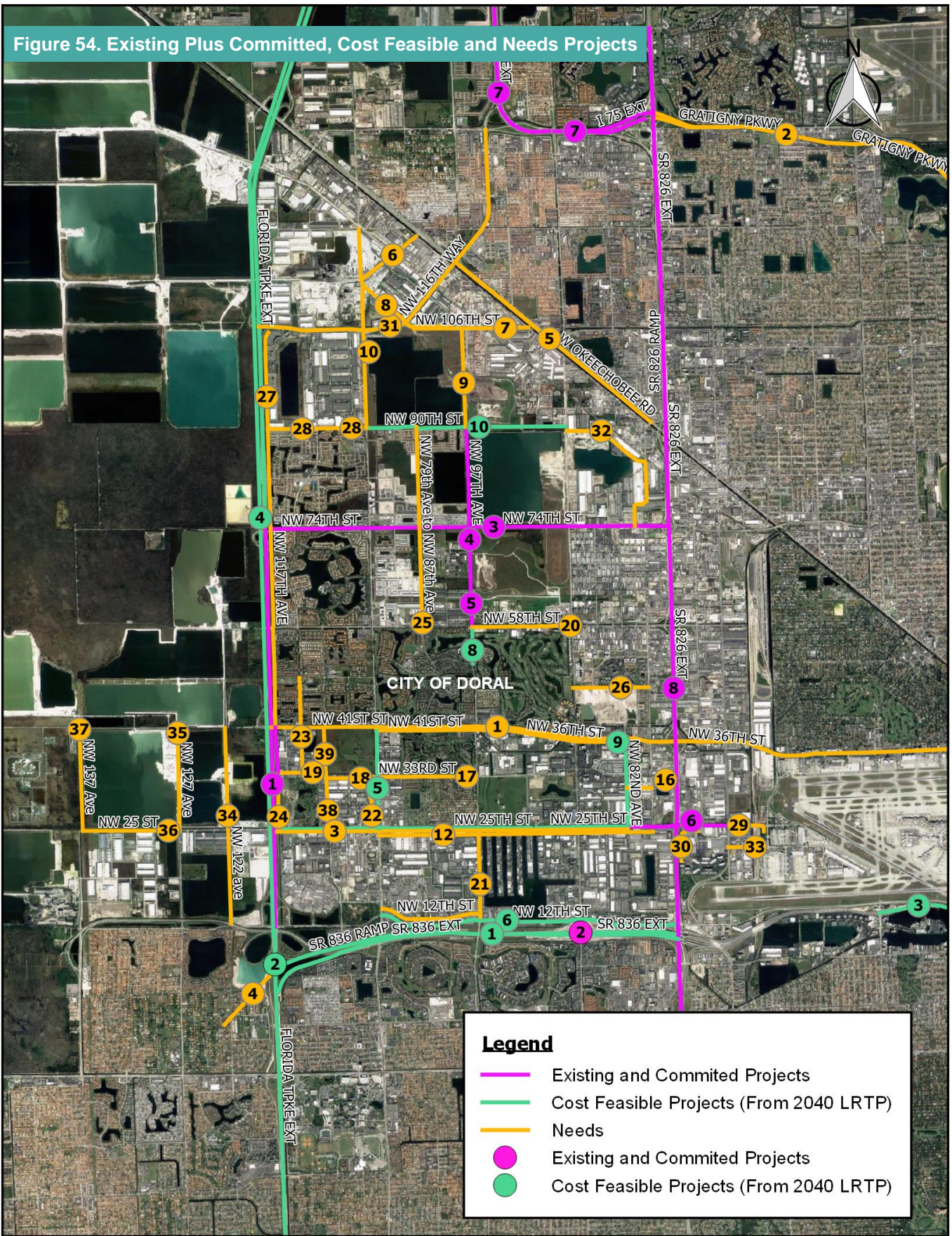
Three (3) roadway networks were developed for alternatives testing. As discussed earlier a network called “Existing Plus Committed” was developed by building onto the existing network roadway projects that were funded for construction after the base 2015 and that are included in the current 5 year FDOT Work Program, Miami-Dade TPO TIP and the Doral CIP (where represented in the model network). A “Cost Feasible” network was developed based the roadway improvements within the subarea identified

as funded for construction in the FDOT 2nd Five Year SIS, Plan and the Miami-Dade TPOs 2040 Cost Feasible LRTP. The third network was a list of “Needs” projects developed from roadway projects identified in the FDOT SIS Unfunded Needs Plan, the Turnpike Master Plan, the FDOT Town of Medley Subarea Freight Plan, the MDX Masterplan and roadway projects not funded for construction but still identified in the Miami-Dade TPO LRTP and the City of Doral Transportation Master Plan and through coordination with the members of the Miami-Dade TPO Freight Transportation Advisory Committee the Town of Medley, the City of Doral and the Miami-Dade Aviation Department.

Table 28 provides the list of projects by the 3 networks and **Figure 54** shows the 3 networks. Note that the table and map show an expanded area beyond the original subarea including the area north of NW 90th Street and the area west of NW 122nd Avenue to NW 137th Avenue between NW 12th Street and NW 41st Street. These areas were added to the networks to show the need for connectivity to the north between the Medley and the Doral studies and to the west to support potential development of additional freight activity centers.

TABLE 28. FINAL TABLE DORAL EXISTING PLUS COMMITTED CF AND NEEDS PROJECTS 11 24 2017

Map ID	Project Roadway	Limits	Description
Existing and Committed Projects			
1	HEFT	SR 836 to NW 74th St	Widening
2	SR 836	SR 836 interchange at NW 87th Ave	Interchange improvements
3	NW 74th St	HEFT to SR 826	Add 2 lanes and reconstruct
4	NW 97th Ave	NW 70th St to NW 74th St	New 4 lanes
5	NW 97th Ave	NW 58th St to NW 70th St	Add 2 lanes
6	NW 25th Viaduct	NW 68th Ave to just W of NW 82nd Ave	Viaduct over SR-826
7	I-75	I-595 to SR 826	Managed Lanes
8	SR 826	Flagler St to NW 154th St	Managed Lanes
9	NW 117th Ave	NW 12th St to NW 41st Access to HEFT	One way NW 34th St and NW 41st St, new NB ramp to HEFT at NW 41st St
10	NW 97th Ave	NW 74th St to NW 90th St	New 4 Lanes
Cost Feasible Projects (from 2040 LRTP)			
1	SR 836 Managed Lanes	HEFT to SR 826	2 new managed lanes
2	SR 836/HEFT	(MDX Project 83634)	Add missing traffic movements between the two interchanges
3	SR 836 capacity	NW 57th Ave to NW 17th Ave	New lane in both directions
4	HEFT	Through Study Area	2/4 new managed lanes on "all" segments of HEFT
5	NW 107th Ave	NW 41st St to NW 25th St	Add 2 lanes
6	NW 12th St	NW 107th Ave to SR 826	Add 2 lanes
7	NW 25th St	Viaduct to NW 117th Ave	Add 2/4 to 6 Lanes
8	NW 97th Ave	NW 58th St to NW 52nd St	Add 2 lanes
9	NW 82nd Ave	NW 41st St to NW 25th St	Freight Management - Widen from 2 to 4L
10	NW 90th St	NW 107th Ave to NW 87th Ave	New 4 lane road
NEEDS			
1	NW 36th St/NW 41st St	HEFT to NW 42nd Ave (LeJeune)	Arterial express street
2	SR 924 Extension	Current eastern terminus to I-95	Extension
3	NW 25th Ave Viaduct	NW 82nd Ave to NW 117th Ave	
4	SR 836	SW Extension to Kendall	
5	Okeechobee Rd	NW 116th Way to NW 79th Ave	Add 2 lanes (total 8 lanes)
6	NW 21st Way	S River Dr to NW 102nd Rd	Widen from 2 to 4 lanes
7	NW 106th St	S River Dr to NW 116th Way	Widen from 2 to 4 lanes
8	NW 102nd Rd	NW 116th Way to NW 121st Way	Widen from 2 to 4 lanes
9	NW 97th Ave	NW 90th St to NW 106th St	Acquire Right-of-way and construct roadway
10	NW 107th Ave	NW 122nd St to NW 90th St	Right-of-way and construct roadway
11	NW 25th St	NW 79th Ave to NW 97th Ave	Expand from 4 to 6 lanes
12	NW 25th St	NW 97th Ave to NW 107th Ave	Expand from 4 to 6 lanes
13	NW 36th St	NW 79th Ave to NW 97th Ave	Expand from 6 to 8 lanes
14	NW 36th St	NW 97th Ave to NW 107th Ave	Expand from 6 to 8 lanes
15	NW 12th St	NW 87th Ave to NW 107th Ave	Expand from 4 to 6 lanes
16	NW 33rd St	NW 79th Ave to NW 87th Ave	Raise Speed Limit to 40mph
17	NW 33rd St	NW 97th Ave to NW 107th Ave	Raise Speed Limit to 40mph
18	NW 33rd St	NW 107th Ave to NW 112th Ave	Raise Speed Limit to 40mph
19	NW 34th St	NW 112th Ave to NW 117th Ave	Raise Speed Limit to 40mph
20	NW 58th St	NW 87th Ave to NW 97th Ave	Expand from 4 to 6 lanes
21	NW 97th Ave	NW 12th St to NW 25th St	Expand from 4 to 6 lanes
22	NW 107th Ave	NW 25th St to NW 33rd St	Expand from 4 to 6 lanes
23	NW 114th Ave	NW 34th St to NW 50th St	Expand from 2 to 4 lanes
24	NW 117th Ave	NW 25th St to NW 34th St	Raise Speed Limit to 40mph
25	NW 102nd Ave	NW 58th St to NW 90th St	New 4 lane facility
26	NW 48th St	NW 79th Ave to NW 87th Ave	New 4 lane facility
27	NW 117th Ave	NW 106th St to NW 41st St	New 2 lane facility
28	NW 90th St	NW 117th Ave to NW 107th Ave	New 4 lane facility
29	NW 25th St Viaduct	MIA International Cargo Hub	Connection to Hub
30	NW 25th St Viaduct	SR 826	SB Ramps to SR 826
31	NW 106th St	HEFT to I-75/NW 138th St	Traffic Adaptive Signal System
32	NW 81st Rd	NW 90th St to NW 70th Ave	New Road Connection
33	NW 22nd St	NW 72nd Ave to NW 68th Ave	New 4 Lanes Connection
34	NW 121st/122nd Ave	NW 12th St to NW 41st St	New 4 lane facility
35	NW 127th Ave	NW 25th St to NW 41st St	New 4 lane facility
36	NW 25th St	NW 127th Ave to NW 137th Ave	Extension and expand to 4 lanes
37	NW 137th Ave	NW 25th St to NW 41st St	New 2 lane facility
38	NW 112th Ave	NW 25th St to NW 34th St	Expand from 2 to 5 lanes



MODELING ANALYSES

The focus of this modeling exercise was to determine the needs for improving the movement of traffic and trucks in the study under the 3 planning scenarios. The team modeled the following alternatives:

- Cost-Feasible (CF) network with high growth scenario (conservative run was chosen for modeling): This run will determine what improvements should be considered beyond those already in the cost feasible plan
- Select Needs network with low growth: performance of needs network under low growth scenario. This run will determine potential high-priority projects
- Select Needs network with expected growth: performance of needs network under expected growth scenario. This run will determine potential medium-priority projects
- Select Needs network with high growth: performance of needs network under high growth scenario. This run will determine potential lower priority projects

The team did not model an Existing Plus Committed (E+C) scenario because the highway network changes for the E+C scenario are already incorporated in the CF network. Further, the E+C scenario modeling was already done as part of the LRTP development process and the deficiency analysis conducted thereof are part of the needs and cost feasible projects vetted through the LRTP process.

Table 29 provides the Needs projects selected for the Low, Expected, High planning scenarios. Roadway links for the Needs Networks were selected for the low, medium and high growth scenarios based on the recommendations from various Master Plans, Freight Improvement Plans, partially funded/SIS unfunded needs and discussions with various stakeholders in and around the city of Doral. The roadway improvements were assumed to have a gradual implementation with most arterial improvements being modeled in the low growth scenario and capital intensive roadway improvements being modeled in the medium and high growth scenarios. Additionally, the study team also proposed various new improvements and these were modeled only in the high growth scenario. **Table 29** provides a summary of the scenario networks and the graphic below provides system wide metrics for each of the scenarios.

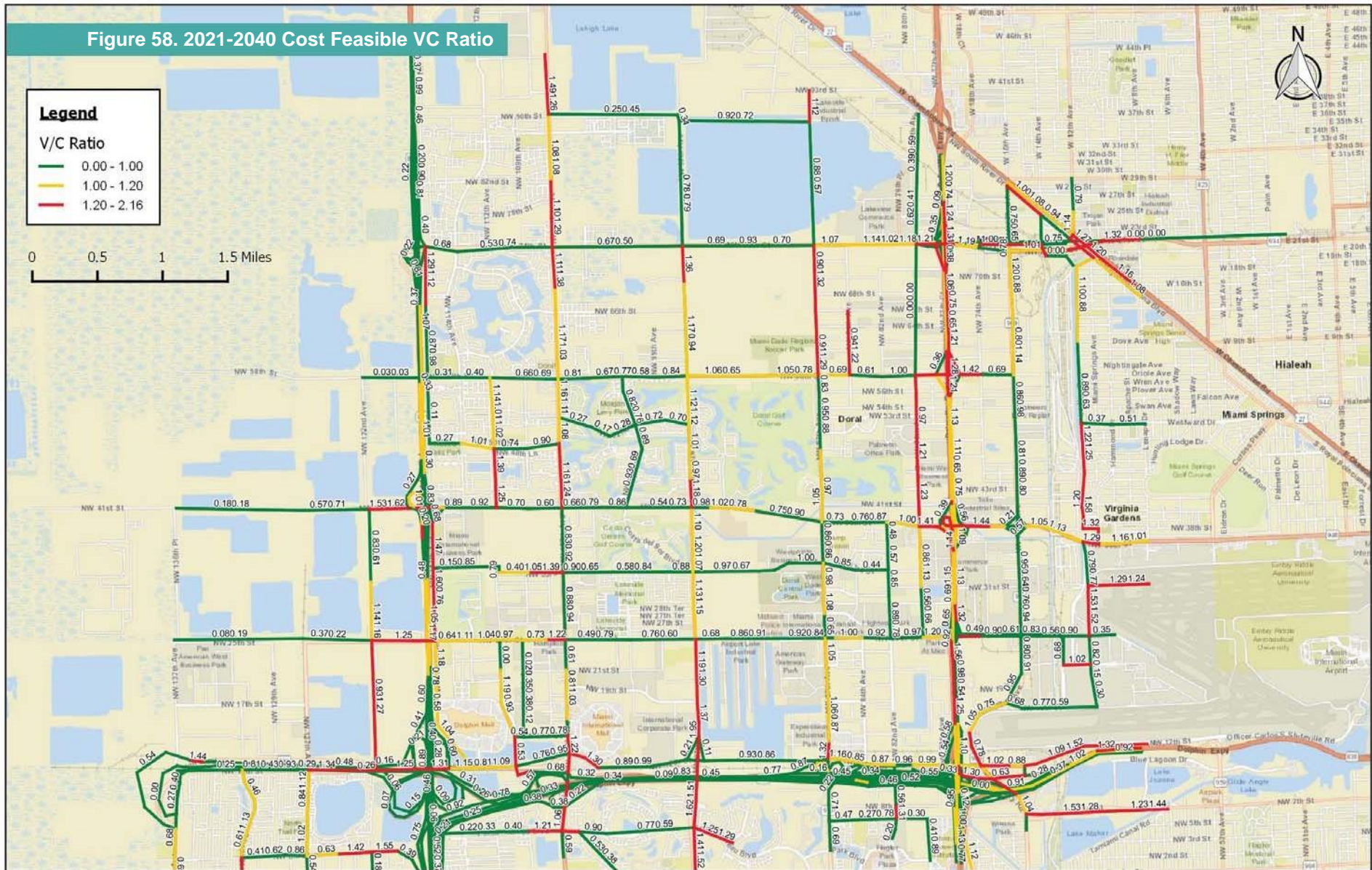
The alternative analysis results for highway projects are provide in **Figures 55 to 64**. For each of the 4 scenarios, % trucks and volume to capacity ratios (V/C) were mapped and will be analyzed in order to develop recommendations and prioritization of those recommendations. The results for previously identified candidate corridors will be reviewed by scenario is assess alternatives for potential recommendation. In addition % trucks and future land use will be analyzed for potential new freight corridors to be added those identified in the existing conditions analysis.

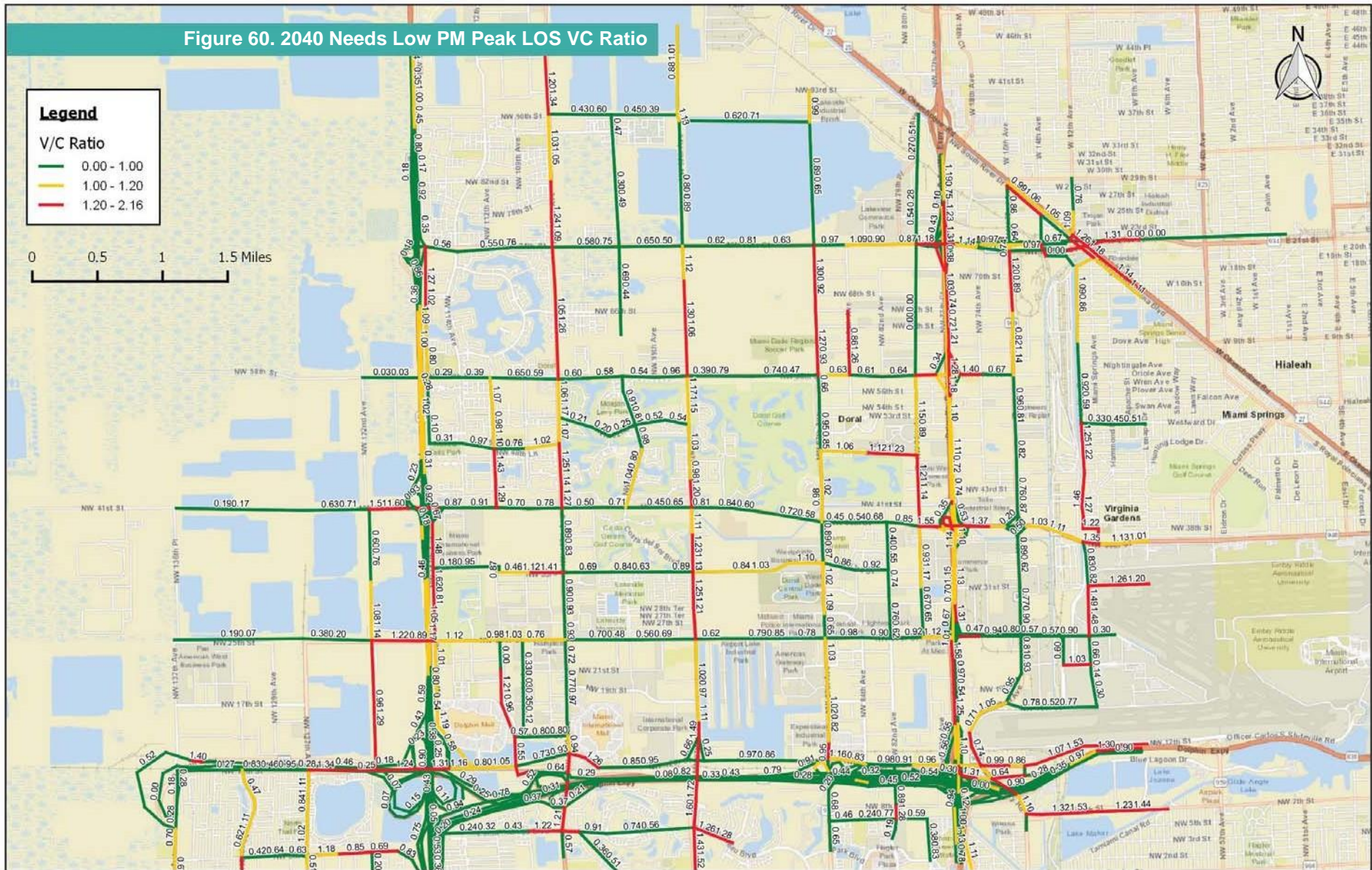
Subarea Statistics	2040 Cost Feasible	2040 Needs "Low"	2040 Needs "Medium"	2040 Needs "High"
Lane Miles	667	688	695	745
Total Vehicle Trips Modeled	1,796,000	1,777,000	1,791,000	1,822,000
Heavy Truck Trips Modeled	133,000	109,000	126,000	134,000
Vehicle Hours of Delay due to all Vehicles	52,100	48,700	50,800	49,900
Vehicle Hours of Delay due to Heavy Trucks	3,370	2,530	3,100	3,230
Average Minutes of Delay per Vehicle	1.74	1.65	1.70	1.64
Average Minutes of Delay per Heavy Truck	1.52	1.40	1.48	1.45
<i>Note: Statistics are for sub-area only, although there are some modeled improvements outside the subarea. For example, the SW extension of SR836 to Kendall is outside the subarea, but it brings in more auto trips into the study area</i>				

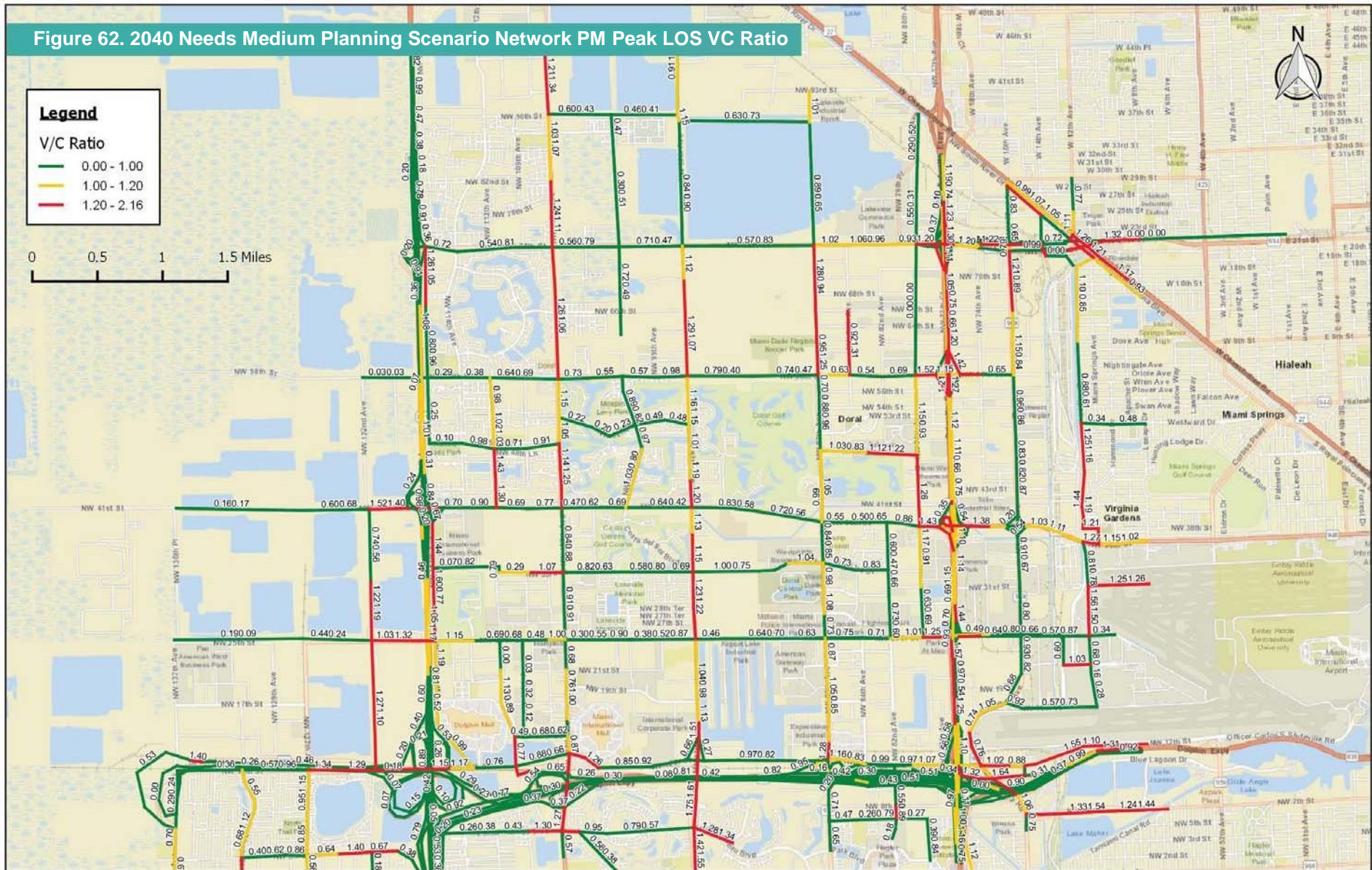
TABLE 29. LOW, EXPECTED AND HIGH NEEDS NETWORKS

Map ID	Roadway	Limits	Description	Select Needs Networks		
				Low Growth Scenario	Expected Growth Scenario	High Growth Scenario
5	Okeechobee Rd	NW 116th Way to NW 79th Ave	Add 2 lanes (total 8 lanes)	Yes	Yes	Yes
6	NW 121st Way	S River Dr. to NW 102nd Rd.	Widen from 2 to 4 lanes	Yes	Yes	Yes
7	NW 106th Street	S River Dr. to NW 116th Way	Widen from 2 to 4 lanes	Yes	Yes	Yes
8	NW 102nd Road	NW 116th Way to NW 121st Way	Widen from 2 to 4 lanes	Yes	Yes	Yes
9	NW 97th Avenue	NW 90th St to NW 106th St	ROW and construct roadway	Yes	Yes	Yes
10	NW 107th Avenue	NW 122nd St to NW 106th St	ROW and construct roadway	Yes	Yes	Yes
11	NW 25th St	NW 79th Ave to NW 97th Ave	Expand from 4 to 6 lanes	Yes	Yes	Yes
12	NW 25th St	NW 97th Ave to NW 107th Ave	Expand from 4 to 6 lanes	Yes	Yes	Yes
13	NW 36th St	NW 79th Ave to NW 97th Ave	Expand from 6 to 8 lanes	Yes	Yes	Yes
14	NW 36th St	NW 97th Ave to NW 107th Ave	Expand from 6 to 8 lanes	Yes	Yes	Yes
15	NW 12th St	NW 87th Ave to NW 107th Ave	Expand from 4 to 6 lanes	Yes	Yes	Yes
16	NW 33rd St	NW 79th Ave to NW 87th Ave	Raise Speed Limit to 40mph	Yes	Yes	Yes
17	NW 33rd St	NW 97th Ave to NW 107th Ave	Raise Speed Limit to 40mph	Yes	Yes	Yes
18	NW 33rd St	NW 107th Ave to NW 112th Ave	Raise Speed Limit to 40mph	Yes	Yes	Yes
19	NW 34th St	NW 112th Ave to NW 117th Ave	Raise Speed Limit to 40mph	Yes	Yes	Yes
20	NW 58th St	NW 87th Ave to NW 97th Ave	Expand from 4 to 6 lanes	Yes	Yes	Yes
21	NW 97th Ave	NW 12th St to NW 25th St	Expand from 4 to 6 lanes	Yes	Yes	Yes
22	NW 107th Ave	NW 25th St to NW 33rd St	Expand from 4 to 6 lanes	Yes	Yes	Yes
23	NW 114th Ave	NW 34th St to NW 50th St	Expand from 2 to 4 lanes	Yes	Yes	Yes
24	NW 117th Ave	NW 25th St to NW 34th St	Raise Speed Limit to 40mph	Yes	Yes	Yes
25	NW 102nd Ave	NW 58th St to NW 90th St	New 4 lane facility	Yes	Yes	Yes
26	NW 48th St	NW 79th Ave to NW 87th Ave	New 4 lane facility	Yes	Yes	Yes
2	SR 924 Extension	Current eastern terminus to I-95	Extension	No	Yes	Yes
3	NW 25th Ave Viaduct	NW 82nd Ave to NW 117th Ave	Extension of Via Duct	No	Yes	Yes
1	NW 36th /NW 41 St	HEFT to NW 42 Ave (LeJeune)	Super-Arterial express street	No	No	Yes
4	SR 836	SW Extension to Kendall	New Construction	No	No	Yes
27	NW 117th Ave	NW 106th St to NW 41st St	New 2 lane facility	No	No	Yes
28	NW 90th St	NW 117th Ave to NW 107th Ave	New 4 lane facility	No	No	Yes
29	NW 25th St Viaduct	MIA International Cargo Hub	Connection to Hub	No	No	Yes
30	NW 25th St Viaduct	SR 826	SB Ramps to SR 826	No	No	Yes
33	NW 22nd St	NW 72nd Ave to NW 68th Ave	New 4 Lanes Connection	No	No	Yes
31	NW 106th St	HEFT to I-75/NW 138th St	Traffic Adaptive Signal System	No	No	Yes
32	NW 81st Rd	NW 90th St to NW 79th Ave	New Road Connection	No	No	Yes
34	NW 121st/122nd Ave	NW 12th St to NW 41st St	New 4 lane facility	No	No	Yes
35	NW 127th Ave	NW 25th St to NW 41st St	New 4 lane facility	No	No	Yes
36	NW 25th St	NW 127th Ave to NW 137th Ave	Extension and expand to 4 lanes	No	No	Yes
37	NW 137th Ave	NW 25th St to NW 41st St	New 2 lane facility	No	No	Yes
38	NW 112th Ave	NW 25th St to NW 34th St	Expand from 2 to 5 lanes	No	No	Yes

Figure 58. 2021-2040 Cost Feasible VC Ratio







SECTION 5: INTERMODAL ALTERNATIVES

PORTMiami and Miami-Dade County are currently investigating opportunities for an Inland Terminal to support the port and to encourage more intermodal activity. **Figure 65** shows that many of the sites being vetted are in the west central Miami-Dade County and several are within or adjacent to the project study area. The project team reviewed the parcels to determine which locations may be ideal to accommodate an intermodal facility and/or a transload facility, each defined as follows:

- An intermodal facility is a loading and/or unloading facility used for trailer on flat car or container on flat car traffic only.
- A transload facility is defined as an intermediary point where freight can be transitioned between two forms of transportation. For the purposes of this study, the two forms of transportation are designated as truck and rail.

Parcels were evaluated based on sizing for the required facilities and ease of rail access, including dual railroad access for the intermodal facility. The intent of the exercise was to develop planning level concepts including high level assumptions to initiate conversation on the ability of various parcels under consideration.

INTERMODAL FACILITY UNDERSTANDING

The intermodal facility is intended to provide a dual access facility for PORTMiami containers that are destined or originating from locations outside of the Miami-Dade area. This would provide several benefits to PORTMiami, Miami-Dade County and the region as a whole. Benefits to the facility are described, but not limited to, the following text.

PORTMiami is located on an island off the coast of downtown Miami where the main ingress/egress point is a tunnel connecting to I-395 and a bridge that leads to Biscayne Boulevard. The area outside of Port property is heavily congested with Port and local traffic. Adding an intermodal facility provides an opportunity to put more freight on rail moving from PORTMiami to its destination through the off- site facility and vice versa. Moving freight from truck to rail in heavily congested areas is an objective supported by many stakeholders.

PORTMiami is land locked and has limited or no ability to increase their landmass. There may be opportunities to improve operations on site; however opportunities for improvement are expected to be limited and anecdotal. As

part of their program to increase capacity for PORTMiami, seeking opportunities off PORTMiami property provides an opportunity to support work being completed on-site.

The addition of an off-site facility would allow for economic growth and new jobs to the region both during construction and then for operation of the facility.

Freight for the facility is proposed to be containerized and focus on products that are currently shipped by PORTMiami. Based on the Cargo Facts from the PORTMiami website, freight is expected to focus on those imports and exports from the Americas and Caribbean as well as Asia. This freight would likely be destined for various locations on both CSX and FEC railway networks in an attempt to reduce the trucking fees.

INTERMODAL FACILITY SIZING AND PLANNING LEVEL DESIGN

Assumptions were developed based on past experience and industry rule of thumb to size project needs. Size of facilities and plans are not typically documented by railroads; however, are often discussed in planning meetings for new facilities based on lessons learned and best practices from facilities that have been recently constructed or expanded. Assumptions for the intermodal facility include the following and are as shown in **Tables 31 and 32**:

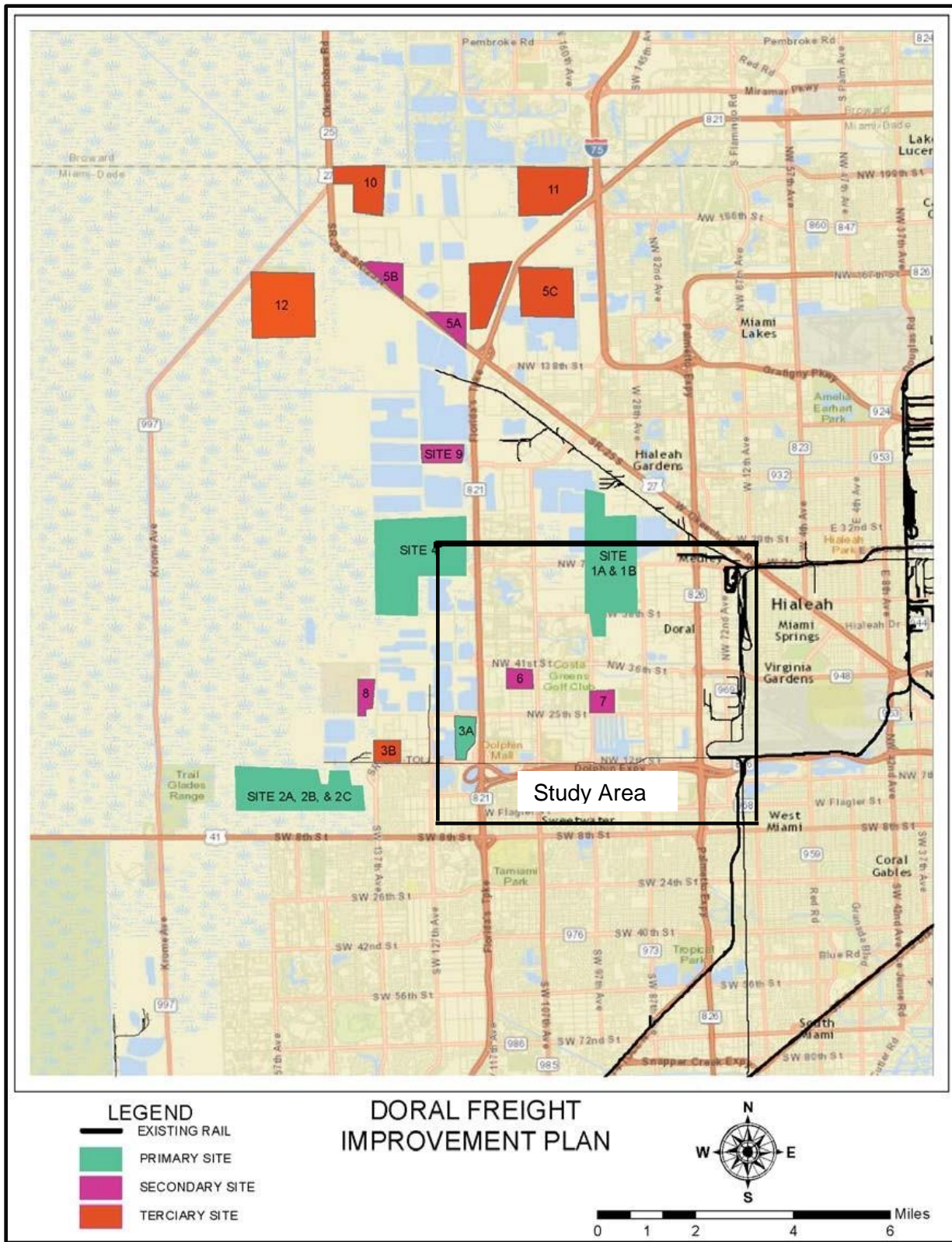
Volume Assumptions:

- PORTMiami handled approximately 581,000 forty foot equivalent units (FEUs) in 2016.
- This effort assumed approximately 20% of the total traffic handled by PORTMiami could be destined for rail. The estimate is based on projections developed by PORTMiami, in their Port of Miami 2035 Master Plan”, to achieve an intermodal rail market share of approximately 18% and figures experienced by other marine terminals in the southeast United States. The Journal of Commerce published an article in July 2017 reviewing the intermodal rail market shares observed in 2016 for the top four US East Coast ports. Results of their shown in the **Table 30**:

TABLE 30. PERCENT INTERMODAL RAIL MARKET SHARE

Port	Intermodal Rail Market Share (%)
PANYNJ	32%
VPA	30%
GPA	22%
SCPA	15%

FIGURE 65. PARCELS BEING VETTED BY PORTMIAMI AND MIAMI-DADE COUNTY



Source: PORTMiami

- This effort assumed an additional 10% of the volume would be domestic freight. The estimate is based on figures experienced by other intermodal terminals in the southeast United States.
- This effort provided accommodation for approximately 50% growth (10 years of growth based on the estimated high growth rate of 4.2% documented in the PORTMiami Master Plan.
- Figures for sizing the facility were rounded to the nearest 100,000 FEU due to the planning level scenario of this study.

Track Footage Assumptions:

- Approximately 50,000 lifts can occur on 2,000 feet of track per year. This figure is currently used as a rule of thumb by some Class I railroads and within studies performed by industry experts. Therefore, a minimum of 8,000 feet of processing track would be required. The project team recommends two 4,500 foot tracks to easily accommodate 9,000 foot trains.
- Processing tracks to storage tracks are generally based on a ratio of one processing track for every 2 storage tracks. This figure is currently used as a rule of thumb by some Class I railroads and within studies performed by industry experts. The project team

recommends four 4,500 foot storage tracks to allow for railcar switching, train building, air testing, railcar storage, etc.

On-site Container Storage:

- Based on sizing of the remainder of the facility, the project team recommends wheeled storage which allows for shorter driver dwell time and reduces pavement cost requirements.
- Based on slot sizing and to allow for safe access, an industry rule of thumb states that one acre can accommodate approximately 40 FEUs and that containers generally dwell for an average of 3 days; therefore, approximately 41 acres of wheeled storage is required.

Equipment Assumptions:

- Based on the sizing of the facility, the team assumed the facility would be operated by Rubber Tire Gantry Cranes (RTG). If the terminal is operated based on a 360 day per year schedule, 2 shifts per day, and 20 lifts per productive hour 3 RTGs would be required.
- Hostlers would be used to move containers from track side to the on-site container storage area. An industry rule of thumb requires 6 hostlers for every RTG being operated for a total of 18 hostlers.

TABLE 31. VOLUME PROJECTION ASSUMPTIONS

Assumption	Quantity Allotted	Total Estimated
PortMiami handled approximately 581,000 FEU in 2016.	581,000 FEU	581,000 FEU
Approximately 20% will be shipped by rail.	116,200 FEU	116,200 FEU
An additional 10% will be domestic freight.	11,620 FEU	127,820 FEU
Ability to accommodate 50% growth (10 years)	65,055 FEU	192,875 FEU
Say		200,000 FEU

TABLE 32. VOLUME PROJECTION ASSUMPTIONS

Assumption	Requirement
Track Footage	
Processing Tracks	2 x 4,500' tracks
Storage Tracks	4 x 4,500' tracks
On-Site Container Storage	
Wheeled parking	41 acres
Equipment	
Rubber Tire Gantry Crane	3
Hostler	18

Once assumptions were documented the project team reviewed the available parcels to determine which may provide the optimal footprint required for the facility and had the best potential to provide rail access. The team focused on site 1A-B, site 2A-C, and site 4 for potential locations for the intermodal facility. 1A and 1B are two separate parcels, for example, but there is an opportunity to combine them now or in the future to accommodate additional growth. The same could be completed with sites 2A, 2B, and 2C

Determination of where rail access is most feasible was considered within the three stated sites. Access agreements would be required with each of the rail carriers that would move trains on or off site. That said, any option to increase the ease of access and the shorten track leading into the facility is ideal. While each of the three sites has the ability to provide rail access, Site 1B, as shown in **Figure 66**, is assumed to provide the best access to the area based additional rail accessible facilities within the area. Further discussions would be required with the rail carriers to gain buy-in.

The Site 1A-B layout accounts for the assumptions previously stated and provides additional operational benefits including the following:

- Site 1A-B includes a loop track, rather than stub end tracks. This would allow switching to occur from the south end of the facility, allow for the railroads to pull trains through the yard rather than having to shove in, and reduce the amount of time that any train would be on the mainline when serving or switching the facility.
- There is room to increase the footprint of storage and processing tracks and to increase the parking.
- If Site 1A-B were selected and volume projections are in excess of what was assumed for this study, there is an opportunity to adjust the planning level concepts to include site 1A and develop a phasing plan to include wide span cranes, additional tracks, and a grounded operation as necessary.
- Truck access to Site 1A-B is proposed via NW 74th Street which provides easy access to Palmetto Expressway, the HEFT and the surrounding arterial system.

If desired Site 4, as shown in **Figure 67**, also provides unique opportunity to accommodate a dual access intermodal facility. This site has the potential to extend a rail connection to FEC

north of the site and to CSX south of the site. Connections to both railroads provides rate competition which may be attractive to shippers.

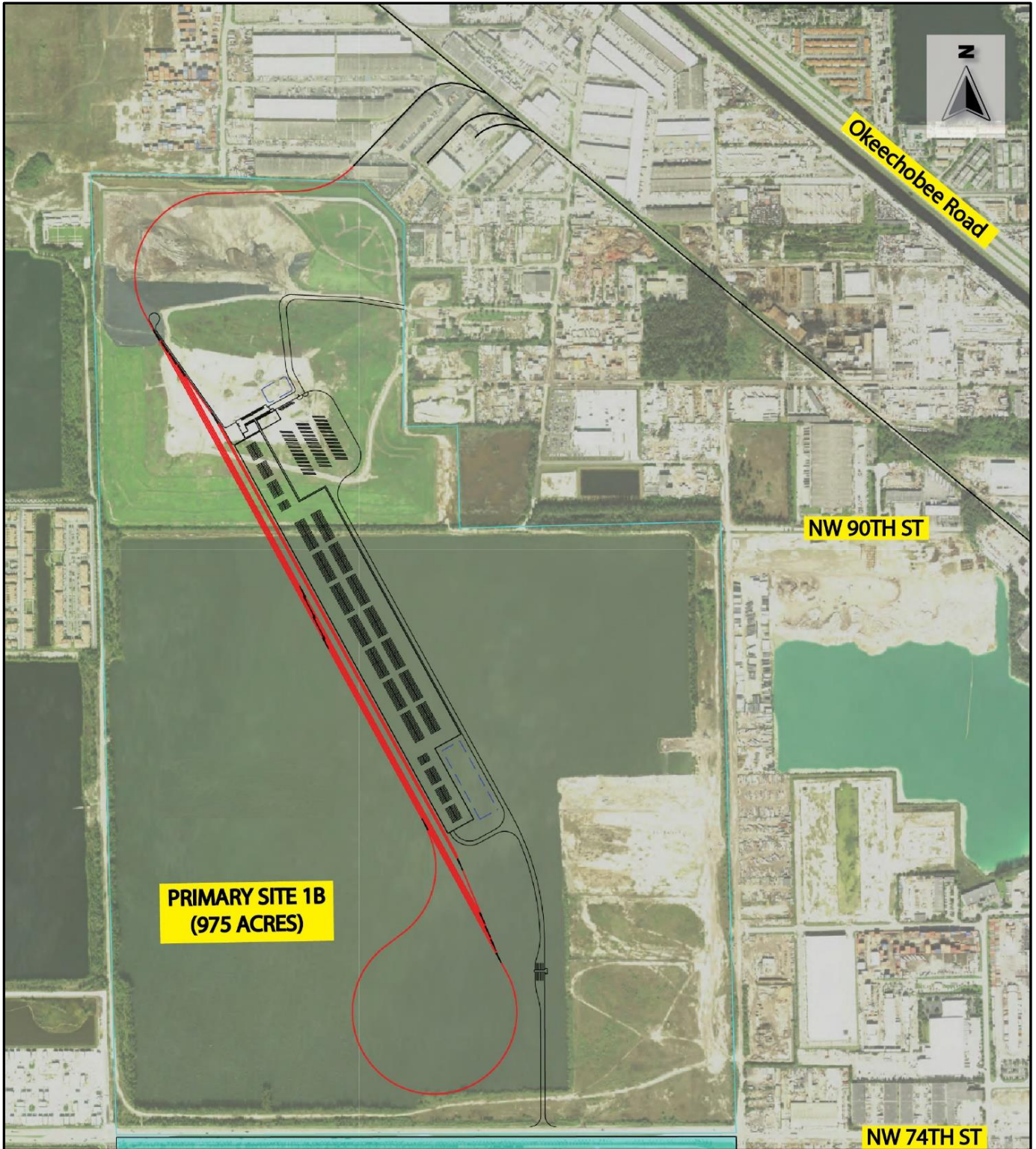
The Site 4 layout accounts for the assumptions previously stated and provides additional operational benefits including the following:

- Site 4 provides long lead tracks for switching from either end of the facility and departure from the North or South. Similar to Site 1A-B, no shove moves would be required when arriving or departing a train.
- There is room to increase the footprint of storage and processing tracks and to increase the parking.
- If Site 4 were selected and volume projections are in excess of what was assumed for this study, there is an opportunity to adjust the planning level concepts to elongate the tracks and develop a phasing plan to include wide span cranes, additional tracks, and a grounded operation as necessary.
- Truck access to Site 4 is proposed via 58th Street which provides easy access to which provides access to the Palmetto Expressway, the HEFT, and the surrounding arterial system.

Challenges to constructing the facility on Site 1A-B or Site 4 include, but are not limited to the following:

- Permitting is a risk to the project. An Environmental Impact Statement or other NEPA documentation will probably be required prior to programming construction.
- The site is privately owned.
- Fill would be required to level the site and considerations for drainage would be required to ensure no drainage issues occur to the surrounding areas.
- There is a golf course and housing in the surrounding area and may be concerns from the surrounding community or mitigation requirements that would be required to allow for construction of the facility.
- Access agreements with the rail carriers can be time consuming and complex. From experience at other facilities, the rail carriers can implement strict requirements in the design and construction phases.
- Additional smaller parcels may be required for purchase in part or in whole to gain rail access to the facility.

FIGURE 66. SITE 1B POTENTIAL INTERMODAL FACILITY LAYOUT



Source: TranSystems, Inc.

FIGURE 67. SITE 4 POTENTIAL INTERMODAL FACILITY LAYOUT



Source: TranSystems, Inc.

TRANSLOADING FACILITY UNDERSTANDING

The transloading facility is intended to provide a location for the following purposes:

- Transfer freight from trailers into intermodal containers.
- Transfer freight from boxcars to intermodal containers.
- Transfer freight from intermodal containers to trailers or boxcars.
- Transfer freight from domestic sized containers to multiple international sized containers.
- Transfer freight from multiple international sized containers to a domestic sized container.

This process provides an intermediary point where freight can be transferred to the next type of shipping receptacle in the supply chain process. The location of this facility is intended to reside in close proximity to the intermodal facility to allow containers to be transferred to and from the port by rail. Reasoning for the change in shipping receptacle are generally related to company practices from product owners within the supply chain, cost of shipping by land, access to the customers' American facilities, etc. Benefits to this scenario include, but are not limited to, those described within this section.

The transloading process requires a significant amount of space for storage, railcar staging, and truck access. Moving this off port property in part or in whole and out of the City of Miami area allows valuable land to be used for other purposes, such as customs requirements, containerized operations, or cruise operations.

Having the transloading facility reside in close proximity to the intermodal facility would provide easy access and allow for the freight to be transported by rail rather than truck. This would allow those containers being transported to and from the Port to stay off the highway system and reduce congestion in the Miami region.

The addition of an off-site facility would allow for economic growth and new jobs to the region both during construction and then for operation of the facility.

The size of the facility compared to the sites that are currently being vetted by Miami-Dade County and PORTMiami is relatively small, as shown in **Figure 65**. That said, there is an opportunity to develop the remaining site into a logistics park, incorporate truck parking or to combine the transloading facility and the intermodal facility on one site.

Freight for the facility would primarily focus on palletized cargo that could easily be transferred between shipping receptacles using a forklift. Based on the Cargo Facts from the PORTMiami website, freight is expected to focus on those imports and exports from the Americas and Caribbean as well as Asia. This freight could be destined for regional facilities or may require a long haul to its final destination.

TRANSLOADING FACILITY SIZING AND PLANNING LEVEL DESIGN

A potential layout is provided in **Figure 68** where for planning purposes, the facility was based on a similar project experience. The facility includes a 400,000 square foot building for operations and product storage and approximately 6,500 feet of track for operations and railcar storage (950' of track can be directly accessed from the building and the remaining would act as storage). Based on these assumptions approximately 7,560 railcars per year assuming 360 days operation and 1.5 track turns per day or 5,040 railcars assuming 360 days operation and only 1 track turn per day.

A site separate from the intermodal facility was used to show the feasibility of access within another ideal site location where remaining property could be used as a logistics park or as seen fit. Site 9 was selected based on proximity to rail and the highway system and because it is owned by FDOT. This site would experience similar challenges as the intermodal facility including, but not limited to, the following:

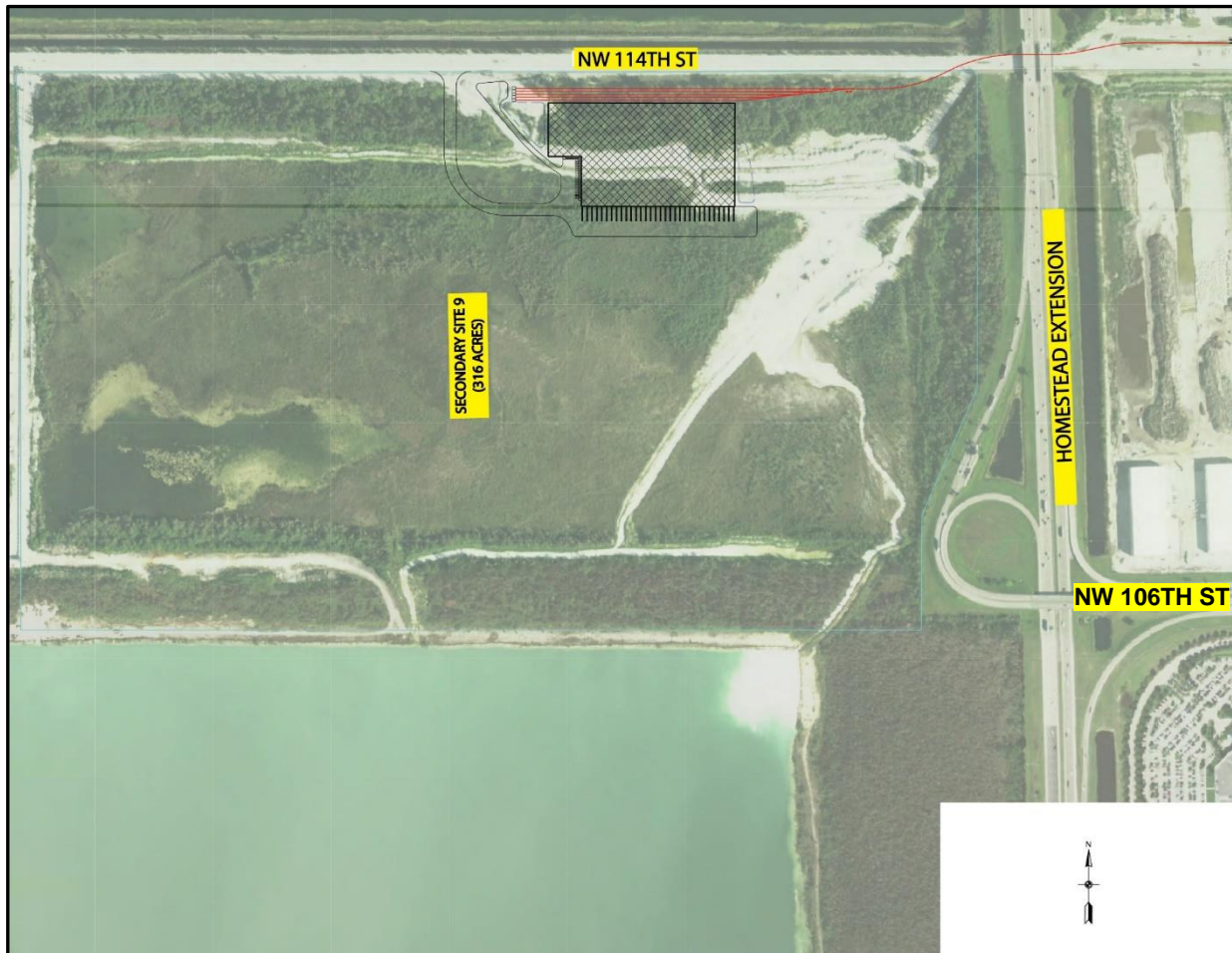
- Permitting is a risk to the project. An Environmental Assessment or Environmental Impact Statement may be required prior to start of construction.
- Either site will require fill to level the site and considerations for drainage would be required to ensure no drainage issues occur to the surrounding areas.
- Access agreements with the Class 1 carriers can be time consuming and complex. From experience at other facilities, the Class 1 carriers can implement strict requirements in the design and construction phases.
- Additional smaller parcels may be required for purchase in part or in whole to gain rail access to the facility.
- A railroad crossing would be required to access the site which would increase the costs to construction and would require additional involvement from the DOT and municipalities.
- Additional smaller parcels may be required for purchase in part or in whole to gain rail access to the facility.
- Additional roadway may be required to access the highway. Based on images from a desktop analysis, the

NW 114th St. appears to be dirt and may require trucks to drive through an existing Cement Plant for access to the entrance.

- Site 9 is located outside/adjacent to the Urban Development Boundary (UDB). This will be a challenge to overcome; however, the site does touch the Boundary line and could be accessed from the NW 114th and developed so that no external roads exited the site into the UDB.

If Miami-Dade County and PORTMiami determined that only one plot of land should be purchased, there is an opportunity to include both facilities within the Site 1A-B or Site 4 and is shown as such in **Figure 65**. This would decrease cost associated to purchase of land, infrastructure required, potentially remove the requirement to include an at-grade rail crossing, increase ease of truck access, etc.

FIGURE 68. SITE 9 POTENTIAL TRANSLOADING FACILITY LAYOUT



Source: TranSystems, Inc.

SECTION 6: CONGESTION MANAGEMENT AND INTELLIGENT TRANSPORTATION SYSTEMS ALTERNATIVES

Freight movement in the Doral Area is impacted by significant traffic congestion and in the long term many roads will not be able to be physically expanded or interim improvements to improve capacity will be warranted prior to expansion utilizing congestion management techniques and Intelligent Transportation Systems (ITS). The objective here is identify projects focused on bottlenecks and low cost high impact improvements to traffic mobility and to use technology and information to “manage” congestion and inform users.

The City of Doral is very progressive in the development and implementation of congestion management projects and implementing technology initiatives to minimize the effects of congestion to move people and freight that have a real economic impact. Recently, Doral became one of only four US Cities with Platinum Certification from the World Council on City Data (WCCD). This certification is awarded to cities who reach the highest standard in collecting and sharing data, using it for effective decision-making. Doral has made significant investments as part of its commitment to resiliency, workability and sustainable environment working on improvement of service and the well-being of the city. With this certificate, the City strengthened its digital government transformation by providing people and business first services and solutions that span city administration and citizen services, enabling increased insight, service efficiency and improved citizen outcomes. Much of this Section of the Doral Subarea Freight Mobility Improvement Plan documents the initiatives and resources developed by the City for transportation.

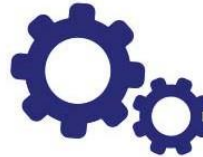
TRAFFIC RELIEF PLAN

The City has taken the initiative, creating a Traffic Relief Plan, implementing strategies to help manage and alleviate traffic congestion. These strategies include short term, mid-term and long term improvements. The development of the strategies is coordinated with other departments of the City such as the Police and Code Compliance Departments as well as agencies outside of the City including the Miami-Dade Department of Transportation and Public Works and MDX and others.

TRAFFIC RELIEF PLAN

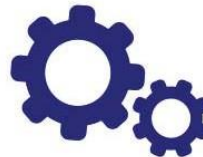
The Traffic Relief Plan Objectives are:

1. Improve traffic flow along the major arterial roads within the City of Doral.
2. Actively monitor traffic using Closed Circuit TV (CCTV) cameras.
3. Adjust signal timing to respond to traffic conditions and incidents.
4. Capital improvement projects to improve congestion at bottleneck locations.



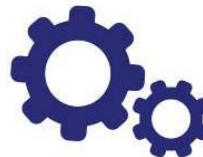
Short-term Improvements

Include updating traffic signal timing based on field observations and reviews of traffic data of Doral's major roads; creating management strategies using signal timing updates to respond to different traffic conditions.



Mid-term Improvements

Include installing CCTV cameras to monitor traffic conditions in real-time and recommending signal timing adjustments for both normal rush hour traffic and special events, based on what the cameras show. Currently, cameras have already been installed along NW 36 Street/41 Street from NW 79 Avenue to NW 114th Avenue at major intersections. This recommendation would expand the deployment of cameras across additional facilities and intersections.



Long-term Improvements

Focus on identifying traffic bottleneck locations, and evaluating improvement solutions that provide additional capacity at signalized intersections like additional turning lanes or extending the length of existing turning lanes. The long-term improvements described above must also be balanced with improved system management strategies, as discussed later in this document, in order to combat the cyclical nature of capacity improvements leading to induced traffic demand and thereby leading to increased congestion.

BLUETOOTH AND CAMERA LOCATIONS

Figure 69 shows the current locations of cameras and Bluetooth traffic sensors deployed throughout Doral. These cameras and sensors play a crucial role in the Traffic Relief Plan, providing real-time information on travel speeds and bottleneck locations, and allowing immediate observations of traffic conditions.

FIGURE 69. CCTV AND BLUETOOTH LOCATIONS



HOW IS THE TRAFFIC RELIEF PLAN IMPROVING TRAFFIC?

The Traffic Relief Plan includes two primary strategies to improve traffic conditions:

1. Active Traffic Monitoring - With the use of CCTV camera installations and Bluetooth sensors, the City has been able to monitor arterial performance and identify the need for signal timing adjustments or other types of traffic congestion relief strategies, such as intersection capacity improvements, the addition of turning lanes or extending the length of existing turning lanes.
2. Signal Retiming – This assessment served to determine the needed additional timing plans to better accommodate traffic variations during the peak periods.

The results of these strategies are:

- AM Peak Period - Overall reduction in Eastbound (peak direction) travel time between 3-4 minutes for the corridor of NW 41st Street/NW 36th Street from SR-821 to NW 7100 Block.
- PM Peak Period - Overall reduction in Westbound (peak direction) travel time between 3-4 minutes for the corridor of NW 41st Street/NW 36th Street from SR-821 to NW 7100 Block.

With active traffic monitoring, the City adjusts green time per movement (i.e. lefts, thru, pedestrians) so the signal runs as efficiently as possible and each movement is given the green time required to efficiently to minimize delays due to traffic congestion.

The City also identified signal equipment malfunctions and worked with the Miami-Dade County Department of Transportation and Public Works to have them repaired.

Additionally, the City of Doral is studying specific intersections for further operational analysis and to support with Maintenance of Traffic (MOT) and construction related signal timing adjustments to reduce the impact of construction activities on traffic progression throughout the day.

THE ROLE OF THE INFORMATION AND TECHNOLOGY DEPARTMENT

The City of Doral is utilizing Smart City Strategies through information and communications technology to enhance livability, workability and sustainability. The Information and Technology Department provides and empowers the City's business partners and Doral's residents, visitors and businesses with sustained, reliable and efficient technology services, infrastructure and telecommunications. Leveraging state-of-the-art tools, innovative methods and strategic partnerships, they are at the center of shaping the City's Smart City strategy. Building a smart city requires championing the strategy at the highest level of the organization, a system-wide view with an integrated approach. To that end, the technology allows the organization to collect information about its operation through different sensors; next, that data is communicated to the information systems that process and 'crunch' it, analyzing the information collected to understand what is happening, initiate responsive actions and even predict what is likely to happen next. This freight plan seeks to support and complement the City efforts.

THE IMPORTANCE OF DORAL TRANSPORTATION-RELATED DIGITAL ASSETS

The City of Doral has a plethora of transportation-related assets available to build upon to become a smarter City which include:

- The City's Wide Area Network
- Your Doral Trolley Tracker
- TSO Doral Smart Phone App
- Red Light Cameras
- License Plate Reader (LPR) Camera & Intersection

- Cameras
- GIS Portal
- Traffic Alerts & Roadway Updates
- CodeRED
- 311

CITY'S WIDE AREA NETWORK - Fiber optic high availability services are provided to all facilities in the City's Wide Area Network.

YOUR DORAL TROLLEY TRACKER - The Your Doral Trolley Tracker provides real-time trolley information for all routes. Unlike traditional trolley schedules, the Your Doral Trolley Tracker lets customers see and track the actual status of the trolley, so they know when their ride will arrive. The Your Doral Trolley Tracker helps passengers plan their time better and allows them to run another errand, finish up another project, or simply wait indoors for the Trolley.

TSO DORAL SMART PHONE APP - Mobile Online Tracker that allows travelers to:

- View all Route Schedules & Trolley Times
- Filter your Information Search by selecting a Stop# or Route
- View Detailed Stop Information
- All Trolley Routes are shown on user friendly Maps which are constantly Updating
- Know all the nearest stops to your Location for easy access to your closest Trolley & Route
- Search by entering a complete address Location & our system will Automatically Choose The Best Route for you
- Directions are shown Simple and Easy to follow, by just reading the step by step instructions & following the Blue Line
- Use system Options to know the best possible route for any given Location
- View complete maps for all City Of Doral Routes
- TSO Doral's Mobile Application, is now integrated to our Phone Automated Voice Interactive System for Accurate Trolley Scheduled Stop Times.
- Use our Automated Voice Interactive System (AVIS)

RED LIGHT CAMERAS - Vehicles not stopping at red lights is a dangerous and costly problem on Doral streets and across the country, and can be a primary cause of fatal collisions on public roads. Doral's Intersection Safety Camera Program is designed to reduce the number of violations, crashes and injuries caused by red-light runners. The objective is to change drivers' behavior, making the community safer as

more and more drivers obey the traffic signals and stop on red.

LPR CAMERAS & INTERSECTION CAMERAS - License plate reader (LPR) cameras and other cameras mounted at intersections are used to monitor origin-destination travel patterns of vehicles within and around Doral. Monthly reports are available on the City's website.

GIS PORTAL - A centralized location of interactive Maps of the City of Doral departments is available online.

CODERED - CodeRED alerts the public via text, voice or email of all traffic crashes, road closures and emergencies in the City of Doral. In addition, CodeRED also notifies if Doral is in the path of severe weather with weather warnings issued by the National Weather Service.

311 - Citizens can request a service or report a problem online. After submitting a service request, citizens receive a Service Request Number or Tracking Number. These service requests can be tracked from the 311 homepage or by calling 311 anytime for additional information and assistance.

Additional information may be incorporated into these assets to better inform the freight industry and traveling public of the situation on the transportation network in Doral. Each asset is described in greater detail in the following sections.

ALTERNATIVES

Potential Alternatives that are intended to benefit the performance of the roadways and the transportation network in Doral through the use of existing resources and crunching of available data are outlined here. Layering additional information on the GIS Portal enables citizens and travelers to make better decisions about their trips in Doral. Therefore, the following alternatives are provided:

- Doral Trolley routes and stops layers added to the GIS Portal
- Specifically market transit including the Trolley, Metro Rail, MetroBus and the new I-75 Express Bus to Doral workers and commuters to increase transit use during peak periods
- Red Light Cameras layer added to the GIS Portal; Develop a webpage that includes statistics on the number of Red Light Photo Enforcement citations issued, number of collisions reduced, etc.
- Process the Bluetooth and Intersection Camera data to create travel times to be added to the GIS Portal
- Process the Bluetooth and Intersection Camera data

- to create origins and destinations for insight into travel patterns in Doral
- Provide up-to-date information on Traffic Alerts and add to the GIS Portal
- Roadway Updates layer added to the GIS Portal
- CodeRED layer added to the GIS Portal
- Add Traffic Information layer to GIS Portal and a Traffic Information button 311 that points to the GIS Portal with the Traffic Information layer on
- Upgrade TSO Doral Smart Phone App to include all Doral transportation-related information

- Multiple Apps and Touchpoints – Looking to Consolidate
- Transportation Data Hub
- Open Data Portal
- Address Climate Change
- Achieve Sustainability
- Use USDOT tools – Connected Vehicle Reference Implementation Architecture (CVRIA), Systems Engineering Tool for Intelligent Transportation (SET-IT), Security Credential Management System (SCMS), Basic Safety Message (BSM), Maintenance Decision Support System (MDSS), etc.

These Alternatives identify steps for the City to take to share more data and actionable information and to become a smarter city by addressing congestion issues. An approach will be enumerated for each of the steps and additional information resources available from the US Department of Transportation (USDOT), National Cooperative Highway Research Program (NCHRP), and others are provided for more detailed information.

Six Florida cities applied for the USDOT's Smart City Challenge: Jacksonville, Miami, Orlando, St. Petersburg, Tallahassee and Tampa. Unfortunately for the Florida cities, the Smart City Challenge was won by Columbus, Ohio. But, the applications by these six cities can be reviewed and their commonalities make up the aspirations for a Florida Smart City.

FLORIDA SMART CITY CHALLENGE COMMONALITIES

Among the Florida cities that applied for the Smart City Challenge, there are a variety of similarities in terms of challenges and goals:

- Address Congestion / Mobility
- Address Freight issues
- Improve Advanced Traffic Management Systems (ATMS)
- More Automatic Vehicle Location (AVL) and Sensors
- Make Wireless Internet available
- More Analytics and Performance Measures
- Implement Connected & Automated Vehicles
- Safety & Security are Overarching
- Include Emergency Services
- Services are Inclusive
- Update Transit – Bus Rapid Transit, Transit Signal Priority, Automatic Passenger Counting, etc.
- Provide Transportation Sharing
- Include Smart Parking & Lighting

For the Alternatives Analysis, a subset of the commonalities to apply in Doral to address its congestion / mobility issues. Our goal is optimizing the performance of the roadway network for a smarter city – intersection by intersection, corridor by corridor and, eventually, the entire roadway network. This optimization is citizen focused to improve their quality of life and enable better access to jobs, healthcare and entertainment. Implementing the Alternatives will provide additional data and information on the performance of the roadways in the City to set priorities on safety and mobility projects. This focus on transportation is important because it is the backbone for everything going on in the City. Our Analysis will make tools available to apply data and help make decisions to address mobility and safety in Doral which are congruent with FDOT's activities in Transportation



System Management and Operations (TSM&O).

FDOT TRANSPORTATION SYSTEMS MANAGEMENT AND OPERATIONS (TSM&O)

FDOT's recently updated 2017 Transportation Systems Management and Operations Strategic Plan is available online. FDOT's Statewide Arterial Management Program

(STAMP) advocates using an Active Arterial Management (AAM) approach to manage traffic which is addressed National Cooperative Highway Research Program Synthesis 447 Active Traffic Management for Arterials.

The Alternatives Analysis considers a number of factors on Intersection-by-Intersection, Corridor-by-Corridor and Entire Roadway Network basis:

Intersection-by-Intersection

- Signalized Intersection Focused
- Detection Functioning
- Generate Intersection Data
- High Resolution Controllers
- Communications for Connected Signals
- Systems Integration
- Signal Performance Metrics
- Signal Retiming
- Adaptive / Peer to Peer Adaptive
- Connected / Automated Vehicle Preparation / Implementation

Corridor-by-Corridor

- Integrated Corridor Management
- Transit Signal Priority / Emergency Signal Preemption
- LPR / Bluetooth / WiFi for Travel Times
- Parking

Entire Roadway Network

- Open Data Platform
- Prepare for Mobility as a Service
- LPR / Bluetooth / WiFi for Origin-Destination
- 3rd Party Data
- Freight Enforcement – Weight and Speed
- Traffic Management – Road and Lane Closure Database
- Traveler, Emergency and Weather Information
- Update Traffic Relief Plan
- ITS Master Plan
- Plan for Vision Zero
- Dashboard with Outcomes

The Alternatives Analysis cycle completes with an annual FHWA TOPS-BC benefit / cost analysis of Alternatives; paper submission on innovations implemented to Smart Cities Week, ITS America, ITS World Congress or other preferred conference; and a Visioning Workshop to review accomplishments and plan for the years ahead.

UPDATE TRAFFIC RELIEF PLAN

Based on the strategies included in this Section, the City may wish to update the Traffic Relief Plan to reflect its desires

For related projects and implementations. This could be incorporated as part of an areawide Congestion Management Process (CMP). A CMP is a systematic approach for managing congestion that provides accurate, up-to-date information on transportation system performance and assesses alternative strategies for congestion management to meet local needs. The CMP uses an objectives-driven, performance-based approach to planning for congestion management. Through the use of congestion management objectives and performance measures, the CMP provides a mechanism for ensuring that investment decisions are made with a clear focus on desired outcomes. This approach involves screening strategies using objective criteria and relying on system performance data, analysis and evaluation.

PLAN FOR VISION ZERO

To protect lives on the transportation network, Vision Zero aims to eliminate fatalities and injuries. Vision Zero is a multi-national road traffic safety project that aims to achieve a highway system with no fatalities or serious injuries involving road traffic. **Figures 39, 40 and 41** in Section 3 showed that most of the truck crashes and pedestrian/bicycle crashes are occurring in the eastern industrial areas of this study. Vision Zero functions to guide strategy selection and not to set particular goals or targets. In most road transport systems, road users bear complete responsibility for safety. Vision Zero changes this relationship by emphasizing that responsibility is shared by transportation system designers and road users.

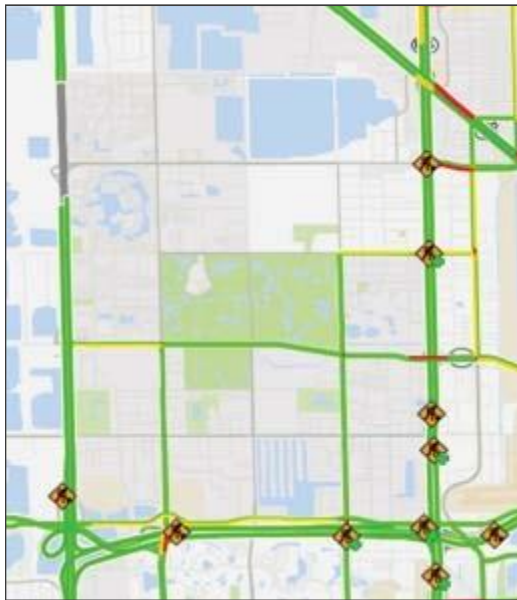
FHWA DATA AND INFORMATION AVAILABLE FOR FREE TO PUBLIC SECTOR AGENCIES

FDOT Data Accessed through the Regional Integrated Transportation Information System (RITIS) The University of Maryland's Center for Advanced Transportation Technology Laboratory (CATT Lab) makes FDOT and other transportation data available through the Regional Integrated Transportation Information System (RITIS) to local agencies. RITIS is an automated data sharing, dissemination, and archiving system that includes many performance measure, dashboard and visual analytics tools.

CONGESTION EVENT ASSESSMENT

Congestion events (where observed speeds dropped below 65% of uncongested speed for at least 2 minutes) and vehicle probe speed data on 92 Traffic Message Channel (TMC) road segments in the Doral area were assessed including SR 826 (Palmetto Expressway), SR 836 (Dolphin Expressway) and Florida's Turnpike.

FIGURE 70. 92 TRAFFIC MESSAGE CHANNEL (TMC) ROAD SEGMENTS



events overall

- Florida's Turnpike had most congestion events at the NW 74th St. interchange
- No data for two quarters in 2014 available on SR 836
- May not be of interest to Doral as the Congestion Events are occurring on nearby limited access roadways

TRAFFIC SPEED DATA ASSESSMENT

Traffic Speed Data is available on portions of:

- NW 107th Ave.
- NW 12th St.
- SW 87th Ave.
- NW 58th St.
- NW 72nd Ave.
- NW 36th St.
- SR 934
- US 27

FIGURE 71. SAMPLE CONGESTION EVENT HEAT MAP FOR 2016 4TH QUARTER- SR 826 (PALMETTO EXPRESSWAY)

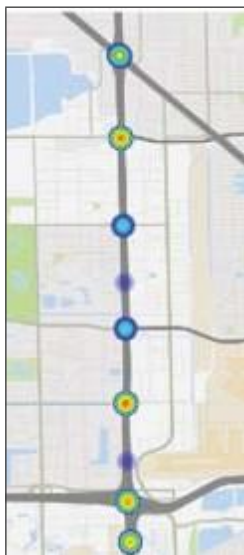
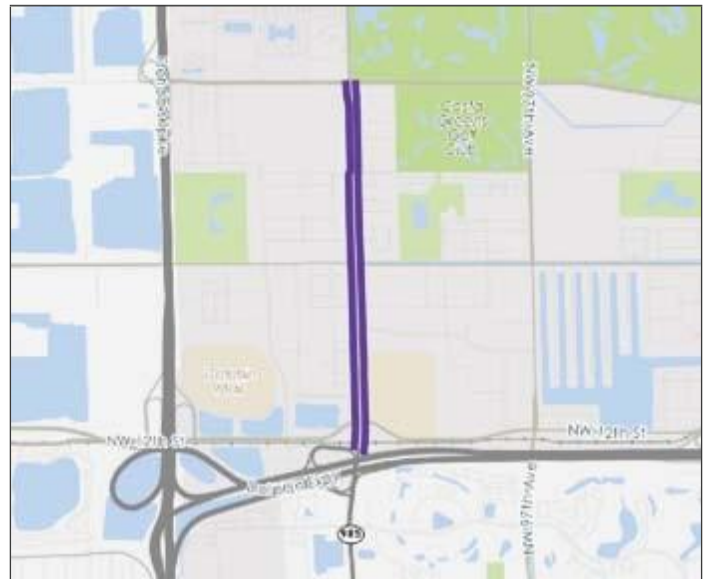


FIGURE 72. EXAMPLE COVERAGE – NW 107TH AVE

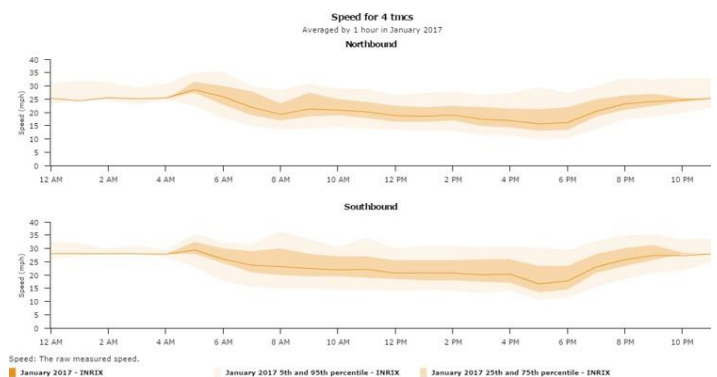


CONGESTION EVENT ASSESSMENT

Using the bottleneck data collected, the following assessments can be made of congestion events:

- Most congestion events occur at interchanges
- SR 826 had the most congestion events overall
- SR 826 had most congestion events at the interchange with 836, 27, NW 74th St. and NW 25th St.
- SR 836 had most congestion events at the interchange with NW 107th Ave., 836 and NW 107th Ave.
- Florida's Turnpike had the least intense congestion

FIGURE 73. TRAFFIC SPEED DATA NW 107TH AVE. – JANUARY 2017



TRAFFIC SPEED DATA CONCLUSIONS

January 2017 Traffic Speed Data was examined and the conclusions were:

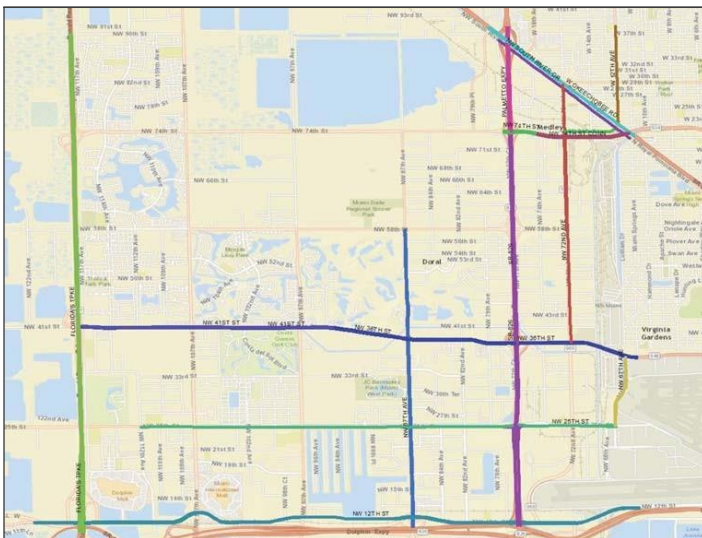
- PM Peak had lower speeds than AM Peak
- Most roadways had speeds of 30 mph or less
- Worst PM Peak drop in speed was seen on NW 36th St. between 4 and 7 PM
- Stakeholders should monitor Traffic Speeds through RITIS

NPMRDS DATA

FHWA has acquired a national data set of average travel times for use in performance measurement called the National Performance Management Research Data Set (NPMRDS). This dataset is comprised of 5 minute travel times for all vehicles, trucks and cars on the National Highway System (NHS). The Project Team obtained access to this dataset for this study through FDOT and analyzed and processed freight speed / travel times data along 90 Traffic Message Channel (TMC) road segments from October 2016 to January 2017 including:

- Florida’s Turnpike
- NW 12th Street
- NW 25th Street
- NW 36th Street
- NW 41st Street
- NW 87th Street
- SR 826/Palmetto Expressway
- Okeechobee Road

FIGURE 74. NPMRDS TRAFFIC MESSAGE CHANNEL (TMC) COVERAGE



FREIGHT BOTTLENECK ANALYSIS

Identified potential bottlenecks in the PM Peak on Weekdays on:

- SR 826/Palmetto Expwy NB between NW 12th St and NW South River Dr/US 27
- SR 826/Palmetto Expwy SB between NW 74th St and NW 25th
- US 27 NB between NW 74th St/SR 934 and SR 826

The x axis are TMC road segments and the y axis is time from 12:01 Saturday to 11:59 PM Sunday from October 1, 2016 to January 31, 2017. Green represents speeds 40 MPH or greater, yellow are speeds O-D 20 – 39 MPH and red are speeds below 20 MPH.

NPMRDS FREIGHT DATA ANALYSIS CONCLUSIONS:

- The NPMRDS data set has an associated GIS shapefile available of the TMC road segment coverage. The data is available historically in a flat, non-GIS file which would need to be converted for any GIS use.
- PM Peak had lower speeds than AM Peak
- SR 826 SB and Turnpike NB had average freight speeds less than 30 mph between 7 am to 8 pm
- Worst PM Peak drop (57%) in speed was observed on NW 36th St. between 4 and 7 PM
- Minor congestion noticed along 25th street EB and WB PM
- Turnpike had the least congestion overall
- No data coverage and low sample size on many of the local arterials such as, 12th Street and NW 87th Street
- Limited travel time sample during off -peak hours
- The City may wish to monitor Freight Data through the NPMRDS

TRUCK WEIGHT ISSUES

A FDOT weigh-in-motion (WIM) station is just north of our study area on the Florida Turnpike and its data for October 2016 was analyzed with the following observations:

- 342,761 records
- Total Weight – 12,257,155,034 lbs.
- Average Weight – 35,760 lbs.
- 8,874 with weight over the Federal maximum weight of 80,000 – 2.22%
- 174,627 lbs. highest recorded weight
- 9,711 with weight under 8,000 – 2.83%
- 2,132 with speeds at the speed limit of 70 MPH or greater – 10.9 %

FIGURE 75. TRUCKS SPEED SCAN WEEKDAY - SR-826 BETWEEN 25TH STAND 74TH ST

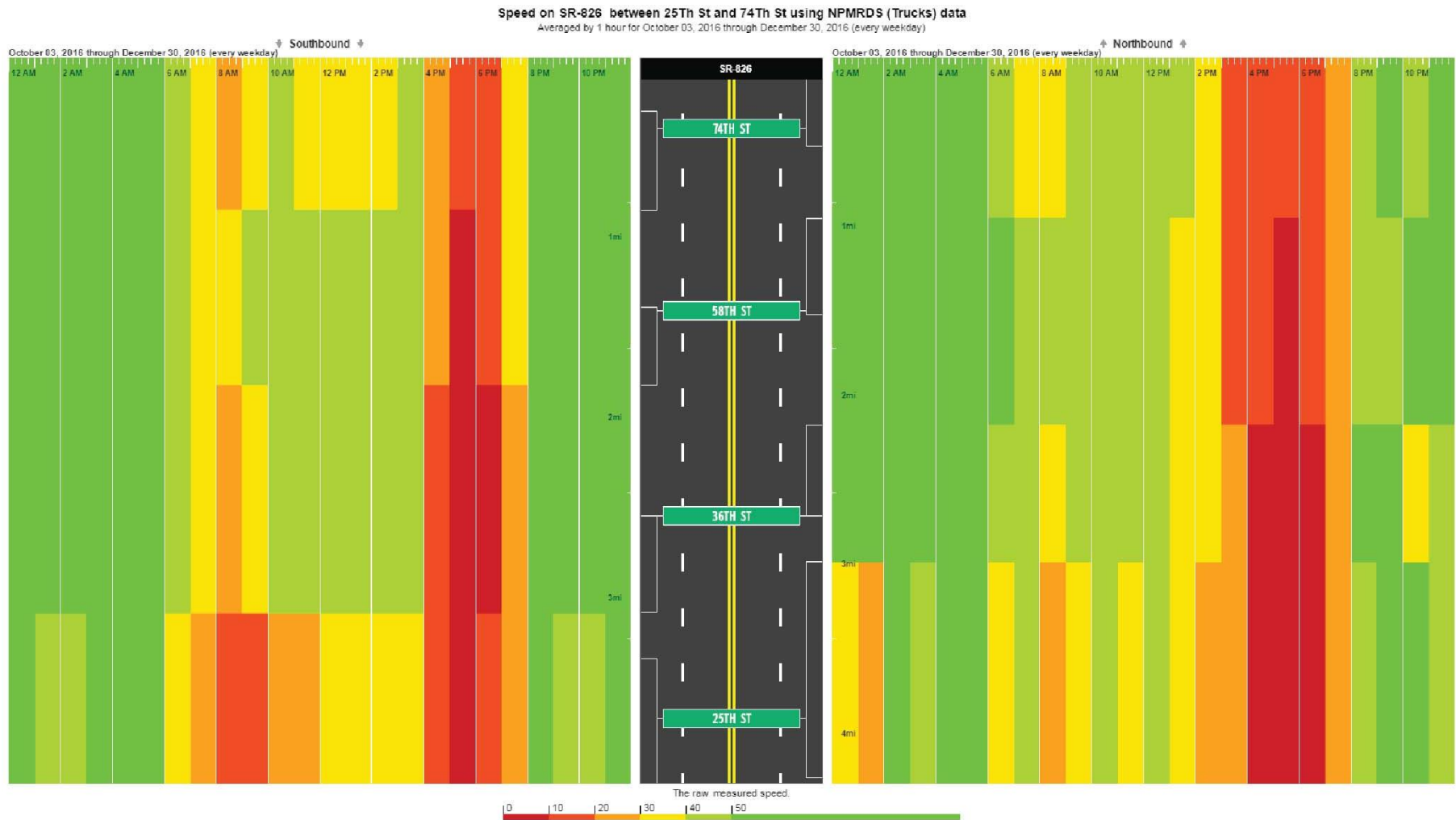


FIGURE 76. TRUCKS SPEED SCAN WEEKDAY - US-27 BETWEEN SR-934/21ST ST/74TH ST CONNECTOR AND SR-826/PALMETTO EXPY

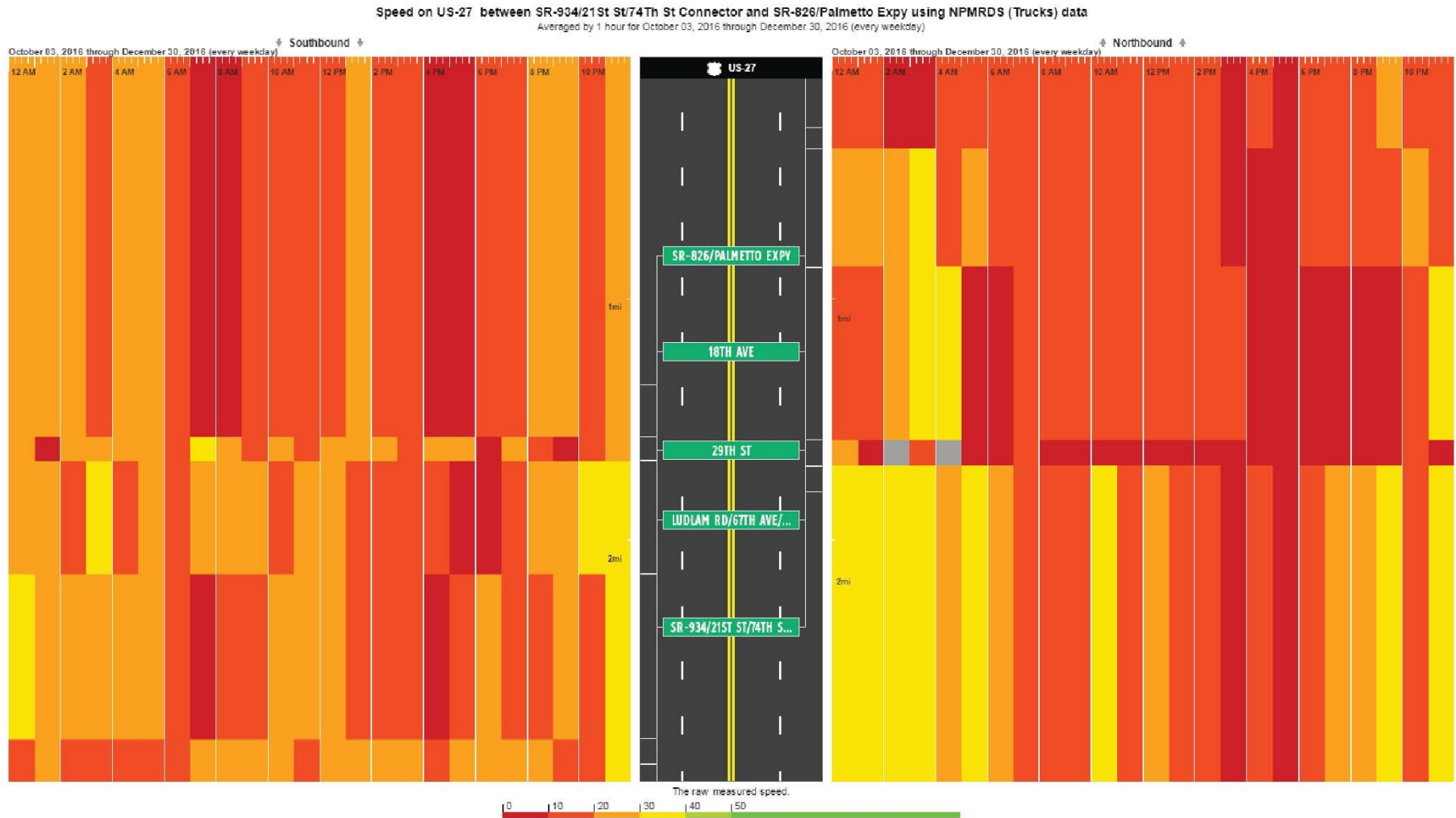
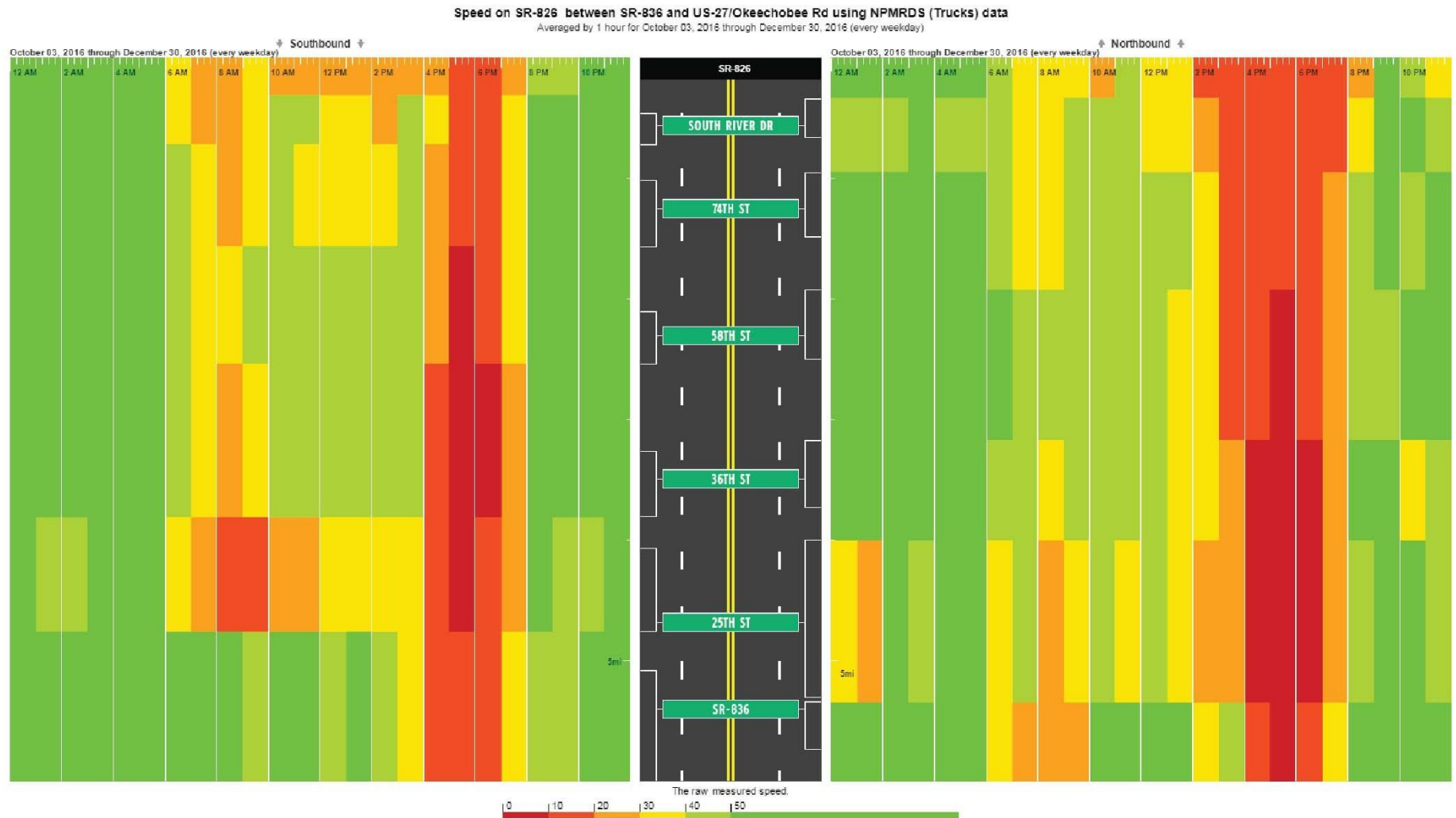


FIGURE 77. TRUCKS SPEED SCAN WEEKDAY - SR-826 BETWEEN SR-836 AND US-27/OKEECHOBEE RD



- 122 mph highest recorded speed
- 1,118 with speeds under 20 mph – 0.33%

FIXING AMERICA'S SURFACE TRANSPORTATION ACT (FAST ACT) TRUCK SIZE AND WEIGHT PROVISIONS

Section 127 of title 23 of the United States Code establishes weight limitations for vehicles operating on the Interstate System. The maximum weight limitations are: 20,000 pounds on a single axle; 34,000 pounds on a tandem axle; and 80,000 pounds gross weight, or the maximum allowed by the Federal Bridge Formula. Section 127 states that the overall gross weight may not exceed 80,000 pounds, including all enforcement tolerances, except for those vehicles and loads which cannot be easily dismantled or divided, and have been issued permits in accordance with applicable State laws.

“NO THRU TRUCK” ZONES

The Commercial Vehicle Enforcement (CVE) Unit is part of the Traffic Section of the Doral Police Department. The CVE Unit enforces traffic laws and conducts safety inspections of commercial vehicles. Freight is a major issue in the transportation community. Transportation facilities, especially roads, are running out of the capacity needed to accommodate projected increases in goods movement.

When combined with projected increases in day to day traffic, the ability of the transportation system to handle efficiently and safely even small increases in freight traffic is negligible. The City of Doral has “No Thru Truck” zones which are strictly enforced. The CVE Unit has the primary responsibility for enforcement and education for the restricted truck zones.

TRUCK ENFORCEMENT

As seen in the WIM data there are a number of trucks that are overweight and over the speed limit. This kind of behavior can also be expected in the City of Doral. As the City has four posted “No Thru Truck” zones which are strictly enforced, similar enforcement could be extended to trucks that are overweight or speeding. This enforcement could be done at a WIM station similar to the one on the Turnpike, equipped with cameras with optical character recognition (which is used in the City's LPRs) to identify, sort and screen commercial motor vehicles for enforcement action should its weight exceed Federal or Doral regulations. Similarly, speed could be enforced for truck, or all vehicles, at fixed or mobile locations across Doral if they allowed by Doral law. Excess speed is one of the three primary factors (along with lack of seatbelt use and DUI) in fatal crashes and enforcing speeds in Doral would increase safety, reduce congestion due to speed related incidents and put Doral on the road to Vision Zero.

SECTION 7: RECOMMENDATIONS

This section describes the development of recommendations resulting from coordination with stakeholders and from analyses and information documented in this Planning and Conceptual Engineering Report. Recommendations were developed for Highway and Intermodal projects.

PUBLIC AND STAKEHOLDER OUTREACH

Coordination was the first step in the development of recommendations. The project team developed a Fact Sheet Brochure for the project and distributed copies to the public and stakeholders throughout this effort. Brochures were made available at the City of Doral, the Freight Customs Brokers and Forwarders Association and at FDOT District 6 Headquarters. The Fact Sheet is shown below.

The Project Team coordinated with local stakeholders through the TPO Freight Technical Advisory Committee (FTAC) to provide briefings on project progress and to solicit input from the freight industry. Three (3) presentations were made to the FTAC including a project Kick-Off Presentation, an Alternatives Development Presentation and a Recommendations Presentation. The PowerPoint presentations and a full-size copy of the Fact Sheet are provided in **Appendix H**. In addition to coordinating through the FTAC, the Project Team contacted and or met with other stakeholders including:

- CSX Railroad
- City of Doral
- FECI Railroad
- Florida Customs Brokers and Forwarders Association
- Florida Department of Transportation District 6 (Various Offices)

- Florida's Turnpike Enterprise
- Florida TransAtlantic Real Estate
- Miami Dade Expressway Authority
- Miami-Dade TPO
- Miami-Dade Aviation Department
- Town of Medley
- PORTMiami
- Sandler, Travis & Rosenberg

The public outreach effort for this study included an expanded scope providing for a freight summit billed as the West Miami-Dade Freight Mobility Summit. Summit materials are provided in Appendix I. The summit included presentations on:

- Global Trade Overview and Florida Opportunities: that identified global trade trends and opportunities for Florida to secure increased growth
- Southeast Florida Ports and Miami-Dade Freight Mobility: providing input on statewide trends and opportunities for Southeast Florida and PORTMiami
- Trade Agreements, Export/Import Compliance and E-Commerce: to provide input on how non-infrastructure policy and trends can affect mobility and economic impact.

In addition to the presentations, 2 panels were convened that provided direct interaction between transportation system providers/planners and freight users of the system.

Panel 1: Highway Operations – Opportunities and Challenges

Transportation System Providers and requested viewpoint for discussion:

- **James A. Wolfe, FDOT D6 Secretary** – USDOT and FDOT initiatives to support growth and partnerships.
- **Paul Wai, Director of Transportation Operations, FDOT Florida's Turnpike Enterprise** – Infrastructure and technology projects and strategies.
- **Claudio Diaferia, Assistant Director of Engineering, Miami-Dade Expressway** – Current projects and opportunities for future extensions of network including multi-modal options and innovations.

Transportation System Users and requested viewpoint for discussion:

- **Barbara Pimentel, Florida Customs Brokers & Forwarders Association, Inc.** – Industry needs for connectivity, truck parking, security, and mobility; training opportunities for the next generation.

- **Mark Sterling, VP of Terminals, Armellini Logistics/ Armellini Express Lines, Inc.** – Operations and opportunities for future growth; vision of freight operations in the Airglades area.
- **Alfredo Keri, CARGO42 Co-Founder** – Determined South Florida as the ideal place to launch innovative start-up company facilitating freight matching for local hauls; vision of the future of freight in South Florida.

Panel 2: Intermodal Operations – Opportunities and Challenges

Transportation System Users and requested viewpoint for discussion:

- **Emir Pineda, Manager of Aviation, Trade and Logistics, Chief of Staff and Senior Policy Advisor, Miami-Dade Aviation Department** – Master Plan projections and new initiatives for future growth and high value jobs.
- **Kevin Lynskey, Deputy Port Director, PORTMiami** – Impacts of canal widening, tunnel, and on-port rail and how to grow the Port in a constrained environment.
- **Robert LeDoux, Florida East Coast Railroad Senior Vice President and General Counsel and Corporate Secretary** – On-port rail and Flagler Station growth and future opportunities.

Transportation Providers/Planners and requested viewpoint for discussion:

- **Mr. Stanley Rigaud, Director of Economic Development and International Trade and Logistics, Miami-Dade Beacon Council** – Beacon Council mission and the importance of connectivity between air, rail, sea, highway modes and warehousing.
- **Carlos Roa, Assistant Director for Transportation and Land Use, Miami-Dade Transportation Planning Organization** – TPO goals, objectives, and processes for freight programs and how they relate to the SMART Plan.

- **Juan Flores, Miami-Dade TPO Freight Transportation Advisory Committee Vice-Chair** – FTAC history as a first of its' kind advisory group and its function as a forum to continue collaboration on efforts discussed today.

The panels were moderated by Mr. Lenny Feldman, Senior Member of Sandler, Travis & Rosenberg, P.A. Mr. Feldman did an outstanding job working with the Project Team and culling significant action items that have directly impacted the results of this study. A summary of the summit included a list of action items for stakeholders to initiate. Some of the action items were appropriate for this study including:

- Coordinate on transportation projects at the local level through the FDOT sponsored subarea studies: the analysis of the alternatives included recommendations from The Town of Medley Subarea Freight Plan.
- Participate and Support the development of the Miami-Dade TPO Freight Plan Update and the Long Range Plan: the draft recommendations from this study are being included in the Miami-Dade Freight Plan Update. All projects listed in the Update will be submitted for funding consideration in the development of the Cost Feasible Plan for the 2045 TPO Long Range Plan.
- Continued Improvement of incident management strategies and protocols: the recommendations for this study include the implementation of Autonomous Vehicle/Connected Vehicle strategies and Transportation System Management & Operation
- Support Development of a Miami-Dade Inland Terminal: this study includes three (3) alternatives for the Inland Terminal and/or a Transload Facility.
- PORTMiami Asian Trade is up 11% - 15% in the last 2 years: which supports this studies' recommendations that focus on the High Growth Planning Scenario

A brochure summarizing Notable Notes and Action Items from the Summit was developed for Stakeholders and is shown on the following page.

POTENTIAL ACTION ITEMS FOR THE STAKEHOLDERS

Some of these efforts are outside the responsibilities of FDOT and will need to be led by the private sector or other agencies.

- Participate in Turnpike Federal AV Grant to **GATHER INFORMATION ON NEW TECHNOLOGIES** and **EXTEND THE TRUCK PLATOONING EFFORT** from Palm Beach County to Miami-Dade County
- COORDINATE on transportation projects at the local level through the FDOT sponsored subarea studies
- SUPPORT THE DEVELOPMENT OF TRUCK PARKING in Miami-Dade County
- Work together to **LEVERAGE FUNDING OPPORTUNITIES** from the National Freight Network
- INCREASE EXPORTS to balance logistics efficiency
- LEVERAGE empty miles and idle hours
- SUPPORT TRANSIT INVESTMENTS to increase mobility and allow for more growth
- PROVIDE EXPOSURE for South Florida startup companies
- PARTICIPATE & SUPPORT the development of the Miami-Dade TPO Freight Plan Update and the Long Range Plan
- CONTINUED IMPROVEMENT of incident management strategies and protocols
- ENGAGE MILLENNIALS for careers in freight and logistics and for us to better understand the future workplace in order to be successful
- SUPPORT THE DEVELOPMENT of a Miami-Dade Inland Terminal
- INCREASE TRADING with Southeast Asia
- SUPPORT TRUCK DRIVER RECRUITING and how to leverage technology to recruit

2017

WEST MIAMI-DADE FREIGHT MOBILITY SUMMIT SUMMARY

On June 6th, 2017 the Florida Department of Transportation sponsored a summit focused on freight mobility in relationship to maintaining and expanding economic development in the West Miami-Dade area and the South Florida Region as a whole. The event was hosted by the City of Doral and we had an audience of local, regional and international stakeholders from the private and public sector. Discussions were interactive and a number of opportunities and challenges were discussed that could/should be further explored and championed by the South Florida Freight Community.

Two themes evolved throughout the event – continued coordination and collaboration with partners at the local level is critical to success and the idea of “Dreaming Big” given that freight knows no borders.

This pamphlet provides a listing of highlights from the event. To access the presentation slides, summary of the event and a taping of the entire event please visit www.freightmovesflorida.com

NOTABLE NOTES

HISTORIC US CONTAINER CARGO GROWTH

Imports at **5.3%** & Exports at **3.3%**

3.6 M TEUs come into Florida through Non-Florida Ports

PORTMiami & Miami International Airport are statewide **ECONOMIC ENGINES**

OPPORTUNITIES for continued and expanded growth lie in full development of rail capacity and by rationalizing and accommodating both **Cruise and Cargo** expansion through an Inland Terminal in Miami-Dade County

South Florida wins big with an **expanded focus on trade agreements** with **LATIN AMERICA, THE CARIBBEAN & SOUTH AMERICA**

GROWTH IN NORTH/SOUTH trade lanes has been **ZERO FOR LAST 10 YEARS**

100% of the growth in the Southeast US is in Asian Trade

eCommerce is growing rapidly and the Trade Facilitation & Trade Enforcement Act of 2015 change from **\$200 - \$800** to admit articles free of duty, tax and entry formalities increases the flow of goods

PORTMiami ASIAN TRADE is UP 11% - 15% IN LAST 2 YEARS

US West Coast share of trade has gone down - **BIG WINNERS** on the East Coast are Houston, Savannah & NY/NJ

Planning needs to be focused on **HIGHWAY ACCESS to Orlando and RAIL ACCESS to Atlanta & Southeast US** to be competitive

Florida will invest **\$2.8 B** in freight infrastructure for the next 5 years

50% OF TRADE in South Florida is **HANDLED BY 3 SHIPPING ALLIANCES**

INNOVATION in automated and connected mobility **IS MOVING FAST** and we **NEED TO KEEP PACE & MODERNIZE OUR INFRASTRUCTURE**

QUOTABLE QUOTES

HIGHWAY RECOMMENDATIONS

The process of developing roadway recommendations followed a tiered process. The Freight Corridor Candidates from the Existing Conditions Summary Section 4 were first mapped and additional Freight Corridors were identified. New corridors were identified utilizing the same process used in for the Existing Conditions designations. All modeled corridors were assessed based on the model results shown on Figures 57 to 65 in Section 4 Highway Alternatives, network connectivity, % trucks, adjacent land use and Engineering and Planning judgement. **Figure 78** provides a map of the Existing and Future Freight Corridors.

The next step was to assess future scenario conditions. The metrics selected for the assessment include Volume to Capacity ratios (V/C) and a 7% truck threshold. Existing and projected conditions were tabulated and are shown on **Tables 33 and 34**. Table 33 provides the information for East/West roadways and Table 34 provides the Table for North/South roadways. The tables present information for the Freight Corridors identifying roadway segment, 2015 traffic conditions, Cost Feasible Plan projected conditions and then the Low, Medium, High traffic projection projections. Between each Scenario the planned or

programmed improvements were inserted to be able to view the impact of improvements from Scenario to Scenario. Further, note that roadways are listed in the tables from South to North on Table 33 and West to East on Table 34 so that parallel facilities could be viewed next to each other to understand the impacts of network improvements.

TABLE 33. DORAL SUBAREA FREIGHT STUDY EAST WEST FREIGHT CORRIDOR ANALYSIS

FACILITY TRUCK CORRIDOR CANDIDATE	FROM	TO	2015-2020				2021-2040				2040 - ALTERNATIVES								RECOMMENDATION (Assumes E+C)							
			EXISTING CONDITIONS				ROAD IMPROVE EXISTING CONDITIONS	ROAD IMPROVE COST FEASIBLE		COST FEASIBLE		ROAD IMPROVE ALT 1 LOW	ALTERNATIVE 1 LOW		ROAD IMPROVE ALT 2 MEDIUM	ALTERNATIVE 2 MEDIUM		ROAD IMPROVE ALT 3 HIGH		ALTERNATIVE 3 HIGH						
			Trucks %	AADT	C	V/C		Trucks %	V/C	Trucks %	V/C		Trucks %	V/C		Trucks %	V/C			Trucks %	V/C	Trucks %	V/C			
South North Roadways																										
NW 137th Ave	NW 12th St	NW 25th St	6.5	8,100	15,600	0.52																				
NW 137th Ave	NW 25th St	NW 41st St	6.5	8,100	N/A	-																				NC 2L
NW 127th Ave	NW 12th St	NW 25th St	5.8	17,800	39,800	0.45																				+2L 4LD
NW 127th Ave	NW 25th St	NW 41st St	N/A	N/A	N/A	-																				NC 4LD
NW 122nd Ave	NW 12th St	NW 25th St	N/A	N/A	N/A	-																				NC 4LD
NW 122nd Ave	NW 25th St	NW 41st St	N/A	N/A	N/A	-																				NC 4LD
NW 122nd Ave	NW 41st St	NW 58th St	N/A	N/A	15,600	-																				NC 4LD
TURNPIKE	SW 8th St/ W Flagler St	FL -836	7.3	115,000	130,600	0.88	Widening		2 L	MUL	11.0	0.87														AV/CV Technology
TURNPIKE	FL -836	NW 41st St	7.3	121,900	130,600	0.93	Widening		4 L	MUL	8.0	1.17														AV/CV Technology
TURNPIKE	NW 41st St	NW 74th St	7.3	120,600	123,300	0.98	Widening		4 L	MUL	12.0	1.07														AV/CV Technology
TURNPIKE	NW 74th St	NW 106th St	7.3	111,500	123,300	0.90			4 L	MUL	14.0	0.99														AV/CV Technology
NW 117th Ave	NW 12th St	NW 25th St	6.5	8,900	15,600	0.57					5.0	1.18														+2 L 4LD
NW 117th Ave	NW 25th St	NW 41st St	7.3	8,700	15,600	0.56	One	Way			8.0	1.60														+2 L 4LD
NW 117th Ave	NW 41st St	NW 58th St	7.3	8,700	15,600	0.56					0.0	0.27														+2 L 4LD
NW 117th Ave	NW 58th St	NW 74th St	N/A	N/A	N/A	-			NR	2L	5.0	1.29														+2 L 4LD
NW 117th Ave including Interchange Improvements	NW 74th St	NW 90th St	N/A	N/A	N/A	-																				NC 4LD
NW 107th Ave	NW 90th St	NW 122th St	10.2	24,000	39,800	0.60					3.0	1.49	NC	2 L	2.4	1.34	NC	2 L	3.0	1.34	NC	2 L	2.6	1.30		NC 4LD
NW 102nd Ave	NW 58th St	NW 74th St	10.2	7,200	15,600	0.46							NC	4 LD	9.6	0.69	NC	4 LD	12.2	0.72	NC	4 LD	13.6	0.72		NC 4LD
NW 102nd Ave	NW 74th St	NW 90th St	10.2	7,200	15,600	0.46							NC	4 LD	6.6	0.56	NC	4 LD	8.4	0.57	NC	4 LD	8.2	0.72		NC 4LD
NW 97th Ave	NW 12th St	NW 25th St	N/A	N/A	33,830	-					4.0	1.37	+ 2 L	4 LD	2.8	1.11	+ 2 L	4 LD	3.7	1.13	+ 2 L	4 LD	3.9	1.13		+2 L 4LD
NW 97th Ave	NW 25th St	NW 36th St	N/A	N/A	33,830	-					6.0	1.15			4.1	1.25			5.1	1.23			5.1	1.24		+2 L 6LD
NW 97th Ave	NW 74th St	NW 90th St	N/A	N/A	15,600	-	NC	4 L			5.0	0.79			1.7	0.89			2.0	0.90			2.2	0.90		
NW 97th Ave	NW 90th St	NW 106th St	N/A	N/A	15,600	-							NC	4 LD	3.3	1.01	NC	4 LD	4.0	1.04	NC	4 LD	3.7	0.99		
NW 87th Ave	FL -836	NW 12th St	13.5	37,500	59,900	0.63					7.0	0.94			4.8	0.92			4.8	0.90			5.1	0.96		
NW 87th Ave	NW 12th St	NW 25th St	13.5	37,500	59,900	0.63					6.0	1.05			4.3	1.03			5.4	1.05			5.7	1.03		TSM&O
NW 87th Ave	NW 25th St	NW 36th St	13.5	37,500	59,900	0.63					4.0	1.12			5.3	1.14			6.9	1.12			7.0	1.13		TSM&O
NW 87th Ave	NW 36th St	NW 58th St	10.2	21,500	39,800	0.54					15.0	1.05			10.8	1.02			13.9	1.05			13.2	1.04		TSM&O
NW 87th Ave	NW 58th St	NW 74th St	10.2	14,100	33,830	0.42					14.0	1.32			10.6	1.30			13.6	1.28			12.6	1.29		+2 L 6LD
NW 87th Ave	NW 74th St	NW 90th St	10.2	14,100	15,600	0.90					11.0	0.88			8.2	0.89			10.5	0.89			9.4	0.89		
NW 82nd Ave	NW 25th St	NW 41st St	10.0	12,948	15,600	0.83					10.0	0.89			8.4	0.76			10.3	0.73			10.4	0.85		
NW 79th Ave	NW 25th St	NW 36th St	13.7	22,300	33,830	0.66					10.0	1.13			7.2	1.17			9.1	1.17			9.5	1.16		
FL-826	FL -836	NW 25th St	6.3	238,000	222,700	1.07		MUL			11.0	1.25			9.6	1.25			10.3	1.25			10.8	1.26		AV/CV Technology
FL-826	NW 25th St	NW 36th St	6.3	232,000	210,300	1.10		MUL			10.0	1.15			10.1	1.15			9.5	1.15			9.8	1.15		AV/CV Technology
FL-826	NW 36th St	NW 58th St	6.3	232,000	210,300	1.10		MUL			11.0	1.13			9.8	1.11			10.6	1.12			11.1	1.13		AV/CV Technology
FL-826	NW 58th St	NW 74th St	6.1	231,000	210,300	1.10		MUL			10.0	1.21			9.1	1.21			9.9	1.20			10.1	1.21		AV/CV Technology
FL-826	NW 74th St	Okeechobee Rd	9.6	232,000	210,300	1.10		MUL			11.0	1.24			9.5	1.23			10.3	1.23			10.8	1.25		AV/CV Technology
NW 72nd Ave	FL -836	NW 25th St	8.5	34,500	59,900	0.58					8.0	0.95			5.6	0.95			7.4	1.05			7.4	1.32		+ 2 L 8LD
NW 72nd Ave	NW 25th St	NW 36th St	12.3	31,500	59,900	0.53					5.0	0.95			3.8	0.90			4.8	0.93			5.0	0.95		TSM&O
NW 72nd Ave	NW 36th St	NW 58th St	12.3	36,500	50,915	0.72					7.0	0.98			5.0	0.87			6.5	0.96			6.6	0.94		TSM&O
NW 72nd Ave	NW 58th St	NW 74th St	10.3	18,400	50,915	0.36					7.0	1.20			5.0	1.20			6.2	1.21			6.3	1.21		TSM&O
NW 72nd Ave	NW 74th St	Okeechobee Rd	15.4	15,600	33,830	0.46					7.0	0.86			5.1	0.86			6.5	0.83			6.8	0.83		TSM&O

TABLE 34. DORAL SUBAREA FREIGHT STUDY NORTH SOUTH FREIGHT CORRIDOR ANALYSIS

FACILITY TRUCK CORRIDOR CANDIDATE	FROM	TO	2015-2020				2021-2040				2040 - ALTERNATIVES								RECOMMENDATION (Assumes E+C)									
			EXISTING CONDITIONS				ROAD IMPROVE EXISTING CONDITIONS	ROAD IMPROVE COST FEASIBLE	COST FEASIBLE		ROAD IMPROVE ALT 1 LOW	ALTERNATIVE 1 LOW		ROAD IMPROVE ALT 2 MEDIUM	ALTERNATIVE 2 MEDIUM		ROAD IMPROVE ALT 3 HIGH	ALTERNATIVE 3 HIGH										
			Trucks %	AADT	C	V/C			Trucks %	V/C		Trucks %	V/C		Trucks %	V/C		Trucks %		V/C	Trucks %	V/C						
South North Roadways																												
NW 137th Ave	NW 12th St	NW 25th St	6.5	8,100	15,600	0.52														NC	2 L	2.3	0.96					
NW 137th Ave	NW 25th St	NW 41st St	6.5	8,100	N/A	-														NC	2 L	26.8	0.02		NC 2L			
NW 127th Ave	NW 12th St	NW 25th St	5.8	17,800	39,800	0.45														+2L	4LD	4.2	0.96		+2L 4LD			
NW 127th Ave	NW 25th St	NW 41st St	N/A	N/A	N/A	-														NC	4LD	6.0	0.56		NC 4LD			
NW 122nd Ave	NW 12th St	NW 25th St	N/A	N/A	N/A	-														NC	4LD	3.7	1.18		NC 4LD			
NW 122nd Ave	NW 25th St	NW 41st St	N/A	N/A	N/A	-														NC	4LD	3.0	0.26		NC 4LD			
NW 122nd Ave	NW 41st St	NW 58th St	N/A	N/A	15,600	-														NC	4LD	4.1	0.79		NC 4LD			
TURNPIKE	SW 8th St/ W Flagler St	FL -836	7.3	115,000	130,600	0.88	Widening		2 L	MUL	11.0	0.87										10.3	0.87		10.6	0.83	AV/CV Technology	
TURNPIKE	FL -836	NW 41st St	7.3	121,900	130,600	0.93	Widening		4 L	MUL	8.0	1.17										9.3	1.17		10.7	1.18	AV/CV Technology	
TURNPIKE	NW 41st St	NW 74th St	7.3	120,600	123,300	0.98	Widening		4 L	MUL	12.0	1.07										12.5	1.18		12.4	1.08	AV/CV Technology	
TURNPIKE	NW 74th St	NW 106th St	7.3	111,500	123,300	0.90			4 L	MUL	14.0	0.99										12.5	0.99		12.4	0.95	AV/CV Technology	
NW 117th Ave	NW 12th St	NW 25th St	6.5	8,900	15,600	0.57					5.0	1.18										2.4	1.19		2.6	1.23	+2 L 4LD	
NW 117th Ave	NW 25th St	NW 41st St	7.3	8,700	15,600	0.56	One	Way			8.0	1.60									Two	Way	9.7	1.52		9.7	1.52	+2 L 4LD
NW 117th Ave	NW 41st St	NW 58th St	7.3	8,700	15,600	0.56					0.0	0.27								NC	2 L	14.9	1.35		14.9	1.35	+2 L 4LD	
NW 117th Ave	NW 58th St	NW 74th St	N/A	N/A	N/A	-			NR	2L	5.0	1.29										4.1	1.27		5.3	1.26	+2 L 4LD	
NW 117th Ave including Interchange Improvements	NW 74th St	NW 90th St	N/A	N/A	N/A	-					-	-								NC	2 L	23.8	0.95		23.8	0.95	NC 4LD	
NW 107th Ave	NW 90th St	NW 122th St	10.2	24,000	39,800	0.60					3.0	1.49	NC	2 L	2.4	1.34	NC	2 L	3.0	1.34	NC	2 L	2.6	1.30		2.6	1.30	NC 4LD
NW 102nd Ave	NW 58th St	NW 74th St	10.2	7,200	15,600	0.46					-	-	NC	4 LD	9.6	0.69	NC	4 LD	12.2	0.72	NC	4 LD	13.6	0.72		13.6	0.72	NC 4LD
NW 102nd Ave	NW 74th St	NW 90th St	10.2	7,200	15,600	0.46					-	-	NC	4 LD	6.6	0.56	NC	4 LD	8.4	0.57	NC	4 LD	8.2	0.72		8.2	0.72	NC 4LD
NW 97th Ave	NW 12th St	NW 25th St	N/A	N/A	33,830	-					4.0	1.37	+ 2 L	4 LD	2.8	1.11	+ 2 L	4 LD	3.7	1.13	+ 2 L	4 LD	3.9	1.13		3.9	1.13	+2 L 4LD
NW 97th Ave	NW 25th St	NW 36th St	N/A	N/A	33,830	-					6.0	1.15										5.1	1.23		5.1	1.24	+2 L 6LD	
NW 97th Ave	NW 74th St	NW 90th St	N/A	N/A	15,600	-	NC	4 L			5.0	0.79										2.0	0.90		2.2	0.90		
NW 97th Ave	NW 90th St	NW 106th St	N/A	N/A	15,600	-					-	-	NC	4 LD	3.3	1.01	NC	4 LD	4.0	1.04	NC	4 LD	3.7	0.99		3.7	0.99	
NW 87th Ave	FL -836	NW 12th St	13.5	37,500	59,900	0.63					7.0	0.94										4.8	0.92		5.1	0.96		
NW 87th Ave	NW 12th St	NW 25th St	13.5	37,500	59,900	0.63					6.0	1.05										5.4	1.05		5.7	1.03	TSM&O	
NW 87th Ave	NW 25th St	NW 36th St	13.5	37,500	59,900	0.63					4.0	1.12										6.9	1.12		7.0	1.13	TSM&O	
NW 87th Ave	NW 36th St	NW 58th St	10.2	21,500	39,800	0.54					15.0	1.05										13.9	1.05		13.2	1.04	TSM&O	
NW 87th Ave	NW 58th St	NW 74th St	10.2	14,100	33,830	0.42					14.0	1.32										13.6	1.28		12.6	1.29	+2 L 6LD	
NW 87th Ave	NW 74th St	NW 90th St	10.2	14,100	15,600	0.90					11.0	0.88										10.5	0.89		9.4	0.89		
NW 82nd Ave	NW 25th St	NW 41st St	10.0	12,948	15,600	0.83					10.0	0.89										10.3	0.73		10.4	0.85		
NW 79th Ave	NW 25th St	NW 36th St	13.7	22,300	33,830	0.66					10.0	1.13										9.1	1.17		9.5	1.16		
FL-826	FL -836	NW 25th St	6.3	238,000	222,700	1.07		MUL			11.0	1.25										10.3	1.25		10.8	1.26	AV/CV Technology	
FL-826	NW 25th St	NW 36th St	6.3	232,000	210,300	1.10		MUL			10.0	1.15										9.5	1.15		9.8	1.15	AV/CV Technology	
FL-826	NW 36th St	NW 58th St	6.3	232,000	210,300	1.10		MUL			11.0	1.13										10.6	1.12		11.1	1.13	AV/CV Technology	
FL-826	NW 58th St	NW 74th St	6.1	231,000	210,300	1.10		MUL			10.0	1.21										9.9	1.20		10.1	1.21	AV/CV Technology	
FL-826	NW 74th St	Okeechobee Rd	9.6	232,000	210,300	1.10		MUL			11.0	1.24										10.3	1.23		10.8	1.25	AV/CV Technology	
NW 72nd Ave	FL -836	NW 25th St	8.5	34,500	59,900	0.58					8.0	0.95										7.4	1.05		7.4	1.32	+ 2 L 8LD	
NW 72nd Ave	NW 25th St	NW 36th St	12.3	31,500	59,900	0.53					5.0	0.95										4.8	0.93		5.0	0.95	TSM&O	
NW 72nd Ave	NW 36th St	NW 58th St	12.3	36,500	50,915	0.72					7.0	0.98										6.5	0.96		6.6	0.94	TSM&O	
NW 72nd Ave	NW 58th St	NW 74th St	10.3	18,400	50,915	0.36					7.0	1.20										6.2	1.21		6.3	1.21	TSM&O	
NW 72nd Ave	NW 74th St	Okeechobee Rd	15.4	15,600	33,830	0.46					7.0	0.86										6.5	0.83		6.8	0.83	TSM&O	

Recommendations were developed based on the information shown on Tables 34 and 35 and focused on the High Scenario conditions. In the last 2 years PORTMiami has seen growth rates in Asian Trade from 11% to 15%. This makes the projected “aggressive” rate of 4.5% per year in Twenty Equivalent Unit (TEU) growth documented in the current PORTMaster Plan more likely than not. The following text provides the logic for each recommendation.

SR 836 was identified as a Freight Corridor in the existing conditions analysis. The corridor is shown as having added capacity in the Cost Feasible Plan and as a result the roadway will operate well through 2040 except for the High Planning Scenario. Under the High Scenario, the Kendall Extension of SR 836 is introduced to the model and the results are growth in traffic and trucks. The highway is expected to operate well except for the western two (2) miles where there are no capacity increases through 2040 and truck percentages are moderate to high ranging from 9.8% to 16%. SR 836 from SW 137th Avenue to the Turnpike is recommended for widening as part of the Kendall Extension and the current Project Development and Environment (PD&E) study.

NW 12th Street was identified as a Freight Corridor in the existing conditions analysis. The corridor for the most part operates well under existing conditions with low to moderate truck traffic and has a planned capacity increase in the Cost Feasible Plan. However, the corridor is shown as operating significantly overcapacity in the Low, Medium and High Planning Scenarios. Note that truck percentages drop under these scenarios and appear to be diverting onto the less congested SR 836 route. NW 12th Street is proposed to be widened to a 6-lane arterial through the study area and will also require Transportation Systems Management and Operations technology to manage traffic through peak periods.

NW 25th Street was identified as a Freight Corridor in the existing conditions analysis. Note that this corridor needs to be reviewed understanding that the corridor has both at-grade and grade separated infrastructure that includes the NW 25th Street Viaduct. The Viaduct was introduced into the analysis under the Existing Plus Committed (E+C) scenario because the existing conditions analysis for this report was based on 2015 conditions and the Viaduct was opened to traffic in 2017. Under the E+C Scenario the Viaduct is operating well with moderate to high percentages of trucks.

The at-grade roadway operates well under existing conditions and carries low to high percentages of trucks through the study area. The at-grade roadway is currently being designed for a reversible lane system to be implemented post-2021 however the roadway is anticipated to experience overcapacity conditions in the long term and is significantly overcapacity west of the Turnpike with V/C ratios running from 1.22 under the Low Scenario to 1.55 under the High Scenario.

An extension of the Viaduct was introduced in the Medium and High Scenarios and the results are mixed and warrant further detailed study. The scenarios with the Viaduct Extension to NW 117th Avenue do show traffic improvements on the at-grade roadway however the truck percentages are shown as going up on the at-grade roadway and down on the grade-separated Viaduct. The introduction of the Viaduct Extension also appears to be relieving congestion on NW 33rd Street.

Through coordination with the Miami-Dade Aviation Department additional alternatives were added to this study. The Airport is planning a major reconstruction of the Miami International Airport (MIA) cargo area including a new Intermodal Facility about a ¼ mile east of the curve on the current viaduct alignment. Miami Dade Aviation Department (MDAD) requested the team test an alternative to extend the Viaduct directly into the proposed intermodal facility and to add a westbound to southbound ramp from the Viaduct onto SR 826. The results indicate that the Viaduct Extension into the intermodal center attracts significant volume and a high truck percentage however the proposed direct ramp from the Viaduct onto SR 826 Southbound does not attract significant volume or truck percentages. As a result, a Viaduct Extension to the new intermodal facility is recommended and improvements to the at-grade westbound NW 25th Street to southbound SR 826 are proposed.

NW 33rd Street from NW 117th Avenue to NW 107th Avenue was identified as a Freight Corridor as a result of the analysis of alternatives. The roadway is planned for an extension and a widening project under the Cost Feasible Plan and adjacent land use is freight related. The analysis shows that the roadway will operate significantly overcapacity under the proposed Cost Feasible Plan and Low, Medium and High Scenarios and is recommended for additional expansion to a 6-lane arterial.

NW 41st Street from NW 122nd Avenue to the Homestead

Extension of Florida's Turnpike (HEFT) was identified as a Freight Corridor as a result of the analysis of alternatives. This roadway is part of a system of alternatives proposed for the area west of the HEFT and south of NW 41st Street. The roadway has no planned capacity improvements and operates at significantly high levels of congestion with low to moderate truck percentages under all of the future scenarios. The roadway is proposed to be widened to a 4-lane arterial from NW 127th Avenue to the HEFT.

NW 58th Street from NW 87th Avenue to NW 72nd Avenue was identified as a Freight Corridor in the existing conditions analysis. The roadway operates well under existing conditions with a moderate percent of truck traffic. There are no planned improvements for the corridor and the future scenario analyses all indicate high levels of congestion and low to high percentages of trucks. It should be noted that the Medium Scenario shows a very high V/C ratio, 1.52, approaching SR 826 from the west and the V/C drops to 1.04 under the High Scenario. This deserves further vetting as it may be a result of the connection of NW 82nd Avenue to NW 90th Street and the direct connection of the Viaduct into the new MIA Intermodal Center. The roadway segment from SR 826 to NW 72nd Avenue is proposed for a 1 lane addition westbound to a 6-lane arterial.

NW 74th Street from NW 97th Avenue to Okeechobee Boulevard was identified as a Freight Corridor in the existing conditions analysis. The roadway also known as the Hialeah Expressway and is currently a 6-lane arterial that experiences moderate to high truck percentages. The roadway is expected to be significantly congested at or over the 1.20 V/C ratio level under the Cost Feasible, Low and Medium Scenarios and, like NW 58th Street, albeit not as significant, drops below 1.20 under the High Scenario. Under all future scenarios the roadway operates with moderate truck percentages. The roadway is proposed for TSM&O applications west of SR 826 and a 2-lane expansion to 8 lanes from SR 826 to Okeechobee Road.

NW 90th Street from NW 107th Avenue to NW 97th Avenue was recognized as a Freight Corridor in the existing conditions analysis and that designation was expanded to NW 117th Avenue to west and to NW 87th Avenue to east under the alternatives analysis. This roadway is part of proposed network of new roads in the north study area that transitions into the recommendations from the Town of Medley Freight Plan. This area currently experiences a disconnected network of roadways that is incrementally

being developed as mining quarries are filled for individual developments. Through coordination with the Town of Medley it was recognized that the incremental development of the roadways is causing significant congestion through lack of connectivity in the northeast section of the study area. As a result, a contiguous NW 90th Street was tested in modeling analysis and the results show that the corridor will operate well with moderate percentages of trucks as a proposed 4-lane divided arterial.

NW 137th Avenue from NW 12th Street to NW 41st Street was identified as a Freight Corridor as a result of the analysis of alternatives. This roadway is part of a system of alternatives proposed for the area west of the HEFT and south of NW 41st Street. The roadway is currently a 4-lane divided arterial north of NW 12th Street and transitions to a 2-lane undivided roadway up to NW 25th Street. The roadway was extended to NW 41st Street in the analysis of the High Scenario where overall volumes are low but the percentage of trucks is high. The extension of a 2-lane road from NW 25th Street to NW 41st Street is recommended so that a new grid of roadways in this area should be planned and developed as part of a larger concept of developing a new freight activity center in this area.

NW 127th Avenue from NW 12th Street to NW 41 Street was identified as a Freight Corridor as a result of the analysis of alternatives. This roadway is also part of the system of alternatives proposed for the area west of the HEFT and south of NW 41st Street. The roadway is currently a 2-lane divided arterial from NW 12th Street to NW 25th Street. The roadway was widened to a 4-lane arterial on this segment and extended as a 4-lane arterial to NW 41st Street in the analysis of the High Scenario. The results show good utilization of the roadway operating well with a low percentage of trucks. The widening of the roadway from NW 12th Street to NW 41st Street and new construction of the roadway as a 4-lane arterial to NW 41st Street is recommended. Note that extension alignment from NW 25th Street to NW 41st Street has an active rail and mining operation within it. If this becomes an obstacle in the future, the alignment also has large quarries east and west of the alignment that could be filled to create an alternative alignment.

NW 122nd Avenue from NW 12th Street to NW 58th Street was identified as a Freight Corridor as a result of the analysis of alternatives. This roadway again is part of the system of alternatives proposed for the area west of the HEFT and south of NW 41st Street. Except for one small

segment south of NW 25th Street, the roadway does not currently exist however it is proposed as part of the long range transportation plan as a 2-lane arterial. The results of the analysis of the future scenarios shows the new road will be well utilized to the point where it is over capacity under all scenarios. The roadway is recommended as a 4-lane arterial. Note that this alignment also has an active mining operation within it and again, if this becomes an obstacle in the future, the alignment also has large quarries east and west of the alignment that could be filled to create an alternative alignment.

The Homestead Extension of the Florida's Turnpike was identified as a Freight Corridor in the existing conditions analysis. The corridor plays a major role in the movement of people and goods inter-regionally and regionally. The roadway is currently being widened and Managed Lanes are also being introduced as well as a new northbound ramp from NW 117th Avenue. Under all future scenarios the corridor will operate over capacity but under a 1.20 V/C ratio. Under these types of operations, we are proposing that transportation management applications be applied through Autonomous Vehicle/Connected Vehicle technology in the managed lanes. By 2040 AV/CV will be predominant in our transportation system in both Managed Lanes and in general purpose lanes as well. For managed lane accommodation, conversion would require striping revisions, assurance of full depth pavement in the shoulders (to accommodate high speed travel), signing to clarify usage of the lanes for those without AV, and potentially dedicated short-range communication devices along the roadside to help communicate to and from the vehicles.

NW 117th Avenue from NW 12th Street to NW 58th Street was identified as a Freight Corridor in the existing conditions analysis and the segment from NW 58th Street to NW 90th Street was designated a Freight Corridor in the alternatives analysis. The corridor now plays a somewhat minor role in the scheme of the subarea network but will play an important role once the northbound ramp at NW 41st Street onto the HEFT is completed. The analysis shows that the northbound ramp connection to the Turnpike under the Cost Feasible, Low and Medium Scenarios will drive the corridor to very high V/C ratios up to 1.60 with low to moderate truck percentages. The proposed extension of NW 117th Avenue to NW 90th Street was tested as a 2-lane facility and also showed very high V/C ratios up to 1.35 and attracted more trucks as the percentages grew to the moderate to high range. This corridor is proposed to

be a 4-lane arterial. Note that implementation of this corridor will require reconstruction of the NW 74th Street interchange at the HEFT.

NW 107th Avenue from NW 90th Street to NW 122nd Street was identified as a Freight Corridor as a result of the analysis of alternatives. The corridor extends into the study area. This roadway is part of the network of roads in the north study area that transitions into the recommendations from the Town of Medley Freight Plan as discussed earlier under the NW 90th Street improvements. As mentioned, the area currently experiences a disconnected network of roadways that is incrementally being developed as mining quarries are filled for individual developments. The results of the all future scenarios shows that the roadway needs to be expanded to a 4-lane arterial.

NW 97nd Avenue from NW 12th Street to NW 25th Street was identified as a Freight Corridor in the existing conditions analysis and the segment from NW 74th Street to NW 90th Street was designated as a Freight Corridor as a result of the alternatives analysis. The southern roadway segment was tested under current conditions in the future scenarios as a 4 lane arterial. The results show that the roadway has a very high V/C ratio at 1.37 with low truck percent under the Cost Feasible Scenario but drops below 1.20 with low truck percent under the Low, Medium and High Scenarios. This appears to be a result of the NW 102nd Avenue improvements just discussed. The roadway is not recommended for widening but should receive TSM&O applications for future operations.

The segment of NW 97th Avenue from NW 74th Street to NW 90th Street is a new road that is proposed to be built as a 4 lane arterial. The results of the alternatives analysis shows that operates well under the High Scenario and just about at capacity for the Low and Medium Scenarios. Under all scenarios the roadway will attract a low percentage of trucks. NW 97th Avenue is a new 4 lane arterial that is currently under construction and considered a committed improvement.

NW 87th Avenue from NW 12th Street to NW 36th Street was identified as a Freight Corridor in the existing conditions analysis and the segment from NW 36th Street to NW 90th Street was designated as a Freight Corridor as a result of the alternatives analysis. The analysis of future conditions shows that the roadway operates above capacity from NW 12th Street to NW 58th Street but below the 1.20 V/C threshold for expanded capacity and the

segment from NW 58th Street to NW 74th Street operates with high V/c ratios in excess of 1.28 for all of the future scenarios. NW 87th Avenue is recommended for expansion to a 6 lane arterial from NW 58th Street to NW 74th Street and to have TSM&O technology from 12th Street to NW 74th Street. Note the northern section from NW 74th Street to NW 90th Street operates well as a 4 lane arterial. **SR 826 was identified as a Freight Corridor in the existing conditions analysis.** The corridor plays a major role in the movement of people and goods in the region. The roadway is currently being widened and Managed Lanes are also being introduced. Under the Low, Medium and High scenarios the corridor will operate over capacity with V/C ratios from 1.11 to 1.26. It is proposed that transportation management applications be applied through AV/CV consistent with the HEFT.

NW 72nd Avenue from NW 12th Street to Okeechobee Road was identified as a Freight Corridor in the existing conditions analysis. The corridor was analyzed as a 6 lane arterial under the future scenarios. The results indicated that the roadway will experience a moderate percent of trucks for the whole corridor and will operate poorly at a V/C ratio of 1.32 from SR 836 to NW 25th Street under the High Scenario. This is most likely due to the increased activity at MIA in this scenario. The roadway is at or just exceeds the 1.20 V/C ratio between NW 58th Street and NW 74th Street under all future scenarios which would require a TSM&O improvement. Note that through collaboration with the Miami-Dade TPO the Team was informed of significant flooding in the areas west of the roadway from NW 25th Street to NW 43rd Street as shown previously on Figure 22. It is recommended that the roadway be widened to 8 lanes from SR 836 to NW 25th Street and the entire corridor from SR 836 to Okeechobee Road be equipped with TSM&O technology.

HIGHWAY RECOMMENDATION IMPLEMENTATION TIMELINE, OWNERSHIP AND COST ESTIMATES

Highway recommendations were prioritized for programming periods. Short Range projects were identified for construction from Fiscal Years (FY) 2019 to 2025. This time frame was selected for several reasons as it is inclusive of the current City Capital Improvement Plan (CIP), the TPO Transportation Improvement Plan (TIP), the FDOT, Turnpike and MDX Work Programs and for consistency with the First 5 Years of the TPO 2045 Long Range Transportation Plan (2045 LRTP) when it is adopted in Fiscal Year 2020. Following this reasoning the 2nd Five Year time frame is from FY 2026 to FY 2030 and the Long Range

time frame is proposed for consistency with the outer years of the 2045 LRTP from FY 2031 to FY 2045. These time frames are also consistent with the TPO Freight Set Aside Program.

Table E-1 presents the list of freight mobility projects on the identified Freight Corridors and Table E-2 provides the list of projects that have been identified on other roadways in the study area and should be developed using FRDC for Diverse Freight Areas.

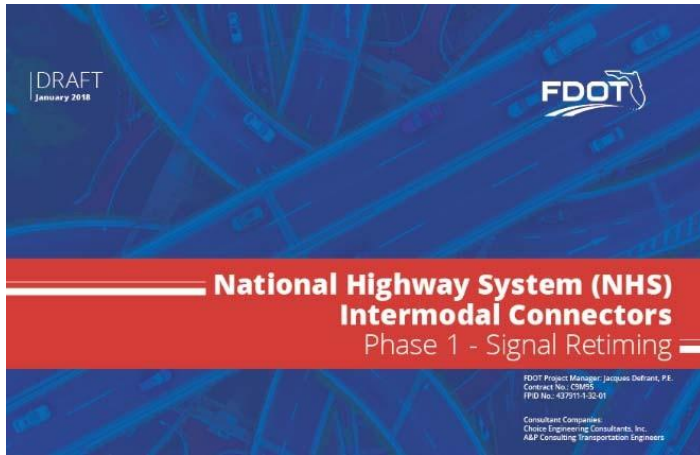
Projects were placed into the 3 programming time frames based on existing programming documents, current phase of development, existing and future needs and level of complexity in project development. A review of the Short Range projects shows relatively smaller scale projects that can have significant impact at a specific intersection or roadway link. Many of these projects came from the City documents including the CIP, Transportation Master Plan and a recent study to identify turning radius needs to accommodate trucks. Recommendations from a Draft FDOT Report focused on National Highway System Intermodal Connectors is also included.

The Mid Range and Long Range Projects were identified mostly focusing in on the results of the travel demand forecasting effort performed for this study. Project conditions were analyzed for the Limited Access, Arterial and Collector roadways in the study area for: Existing Network Conditions, Existing Conditions Plus Committed (programmed for construction funding) Projects Funding and 2040 Conditions under Low, Medium and High freight growth scenarios. Projects identified for the Mid Range FY 2026 to FY 2030 time frame were typically those that were roadways over capacity under Existing Plus Committed Conditions and/or 2040 Low Planning scenario. Mid Range projects were also identified using the FDOT Second 5 Year SIS Plan and if the review of programming documents showed that a PD&E was already underway for the corridor and construction funding had not yet been programmed.

Long Range FY 2031 to FY 2045 projects were identified from the FDOT 2045 Unfunded Needs plan and recommended if they were tested as an alternative in the 2040 scenarios and mitigated an overcapacity condition or if the analysis of 2040 scenarios showed that a new recommendations over and above the alternatives tested was required.

Costs were development utilizing the most current FDOT Program Management Long Range Estimate Cost Per Mile

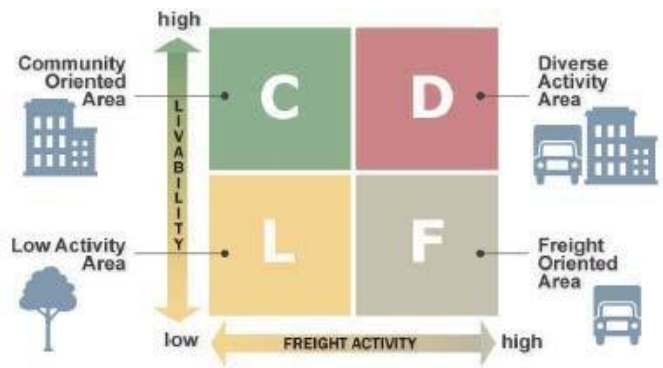
Model and using Engineering judgement on unique projects. In some instances more detail is required to develop an estimate and a study is proposed.



Also note that the Florida Department of Transportation District 6 is in receipt of a Draft Final Report that identifies short, mid and long term improvements for the National Highway System (NHS) Intermodal Connectors included in this report's study area. The projects included are focused on connectors to the Hialeah Yard Strategic Intermodal Center and the MIA Cargo Area. These projects have been included and have been noted as Draft.

Finally, jurisdictional ownership was ascertained for each recommendation. **Table 35** presents a summary of each recommendation providing a description of the recommendation by time frame, jurisdictional ownership and a cost estimate.

The Doral Area is unique when driving through the community one can clearly see a City of contrasts where golf course communities, a new urban core and dense residential development abut high activity freight uses. Land use data and truck traffic data documented in this report clearly indicate that in general the study area has a "ring" of dense freight related development surrounding the City of Doral community. The purpose of this project was to identify and advance freight projects, however, the summary of existing conditions clearly indicated that there needs to be a co-existence of freight traffic and land use and non-freight traffic and land use. For roadways outside an area that has predominant freight uses should still be designed to accommodate all users including freight. FDOT District 7 developed guidelines called Freight Roadway Design Considerations.



In summary the guidelines have been developed for a policy framework for freight planning that supports the economic and quality of life goals for the region and to identify where freight activity conflicts with community land uses and associated activities. The guidelines focus on the categorization of areas based on Freight Activity and Livability identify 4 types of locations that should have different design considerations for roadway facilities. The typologies include:

- **Freight Oriented Area**
 - Strategies emphasize freight movements
- **Community Oriented Area**
 - Strategies and policies emphasize livability (pedestrian, bicycle, transit, car movements)
- **Diverse Activity Area**
 - Strategies and policies address conflicts between freight movements and livability concerns and are sensitive to local contexts
- **Low Activity Area**
 - Strategies and policies emphasize redevelopment, restoration/conservation, or other future land use goals

PROTOTYPES

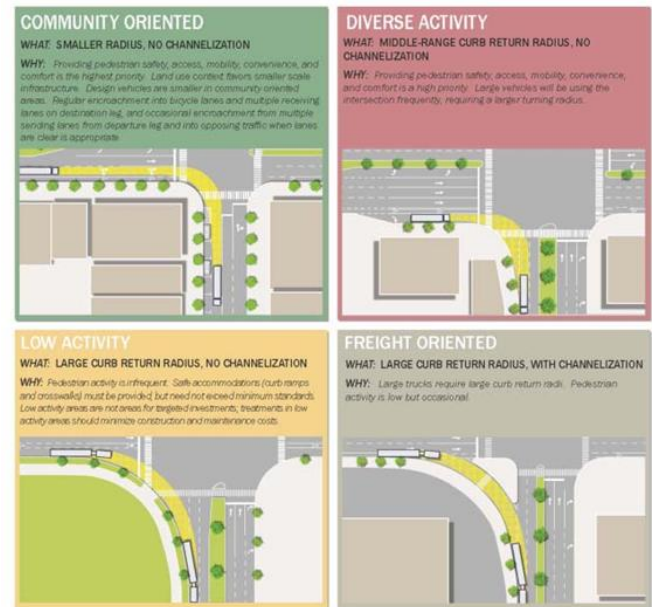


TABLE 35. DORAL SUBAREA FREIGHT STUDY FREIGHT CORRIDOR ANALYSIS AND RECOMMENDATIONS

FREIGHT CORRIDOR CANDIDATE	FROM	TO	RECOMMENDATION (Assumes Committed Projects)	CURRENT PHASE	MAINTAIN- ING AGENCY	ESTIMATED COST
Short Term FY 2019 to FY 2024						
NW 12th St	@NW 107th Ave		Add WB turn lane, signal optimization	Planning	County	\$ 43,100
NW 12th St	@NW 97th Ave		Add WB turn lane, Interxsection Imp	Planning	County	\$ 60,000
NW 12th St	@NW 87th Ave		Add NB,SB turn lane, signal optimize	Planning	County	\$ 83,100
NW 12th St	@NW 82nd Ave		Connect to SB NW 82nd Ave	Planning	City Doral	\$ 20,000
NW 25th St	NW 87th Ave	NW 74 Ave	Signal Timing Improvement (Draft*)	Planning	County	\$ 31,700
NW 25th St	NW 74th Ave	MIA Cargo Area	Signal Timing Improvement (Draft*)	Planning	County	\$ 19,300
NW 34th St	@NW 117th St		NB Right Turning Radius	Planning	City	\$ 12,000
NW 33rd St	@NW 107th St		Signal Optimization	Planning	City Doral	\$ 3,100
NW 34th St	@NW 112th Ave		Turning Radius Improvements	Planning	City	\$ 7,400
NW 36th St	NW 7100 Block	NW 79th Ave	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
NW 58th St	@84th Ave		SB, EB, WB Right Turning Radius	Planning	County	\$ 79,500
NW 58th St	@82nd Ave		SB,WB, EB Right Turning Radius	Planning	County	\$ 53,200
NW 74th St	NW 74th Ave	SR 826	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
US 27/Okeechobee Rd	W 8th Ave	NW 74th St	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 16,200
NW 72nd Ave	Corporate Way	NW 25th St	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 22,400
NW 72nd Ave	NW 74th St	74th St Connector	Signal Timing Improvement (Draft*)	Planning	FDOT	\$ 16,200
NW 102nd Ave	NW 62nd St	Roadway widen	Widen 300' N and '660 E	Design	City Doral	\$ 1,022,920
NW 117th Ave	NW 12th St	NW 25th St	+2 Lanes 4 Lane Divided	Design	City/FTE	\$ 4,799,400
NW 117th Ave	NW 25th St	NW 41st St	+2 Lanes 4 Lane Divided	Design	City/FTE	\$ 5,052,000
Mid Term FY 2025 to FY 2029						
NW 12th St	NW 127th Ave	TURNPIKE	+2 Lanes 6 Lane Divided with TSM&O**	Planning	County	\$ 5,087,000
NW 25th St	NW 137th Ave	NW 127th Ave	New 2 Lane Divided	Planning	County	\$ 4,800,400
NW 25th St	NW 127th Ave	TURNPIKE	+2 Lanes 6 Lane Divided with TSM&O**	Planning	County	\$ 5,045,700
NW 25th St	@NW 67th Ave		Intersection Modification (Draft*)	Planning	County	\$ 167,443
NW 33rd St	NW 117th Ave	NW 107th Ave	+4 Lane New Construction and +2 Lanes to 4 & 6 Lane Divided	Planning	City	\$ 6,602,000
NW 36th St	@NW 79th Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 95,682
NW 36th St	@NW 72nd Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 119,602
NW 36th St	@NW 7100 Block		Traffic Signal	Planning	County	\$ 50,000
NW 41st St	NW 127th Ave	HEFT	+2 Lanes 4 Lane Divided	Planning	County	\$ 5,052,000
NW 58th St	East of FL-826	NW 72nd Street	+1 Lane 6 Lane Divided with TSM&O**	Planning	County	\$ 1,578,750
NW 74th St	NW 87th Ave	FL-826	TSM&O**	Planning	FDOT/County	\$ 500,000
NW 74th St	FL-826	Okeechobee Rd	+2 Lanes 8 Lane Divided with TSM&O**	Planning	FDOT	\$ 6,509,888
NW 74th St	@ NW 77th Ct		Intersection Modification (Draft*)	Planning	FDOT	\$ 119,602
NW 74th St	@NW 72nd Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 181,795
NW 74th St	@NW 69th Ave		Intersection Modification (Draft*)	Planning	FDOT	\$ 5,000
NW 90th St	NW 117th Ave	NW 112th Ave	New 4 Lane Divided	Planning	City Medley	\$ 3,444,500
NW 90th St	NW 112th Ave	NW 107th Ave	+2 Lanes 4 Lane Divided	Planning	City Medley	\$ 2,526,000
NW 90th St	NW 107th Ave	NW 97th Ave	+2 Lanes 4 Lane Divided	Planning	City Medley	\$ 5,052,000
NW 90th St	NW 97th Ave	NW 87th Ave	New 4 Lane Divided	Planning	City Medley	\$ 6,889,000
NW 90th St	NW 84th St	NW 79th Ave	New 4 Lane Divided	Planning	City Medley	\$ 3,444,500
NW 137th Ave	NW 25th St	NW 41st St	New 2 Lane Divided	Planning	County	\$ 4,800,400
NW 127th Ave	NW 25th St	NW 41st St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 12th St	NW 25th St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 25th St	NW 41st St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 122nd Ave	NW 41st St	NW 58th St	New 4 Lane Divided	Planning	County	\$ 6,889,000
NW 117th Ave	NW 41st St	NW 58th St	+2 Lanes 4 Lane Divided	Planning	FTE/City	\$ 5,052,000
NW 117th Ave	NW 41st St	NW 58th St	+2 Lanes 4 Lane Divided	Planning	FTE/City	\$ 5,284,000
NW 97th Ave	NW 12th St	NW 25th St	+2 Lanes 6 Lane Divided	Planning	County	\$ 6,315,000
Long Term FY 2030 to FY 2045						
SR 836	NW 137th Ave	NW 127th Ave	+2 Managed Use Lanes	PDE	FDOT	\$ 8,758,200
SR 836	NW 127th Ave	TURNPIKE	+2 Lanes	PDE	FDOT	\$ 7,962,000
NW 12th St	TURNPIKE	NW 107th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Sweetwater	\$ 5,137,000
NW 12th St	NW 107th Ave	NW 97th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Doral	\$ 5,045,700
NW 12th St	NW 97th Ave	NW 79th Ave	+2 Lanes 6 Lane Divided with TSM&O**	Planning	City Doral	\$ 6,880,500
NW 25th St	NW 117th Ave	NW 107th Ave	+2 Lanes or Viaduct	Planning	City Sweetwater	\$ 4,800,400
NW 25th St	FL-826	MIA Cargo Area	+ SB Left Intersection Study	Planning	County	\$ 50,000
NW 25th St	@NW 75th Ave		Intersection Modification (Draft*)	Planning	County	\$ 71,761
NW 25th Street Viaduct	NW 117th Ave	NW 107th Ave	+Viaduct	Planning	SIS Connector	\$ 110,941,059
NW 25th Street Viaduct	NW 107th Ave	NW 97th Ave	+Viaduct	Planning	SIS Connector	\$ 110,941,059
NW 25th Street Viaduct	NW 97th Ave	NW 82nd Ave	+Viaduct	Planning	SIS Connector	\$ 166,411,589
NW 25th Street Viaduct	MIA Cargo Area	New Intermodal	+ Viaduct Ext	Planning	SIS Connector	\$ 36,328,995
NW 36th St	@NW 79th Ave		Lane Reconfiguration (Draft*)	Planning	FDOT	\$ 95,682
NW 36th St	@NW 67th & 66th Ave & Perimeter Rd		Intersection Modifications (Draft*)	Planning	FDOT	\$ 239,205
NW 74th St	@NW 72nd Ave		Access Management (Draft*)	Planning	FDOT	\$ 239,205
HEFT	SR 836	NW 41st St	AV/CV Technology***	Study	FTE	\$ 100,000
HEFT	NW 41st St	NW 74th St	AV/CV Technology***	Study	FTE	\$ 100,000
HEFT	NW 74th St	NW 106th St	AV/CV Technology***	Study	FTE	\$ 100,000
NW 117th Ave	NW 58th St	NW 74th St	+2 L 4LD	Planning	City/FTE	\$ 16,889,000
NW 117th Ave w/Interchange Improvements at NW 74th Street	NW 74th St	NW 90th St	Interchange Reconstruction New Construction 4LD	Planning	City/FTE	\$ 65,104,000
NW 107th Ave	NW 90th St	NW 122th St	+2 Lanes 4 Lane Divided	Planning	County	\$ 10,104,000
NW 102nd Ave	NW 58th St	NW 74th St	New 4 Lane Divided	Planning	City Doral	\$ 6,889,000
NW 102nd Ave	NW 74th St	NW 90th St	New 4 Lane Divided	Planning	City Doral	\$ 6,889,000
NW 97th Ave	NW 12th St	NW 25th St	TSM&O**	Planning	County	\$ 4,799,400
NW 87th Ave	NW 12th St	NW 25th St	TSM&O**	Planning	County	\$ 450,000
NW 87th Ave	NW 25th St	NW 36th St	TSM&O**	Planning	County	\$ 500,000
NW 87th Ave	NW 36th St	NW 58th St	TSM&O**	Planning	County	\$ 500,000
NW 87th Ave	NW 58th St	NW 74th St	+2 Lanes 6 Lane Divided with TSM&O	Planning	City Doral	\$ 6,946,500
SR 826	SR 836	Okeechobee Rd	AV/CV Technology***	Study	FDOT	\$ 100,000
NW 72nd Ave	SR 836	NW 25th St	+2 Lanes 8 Lane Divided with TSM&O**	Planning	FDOT	\$ 7,714,640
NW 72nd Ave	NW 25th St	Okeechobee Rd	TSM&O**	Planning	FDOT	\$ 1,750,000

* At the time of publishing this report the FDOT National Highway Systems (NHS) Intermodal Connectors Report was in Draft format
 ** Transportation Systems Management & Operations (TSM&O)
 *** Autonomous Vehicle/Connected Vehicle (AV/CV)

The guidelines focus a lot of attention on the inclusion of all modes on all streets (pedestrians, bicyclists, buses, trucks and cars) and provides significant guidance on turning movements and turning radius. Prototype intersection turning designs for each of the typologies are provided on this page.

The guidelines were reviewed and **Figure 79** shows that 2 FRDC area types exist in the Doral Area – Freight Diverse and Freight Oriented. A Freight Diverse Area recognizes that there is a mix of freight and non-freight traffic and Freight Oriented Areas have dominant freight land uses and accommodations for high percentages of heavy truck movements is recommended for arterials and collectors the Freight Corridors in context area where the Diverse Activity Area design guidelines should be implemented. Table 36 presents the projects in the Diverse Activity Area Guidelines.

This study also recognizes that close coordination with the Town of Medley is required. The north part of this study overlaps with the Town and also with the study area for the completed FDOT 6 Town of Medley Freight Plan. **Figure 80** shows that Subarea recommendations from the Medley study and the freight corridors identified in this study complement each other.

INTERMODAL FREIGHT RECOMMENDATIONS

FDOT emphasizes that this study is a planning level assessment designed to provide information on potential transportation projects to support freight related infrastructure. The proposed development of an intermodal facility includes a review of properties that have been under review by Miami-Dade County that may have the potential for development as an Inland Terminal. Note that some of these properties are privately owned and all the proposals include extensions of privately operated railroads connecting to those properties.

The proposals provided in this study are for informational purposes for the private sector, specifically land owners, railroad operators and potential developers of such facilities and are to facilitate partnerships to advance the development of such facilities and services.

Three proposals were provided in Section 5 of the report for intermodal site development. The proposals are summarized in **Table 37**. Coordination on this report indicated that PORTMiami was actively studying the development of an Inland Terminal with roadway and rail connections. The County had identified 16 sites that are shown in comparison to this report's study area as shown on **Figure 65** (page 99). Three (3) sites were selected for the development of concepts including 1 owned by FDOT and 2 privately owned. These sites were selected because of proximity to this study area, the size of the property, appropriate land use designation and proximity to rail and highway access. A summary of the concepts is provided on **Table 37**.

It is recommended that FDOT coordinate with Miami-Dade County and the TPO on these proposals. Coordination with the County is critical as 2 of the sites are physically outside the Urban Development Boundary (UDB). The sites could be accessed from arterials and the HEFT from outside the UDB and traffic could be limited to those roads. However, development within the UDB will require a significant amount of coordination and public outreach. The 3rd site reviewed is on private property and is in the Town of Medley.

The 2045 TPO Long Range Transportation plan is in the development phase and is a potential platform for coordination between FDOT, the County, local municipalities, the FEC and CSX Railroads and private interests to identify long range purpose and need for such a facility and to identify development phases in the cost feasible plan.

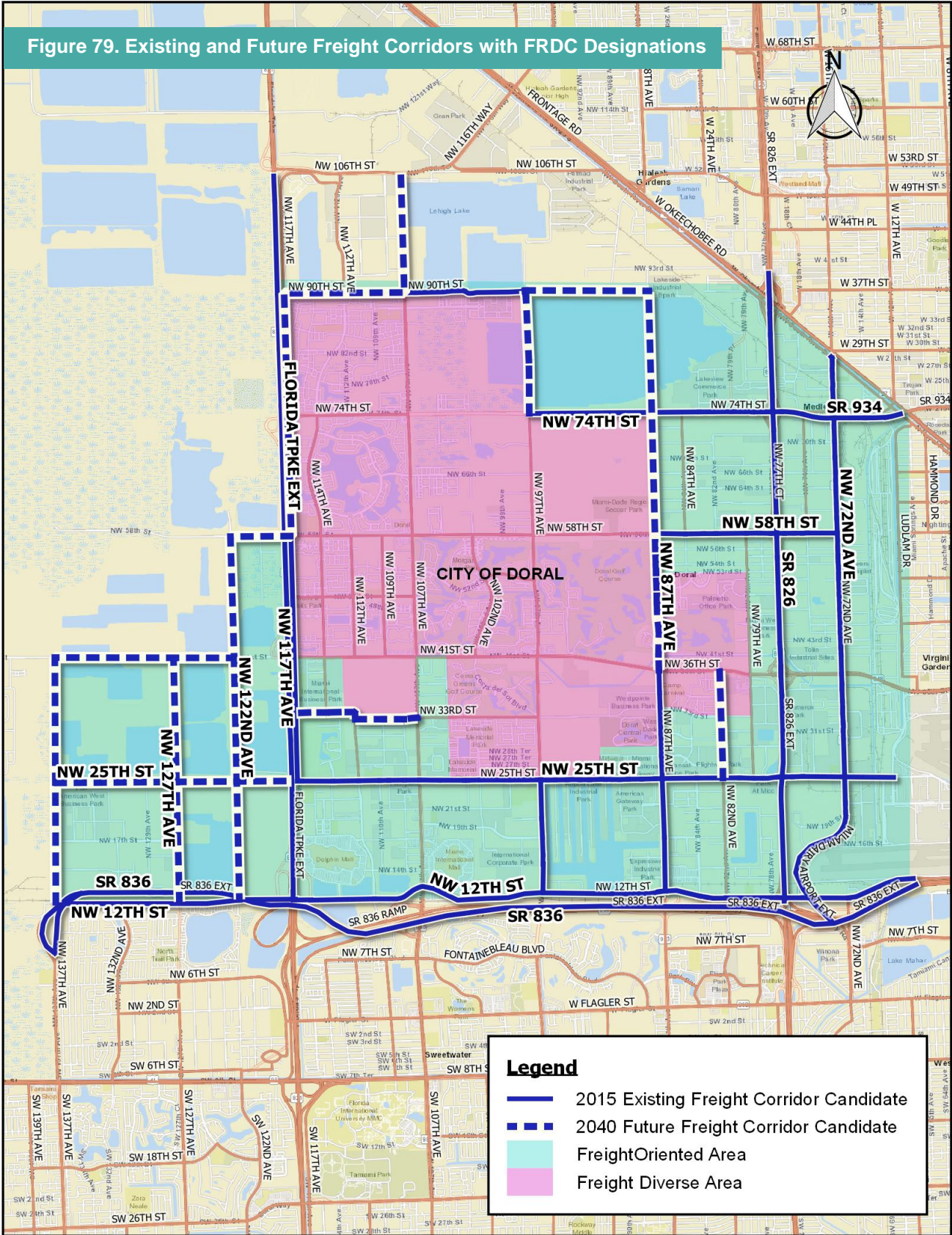


TABLE 36. PLANNED AND PROGRAMMED NON-FREIGHT PROJECTS WITHIN THE DORAL SUBAREA STUDY WITHIN THE DIVERSE ACTIVITY AREA

Roadway	Limits	TYPE of WORK	FY
NW 33rd Street	and NW 97th Ave	Add northbound turn lane, signal optimization	2015-2020
NW 33rd Street	and NW 87th Ave	Add westbound/eastbound turn lanes, signal optimization	2015-2020
NW 34th Street	and 117th Ave	Improve northbound right turn	2015-2020
NW 34th Street	and 112nd Ave (curved Rd)	improvement	2015-2020
NW 36th Street	and NW 87th Ave	Add southbound/westbound turn lanes, signal optimization	2015-2020
NW 36th Street	and NW 82th Ave	Add turn lanes north/south/east/westbound, signal optimization	2015-2020
NW 36th Street	and NW 79th Ave	split phase removal, add eastbound thru lane, add westbound/southbound turn lanes, signal optimization	2015-2020
NW 41st Street	and NW 115th Ave	Add dual left northbound turn lanes, signal optimization	2015-2020
NW 41st Street	and NW 114th Ave	Add westbound/eastbound turn lanes, signal optimization	2015-2020
NW 41st Street	and NW 87th Ave	Improve northbound right turn	2015-2020
NW 58th Street	and NW 114th Ave	Add turn lanes east/westbound	2015-2020
NW 58th Street	and NW 107th Ave	Add turn lanes north/south/east/westbound, signal	2015-2020
NW 58th Street	and NW 97th Ave	Remove split phase, Add turn lanes north/south/east/westbound, signal optimization	2015-2020
NW 58th Street	and NW 87th Ave	Add turn lanes north/east/westbound, signal optimization	2015-2020
NW 58th Street	and NW 84th Ave	Improve southbound/eastbound/westbound right turn	2015-2020
NW 74th Street	and NW 107th Ave	Add turn lanes south/east/westbound, signal optimization	2017
NW 74th Street	and NW 114th Ave	Add turn lanes north/south/east/westbound	2017
NW 33rd St	At NW 33th St & 79th Ave Intersection	Traffic Signal	2017
NW 41th St	From NW 79th Ave to NW 87th Ave	Roadway Reconstruction	2017
NW 54th St	From NW 79th Ave to NW 87th Ave	Roadway Reconstruction	2017
NW 82nd Ave	From NW 33rd St to NW 36th St	Roadway widen capacity	2017
NW 92nd Ave	From NW 28th St to NW 33rd St	New Road Construction	2017
NW 97th Ave North Extension	From NW 58th St to NW 70th St Widen to 4 Lanes	Add 2 Lanes & Reconstruct	2017
NW 102nd Ave	From NW 66th St to NW 74th St	New Road Construction	2017
NW 117th Ave Bridge	Over Doral Boulevard	Roadway Connectivity	2017
NW 82nd Ave	From NW 27th St to NW 33rd St	Roadway Improvements	2018
NW 112th Ave	From NW 25th St to NW 34th St	Roadway Improvements	2018
NW 87th Ave	From NW 74th St to NW 103rd St	New Road Construction - Add 2 Lanes	2019
NW 99th Ave	From NW 64th St to NW 66th St	New Road Construction	2019
NW 102nd Ave	From NW 62th St (300' N) & NW 62th St (660' E)	Roadway widen capacity	2019
NW 112th Ave & NW 114th Ave	From NW 41st St - NW 58th St Two-Way Pair	Roadway Improvements	2019
NW 114th Ave	Southbound NW 114th Ave Right Turn Lane @ NW 58th St	Roadway Improvements	2019
NW 114th Ave	Extension of NB NW 114th Ave Right Turn Lane @ NW 58th	Roadway Improvements	2019
NW 117th Ave	From NW 58th St to North	New Road Construction	2020
NW 34th St	From NW 117th Ave to NW 112th Ave	Roadway Improvements	2021
NW 36th Street	From NW 79th Ave to NW 97th Ave	Expand from 6 to 8 lanes	2025
NW 36th Street/NW 41th Street	From NW 97th Ave to NW 107th Ave	Expand from 6 to 8 lanes	2040

TABLE 37. INTERMODAL ALTERNATIVES

SITE INDEX	LIMITS of WORK	OWNER-SHIP	TOTAL ACRES	ROADWAY ACCESS	PROXIMITY TO RAIL	COST ESTIMATE
Site 1B Proposal	Intermodal Facility	Private	975	74th St, 90th St, 93rd St, 97th Ave, 87th Ave	900' from FEC	\$ 43,300,000
Site 4 Proposal	Intermodal Facility	Public	2350	HEFT/74th St, HEFT/106th St	3,260' to FEC and 2.13 miles to CSX	\$ 50,980,000
	Transload Facility					\$ 14,900,000
	Total					\$ 65,880,000
Site 9 Proposal	Transload Facility	Private	316	NW 114 Street, HEFT/106th St	1000' from FEC	\$ 11,910,000

- Earthwork and grading are not included in the cost estimates. Pricing of this will vary and has the potential to drastically increase the estimated probable cost.
- Cost to purchase the property private is not included in the cost estimates.
- Cost of equipment for the facilities were not included.
- Design services for the facilities were not included.
- A 25% contingency fund was included within the estimate.

RECOMMENDATIONS FOR ADVANCEMENT OF FDOT FREIGHT PROJECTS TO PD&E

The City of Doral is the fourth community with a recommended freight plan. The strategy is to advance the implementation of freight and logistics projects by partnering with local communities and stakeholders to develop subarea freight plans. The study has resulted in a list of Freight Corridors and projects within those corridors that should be implemented through coordination with other stakeholders and there are some that can be advanced from this PACE to study on a condensed path to NEPA compliance through the PD&E phase.

These projects include:

- **NW 74th Street/Hialeah Expressway from SR 826 to Okeechobee Blvd.** to be expanded to an 8 lane divided arterial with Transportation Systems Management technology
- **Extension of the NW 25th Street Viaduct from NW 117th Street to 82nd Avenue** - construct a grade separated roadway along the 25th Street Corridor. NW 25th Street is not a State Road however this project, if proposed through the PD&E process would become a SIS Connector.
- **Extension of the NW 25th Street Viaduct into the proposed New MIA Intermodal Center** – construct grade separated construct a grade separated roadway along the 25th Street Corridor. NW 25th Street is not a State Road however this project, if proposed through the PD&E process would become a SIS Connector.

- **NW 117th Avenue Extension from NW 58th Street to NW 74th Street** – construct a new 4 lane divided arterial that will require some canal reconfiguration. Note the NW 117th Avenue is within Florida’s Turnpike Enterprise Right of Way.
- **Reconstruct the NW 74th Street Interchange at the HEFT and extend NW 117th Avenue to NW 90th Street** – reconstruct the interchange to allow for a new 4 lane divided arterial extension on the NW 117th Street alignment from NW 74th Street to NW 90th Street Note the NW 117th Avenue is within Florida’s Turnpike Enterprise Right of Way.
- **NW 72nd Avenue/Milam Dairy Road from SR 836 to Okeechobee Road** – construct an 8 Lane Divided Arterial from SR 836 to NW 25th Street and explore other alternatives for capacity AND drainage solutions from NW 25th Street to Okeechobee Road. Include TSM&O technologies for the entire corridor.

Figure 81 shows a map of the recommendations for FDOT roads. Area of Interest environmental screens were performed for a buffer of 500’ around each corridor. These reports provide significant data/information that bridge the recommendations from planning to the next level of project development including complete environmental analysis. A summary of results and full reports are provided in Appendix K. Note that a report was also performed for SR 948/NW 36th Street for the area where the Draft District 6 NHS Intermodal Connector report showed a recommendation



Figure 81. FDOT Projects Recommendations for PD&E