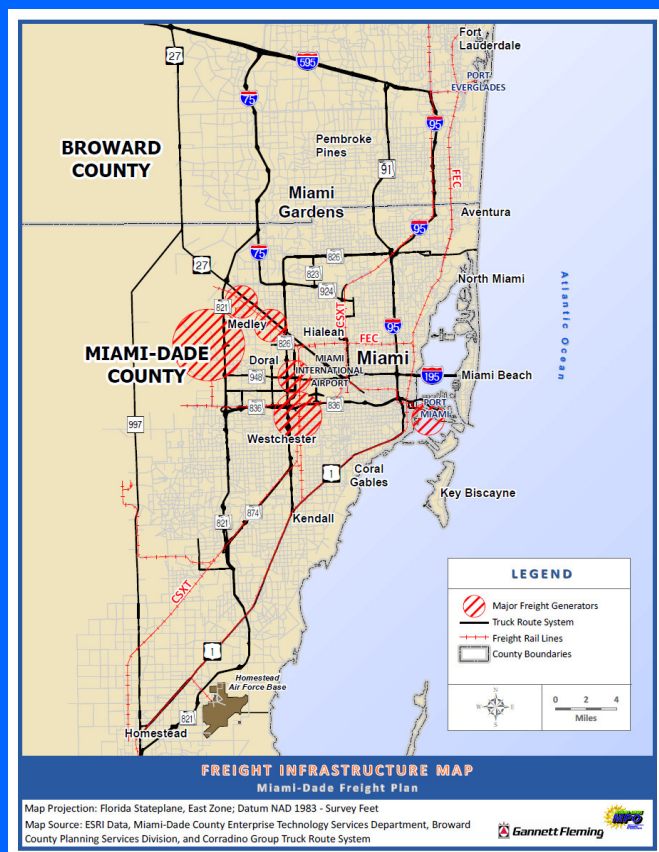
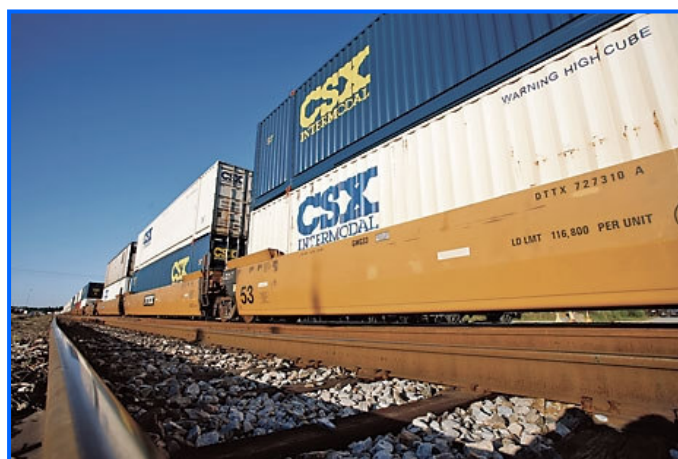


Miami-Dade Freight Plan



Final Plan
March 2009





Miami-Dade MPO Freight Transportation Advisory Committee (FTAC)

This Plan has been developed under the guidance of the Miami-Dade MPO Freight Transportation Advisory Committee (FTAC) which is the industry's advisory panel to the MPO that advises the MPO Board on freight movement and truck traffic needs.

The role of the FTAC is to assist the MPO in formally and systematically addressing freight related issues and providing guidance related to freight improvements that must be made for safety and freight efficiency throughout the county. FTAC members include:

Chairwoman Sylvia Berstein
Vice-Chairman Jorge Rovirosa

Members

Stephen Armellini
Ralph Puga
Del Bryan
Barbara Pimental
Lee Karlinsky
Mariella Marrero
Lee Sandler
John Johnson
Eddie Rodriguez
Douglas Tannehill
Kornelia Tiede
Felipe Muñoz

MPO Coordinator Larry Foutz

The preparation of this report has been financed in part through grant[s] from the Federal Highway Administration and Federal Transit Administration, U.S. Department of Transportation, under the State Planning and Research Program, Section 505 [or Metropolitan Planning Program, Section 104(f)] of Title 23, U.S. Code. The contents of this report do not necessarily reflect the official views or policy of the U.S. Department of Transportation.



(This page is left intentionally blank)

Table of Contents

1	Executive Summary	5
1.1	Plan Background and Purpose.....	5
1.2	Goals and Policy Objectives.....	5
1.3	Significant Countywide Freight Trends	7
1.4	Project Needs.....	8
2	Introduction	11
3	Freight Plan Methodology	12
4	Freight Plan Goals and Objectives	14
4.1	Economic.....	16
4.2	Safety	18
4.3	Security.....	19
4.4	Accessibility and Mobility	19
4.5	Environmental and Quality of Life	21
4.6	Integration and Connectivity	22
4.7	System Efficiency	23
4.8	System Preservation.....	24
5	Current and Future Regional Freight Movements	26
5.1	Freight Flows	26
5.2	Commodities/Industries by Mode	31
5.3	Truck Origin-Destination Surveys	40
5.4	Primary Routes from Survey Locations.....	55
6	Miami-Dade County Freight System	56
6.1	Freight Generators.....	56
6.2	Highways	60
6.3	Railroads.....	62
6.4	Water Ports.....	63
6.5	Airport	63
7	Regional Freight Improvements.....	65
7.1	Project Identification	65
7.2	Priority Freight Investments.....	65
8	Plan Implementation.....	71
8.1	General Roles & Responsibilities—FTAC and MPO.....	71
8.2	Project Prioritization & Programming.....	71
8.3	Action Planning and Tracking	72
8.4	Plan Monitoring and Performance Measures	73
9	Appendices	74
9.1	Regional Chokepoints.....	75
9.2	Medley Sub-Area Study Executive Summary.....	76



Tables and Figures:

Table 1: General Measures of Goal Achievement	15
Table 2: Effects of Improved Freight Transportation.....	17
Table 3: Miami Airport Top Freight Origins and Destinations.....	31
Table 4: Top Domestic Commodities by Truck	34
Table 5: Top Domestic Commodities by Rail.....	34
Table 6: Top Domestic Commodities by Air	35
Table 7: Top Domestic Commodities by Water.....	35
Table 8: Primary Routes of Surveyed Drivers.....	55
Table 9: Freight Highway Traffic/Truck Volumes.....	61
Table 10: Freight Plan Priority Freight Investments.....	66
Figure 1: Miami-Dade Goods Domestic Destinations	27
Figure 2: Miami-Dade Goods Domestic Origins.....	28
Figure 3: Commodity Flow map for 2006.....	29
Figure 4: Commodity Flow map for 2035.....	30
Figure 5: Domestic Tons Shipped within Miami-Dade County.....	32
Figure 6: Domestic Tons Shipped to Miami-Dade County	32
Figure 7: Domestic Tons Shipped from Miami-Dade County.....	33
Figure 8: Miami-Dade County Total Domestic Shipments	33
Figure 9: Port of Miami Container Activity Trend.....	37
Figure 10: Port of Miami Container share of US Total	37
Figure 11: Miami Airport Freight Imports and Exports	38
Figure 12: Miami Airport International Cargo.....	39
Figure 13: Origin-Destination Survey Trip Ends.....	41
Figure 14: Port of Miami Truck Survey Origins	43
Figure 15: Port of Miami Truck Survey Destinations	44
Figure 16: Port Everglades Survey Trip Ends.....	46
Figure 17: MIA Truck Survey Location Origins.....	48
Figure 18: MIA Truck Survey Location Destinations.....	49
Figure 19: Medley Area Truck Survey Location Origins.....	50
Figure 20: Medley Area Truck Survey Location Destinations.....	51
Figure 21: HEFT Truck Survey Location Origins	53
Figure 22: HEFT Truck Survey Location Destinations	54
Figure 23: Miami-Dade County Freight Infrastructure.....	57
Figure 24: Miami-Dade Freight Plan Priority Projects.....	70

1 Executive Summary

The performance of the Miami-Dade freight network is critical to the County's mobility and economic competitiveness. Efficient and safe goods movement benefits business and the general public. There are few areas in the country that have the modal access that Miami-Dade shippers and receivers enjoy. This freight plan addresses the region's freight mobility needs and will become the basis for the freight component of the next MPO long-range transportation plan (LRTP). In this manner, the County can improve the movement of freight in ways that are consistent with its future vision.

1.1 Plan Background and Purpose

Freight movement touches the lives of all businesses and residents. Without efficient goods movement, the economic engine of the country, state, and county would stall. The efficient movement of goods is a critical component of Miami-Dade County residents' daily lives and should be a planning focus for the ongoing growth and prosperity of the County. The Miami-Dade Freight Plan describes the County freight system and the needed infrastructure improvements and policies to enhance freight mobility and access to the year 2035.

Freight needs are addressed through projects and policies that respond to requirements of the freight industry and that benefit the region. These projects will be considered within the regional long-range transportation plan (LRTP) which is the MPO's financially constrained priority list of projects to the year 2035. These projects will be weighed among other priorities to provide the best infrastructure improvement and maintenance program for the County.

1.2 Goals and Policy Objectives

The following eleven goals are intended to support federal, state, and countywide priorities as established in the County's long range transportation plan and the future vision for freight of the Freight Transportation Advisory Committee (FTAC) and MPO.

Goal 1: Support economic development by enhancing freight system connectivity.

Goal 2: Advance strategic freight initiatives that support job creation and retention to enhance the region's long-term competitive position.

Goal 3: Enhance freight transportation safety and convenience to ensure mobility and access.

The Freight Plan goals support Miami-Dade County's Long Range Transportation Plan and advance the future vision for freight of the FTAC and MPO.

Goal 4: Provide the secure movement of international and domestic goods.

Goal 5: Address the varied freight improvement needs of area shippers, carriers and distributors at both a regional and corridor level.

Goal 6: Improve multimodal access in order to enhance freight efficiency throughout the County.

Goal 7: Promote methods for regional goods movement that are socially and environmentally responsible.

Goal 8: Educate the public on the importance of freight transportation to the region as well as the needs and issues of shippers, carriers, and other affected stakeholders.

Goal 9: Give greater priority and attention to freight in the regional planning process.

Goal 10: Make public investments that help minimize the cost and improve the reliability of goods movement within the County.

Goal 11: Implement and maintain freight initiatives that provide long-term returns on public investment.

Examples of policy objectives associated with these goals include:

- Determine a location(s) for truck parking and staging locations closer to origins/destinations to allow drivers to avoid peak traffic periods and comply with Federal Driver Hours of Service regulations.
- Evaluate the feasibility of “24/7” operations at key freight origins and destinations as a potential freight congestion management strategy.
- Identify and evaluate the feasibility and benefit-cost of low-cost congestion management improvements such as improved traffic signal timing.
- Identify intersections with heavy truck traffic that do not meet present design standards. Advance priority intersection improvements in line with updated intersection design standards.
- Implement the Truck Route System for Miami-Dade County as a foundation or backbone for defining a Miami-Dade County Core Freight System (all modes) and integrate with current planning and programming activity.
- Implement low cost ITS improvements that provide information to freight carriers that allow them sufficient time to react to changing traffic conditions.
- Periodically review the state of the system in terms of pavement quality and other maintenance related measures that are important to carriers.

1.3 Significant Countywide Freight Trends

In terms of tonnage, trucks dominate freight movement in Miami-Dade County. Over 80 percent of all the tons moved in the County are by truck. This modal dominance will continue as trucks are required for at least one leg of every move between the County's major freight generators. Rail movements represent nearly all of the remaining tonnage, with air and water having a very small share of total domestic tonnage. By 2035 freight tonnage moved in the county will increase substantially. This underscores the importance of regional freight planning.

Figure ES-1: Domestic Shipments by Mode

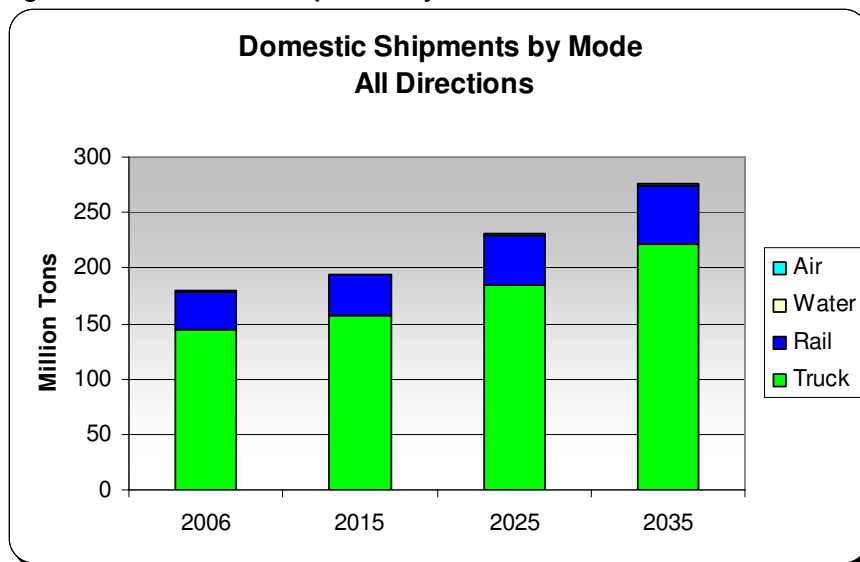
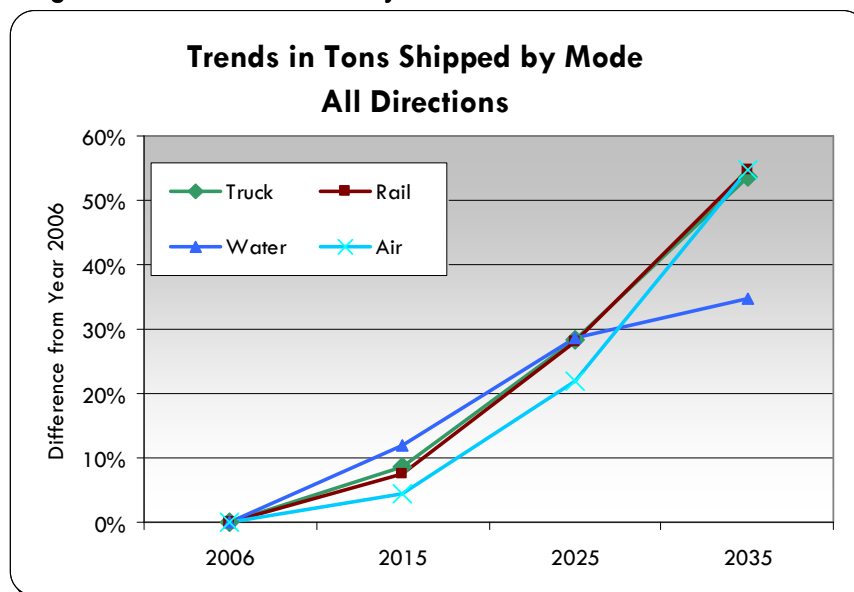
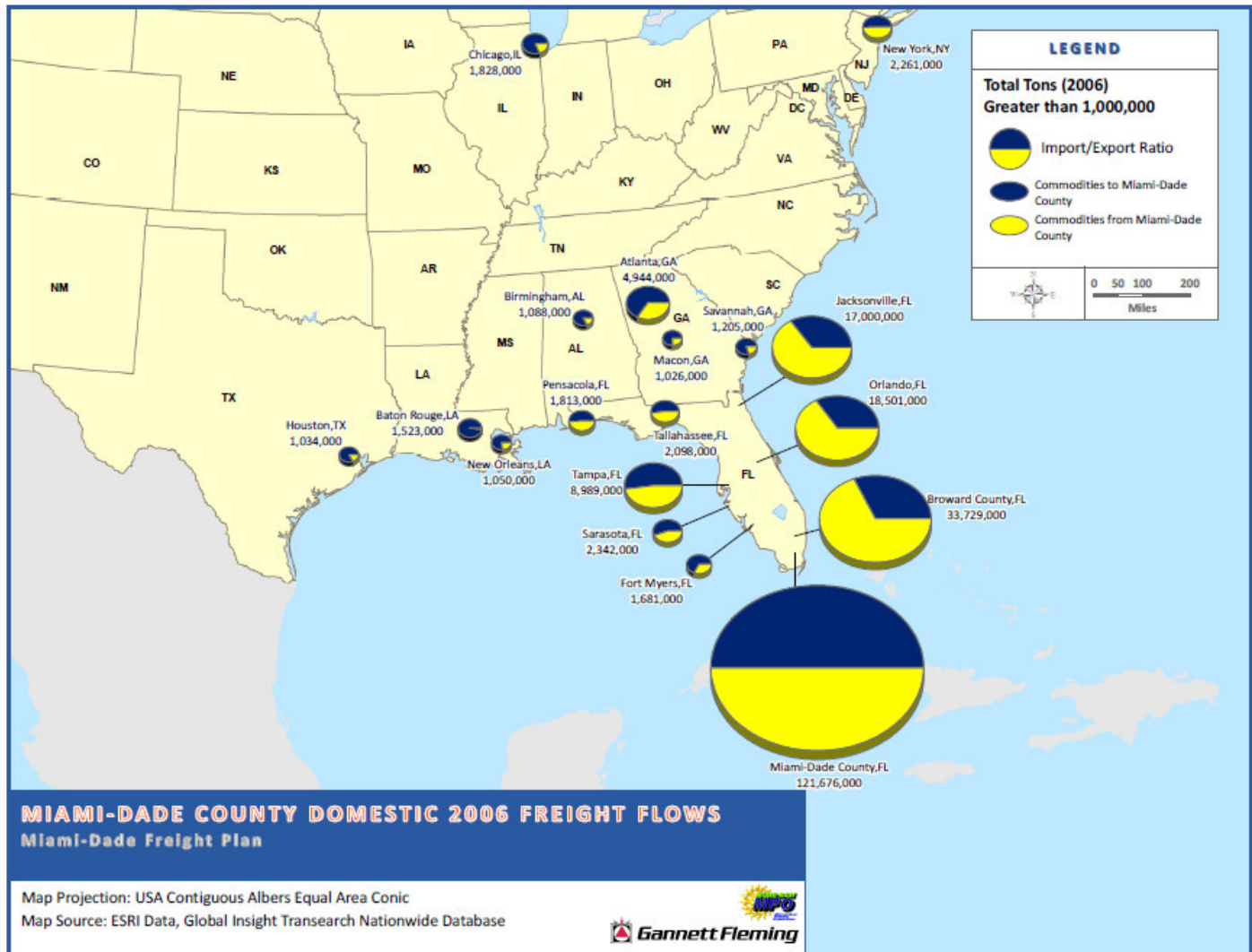


Figure ES-2: Trends in Tons by Mode



Domestic shipments are expected to jump nearly 50 percent by 2035 for cargo both into and out of the county. The total number of goods shipped from Miami-Dade is slightly above those received, making the county a net exporter and providing a trade surplus.

Figure ES-3: 2006 Domestic Freight Flows to/from Miami-Dade County



1.4 Project Needs

The freight plan addresses regional freight needs through recommended projects and supportive freight policies. Priority freight projects for the region include.

Table ES-1: Tier 1 Freight Project Recommendations

Tier 1 Freight Plan Project Recommendations

Project	Details
Downtown/Port Access	Construct I-95 NB Slip Ramp on NW 6 th St. Implement NE/NW 5 th /6 th Sts./Port Blvd. improvements for access between POM and I-95 slip ramp.
I-95 (Broward County Line to Downtown) Managed Lanes Program	Allow for trucks on managed lanes Monitoring of traffic conditions
SR 836/I-395/MacArthur Cswy. (NW 137 Ave. to Proposed Port of Miami Tunnel)	Elevated express lanes Implementation of E-W Rail Line to reduce passenger traffic 836-112 interconnector implementation (part of MIC project)
NW25 St. (89th Court to HEFT)	Traffic signal improvements Improve intersections to accommodate truck movements and provide direct connection to HEFT
NW 87 Ave. (SR 836 to NW 58 St.)	Improve SR 836/NW 12 St./NW 87 Interconnections including the 12 th Street grade separation over NW 87th. Improve intersections to accommodate truck movements
NW 119 St. (Gratigny to I-95)	Develop E-W expressway connector mid-north County
Integration of Truck Route System and the regional ITS network	Implementation of ITS improvements specifically geared toward trucks will aid the movement of all traffic as this results in more efficient truck movements.
Medley Freight Hub Streetlight Improvements	Add street lights to local roads in Medley to increase safety and help to facilitate expanded hours of operations.
Medley Local Roadway Improvement Program	Improve the local infrastructure to and from businesses in the Medley area--Pavement, turning radii. 1.5 miles of roadway.
Okeechobee Road Operations/Access Improvement Project	Signal timing improvements, improve access, and improve signing to provide better flow allong Okeechobee and access from side roads and access by trucks to and from Medley (NW 138th St to 79th Ave)
Port of Miami Infrastructure (Including all access roads in/through downtown Miami)	Expand shipping/freight industry hours of operations Port Tunnel Improve intersections to accommodate truck movements in existing NW 1 st /Miami Ave./NE/NW 5 th /6 th St corridor Expand SB left-turn lane on Biscayne Boulevard for trucks entering the POM.
Truck Parking Improvement	Provide a location in the area of Okeechobee and the HEFT for long-term truck parking and staging. Area should provide the amenities necessary for drivers to serve Miami-Dade County while meeting their Federal Hours of Service requirements. Develop truck staging area near NW 36th Street and NW 37th Ave for the Port of Miami River.
Way-Finding Sign Improvement Program	Improve county-wide for movements to/from regional freight hubs
Freight Rail Safety and Security	Projects that enhance safety and security of freight transportation, including grade crossing improvements, grade separation projects, signal upgrades, etc.
Short Sea Shipping Pilot Project	Conduct a Pilot Project of short sea shipping to evaluate if containers could be transported effectively from the POM to the Port of Miami River using shallow draft vessels to relieve congestion at the POM and reduce truck traffic.
NW 25 St Viaduct	Construction is currently underway on the East Segment from SR 826 to NW 67th Avenue. Includes reconstruction/widening of NW 25th Street and the construction of a viaduct from just east of SR 826 to NW 68th Ave. Funding for phase II of the 25th Street Viaduct is not currently in FDOT's 5-Year work program.



The recommended projects have been identified by developing a consolidated inventory of existing projects and comparing the inventory of projects in relation to needs addressed through data analysis, stakeholder input, and consistency with Freight Plan and LRTP goals and objectives. The data analysis included a commodity flow study of historic trends and future forecast through 2035, a subarea study of the Medley area, an origin and destination study based on a survey of area truckers, and a review of outputs of the region's travel demand model.

All recommended projects appear in Chapter 7. The projects will be considered as input of the Freight Transportation Advisory Committee for the MPO's update of the Regional Long Range Transportation Plan. The list above includes a sampling of some of the projects that have been identified.

2 Introduction

Freight movement touches the lives of all businesses and residents throughout the country. Goods movement is regional in nature where county boundaries mean little. Without efficient goods movement, the economic engine of the country, state, and county would stall. The efficient movement of these goods is a critical component of Miami-Dade County residents' daily lives and should be planned for as a necessary activity for continued growth and prosperity.

The efficient movement of goods is a critical component of the daily lives of Miami-Dade County residents.

This Freight Plan identifies key trends, issues, and freight needs throughout Miami-Dade County to the year 2035. To that end, the freight industry (like the robust regional tourism industry) requires financial public support, and advocacy to fulfill its needs and serve County residents.

Freight movement and generation trends tend to follow the ebb and flow of the national and regional economies, whereas goods movement modal shifts and technological advances follow regulatory and industry efficiency trends. The balance between these two different, dynamic drivers should be planned for so that the ever-changing freight industry is consistently well represented in the MPO.

Freight issues are similar to those of the commuting public. Freight modes use much of the same infrastructure. Knowing the issues and potential conflicts (now and in the future) provides insight into mitigating the negative impacts and accentuating the positive.

Freight needs are addressed by projects and policies that relate to the requirements of the freight industry and that benefit the region. The recommended projects will be considered within the regional long-range transportation plan (LRTP) which is the MPO's financially constrained priority list of projects to the year 2035. These projects will be weighed among other priorities to provide the best infrastructure improvement and maintenance program for the County.

The Freight Plan has been developed to enhance not only the regional LRTP but also the State's Strategic Intermodal System (SIS) by identifying regionally significant freight facilities and linkages. This significant road, rail, and water network is the critical to the economic competitiveness and mobility for freight within Miami-Dade County.

3 Freight Plan Methodology

Developing the Miami-Dade County Freight Plan required close coordination between the MPO, Freight Transportation Advisory Committee (FTAC), and other stakeholders. This entailed the collection and dissemination of various information such as the types and volumes of freight commodities and their origins and destinations. It also included forums for identifying the priority freight transportation needs. The steps below were followed to ensure that the freight plan included the latest information, trends, and issues to determine countywide freight related needs.

Miami-Dade Freight Transportation Advisory Committee (FTAC) Coordination

The FTAC served as the Study Advisory Committee (SAC) for the development of the freight plan. The FTAC met six times to guide plan development and provide knowledge and insight on the freight issues and needs of the County. FTAC assisted in interpreting various data and providing input on draft plan elements, such as the goals and objectives.

Methodology

- Freight Transportation Advisory Committee (FTAC) Coordination
- Background Documentation Review
- Data Collection
- Identify the Magnitude of Countywide Freight Activity
- Identify Planned and Programmed Freight Related Improvements
- Identify Additional Needed Improvements and Policies
- Develop Plan

Background Documentation Review

Freight-related decisions made in Miami-Dade County have significant impacts that extend beyond the region. As such, the plan was developed to be consistent with other regional efforts. This helps to ensure that the freight priorities complement other important efforts and that they do not conflict with other plans or programs. The study team reviewed freight components of previous studies and plans to determine the status and applicability of the recommendations presented herein.

Data Collection

The data collection that supported development of the freight plan included five primary elements:

1. Traffic volumes and forecasts and other countywide freight data from publicly available sources (such as truck volumes) were collected.
2. Data specific to the operations in and around the Medley warehouse and distribution area was obtained primarily through interaction with freight stakeholders at a stakeholders meeting on August 13, 2008.
3. Commodity flow data specific to Miami-Dade County was obtained through Global Insight, Inc. This includes current data and forecasts through 2035.

4. Anecdotal information from trucking companies, drivers, FTAC members, shippers, and warehouse operators.
5. Truck Origin-Destination data obtained through driver surveys conducted at five sites during the month of June 2008 and one conducted in June 2007 through a previous study.

The data was the foundation for identifying the performance of the freight system, the magnitude of freight activity, and the needs of the freight industry.

Identify the Magnitude of Countywide Freight Activity

Understanding the extent and nature of freight movements in the County was a critical foundation for defining freight movement infrastructure needs and options. This was completed by analyzing the data collected with a focus on those activities that are directly affected by (or a result of) freight movements to, from, and within Miami-Dade County.

Understanding the extent and nature of County freight movements was a critical foundation for defining freight movement infrastructure needs and options.

Identify Planned and Programmed Freight Related Improvements

The Miami-Dade MPO has a well-defined planning process that evaluates and prioritizes transportation infrastructure needs based on criteria. Existing planned improvement projects that potentially impact freight were identified and evaluated to determine their need relative to goods movement.

Identify Additional Needed Improvements and Policies

A list of candidate projects was developed for FTAC review which considered the plan goals and objectives as well as other county priorities. Criteria were used to evaluate various projects that are specific to freight movements which include congestion (v/c), FTAC ranking, and stakeholder input. Projects and freight policies were considered in relation to countywide freight issues and include all freight-related modes: air, water, truck, and rail.

Plan Drafting, Review, and Finalization

The results of the above tasks were documented, analyzed, incorporated into this plan, and vetted through the FTAC for final acceptance by the MPO. This plan is developed as a stand-alone document but will be incorporated in part into the overall county LRTP.

4 Freight Plan Goals and Objectives

The purpose of the Miami-Dade Freight Plan is to better understand the county freight system and to identify infrastructure improvements to improve freight mobility and access. Since the 1991 passage of the Intermodal Surface Transportation Efficiency Act (ISTEA), freight transportation has been a growing area of federal transportation policy emphasis. Goods movement also was a focus of the Transportation Equity Act for the 21st Century (TEA-21) in 1998, and the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) in 2005. National policy attention to freight transportation could expand in the next federal transportation funding legislation due in 2011—particularly as there will be greater attention to economic performance, system operations, and freight traffic growth that outpaces capacity.

The purpose of the Miami Dade Freight Plan is to understand the county freight system and to identify infrastructure improvements and other actions to improve freight mobility and access.

While the federal policy direction is promising, real problem solving will largely occur at the state and regional levels through greater partnership among public officials, shippers, carriers, and other freight stakeholders.

Each Metropolitan Planning Organization (MPO) is required to carry out a transportation planning process that includes projects and strategies to address eight planning factors:

- Economic vitality
- Safety
- Security
- Accessibility and mobility options
- Environment
- Modal integration and connectivity
- Efficient management and operation
- Preservation.

These planning factors are the basis for goal setting in this plan. The following eleven goals and supporting objectives were developed by the FTAC and are intended to advance countywide freight priorities consistent with the County's long range transportation plan. The process for ongoing action identification for each objective is described in Chapter 8—Plan Implementation.

This plan includes specific performance measures for each objective. It is also important to consider broader or more general measures at the goal level. Listed below

are 10 key general measures that reflect the overall direction of this plan. In the right column are the related goals associated with each of the general measures.

Table 1: General Measures of Goal Achievement

General Measure	Related Goals
Reduction in shipping time/delay	Goal 1: Enhance Freight System Connectivity
	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 3: Enhance Freight Transportation Safety and Convenience to Ensure Mobility and Access
	Goal 5: Address Regional and Corridor Needs of Freight Movement and Activities.
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
	Goal 10: Minimize the cost and improve the reliability of goods movement within the county.
Reduction in truck related accidents	Goal 3: Enhance Freight Transportation Safety and Convenience to Ensure Mobility and Access
	Goal 11: Carefully balance the needs of people and goods.
Reduction of shipping bottlenecks and connection gaps	Goal 1: Enhance Freight System Connectivity
	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 4: Provide the Secure Movement of International and Domestic Goods
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
Increased freight-related employment	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
	Goal 8: Educate the public on freight transportation needs and issues from the point of view of shippers, carriers, and other affected stakeholders.
	Goal 11: Carefully balance the needs of people and goods.
Expanded shipping volumes at intermodal facilities	Goal 1: Enhance Freight System Connectivity
	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 5: Address Regional and Corridor Needs of Freight Movement and Activities.
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
Greater concentration of freight activity in areas with supportive land use and infrastructure access	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 3: Enhance Freight Transportation Safety and Convenience to Ensure Mobility and Access
	Goal 7: Promote the movement of freight in a socially and environmentally responsible manner.
	Goal 11: Carefully balance the needs of people and goods.

General Measure	Related Goals
Improved signing and wayfinding reducing delay and associated cost	Goal 1: Enhance Freight System Connectivity
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
	Goal 10: Minimize the cost and improve the reliability of goods movement within the county.
More sustainable freight movement from an environmental perspective	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 5: Address Regional and Corridor Needs of Freight Movement and Activities.
	Goal 7: Promote the movement of freight in a socially and environmentally responsible manner.
	Goal 11: Carefully balance the needs of people and goods.
Expanded partnerships among private and public freight stakeholders	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 6: Improve Access to the Transportation System and Improve the Efficiency of Freight.
	Goal 7: Promote the movement of freight in a socially and environmentally responsible manner.
	Goal 8: Educate the public on freight transportation needs and issues from the point of view of shippers, carriers, and other affected stakeholders.
	Goal 11: Carefully balance the needs of people and goods.
Greater integration of freight information and needs among public sector agencies in planning, programming, and project development.	Goal 2: Maintain and Enhance the County's Competitive Position Through Strategic Freight Initiatives
	Goal 5: Address Regional and Corridor Needs of Freight Movement and Activities.
	Goal 8: Educate the public on freight transportation needs and issues from the point of view of shippers, carriers, and other affected stakeholders.
	Goal 9: Expand the position for freight in the regional planning process.

It is required that each objective be tied to criteria to allow the MPO to measure how well each is being followed. These criteria provide the critical feedback on the progress of each objective. Each measure also is given a time frame for achievement, from short-term (within two years), mid-term (3 to 10 years), and long-term (beyond 10 years). Each objective should be completed within the identified time frame, however the FTAC should seize opportunities if a particular objective is able to be completed sooner.

4.1 Economic

Freight movement is critical to the growing consumer population and to the general economic well being of the country, state, and County. The ability to move goods effectively and efficiently is a fundamental underpinning to regional economic performance. Freight transportation policies and investments must be made in the context of addressing economic activity and the needs of, key freight dependent industries.

The ability to move goods effectively and efficiently is a fundamental underpinning to regional economic performance.

4.1.1 Goal 1: Support economic development by enhancing freight system connectivity.

Objectives

- a) Improve interconnectivity between intermodal facilities such as rail terminals/ yards, deep water ports, river terminals, and other freight container and transloading points. *Measurement Criteria:* 1) Reduction in truck dwell times (Long-term); 2) Intermodal connectivity improvement projects implemented (Mid-term)
- b) Identify and preserve rail freight service and rights-of-way. *Measurement Criteria:* 1) Development of a prioritized inventory/facilities list (Short-term); 2) Facilities preserved (Long-term)
- c) Continue to identify and map key freight corridors and facilities (all modes) and major gaps, bottlenecks or chokepoints that impair the performance of the priority network. Periodically identify progress made and needs remaining. *Measurement Criteria:* 1) Development of facilities map and its use in planning and programming (Mid-term); 2) Number and cost of projects for the improved performance of the priority network (Long-term); 3) Performance improvement of the priority network in terms of greater efficiency and effectiveness as defined by shippers, carriers, and receivers of freight (Long-term).

Table 2: Effects of Improved Freight Transportation

Effects of Improved Freight Transportation	
First Order Benefits	Immediate cost reductions to carriers, importers, shippers, and receivers, including gains to shippers from reduced transit times and increased reliability.
Second Order Benefits	Reorganization-effect gains from improvements in logistics. Quantity of firms' outputs changes, quality of output does not change.
Third Order Benefits	Gains from additional reorganization effects such as improved products, new products, or some other change.
Other Effects	Effects that are not considered benefits according to the strict rules of benefit-cost analysis, but may still be of considerable interest to policy-makers. These could include, among other things, increases in regional employment or increases in rate of growth of regional income.

Source: FHWA Freight Benefit/Cost Study, Feb 2001.

4.1.2 Goal 2: Advance strategic freight initiatives that support job creation and retention to enhance the region's long-term competitive position.

Objectives

- a) Take steps to ensure that state and regional economic development groups routinely identify the freight needs of current and prospective companies. Include as part of a larger approach to ensure that goods movement is integrated with regional economic development. *Measurement Criteria:* 1) Participation of economic development groups in FTAC (Short-term); 2) Freight needs by companies identified in future LRTP and freight plan updates (Mid-term).
- b) Identify freight industry current and projected employment needs and related opportunities for workforce development investment and training. *Measurement Criteria:* Presentation of needs by workforce development groups to FTAC (Short-term).

4.2 Safety

Safety is a paramount priority for any transportation plan, program, or project. The growing volume of freight movement underscores the need for a safety focus in the freight plan.

The growing volume of freight movement underscores the need for a safety focus in the freight plan.

4.2.1 Goal 3: Enhance freight transportation safety and convenience to ensure mobility and access.

Objectives

- a) Identify and prioritize locations with high truck/auto conflict to reduce injuries, fatalities and damage to equipment and infrastructure. Establish a process for this evaluation that includes input from the freight sector. *Measurement Criteria:* Development of a review/identification process and location priority list (Short-term).
- b) Identify and prioritize rail grade crossings for improvement or closure. *Measurement Criteria:* Development of a location priority list (Mid-term).
- c) Monitor and disseminate roadway conditions associated with inclement weather through Intelligent Transportation Systems (ITS) to improve the flow of freight traffic. Take steps to confirm the availability of this information to the freight industry. *Measurement Criteria:* Identification of at-risk facilities and ITS mitigation opportunities (Mid-term).
- d) Establish an annual FTAC–FDOT process to determine freight safety improvement priorities. This would include a review of progress and to assess the state of the system from a safety perspective. *Measurement Criteria:* 1) Joint safety review process is established and followed (Mid-term) 2) Development of safety improvement priority list and issues (Mid-term).

- e) Determine a location(s) for truck parking and staging areas closer to high concentration origins/destinations to allow drivers to avoid peak traffic periods and comply with Federal Driver Hours of Service regulations. Identify applicable standards or model ordinances that can be used as the basis for moving forward. *Measurement Criteria:* 1) Identification of potential truck parking/staging locations (Mid-term); 2) Development of new truck parking/staging area(s) (Long-term).

4.3 Security

Freight distribution security is a priority for Miami-Dade's transportation system. Systematic communication and coordination among agencies and stakeholders is essential to being proactive and effectively addressing security issues. New national cargo security reporting standards are due to take effect to better assess and identify high-risk shipments. A collaborative approach requires an effective working partnership among planning officials, law enforcement, emergency response personnel, and the freight industry.

Systematic communication and coordination among agencies and stakeholders is essential to being proactive and effectively addressing security issues.

4.3.1 Goal 4: Provide for the secure movement of international and domestic goods.

Objectives

- a) Engage FTAC as a forum for discussing freight security issues on a regional scale. Involve additional security organizations as necessary. *Measurement Criteria:* Presentations and discussion by FDOT and FHWA safety representatives with FTAC (Mid-term).
- b) Identify potential funding sources to support freight security initiatives through Homeland Security and other agencies. Support efforts to establish program funding and eligibility to address freight security. Partnering across companies could be an important competitive advantage for these funds. *Measurement Criteria:* Identification of existing safety funding sources and communication to appropriate elected officials (Short-term).
- c) Research freight security efforts in similar regions and benchmark those relevant to Miami-Dade County. *Measurement Criteria:* Development and distribution of a freight security best practices summary to freight community (Mid-term).

Freight must be able to move through the system with minimal impedance to meet time, quality, and cost criteria required by businesses and consumers.

4.4 Accessibility and Mobility

The efficient movement of goods depends on reliable freight mobility and accessible ports, terminals, and infrastructure. Freight must be able to move through the system with

minimal impedance to meet time, quality, and cost criteria required by businesses and consumers.

4.4.1 Goal 5: Address the freight improvement needs of area shippers, carriers, and distributors at both a regional and corridor level.

Objectives

- a) Identify and prioritize freight corridors of regional and statewide significance. Evaluate the maintenance, operational, and capacity needs for each corridor by mode. Identify actions to reduce freight delay. *Measurement Criteria:* Develop freight corridor priority list, conditions, and needs report (Mid-term).
- b) Improve regional freight flow by promoting expedient and cooperative multi-modal shipment of goods among shippers, carriers, and freight-forwarders. *Measurement Criteria:* Participation of freight groups in FTAC workshop to identify and partner in cooperative opportunities (Long-term).
- c) Evaluate the feasibility of “24/7” operations at key freight origins and destinations as a potential freight congestion management strategy. *Measurement Criteria:* Participation of port and warehousing groups in FTAC workshop to identify specific opportunities, as well as barriers and constraints (Mid-term).
- d) Identify additional opportunities for public-private partnerships (P3) and continue to focus on P3 as a means for advancing freight projects through the MPO Long Range Plan and TIP. *Measurement Criteria:* Hold an FTAC “P3 Freight Summit” to identify strategies and candidate P3 projects. (Mid-term).

4.4.2 Goal 6: Improve multimodal access in order to enhance freight efficiency throughout the County.

Objectives

- a) Identify and evaluate the feasibility and benefit-cost of low-cost congestion management improvements such as improved traffic signal timing. *Measurement Criteria:* Potential improvements are identified and evaluated as part of TIP updates (Mid-term).
- b) Identify intersections with heavy truck traffic that do not meet present design standards. Advance priority intersection improvements in line with updated intersection design standards. *Measurement Criteria:* Priority intersections and improvements are identified (Mid-term).
- c) Collaborate with the Port for a multi-year/multi-modal improvement program that advances initiatives and projects such as congestion pricing, traffic

As the private and public sectors seek to be more socially responsible stewards of the environment and the community, freight transportation projects will need to focus on environmental impact mitigation and strategies that provide mode shift where feasible.

modifications, signal improvements, and improved public transit to serve passenger terminals. *Measurement Criteria:* The development of a Port of Miami Comprehensive Port Master Plan (Long-term).

- d) Encourage the development and use of intermodal facilities to reduce truck traffic and increase goods movement efficiency. Consider using the framework of a core freight network to identify potential locations for new or expanded intermodal facilities. *Measurement Criteria:* 1) Prioritize the core freight network and identify freight infrastructure elements and needs of that network (Long-term). 2) Intermodal movements as a percentage of all freight movements increases (Long-term).
- e) Encourage the development of scheduled short sea shipping services as a means of reducing highway congestion and the frequency of modal transfers where efficient. *Measurement Criteria:* Identification and participation of potential short sea operators in FTAC to identify potential opportunities (Mid-term).

4.5 Environmental and Quality of Life

Freight transportation is not typically perceived as a “green industry”. As both the private and public sectors seek to be more socially responsible environment and community stewards, freight transportation projects will require a focus on environmental impact mitigation and the benefits of various strategies including mode shift where feasible.

4.5.1 Goal 7: Promote methods for regional goods movement that are socially and environmentally responsible.

Objectives

- a) Establish a process for the context sensitive design of freight projects and freight node expansions in order to preserve and respect surrounding neighborhoods’ values and characteristics. *Measurement Criteria:* Development of freight supportive land use guidelines and/or a model ordinance for county and local zoning and development officials. (Mid-term).
- b) Encourage the reduction of noise and air pollution associated with freight activity (e.g. buffers between freight facilities and residential neighborhoods). *Measurement Criteria:* Development of a model ordinance for county and local zoning and development officials including guidelines or standards for mitigation techniques. (Mid-term).
- c) Assess long term investment strategies in relation to the environmental impacts of various choices/ scenarios. Consider feasible mode shifts to rail that may have significant positive environmental and energy impacts. *Measurement Criteria:* Identification of best practices for reducing the environmental impacts of freight development and infrastructure projects (Long-term).

4.5.2 Goal 8: Educate the public as to the importance of freight transportation to the region as well as the needs and issues of shippers, carriers, and other affected stakeholders.

Objectives

- a) Develop educational and informational materials for public dissemination that describe how the freight industry works (in layperson terms) and how it positively impacts daily living. *Measurement Criteria:* Development and dissemination of information promoting the benefits of freight for the County's economy and residents (Mid-term).
- b) Establish a package of basic information materials that could be disseminated or presented to schools, Rotary Clubs, organizations such as Junior Achievement, etc. *Measurement Criteria:* Development of a Speakers Bureau Kit to be used by FTAC members and others (Mid-term).
- c) Establish an FTAC communications subcommittee that would focus on public information, education, and marketing strategies. *Measurement Criteria:* Establishment of an FTAC communications subcommittee to advance this goal (Mid-term).
- d) Use FTAC as a forum for understanding how truck driver education is being conducted throughout the County and to identify opportunities for collaboration, improvement and expansion of training among the shipper/carrier stakeholders. *Measurement Criteria:* Presentation to the FTAC by a representative from the South Florida Workforce Investment Board and/or others highlighting current efforts and opportunities for freight industry training (Short-term).

4.6 Integration and Connectivity

The region's multimodal freight facilities and hubs should (to the greatest extent possible) function as a single integrated transportation system. In addition, the integration and connectivity of the freight and passenger systems must also be achieved to maximize connectivity for all transportation infrastructure users.

The region's multimodal freight facilities and hubs should (to the greatest extent possible) function as a single integrated transportation system.

4.6.1 Goal 9: Give greater priority and attention to freight in the regional planning process.

Objectives

- a) Implement the Truck Route System for Miami-Dade County as a foundation or backbone for defining a Miami-Dade County Core Freight System (all modes) and integrate with current planning and programming activity. *Measurement Criteria:* Identification of key rail, air, water, and connecting freight facilities and their incorporation with truck routes to constitute the County's Core Freight System (Mid-term).

- b) Continue to monitor the performance of the Truck Route System with respect to efficient and effective goods movement. Identify improvement needs and issues demanding attention based on periodic assessments. *Measurement Criteria:* Improved freight efficiency over time and the associated identification of truck route system issues and needs (Long-term).
- c) Continue to involve and expand freight sector participation in the MPO's planning process as a mutual effort to better understand the issues and to secure input on the diverse elements of regional planning. *Measurement Criteria:* Expanded involvement of freight stakeholders in the planning process (Short-term).
- d) Foster increased cooperation and coordination among public agencies and the private sector by demonstrating that involvement is an investment in their organization's future. *Measurement Criteria:* Development of a fact-sheet describing the MPO process and its impact on the freight industry now and in the future (Mid-term).
- e) Research and identify the range of MPO Freight Planning Best Practices nationally. Evaluate the resultant list and determine which best practices should be emulated in Miami-Dade County. *Measurement Criteria:* Development of a freight best practices report applicable to Miami-Dade County (Long-term).
- f) Determine requirements and modify the Miami-Dade Travel Demand Model to include a more robust truck component. *Measurement Criteria:* Development of a data needs report for an enhanced truck simulation component to the county and regional models (Mid-term).

Core Freight System Concept

The designated Miami-Dade County Truck Network provides a focal point for freight planning as the network is made up of those routes that are critical for goods movement. Because trucks move most of the goods in the County, the Truck Network might also provide a strategic starting point for defining a Core Freight System that includes all modes. Potential benefits:

- Identification of intermodal connections and key intermodal transfer points
- Identification of bottlenecks and chokepoints between modes, nodes, and facilities
- Provide a focal point for system performance evaluation, planning, and programming
- Support a dialogue across shippers and the various modes
- Aid in economic development and land use planning.

4.7 System Efficiency

System efficiency is critical to identifying transportation infrastructure investment priorities for freight. Efficiency (or inefficiency) equates to the time gained or lost as a result of unproductive goods movement and ultimately impacts the cost of goods.

Efficiency (or inefficiency) equates to the time gained or lost as a result of unproductive goods movement and ultimately impacts the cost of goods.

4.7.1 Goal 10: Make public investments that help minimize the cost and improve the reliability of goods movement within the County.

Objectives

- a) Focus planning efforts on the regional corridors of significance to reduce recurring and non-recurring incidents and improve on-time freight reliability. *Measurement Criteria:* Identification of at-risk facilities and mitigation opportunities (Long-term).
- b) Implement low cost ITS improvements that provide information to freight carriers that allow them sufficient time to react to changing traffic conditions. *Measurement Criteria:* Identification of ITS opportunities within the freight system. (Mid-term).
- c) Implement advanced ITS improvements and congestion management measures that are focused on freight movements. Consider system operational improvements which may be among the most feasible and cost-effective approaches to improving the freight transportation system. *Measurement Criteria:* Identification of ITS opportunities along the established truck route system. (Mid-term).
- d) Collaborate with FDOT to ensure that freight is a routine focus and consideration in developing congestion management initiatives and ITS projects drawing from national experience and best practices of Commercial Vehicle Operations (CVO). *Measurement Criteria:* Identification of ITS opportunities along the established truck route system and include in TIP process. (Mid-term).
- e) Develop ITS applications that complement any initiatives to expand truck parking. *Measurement Criteria:* Identification of ITS truck parking information enhancements along the established truck route system. (Mid-term).

4.8 System Preservation

With finite financial resources, preserving the existing system has become a priority for agencies throughout the country. System preservation is especially imperative for those facilities used by freight because of the intense impacts of heavier vehicles on pavement, structures, and intermodal connections.

With finite financial resources, preserving the existing system has become a priority.

4.8.1 Goal 11: Implement and maintain freight initiatives that provide long-term returns on public investment.

Objectives

- a) Review the state of the system every two years in terms of pavement quality and other maintenance related measures that are important to carriers. *Measurement*



Criteria: Review FDOT pavement quality data as it relates to truck movements and incorporate into freight project criteria in planning process (Short-term).

- b) Establish routine processes to secure freight stakeholder input on basic maintenance and small scale improvement needs/projects. *Measurement Criteria:* FTAC reviews Draft TIP maintenance projects and provides input to MPO prior to TIP adoption (Mid-term).

5 Current and Future Regional Freight Movements

This chapter describes the regional freight movements that contribute to the economy of Miami-Dade County and expected future changes. In addition, the regional freight infrastructure is described as the vital facilities for goods movement.

Regional freight shippers and carriers have requirements that dictate how, when, and where freight moves throughout the County. Assisting the freight industry in the effective and efficient movement of goods is a primary purpose of this freight plan. Efficient goods movement has both public and private benefits. It is important to understand what freight types move in Miami-Dade County and by which mode in order to evaluate system needs and to plan for meeting those needs.

Assisting the freight industry in the effective and efficient movement of goods is the primary purpose of this freight plan.

In Miami-Dade County freight moves by all modes...truck, rail, air, and water. Each mode makes use of modal connections where the freight is transferred, moves on the regional transportation infrastructure, is broken down and/or consolidated, and transported to its final destination or to other interim or value adding facilities. This network of connections, routes, and facilities must work cohesively to provide consumers with products on store shelves, materials for building and manufacturing, and all other products necessary for companies and consumers.

5.1 Freight Flows

The origins and destinations of goods are the primary indicators of mode and route. Mode choice decisions by shippers and receivers are based on the time sensitivity of the shipment as well as the cost of the transportation. For example, a small Atlanta-bound shipment may enter the Port of Miami along with larger shipments to customers in the Miami region because of inland transportation costs (truck/rail) associated with moving the goods to their final destination. However, the same shipment may be brought into the Port of Charleston because the water-borne shipping fee may offset the cost of moving the goods when inland.

These shipping dynamics can vary on an annual and even monthly basis. However, generally reliable estimates of future freight flows can be developed for the long term.

5.1.1 Domestic Flows

Domestic shipments are classified as those that begin and end their journey within the US, Canada, and Mexico. As with most regions throughout the US, Miami-Dade County primarily ships and receives goods internally. These are the goods shipped and received from an origin and destination

Domestic shipments are expected to jump nearly 50 percent by 2035 for cargo both into and out of the county. The total number of goods shipped from Miami-Dade is slightly above those received, making the county a net exporter.

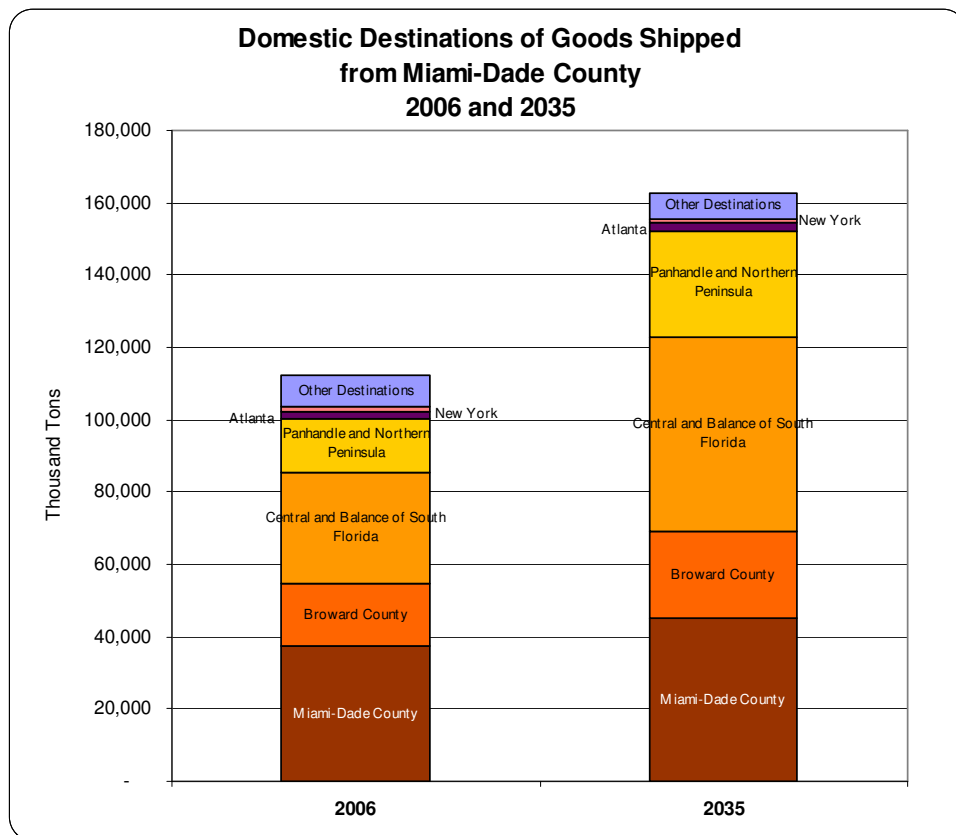
within the County. The County also has a large amount of goods shipped and received to and from destinations within Florida. Miami-Dade has relatively little trade with regions outside the state.

Domestic shipments are expected to jump nearly 50 percent by 2035 for cargo both into and out of the County. The total amount of goods shipped from Miami-Dade is slightly above those received, making the County a net exporter. This trend is expected to continue to 2035 with total tonnage expected to increase

Domestic commodity flows are primarily concentrated within Florida. Aside from freight moves internal to Miami-Dade County, Broward County is the single county with which Miami-Dade trades the most with over 22 million tons “traded” between the two annually. This pattern is expected to continue to the year 2035 when 31 million tons are expected to move between these two South Florida counties—an increase of over 40 percent from 2006. About 20 percent of all goods entering or exiting Miami-Dade are to or from destinations outside the state, with most being international imports.

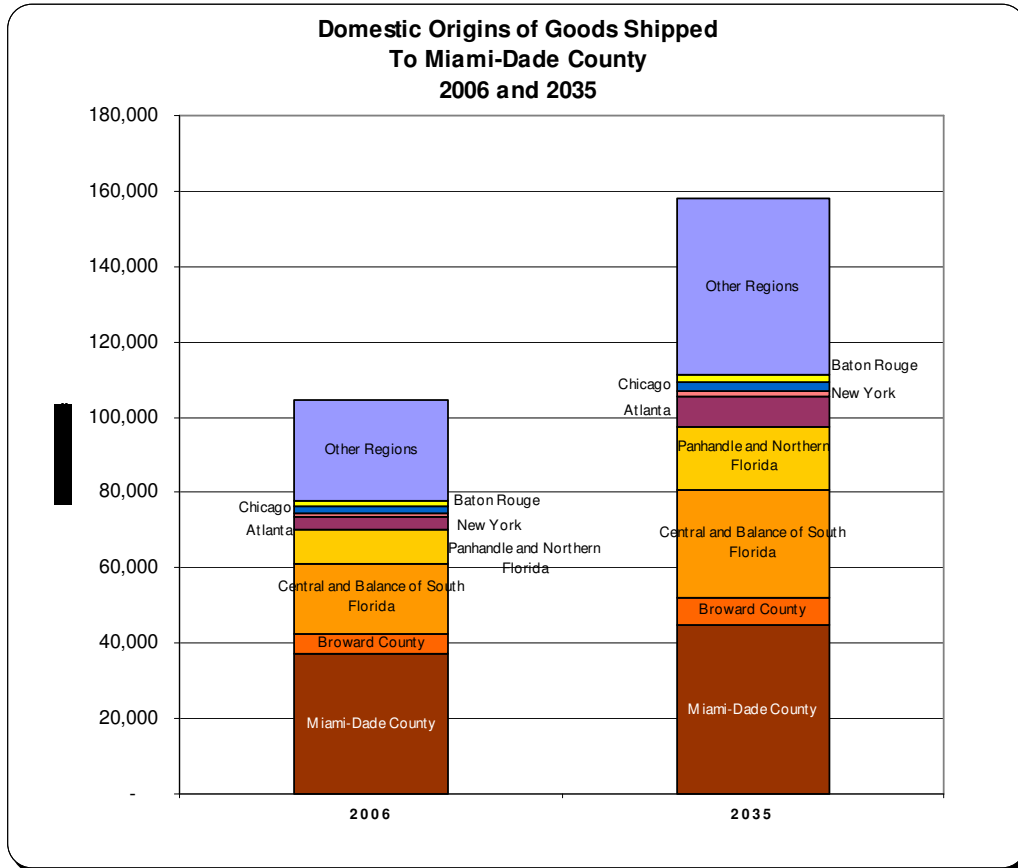
Broward County is the Miami-Dade’s largest trading partner with over 22 million tons traded between the two annually.

Figure 1: Miami-Dade Goods Domestic Destinations



Source: 2006 Global Insight TRANSEARCH

Figure 2: Miami-Dade Goods Domestic Origins



Source: 2006 Global Insight TRANSEARCH

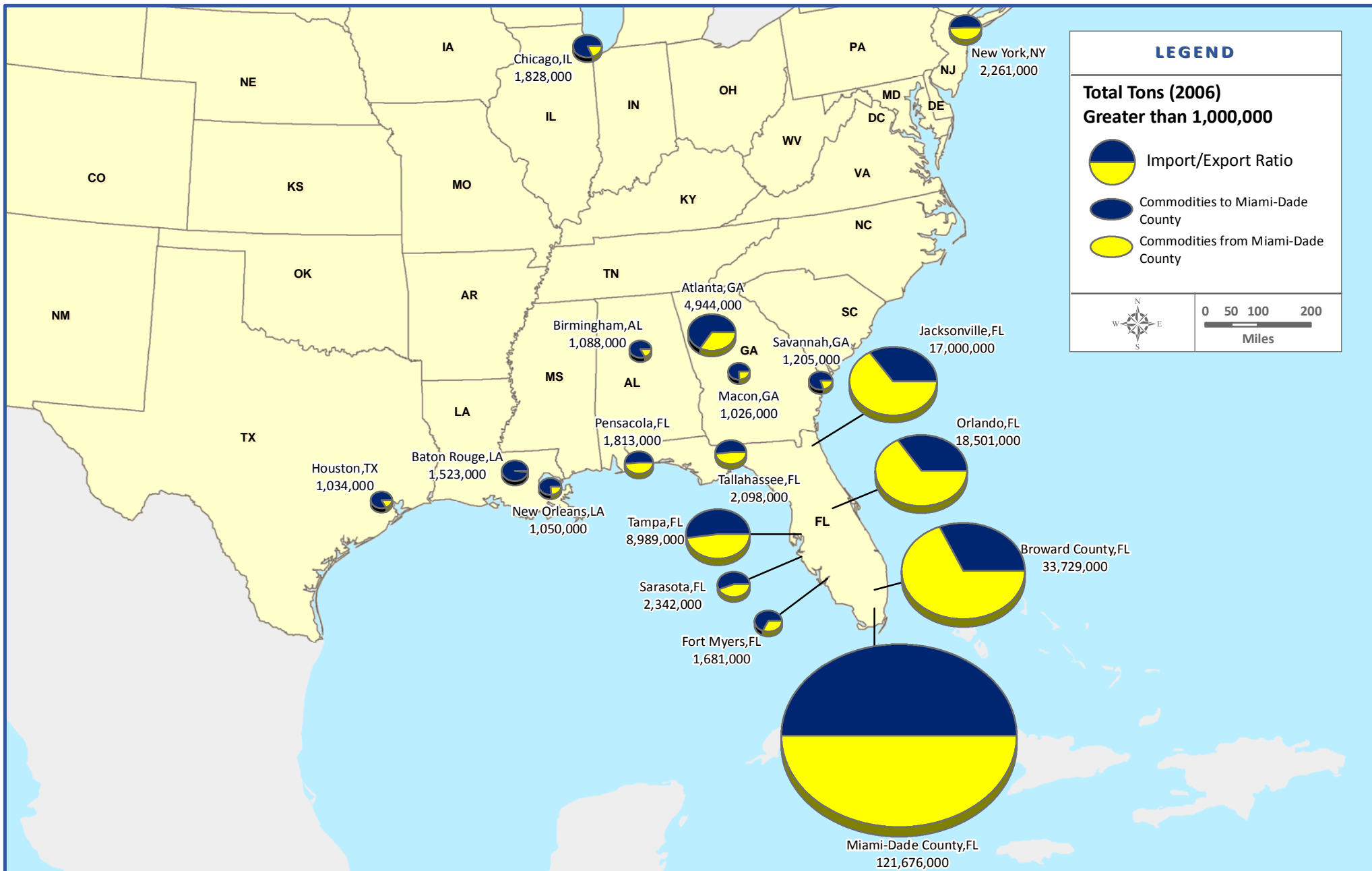
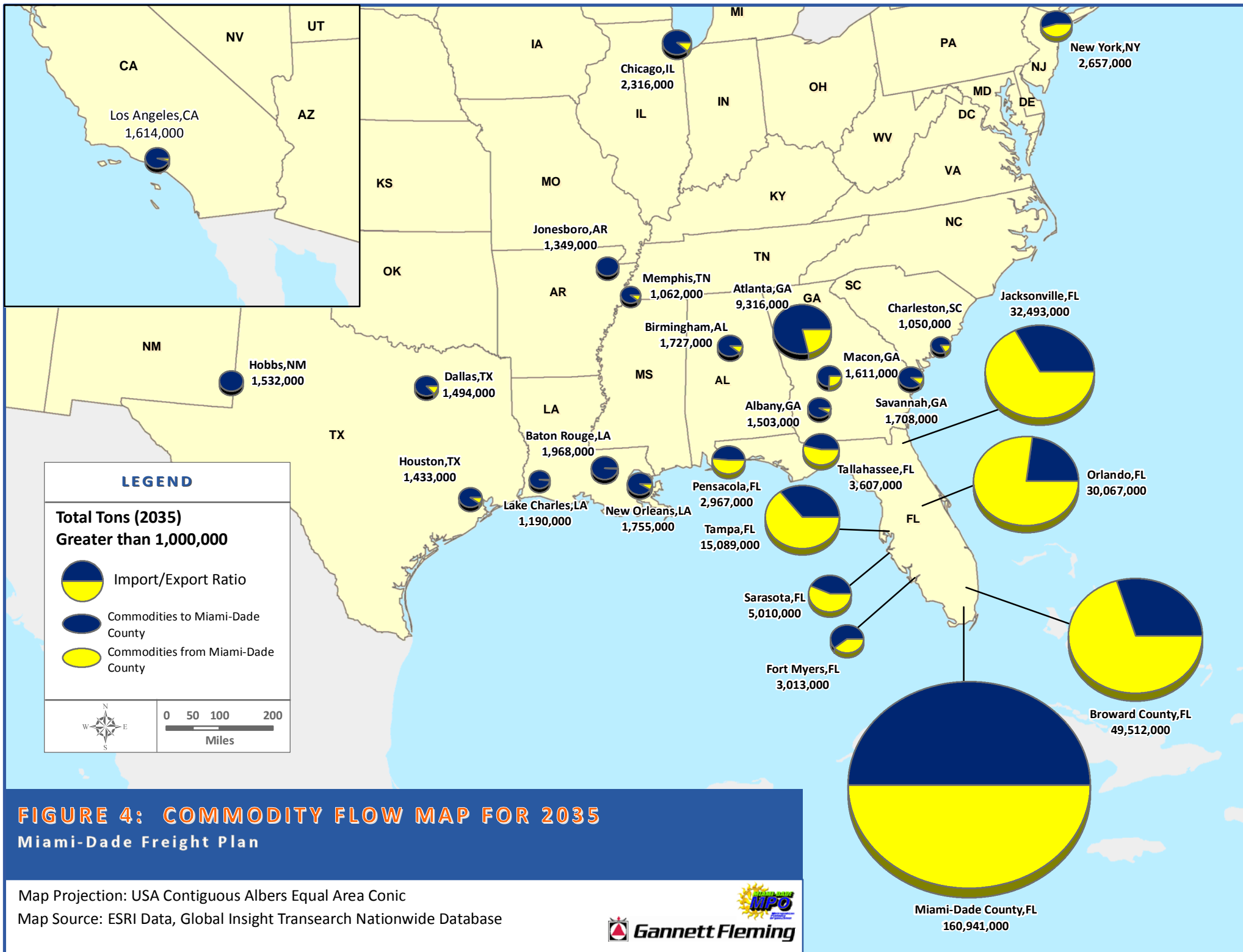


FIGURE 3: COMMODITY FLOW MAP FOR 2006

Miami-Dade Freight Plan

Map Projection: USA Contiguous Albers Equal Area Conic

Map Source: ESRI Data, Global Insight Transearch Nationwide Database



5.1.2 International Flows

Miami International Airport (MIA) is a major gateway air hub for Latin America. By weight, Colombia was the major destination for exports and the leading origin country for imports through MIA on nonstop international flight segments in 2003. International merchandise trade with Colombia alone accounted for more than 27 percent of the air cargo tonnage handled at MIA in 2003.

The other key origin countries for imports through MIA are Ecuador and Chile. Along with Colombia, these three countries originate 50 percent of import tonnage through MIA. The other key destinations for exports through MIA include Brazil and Mexico, which together with Colombia account for 40 percent of exports through MIA.

Table 3: Miami Airport Top Freight Origins and Destinations

Top 3 Destination and Origin Countries for International Air Freight via Miami Airport (2003)

Rank	Export destination	Export Tons (000)	Rank	Import origin	Import Tons (000)
1	Colombia	102	1	Colombia	266
2	Brazil	76	2	Ecuador	81
3	Mexico	28	3	Chile	77

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics

Top 3 Destination and Origin Cities for International Air Freight via Miami Airport (2003)

Rank	Export destination	Export Tons (000)	Rank	Import origin	Import Tons (000)
1	Bogota, Colombia	70	1	Bogota, Colombia	209
2	Sao Paulo, Brazil	42	2	Guayaquil, Ecuador	76
3	San Jose, Costa Rica	22	3	Santiago, Chile	76

SOURCE: U.S. Department of Transportation, Bureau of Transportation Statistics

International goods also arrive into and are shipped from the Port of Miami, an exclusively containerized port whose primary trading partner is China, along with other top trading partners from countries in Asia, South and Central America, Europe and the Caribbean.

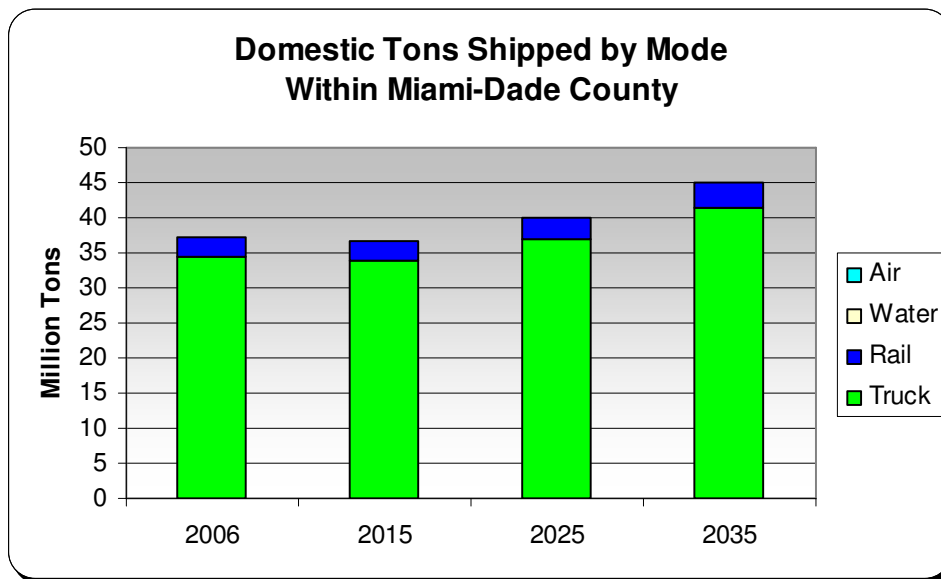
5.2 Commodities/Industries by Mode

In terms of tonnage, trucks dominate freight movement in Miami-Dade County. Over 80 percent of all the tons moved in the County are by truck. This modal dominance will continue as trucks are required for at least one leg of every move between the County's major

Over 80 percent of all tonnage moved in the county is by truck

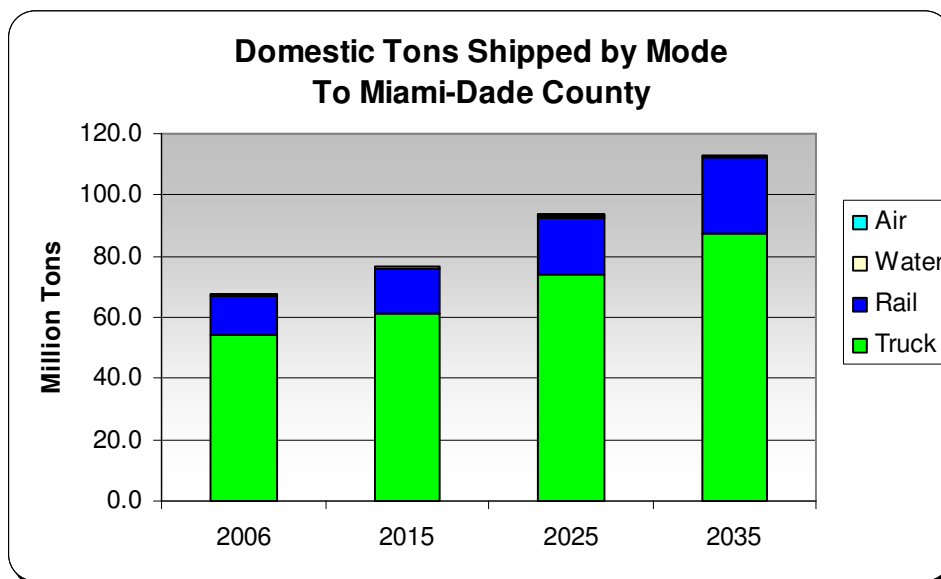
freight generators. Rail movements represent nearly all of the remaining tonnage, with air and water having a very small share of total domestic tonnage. It is expected that there will be an increase of 50 percent in all domestic goods movement. Figures 5 through 8 show the Miami-Dade County related goods shipped and the expected trends through 2035.

Figure 5: Domestic Tons Shipped within Miami-Dade County



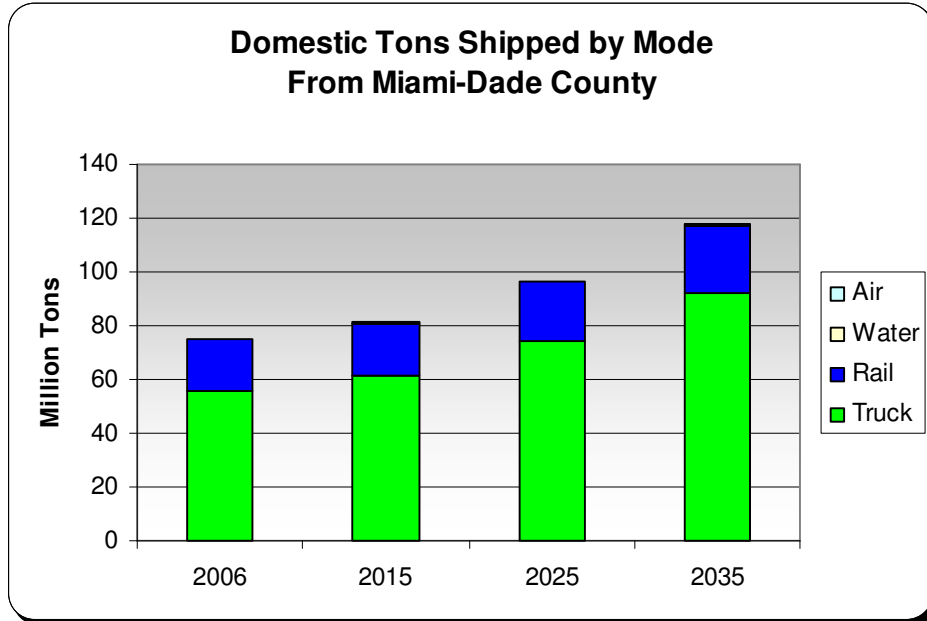
Source: 2006 Global Insight TRANSEARCH

Figure 6: Domestic Tons Shipped to Miami-Dade County



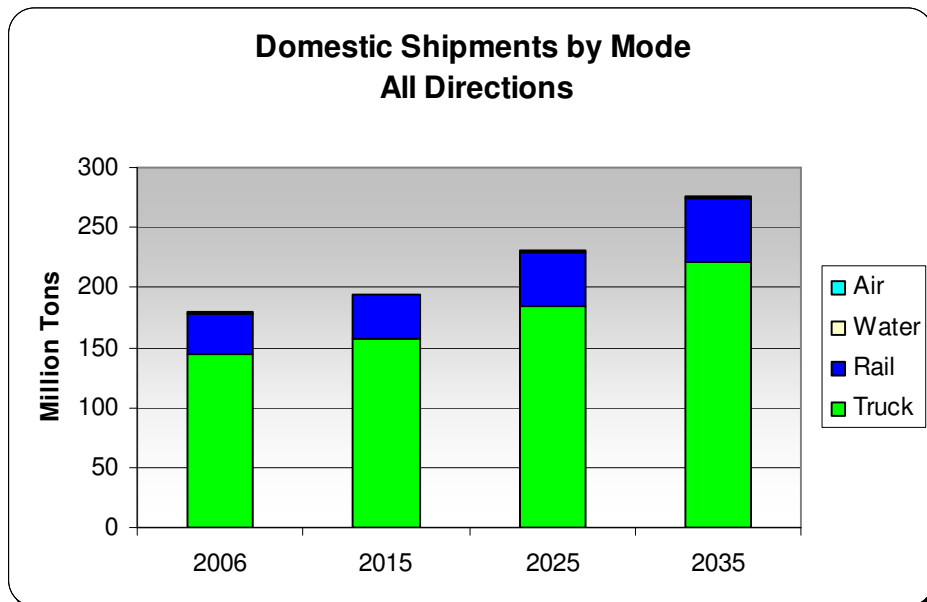
Source: 2006 Global Insight TRANSEARCH

Figure 7: Domestic Tons Shipped from Miami-Dade County



Source: 2006 Global Insight TRANSEARCH

Figure 8: Miami-Dade County Total Domestic Shipments



Source: 2006 Global Insight TRANSEARCH

Truck

Nonmetallic minerals account for 35 percent of all the tonnage moved in the County. Trucks move 70 percent of these shipments. Truck drayage (secondary traffic) accounts for the next largest amount of tonnage and is expected to be the primary truck purpose by the year 2015.

Table 4: Top Domestic Commodities by Truck

Top 10 Current and Future Domestic Commodities by Truck (Annual Tons)

Commodities	2006	2015	2025	2035
Nonmetallic Minerals	41,809,750	42,295,750	47,886,950	53,805,360
Secondary Traffic	33,944,360	43,220,620	59,397,990	86,241,220
Clay, Concrete, Glass, or Stone	16,789,120	17,461,290	20,040,550	19,696,900
Food or Kindred Products	11,722,420	12,370,890	12,451,000	12,727,290
Chemicals or Allied Products	11,280,240	13,786,760	14,883,650	14,609,340
Lumber or Wood Products	6,967,420	5,851,050	5,518,120	5,421,090
Pulp, Paper, or Allied Products	3,388,290	3,435,720	3,597,840	3,547,510
Fabricated Metal Products	2,652,830	2,811,130	3,172,720	3,481,880
Primary Metal Products	2,565,360	2,754,810	3,135,060	2,973,990
Apparel or Related Products	1,972,690	820,700	360,690	194,520
Total	133,092,480	144,808,720	170,444,570	202,699,100

Source: Global Insight TRANSEARCH Database

Rail

The County's rail tonnage is also dominated by nonmetallic mineral shipments. These movements constitute over 60 percent of the total tonnage currently moved by rail, and nearly 35 percent of all movements of this commodity.

Table 5: Top Domestic Commodities by Rail

Top 10 Current and Future Domestic Commodities by Rail (Annual Tons)

Commodities	2006	2015	2025	2035
Nonmetallic Minerals	21,521,090	22,757,390	25,284,620	27,310,610
Miscellaneous Mixed Shipments	5,704,560	7,461,710	10,835,670	16,866,260
Food or Kindred Products	1,479,050	1,490,170	1,523,730	1,574,600
Shipping Containers	1,059,190	11,140	15,390	22,900
Lumber or Wood Products	829,925	841,470	952,110	1,060,230
Clay, Concrete, Glass, or Stone	680,930	837,710	1,110,070	1,299,010
Chemicals or Allied Products	655,050	855,320	1,042,490	1,179,960
Transportation Equipment	524,120	552,570	660,860	776,450
Waste or Scrap Materials	408,840	446,030	464,770	545,990
Primary Metal Products	408,510	437,520	507,890	502,190
Total	33,271,265	35,691,030	42,397,600	51,138,200

Source: Global Insight TRANSEARCH Database

Air

As might be expected, total domestic tonnage by air is far less than other modes with mail and air courier traffic topping the list. Air freight's major role in goods movement is the transport of low weight-high value international shipments.

Table 6: Top Domestic Commodities by Air

Top 10 Current and Future Domestic Commodities by Air (Annual Tons)

Leather and Leather Products	2006	2015	2025	2035
Mail or Contract Traffic	80,200	81,640	82,590	82,720
Transportation Equipment	55,880	50,720	51,200	56,220
Electrical Equipment	32,270	38,260	58,930	106,160
Machinery	18,960	24,270	36,040	49,990
Printed Matter	18,000	17,950	18,710	19,890
Miscellaneous Mixed Shipments	11,650	15,970	23,910	38,630
Instruments, Photo Equipment, and Optical E	11,060	14,260	18,530	24,730
Fabricated Metal Products	7,660	7,830	8,100	8,160
Apparel or Related Products	6,780	2,900	1,290	750
Chemicals or Allied Products	6,770	8,350	9,460	9,470
Total	249,230	262,150	308,760	396,720

Source: Global Insight TRANSEARCH Database

Water

Domestic water moves primarily through the Miami River and the intercoastal waterway. Again, non-metallic minerals dominate these movements with petroleum and coal products expected to be the primary commodity shipped by 2025.

Table 7: Top Domestic Commodities by Water

Top 10 Current and Future Domestic Commodities by Water (Annual Tons)

Commodities	2006	2015	2025	2035
Nonmetallic Minerals	288,760	276,690	282,660	284,190
Petroleum or Coal Products	185,790	253,040	313,460	317,720
Pulp, Paper, or Allied Products	42,460	47,530	58,770	73,160
Lumber or Wood Products	20,910	22,120	26,005	29,150
Clay, Concrete, Glass, or Stone	11,020	15,270	22,460	28,310
Waste or Scrap Materials	9,920	11,430	14,850	19,750
Chemicals or Allied Products	1,820	1,930	2,300	2,650
Food or Kindred Products	680	790	1,000	1,220
Transportation Equipment	40	80	170	360
Machinery	30	40	50	60
Total	561,430	628,920	721,725	756,570

Source: Global Insight TRANSEARCH Database

5.2.1 International Shipments

International shipping includes those goods that enter Miami-Dade County via seaport or airport from other countries. Once these goods are on the ground and moving via another mode (truck, rail), they are classified as domestic movements and are included in the figures shown above. Therefore, the discussion below is not particularly significant to the regional freight system, but is important in relation to overall regional demand, trends and issues.

International Water

Miami-Dade County is a large shipping and receiving point for international goods through its air and water facilities primarily to/from Latin and South America. The Port of Miami is the only Florida Port that is scheduled to receive federal funding to deepen its channel to accommodate the next generation of deep draft ships through the Panama Canal. In addition to being a cruise terminal, the Port of Miami serves as a cargo container facility which processed over 1,600 ships and nearly 8 million tons (about 900,000 TEUs) of cargo in 2007.

The Port of Miami serves as a cargo container facility which processed over 1,600 ships and nearly 8 million tons (about 900,000 TEUs) of cargo in 2007.

Water cargo forecasts vary widely due to several international shipping variables including the opening of the expanded Panama Canal, completion of the expanded Suez Canal, West Coast port capacity, East Coast port competition, potential opening of the Northern Passage, etc.

Because of Miami-Dade County's geographic position, it is closer to Asian markets than any other east cost port. It is, however, also well situated to serving the south Florida container shipping and receiving market along with the Port of Palm Beach and Port Everglades which accommodate both containerized and bulk goods.

In 2007, China ranked first as the port's trading partner for the second year in a row. Among its top ten trading partners include countries from the Far East, South and Central America, Europe and the Caribbean.

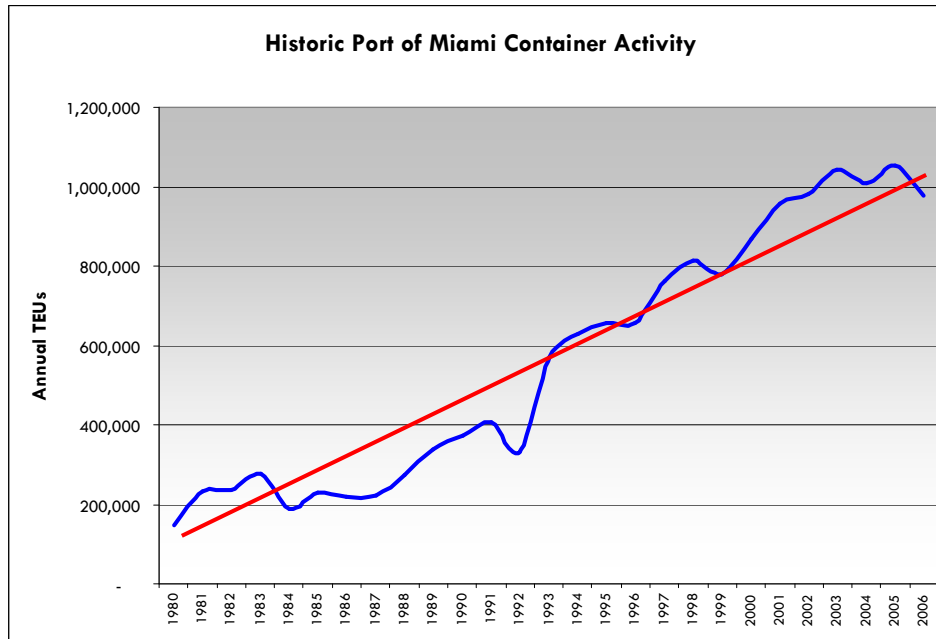
International water cargo forecasts are difficult to accurately predict, however it is expected that most U.S. container port gateways will double in volume by the year 2020. Port capacity, terminal leasing arrangements, and other factors contribute to the uncertainty. It is expected, however that TEUs will rise an average of 1 to 2.5 percent annually by 2035 based on the recent past trends and waterborne cargo forecasts from the US DOT's Freight Analysis Framework.

It is expected that TEUs will rise an average of 1 to 2.5 percent annually by 2035 based on the recent past trends and waterborne cargo forecasts from the US DOT's Freight Analysis Framework.

Over the past 25 years, containerized traffic to and from the

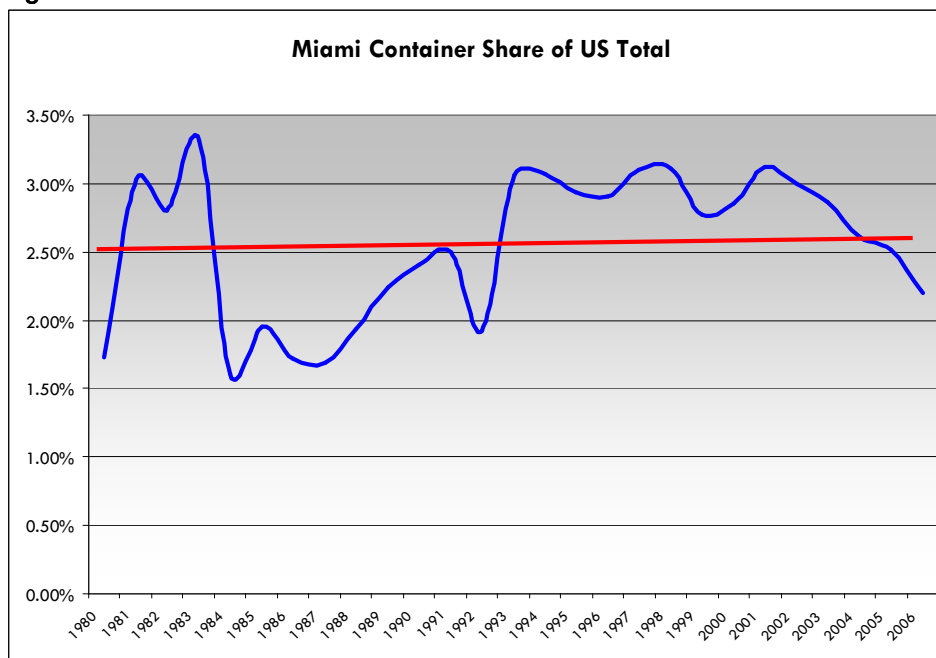
Port of Miami has risen steadily, due in large part to the growing population and improvements to the port facility.

Figure 9: Port of Miami Container Activity Trend



Source: American Association of Port Authorities (AAPA)

Figure 10: Port of Miami Container share of US Total



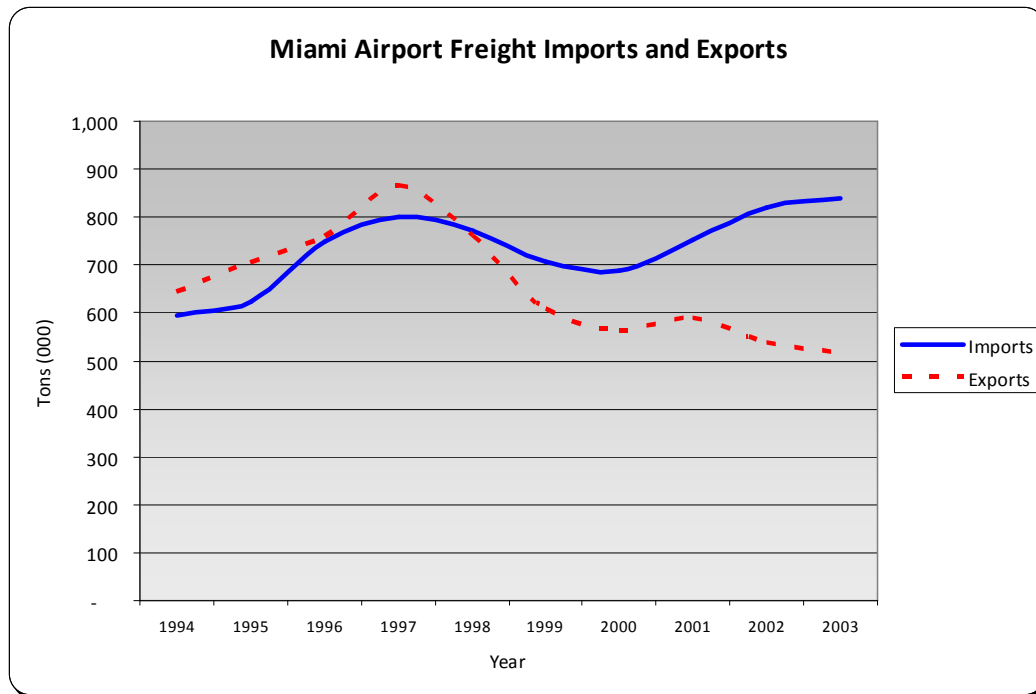
Source: American Association of Port Authorities (AAPA)

International Air

The Miami International Airport (MIA) handles a large amount of international air shipments ranking seventh in terms of handled value among all international air gateways in the US. About 4 percent (\$23 billion) of the value of all U.S. international air freight moved through MIA in 2003. By weight, MIA ranked second among all air gateways with 16 percent of total U.S. international air cargo tonnage moving through it. Of the 2 million tons of freight annually, 81 percent is from international origins or destinations.

By weight, MIA ranked second among all air gateways with 16 percent of total U.S. international air cargo tonnage moving through it. Of the 2 million tons of freight annually, 81 percent is from international origins or destinations.

Figure 11: Miami Airport Freight Imports and Exports



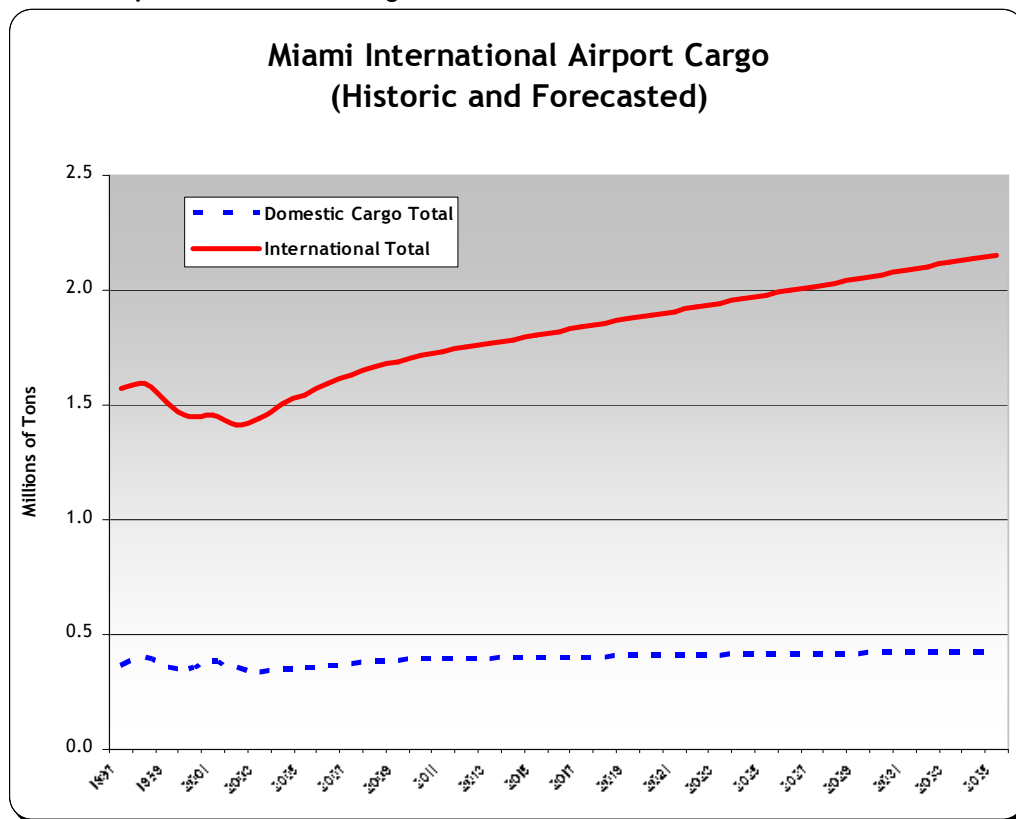
Source: US Dept. Of Transportation, Bureau of Transportation Statistics

Most of MIA's air cargo imports are perishable products, including flowers, fruits, vegetables, and seafood. MIA's air export cargo includes computers and peripherals, machinery, medical equipment, telecommunications equipment, agricultural machinery, apparel articles, and aircraft parts.

United Parcel Service (UPS) is the major U.S. air carrier for imports and exports, accounting for over 9 percent of the weight of all air freight through MIA in 2003. The other major carriers were Panamericanos, S.A. (Tampa Airlines) of Colombia and Atlas Air. In total, these top 3 air carriers moved 29 percent of imports and 26 percent of exports in 2003.

United Parcel Service is the major U.S. air carrier for imports and exports, accounting for over 9 percent of the weight of all air freight through MIA in 2003.

Figure 12: Miami Airport International Cargo



Source: Historic and forecasted (1997-2015): MIA; (2016-2035) GF

MIA is embarking on a major modernization plan to improve its cargo facilities and to accommodate the anticipated growth in trade volume over the next few years. This steady growth is expected primarily in international shipments which are expected to rise 30 percent by 2035. Domestic shipments are expected to remain relatively steady with a 10 percent increase over the same timeframe. However, as noted earlier, growth in international air cargo translates to increases in domestic moves on surface transportation modes.

International shipments at MIA are expected to rise 30 percent by 2035. Domestic shipments are expected to remain relatively steady with a 10 percent increase over the same timeframe.

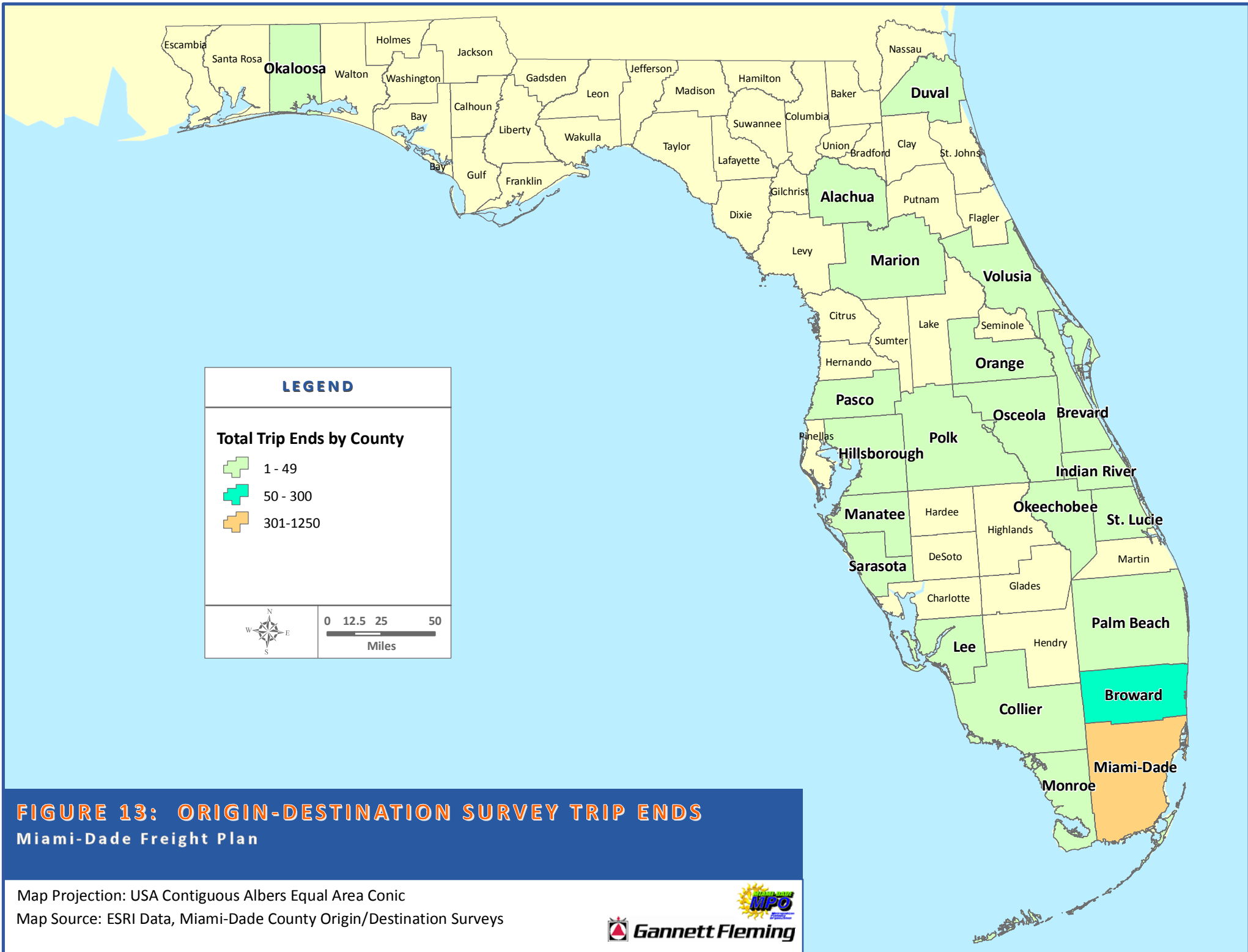
5.3 Truck Origin-Destination Surveys

Truck origin destination surveys were conducted to understand the travel patterns of drivers throughout the county. Since the surveys were conducted in locations where major trucking activity is known to be generated, the data was used to determine and validate major truck routes and, most importantly, those major freight destinations.

Destinations are more difficult to determine. The sample provides information on the major trip generators. Five locations were surveyed with a sixth location drawn from a previous study in Broward County. In total, nearly 1,000 trucks were surveyed. These six survey locations vary in the amount and purpose of trucking activity, and include:

- Port of Miami
- Port Everglades
- Intersection of 67th Ave and 22nd St.
- Intersection of 79th Ave and NW South River Drive
- Interchange of Okeechobee and SB exit of the HEFT
- Intersection of Perimeter Road and NW 22nd St.

Surveys were conducted during the morning and afternoon peak periods (6 AM to 10 AM and 3PM to 7PM) during June 2008, with the Broward survey taken June 2007. The sample supports the analysis of the commodity flow data. Most originated or were destined for locations within Miami-Dade County. The second most popular trip ends were at locations in Broward County. The map below shows the trip ends associated with this data collection effort.





Each survey location has unique characteristics and together provides a useful picture of truck movements throughout the county.

5.3.1 Port of Miami

The Port of Miami is a major generator of truck traffic. Like most generators in the County, the Port's reach is primarily contained to local destinations for those 'first moves' to and from the port which implies that the first or final leg of the truck trip to and from the Port is local.

There were a total of 181 trucks surveyed at this location with nearly a 50/50 split of picking up and drop off trips. The primary origins and destinations are Hialeah, Doral, and Medley. This reflects the high concentration of warehousing and distribution centers in these areas and their ability to breakdown bulk cargo for redistribution.

Other locations reported as secondary origins-destinations from surveys at the Port of Miami include Downtown Miami, Opa-Locka/Westview, South Miami, and portions of unincorporated Miami-Dade County.

The primary route reported by drivers to and from the port is I-95. This roadway was used for at least one portion of a truck's journey by 45 percent of the drivers surveyed. Other major routes used by Port traffic include SR 836/Dolphin Expressway, US27/Okeechobee Road, SR 826/Palmetto Expressway, SR112/Airport Expressway, and NW119 St./Gratigny Expressway.

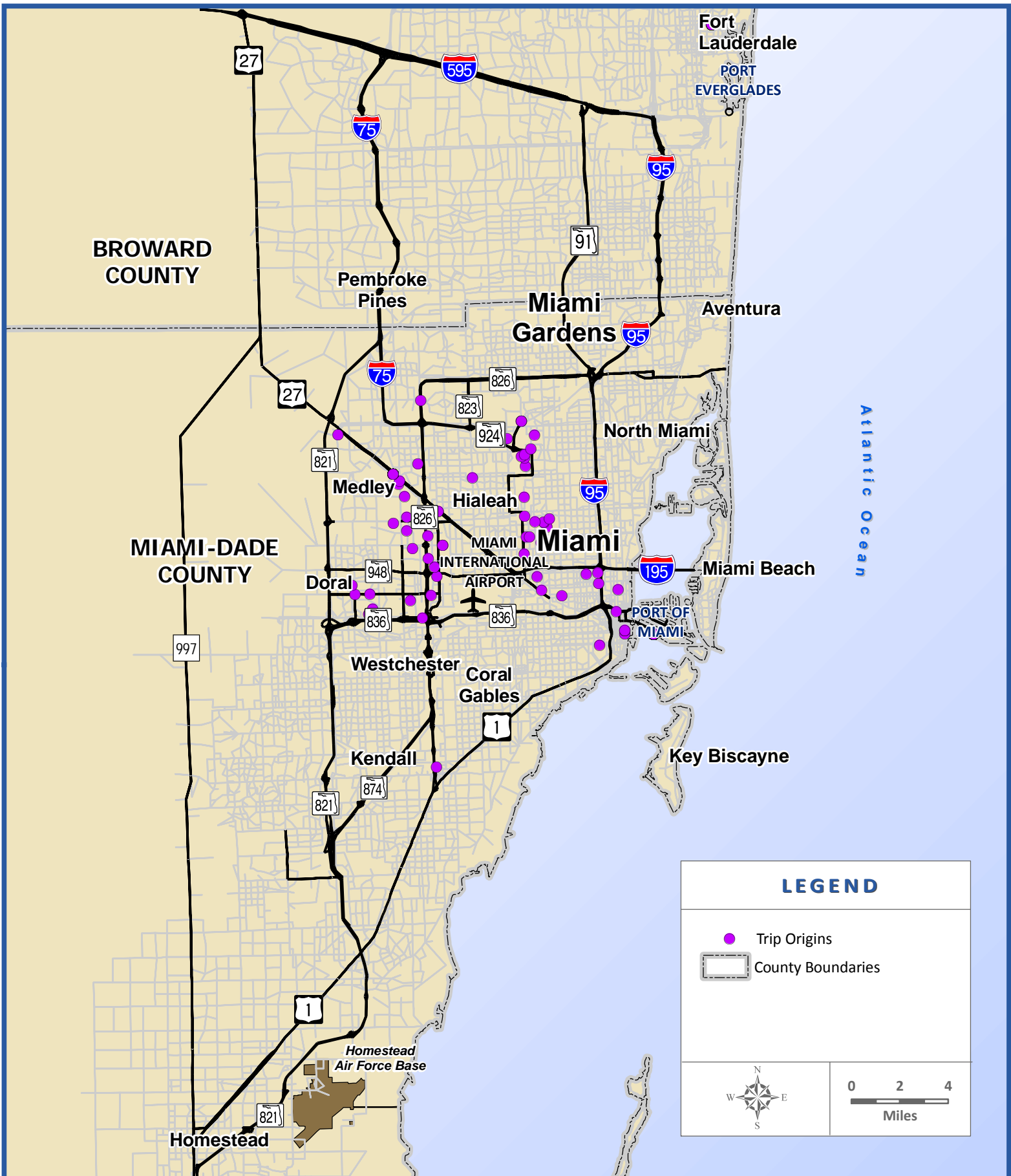


FIGURE 14: PORT OF MIAMI - TRUCK SURVEY ORIGINS
Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

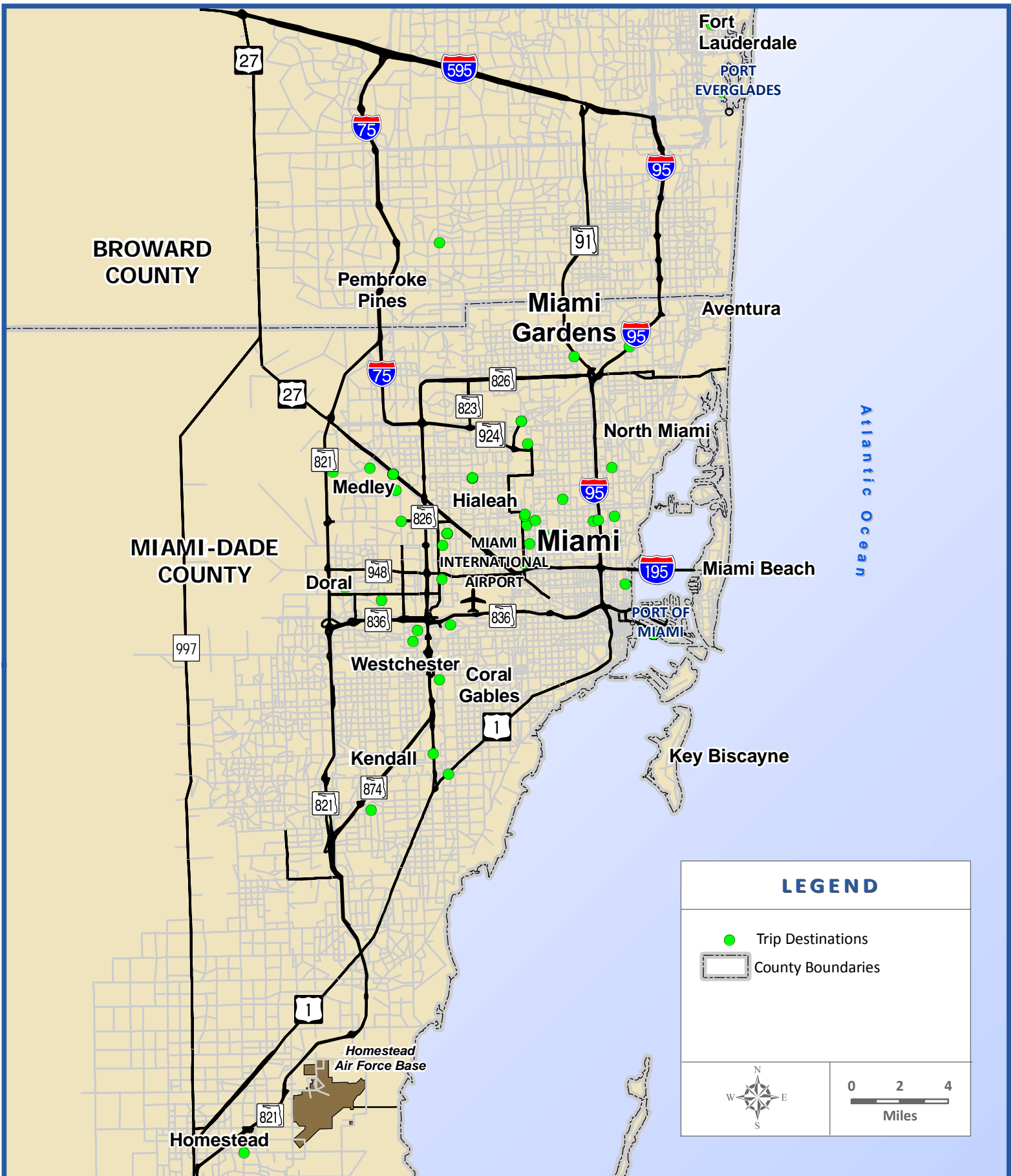


FIGURE 15: PORT OF MIAMI - TRUCK SURVEY DESTINATIONS
Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

5.3.2 Port Everglades

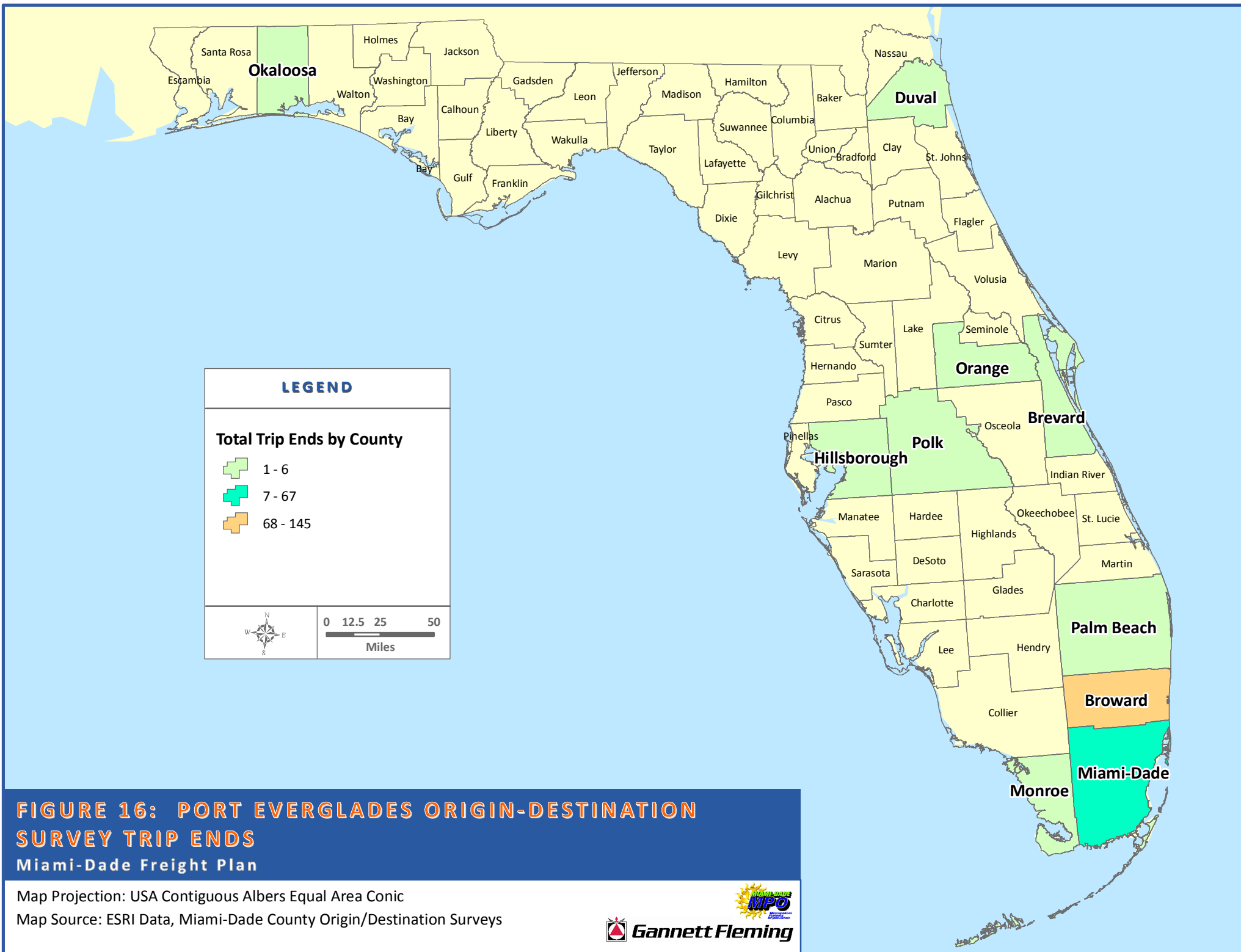
One hundred twenty surveys were completed at Port Everglades in Broward County. These surveys are included as part of the Miami-Dade Freight Plan because of the extensive movement of goods between the two counties. Of all trucks surveyed at Port Everglades 57 percent originated from or were destined for locations in Miami-Dade County.

The surveys show that Port Everglades has a wider geographic reach than the Port of Miami. Though most of the surveys were of drivers with at least one stop in Miami-Dade County, about 20 percent of drivers had origins or destinations outside the two counties. Other major points to and from Port Everglades include the FEC in Broward County, Ft. Lauderdale, West Palm Beach, and Jacksonville, with others scattered around Florida and other east coast states.

The bulk of those trucks surveyed carried containers (60 percent), but unlike the Port of Miami, Port Everglades also processes waterborne bulk shipments. As a result, all non-containerized commodities must be trucked to and from Miami-Dade County. These trucks readily access the port via Eller Drive and I-595.

Just like the Port of Miami, most trucks moving into and out of Port Everglades also use I-95. Nearly two-thirds of the trucks into or out of the port use I-95 for at least one leg of their trip. The section of I-595 between the port and I-75 provides critical access to I-95, Florida's Turnpike, and I-75.

Figure 16 shows the trip ends of the Port Everglades survey. The survey was conducted as part of a separate study in Broward County and made available for this freight plan. This survey followed a different methodology with less specific locational data collected and exclusively surveyed trucks exiting the port. Therefore, it is portrayed at a county level for the state compared to the specific point data for the other surveys.



5.3.3 Intersection of 67th Ave and 22nd St. and Intersection of Perimeter Road and NW 22nd St.

These two survey locations were chosen to provide insight into the movement of trucks to and from Miami International Airport (MIA) and their corresponding trip end. A total of 86 surveys were conducted at these locations with most of the trucks surveyed (73 percent) traveling between points at MIA and Doral, Hialeah, or Medley.

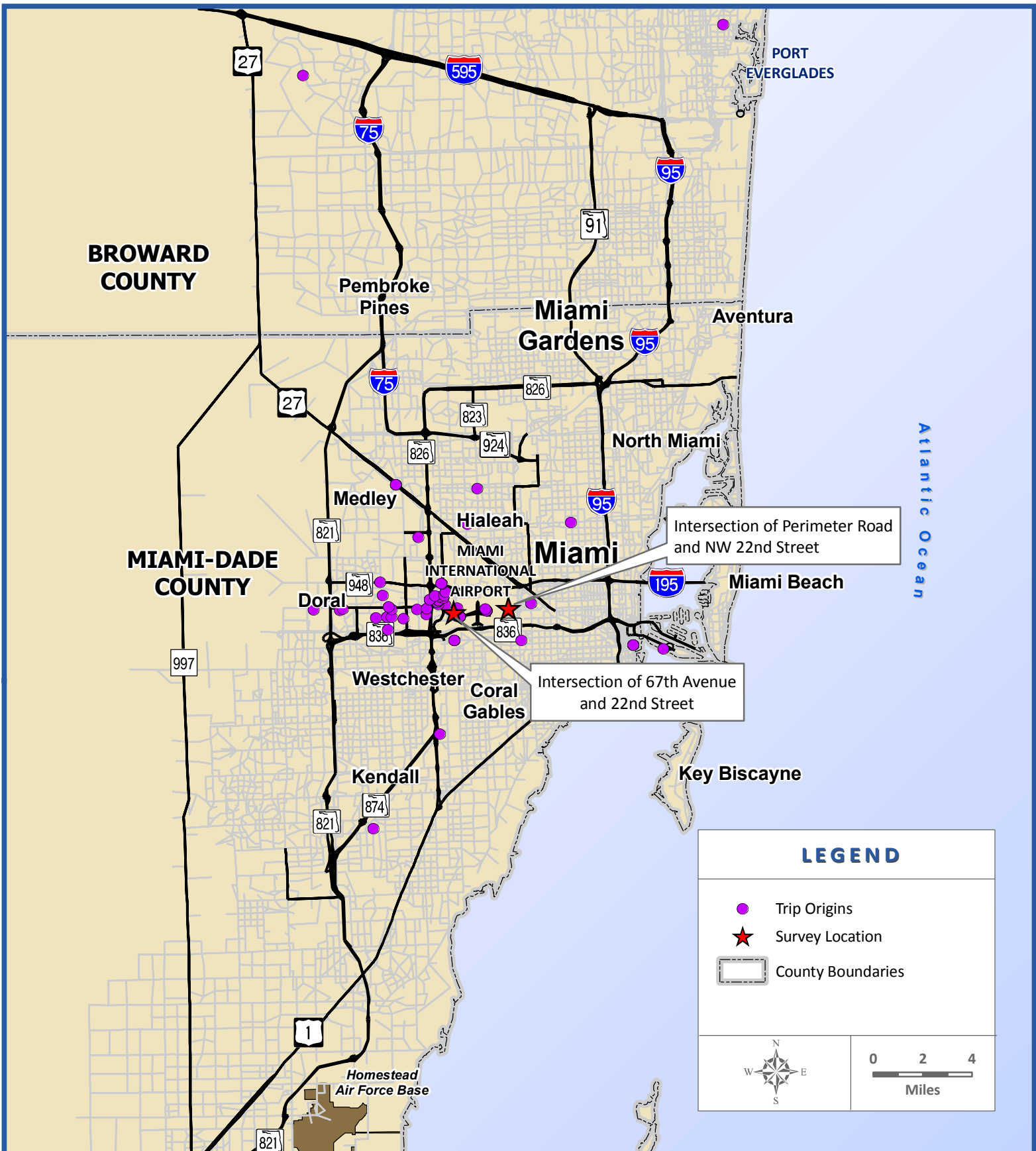
Only two of the 86 trucks surveyed originated outside the county. Just nine trucks had destinations outside the county. This underscores the close ties between importers/exporters within Doral, Hialeah, and Medley, and the international carriers at the airport.

The trucks primarily utilize SR 826 (Palmetto Expressway) and SR 836 (Dolphin Expressway) using local roads such as Perimeter Road, 25th St, and 67th Avenue for direct access from/to their origins/destination.

5.3.4 Intersection of 79th Ave and NW South River Drive

This location was chosen to understand the truck traffic to and from the Medley area. Of the 172 surveys completed at this location, 74 percent were local (within Miami-Dade County) moving a variety of commodity types, from cement to flowers. Forty-eight percent originated from or were destined for Medley, Hialeah, or Doral and 18 percent were from/to Miami or the POM.

Most truck traffic at this location uses Okeechobee Road for part of their trips to access Medley or other regional roadways. Only 16 percent of those surveyed reported using interstates or the turnpike while 84 percent reported using state or local roadways (including Okeechobee Road).

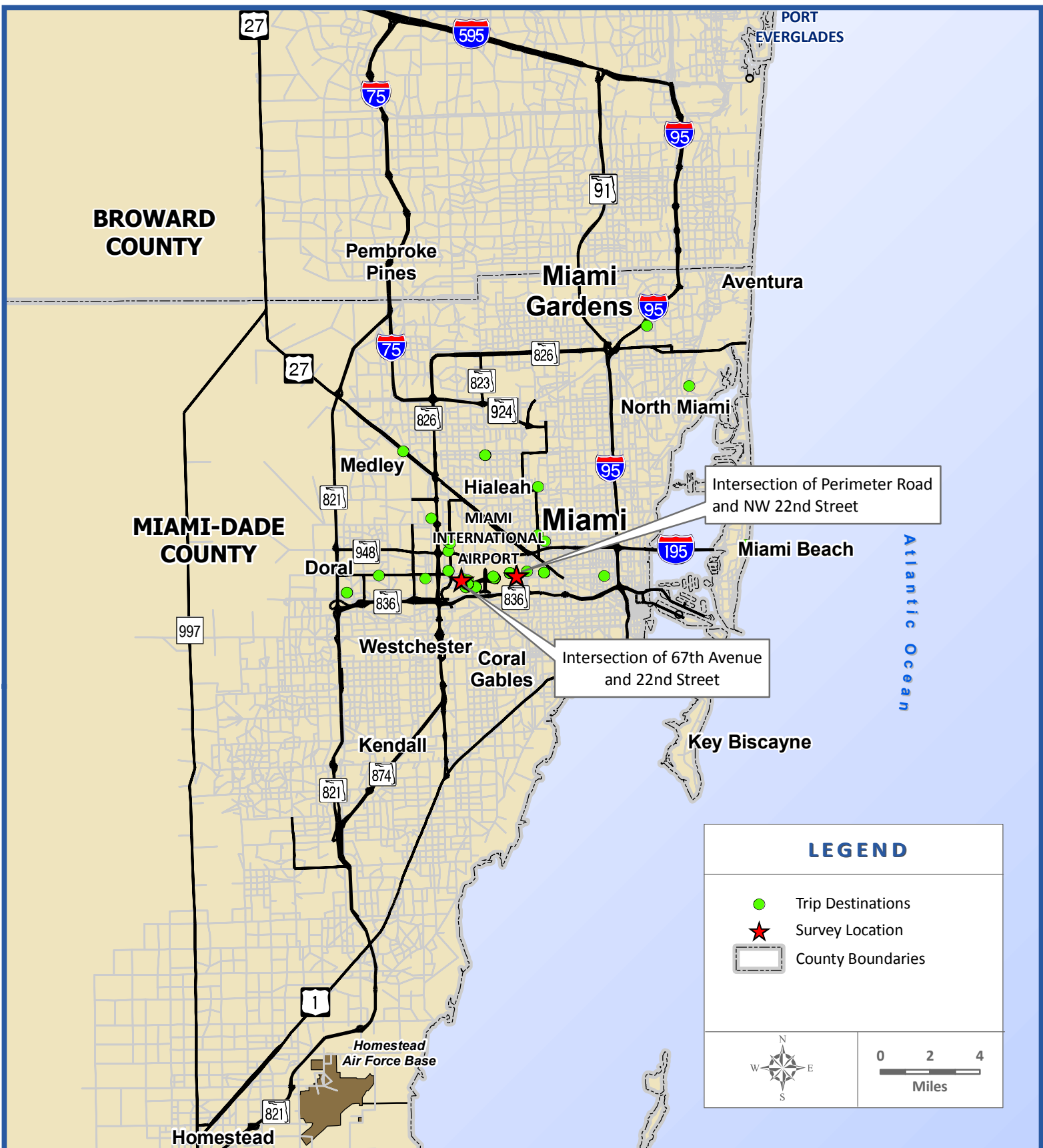


**FIGURE 17: INTERSECTION OF 67TH AVENUE AND 22ND STREET AND
INTERSECTION OF PERIMETER ROAD AND NW 22ND STREET -
TRUCK SURVEY ORIGINS**

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey



**FIGURE 18: INTERSECTION OF 67TH AVENUE AND 22ND STREET AND
INTERSECTION OF PERIMETER ROAD AND NW 22ND STREET -
TRUCK SURVEY DESTINATIONS**

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey



Gannett Fleming



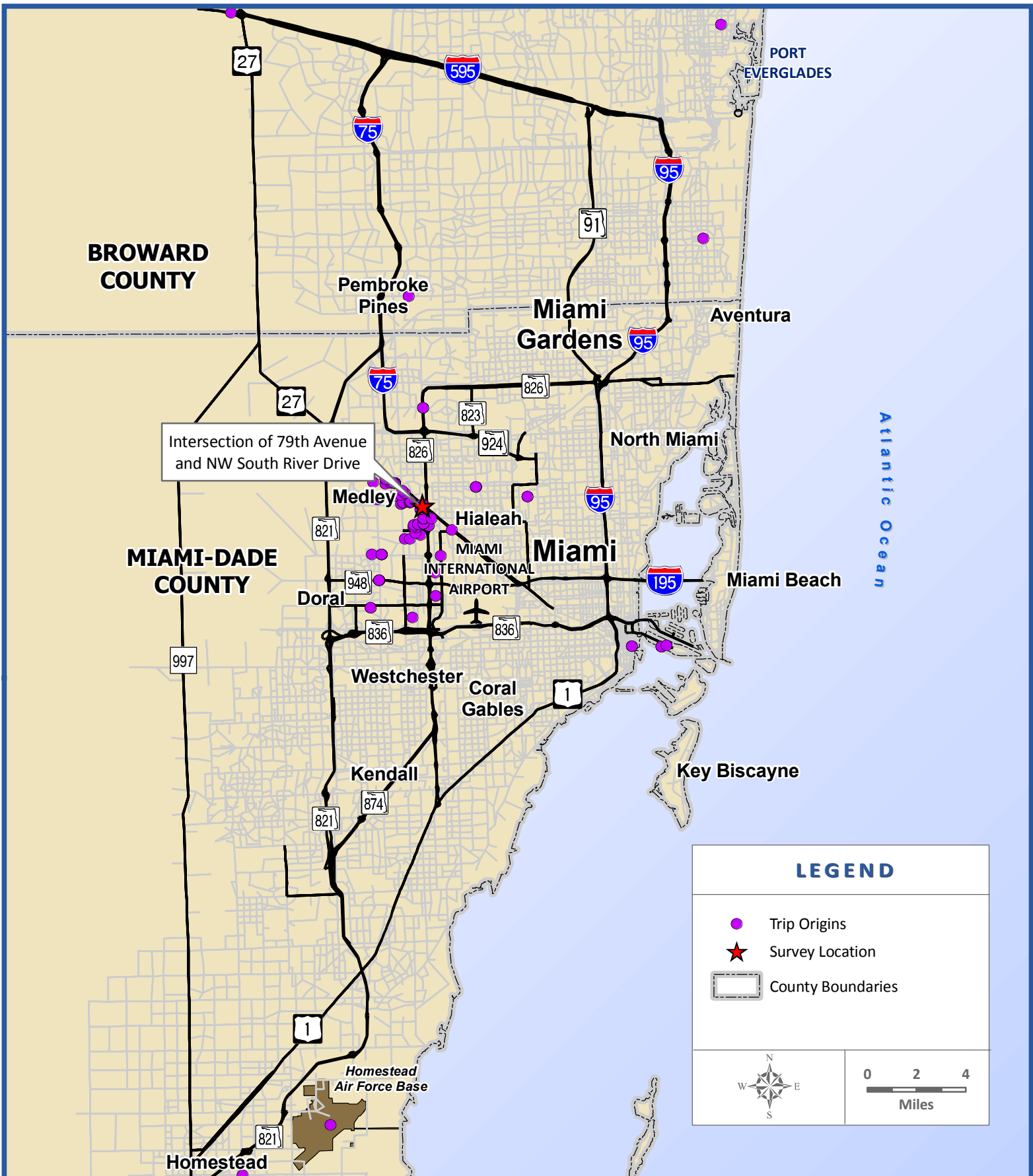


FIGURE 19: INTERSECTION OF 79TH AVENUE AND NW SOUTH RIVER DRIVE - TRUCK SURVEY ORIGINS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

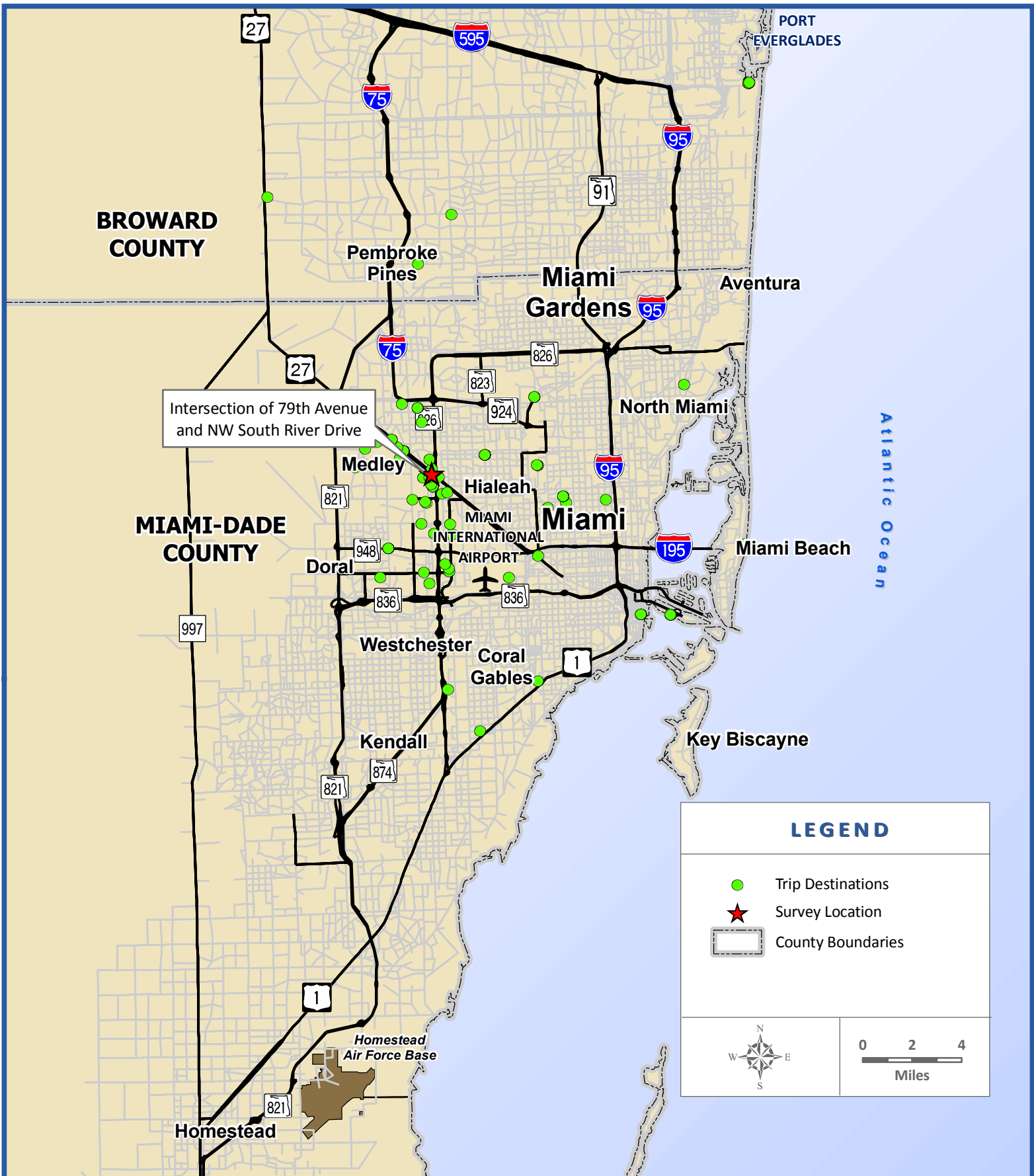


FIGURE 20: INTERSECTION OF 79TH AVENUE AND NW SOUTH RIVER DRIVE - TRUCK SURVEY DESTINATIONS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

5.3.5 Interchange of Okeechobee and SB exit of the HEFT

A total of 302 surveys were taken on southbound exit 35 of the Homestead Extension of Florida's Turnpike (HEFT) at Okeechobee Road. Because of the interregional nature of the Turnpike, many trucks originated/terminated at locations outside of Miami-Dade County (56 percent). Of those surveyed 39 percent were hauling rock or other building materials from quarries, cement plants, or manufacturers of precast goods to destinations outside the County.

Because of the location of the survey, 94 percent of all respondents said that their primary routes were the Turnpike or Okeechobee Road.

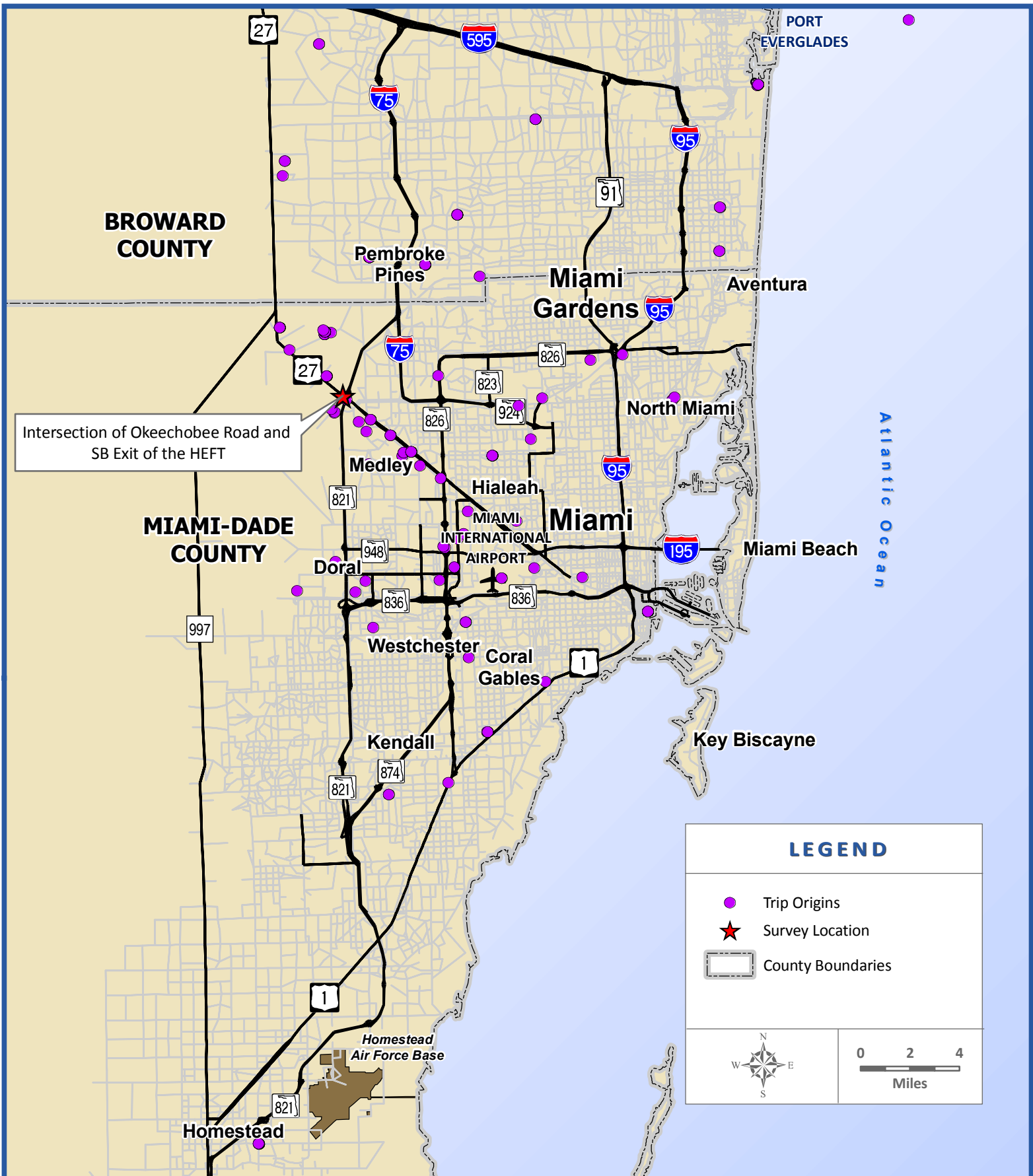


FIGURE 21: INTERSECTION OF OKEECHOBEE ROAD AND SB EXIT OF THE HEFT - TRUCK SURVEY ORIGINS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

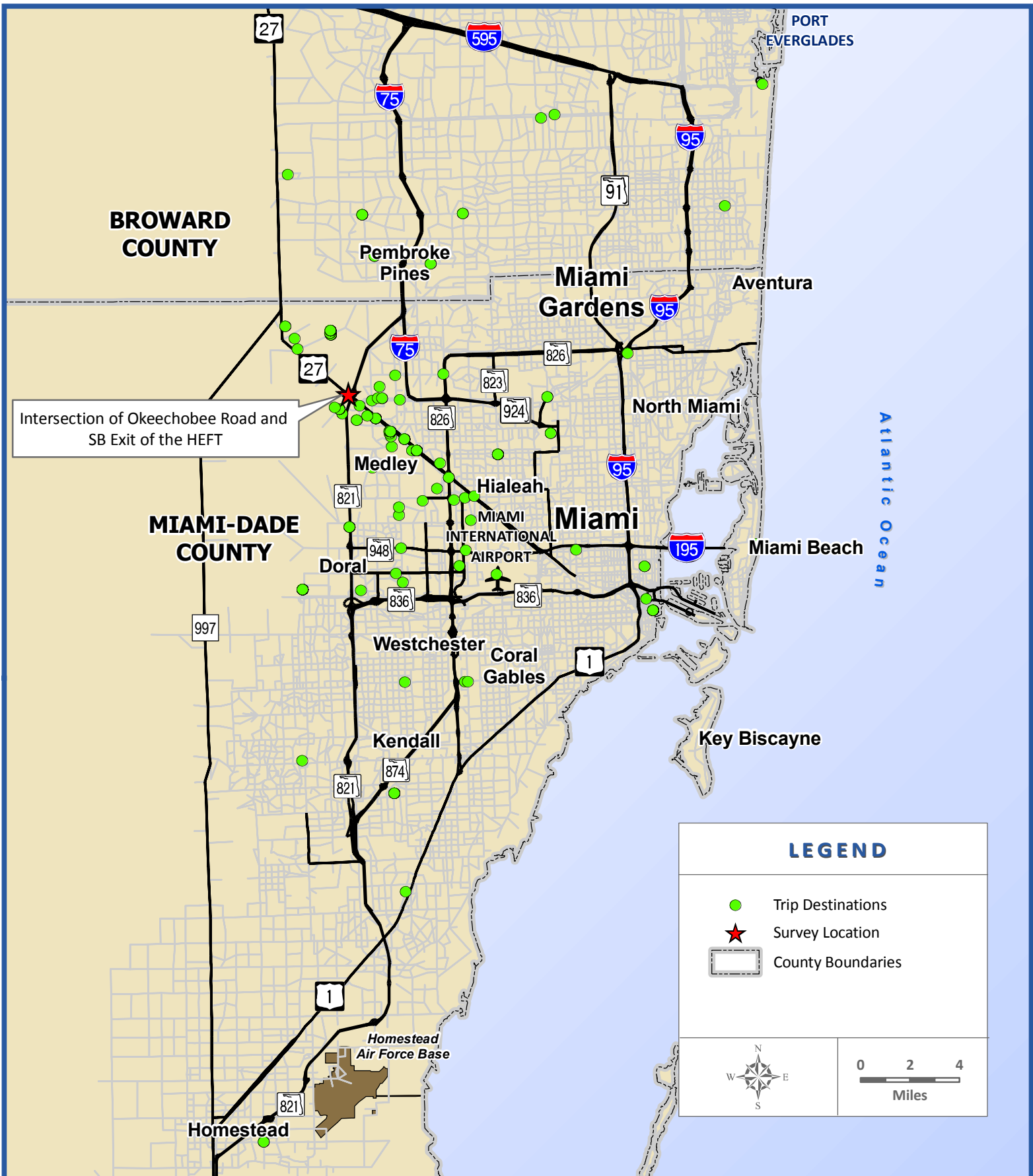


FIGURE 22: INTERSECTION OF OKEECHOBEE ROAD AND SB EXIT OF THE HEFT - TRUCK SURVEY DESTINATIONS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, Miami-Dade Freight Plan Origin-Destination Survey

5.4 Primary Routes from Survey Locations

Each driver surveyed was asked their intended route to determine the travel patterns to and from each survey location. The following are the primary routes by survey location.

Table 8: Primary Routes of Surveyed Drivers

Primary Routes of Surveyed Drivers	
Port of Miami	Okeechobee Rd
	Dolphin Expressway
	I-95
	Palmetto Expressway
Port Everglades	I-95
	Palmetto Expressway
	I-75
	I-595
Intersection of 67th Ave and 22nd St.	Palmetto Expressway
	Dolphin Expressway
	25th Street
	72nd Ave
Intersection of 79th Ave and NW South River Drive	S. River Drive
	Okeechobee Rd
	Palmetto Expressway
	Dolphin Expressway
Interchange of Okeechobee and SB exit of the HEFT	Florida's Turnpike
	Okeechobee Rd
	Palmetto Expressway
	I-75
Intersection of Perimeter Road and NW 22nd St.	I-95
	Palmetto Expressway
	Dolphin Expressway
	Perimeter Road

6 Miami-Dade County Freight System

The Miami-Dade Freight system is centered in an east-west orientation across the central part of the County. The network of highways, rail, warehouses, air freight, and water terminals provide both domestic and international connections via all modes.

Because of the high concentration of industrial and freight logistics related businesses, the County's freight infrastructure is essential to the economy of the area. Roadways are the primary means of moving goods and are the critical links between freight hubs, consumers, and other freight infrastructure within the County and beyond.

6.1 Freight Generators

Nearly all businesses in Miami-Dade County require freight movement, whether to deliver supplies, consumer goods, or goods for warehousing and distribution activities. Major generators tend to be clusters of freight related industries or are very large facilities (such as port or rail terminals) that generate movements in large quantities. Understanding where the generators are and the connections between them provide insight into how, why, and when goods move throughout the County. Generators in Miami-Dade County follow these patterns.

There are seven major generators in Miami-Dade County which include:

- Medley
- Doral Warehouse District
- Miami International Airport
- Port of Miami
- FEC Intermodal Facility
- Rock Quarries in unincorporated Miami-Dade County
- Port of the Miami River

BROWARD COUNTY

MIAMI-DADE COUNTY

PORT
EVERGLADES

Pembroke
Pines

Miami
Gardens

Aventura

North Miami

Atlantic Ocean

Medley

Hialeah

Miami

Miami Beach

Doral

MIAMI
INTERNATIONAL
AIRPORT

Westchester

Coral
Gables





Key Biscayne

Kendall

Homestead
Air Force Base

Homestead

LEGEND

-  Major Freight Generators
-  Truck Route System
-  Freight Rail Lines
-  County Boundaries



0 2 4
Miles

FIGURE 23: FREIGHT INFRASTRUCTURE MAP
Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, and Corradino Group Truck Route System

 **Gannett Fleming**



6.1.1 Medley

Located 10 miles northwest of Downtown Miami, the Medley area is a primary freight generator within the region. A high concentration of warehouses and distribution centers make Medley an important origin and destination for regional goods and a key part of the County economy. The town has proportionately few residents compared to large number of freight related businesses.

Medley's freight infrastructure is essential to the economy of the area. Roadways are the primary means of moving goods and are the critical links between Medley, consumers, and other freight infrastructure within the County and beyond.

6.1.2 Doral Industrial Center

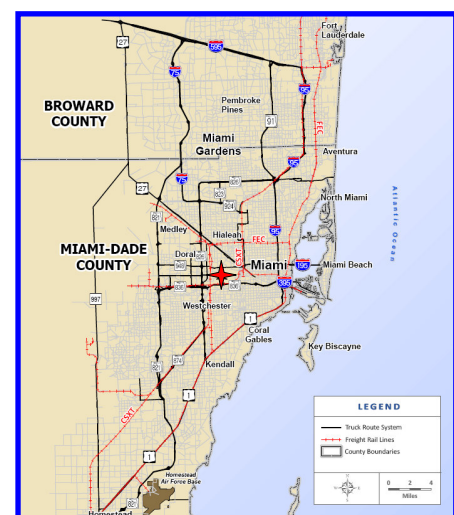
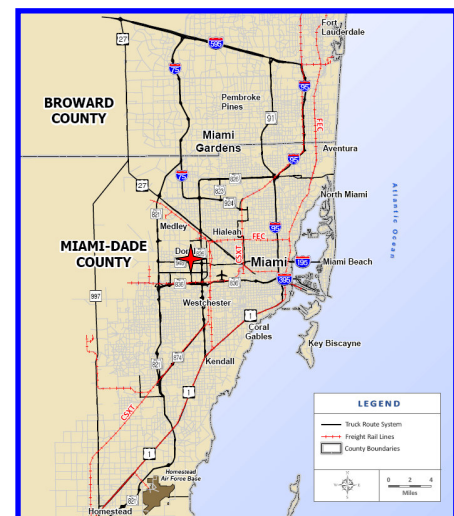
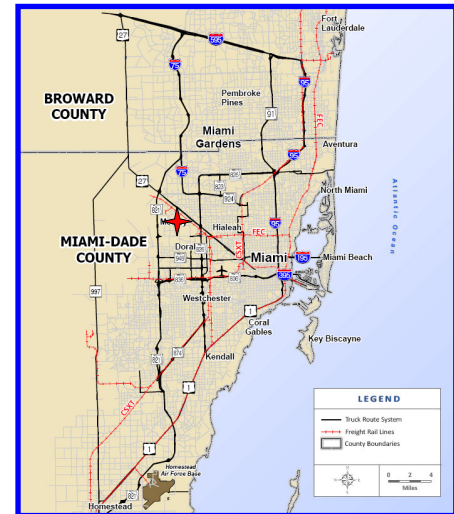
The City of Doral is located west of the Miami International Airport and south of Medley. Doral has a land area of 15 square miles and is primarily characterized by its airport cargo warehousing and processing for importers and exporters.

Doral has a large number of freight forwarders that deal exclusively with international cargo. Because of its proximity to MIA and the Port of Miami, truck movements contribute to daily congestion in the city.

6.1.3 Miami International Airport (MIA)

The Miami International Airport (as previously described) handles a large amount of international air shipments and is closely tied to the import/export and freight forwarder businesses in the Doral area. The airport generates thousands of trucks per day between the two generators.

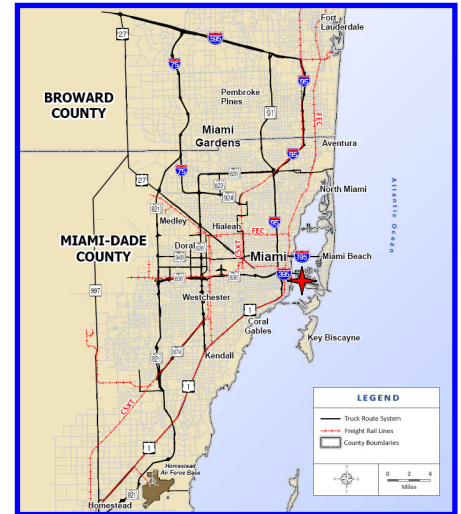
The airport's proximity to several regional truck routes provides good access to logistics and distribution facilities in Doral and Medley.



6.1.4 Port of Miami

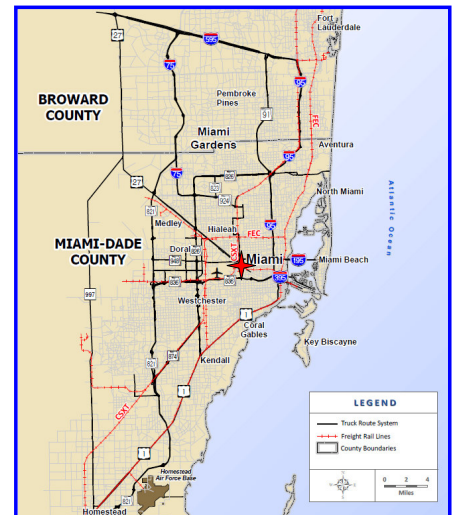
The Port of Miami is a large generator of truck traffic because of a limited number of rail movements. Its proximity to downtown Miami and the need for trucks to utilize city streets, and creates circulation problems for cars and trucks along those routes connecting the port with the regional highway system.

The Port of Miami currently generates approximately 3,200 trucks daily on a given weekday. If freight projections are realized, by 2035 this number could increase 30 percent.



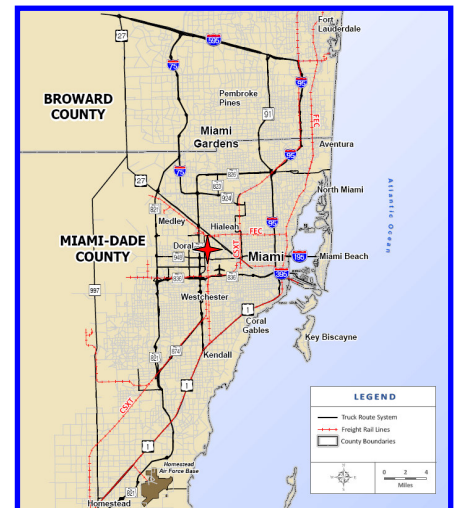
6.1.5 Port of Miami River

The Port of Miami River is a 5 mile stretch of the river that extends from the Miami Canal to Biscayne Bay. The 15 foot depth (recently completed in October 2008) requires shallow draft vessels that serve 26 terminals which move approximately 1 million tons of goods annually to and from areas such as Haiti, The Bahamas and Caribbean nations. The cargo consists of dry foodstuffs such as beans and rice, canned goods, clothing, household goods and appliances, and used vehicles.



6.1.6 FEC Intermodal Facility

The Florida East Coast Railway (FEC) intermodal facility is located in unincorporated Miami-Dade County to the northwest of Miami International Airport. The facility provides container operations and transloading for the Port of Miami and rock quarries to the northwest. Rock trains originate at the FEC yard at Medley, in unincorporated Miami-Dade and Broward Counties west of Hialeah. Container movements require truck drayage from the port to the facility.



- I-75
- I-95
- US 1 (S. Dixie Highway)
- SR 836 (Dolphin Expressway)
- US 27/SR 25 (Okeechobee Road)
- Krome Avenue
- Port of Miami Access Routes
- Florida's Turnpike (HEFT and SR 821)
- NW 87th Ave
- NW 25th Street
- SR 874 (Shula Expressway)
- Gratigny Expressway
- NW/NE 163/167th Street
- NW 57th Ave
- NW 72nd Ave
- SR 112
- NW 36th Street
- E Hialeah Industrial Railroad Corridor
- Tamiami Industrial Corridor
- Bird Road Industrial Corridor

Traffic is expected to increase throughout the area on all roadways in proportion to total traffic growth. Most roadways have less than 10 percent truck traffic. The table below shows the average daily traffic, average daily truck traffic, and percent truck traffic on each roadway.

Table 9: Freight Highway Traffic/Truck Volumes

	2007 AADT	2007 AADTT	% Trucks
I-75	148,500	9,060	6%
I-95	240,000	11,040	5%
US 1 (S. Dixie Highway)	35,000	1,050	3%
SR 836 (Dolphin Expressway)	207,000	5,170	3%
US 27/SR 25 (Okeechobee Road)	41,500	7,880	19%
Krome Avenue	18,000	2,610	15%
Port of Miami Access Routes	13,500	1,850	14%
Florida's Turnpike (HEFT and SR 821)	102,000	6,120	6%
NW 87th Ave	62,500	4,940	8%
NW 25th Street	47,500	9,030	19%
SR 874 (Shula Expressway)	119,500	7,300	6%
Gratigny Expressway	38,500	3,270	9%
NW/NE 163/167th Street	147,000	9,700	7%
NW 57th Ave	35,000	840	2%
NW 72nd Ave	31,500	3,590	11%
SR 112	85,000	4,810	6%
NW 36th Street	198,500	13,100	7%
E Hialeah Industrial Railroad Corridor	38,500	4,870	13%
Tamiami Industrial Corridor	122,500	7,580	6%
Bird Road Industrial Corridor	47,000	2,570	5%

The relatively small percentage of trucks on the roadways is a reminder that congestion impacts goods movement, as opposed to the conventional wisdom that trucks are the primary impediment to the flow of traffic.

6.3 Railroads

There are two operating freight railroads in the County: CSX and the Florida East Coast Railway (FEC). Each has unique characteristics that directly impact the movement of freight throughout the county.

CSX

Headquartered in Jacksonville, CSX is the largest rail freight carrier in Florida, but its network is limited in Miami-Dade County. The carrier uses FEC trackage rights to serve the FEC's Hialeah Yard and to access its own network in the southern end of the County to Homestead.

The State of Florida owns a 70-mile segment of rail between West Palm Beach and Miami on which CSX operates. A recent addition of a second track to support a growing commuter rail operation has been completed and 40 commuter trains operate each weekday between West Palm Beach and Miami in addition to Amtrak's four daily passenger trains.

While the majority of trains on this segment are passenger trains, CSXT operates freight trains over this line and owns and operates several freight branch lines in the Miami area that provide rail freight service to its South Florida customers.

Increasing pressure from commuter needs along this segment create direct conflicts between rail freight movements and the traveling public. As commuter operations increase between West Palm Beach and Miami, CSX freight capacity is expected to decrease proportionally.

FEC

The FEC operates a freight only rail operation focusing on four principal markets in South Florida:

1. Intermodal containers and trailers to serve local markets and the Port of Miami.
2. Rock and stone used for construction from quarries in the County to concrete plants and construction depots along the east coast of the state.
3. Automobiles to south Florida for local sale or for export.
4. Limited carload freight service to local customer warehousing facilities.

The railroad system moves approximately 190,000 carloads annually with 25 trains traveling daily along its line between Miami and Jacksonville.

A study to determine the potential for passenger operations on the FEC line is underway, where excess line capacity would be used in an effort to ease congestion on the highway system by diverting passenger traffic to rail between Ft. Lauderdale and Miami. A change in passenger/freight operations could force the scheduling of freight traffic during overnight hours as is seen in the Northeast US. Any changes in operations would be longer term, as passenger alternatives are currently being identified.

6.4 Water Ports

There are two water modes within the County—deep water and river shipping. The capacity of the waterways is important, but there are few issues demanding attention from a regional transportation planning perspective. The impact of the water modes on the inland transportation system, however, is a significant issue which must be addressed.

Miami River Shipping

The Miami River serves as an artery for both passenger and freight vessels. The five and a half mile long river serves 24 certified international shipping terminals¹ from Biscayne Bay to NW 37th Avenue near the Miami International Airport. There is little public oversight of the operations of the port, however, there is a regulatory presence for the environmental integrity of each of the privately operated terminals and boat docks. The river handles vessels with up to a 15 foot draft.

Shipping on the Miami River consists of bulk materials such as scrap metal and stone or other bulk products. This trend is expected to continue until 2035.

Port of Miami

The Port of Miami is exclusively a container terminal owned by Miami-Dade County and operated by several private terminal companies. Although there is a rail spur (owned by the FEC) to the port, the bridge into the port is in need of repair or replacement and there is currently no direct rail service. The port is served exclusively by trucks which must navigate through downtown Miami.

6.5 Airport

Approximately 70 percent of all flights in and out of Miami International Airport carry freight. The airport ranks number one in the country in the movement of international goods. This makes the airport a critical component of the freight infrastructure not just as a generator,

¹ The Miami River Commission



but as a key hub of freight activity. The airport is the only air freight generator in the County.

MIA is served exclusively by truck and most of its cargo originates from, or is destined for, Doral or Medley just west of the airport. Roadway connections are congested in the vicinity of the airport including NW 36th St., the Dolphin Expressway (SR 836), and the Palmetto Expressway (SR 826).

7 Regional Freight Improvements

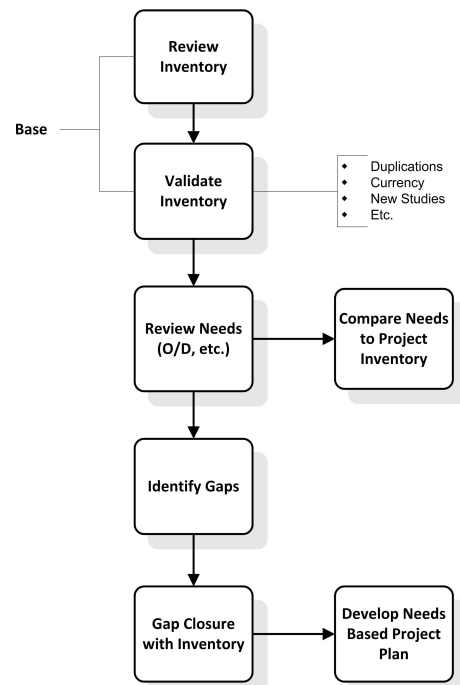
This section identifies projects that would benefit freight transportation in Miami-Dade County. The Freight Plan helps to “inform” the update of the MPO Long Range Transportation Plan and programming of projects through the Transportation Improvement Program (TIP). As such, these projects will be considered in the next update to the County LRTP. These projects have been placed in prioritized categories by the FTAC as they relate to freight movements in Miami-Dade County.

7.1 Project Identification

The accompanying flow-chart depicts the process for identifying freight plan projects. The first step was to establish an inventory of projects drawing from existing plans and studies. All projects were verified and updated in terms of their currency, removal of duplicate entries, etc. The resultant validated inventory of projects was compared to other improvement needs which were assessed through:

- Analysis of historic commodity flow data and the forecast through 2035
- A Truck Origin and Destination Analysis conducted as part of the Freight Plan development
- Needs identified by Stakeholders through the Medley Sub Area Study
- Review of the regional travel demand forecast to help identify choke points and areas of congestion
- Review of existing studies and plans for regional consistency
- Input from FTAC based on their review of these various sources and their review of the validated project inventory.

Miami-Dade County Freight Project Selection Process



The comparison of the inventory with the above data sources helped to surface various gaps. Gap closure occurred by identifying some candidate projects that surfaced through this analysis. The FTAC established a basic prioritization approach that categorized all projects into three priority categories. The recommended projects have also been developed consistent with Freight Plan and LRTP goals and objectives.

7.2 Priority Freight Investments

Based on the criteria above, the list of potential projects were vetted and prioritized. The table below shows the recommendations for the County’s priority freight investments.



Table 10: Freight Plan Priority Freight Investments

Freight Plan Project Recommendations

New Project	Priority	Project	Details
	1	Downtown/Port Access	Construct I-95 NB Slip Ramp on NW 6 th St. Implement NE/NW 5 th /6 th Sts./Port Blvd. improvements for access between POM and I-95 slip ramp. Improve intersections to accommodate truck movements in existing NW 1 st /Miami Ave./NE/NW 5 th /6 th St corridor
	1	I-95 (Broward County Line to Downtown) Managed Lanes Program	Allow for trucks on managed lanes Monitoring of traffic conditions
	1	SR 836/I-395/MacArthur Cswy. (NW 137 Ave. to Proposed Port of Miami Tunnel)	Elevated express lanes Implementation of E-W Rail Line to reduce passenger traffic 836-112 interconnector implementation (part of MIC project)
	1	NW 25 St. (89th Court to HEFT)	Traffic signal improvements Improve intersections to accommodate truck movements and provide direct connection to HEFT
	1	NW 87 Ave. (SR 836 to NW 58 St.)	Improve SR 836/NW 12 St./NW 87 Interconnections including the 12th Street grade separation over NW 87th. Improve intersections to accommodate truck movements
	1	NW 119 St. (Gratigny to I-95)	Develop E-W expressway connector mid-north County
<input checked="" type="checkbox"/>	1	Integration of Truck Route System and the regional ITS network	Implementation of ITS improvements specifically geared toward trucks will aid the movement of all traffic as this results in more efficient truck movements.
<input checked="" type="checkbox"/>	1	Medley Freight Hub Streetlight Improvements	Add street lights to local roads in Medley to increase safety and help to facilitate expanded hours of operations.
<input checked="" type="checkbox"/>	1	Medley Local Roadway Improvement Program	Improve the local infrastructure to and from businesses in the Medley area--Pavement, turning radii. 1.5 miles of roadway.



Freight Plan Project Recommendations

New Project	Priority	Project	Details
<input checked="" type="checkbox"/>	1	Okeechobee Road Operations/Access Improvement Project	Signal timing improvements, improve access, and improve signing to provide better flow along Okeechobee and access from side roads and access by trucks to and from Medley (NW 138th St to 79th Ave)
	1	Port of Miami Infrastructure (Including all access roads in/through downtown Miami)	Expand shipping/freight industry hours of operations Port Tunnel Expand SB left-turn lane on Biscayne Boulevard for trucks entering the POM.
<input checked="" type="checkbox"/>	1	Truck Parking Improvement	Provide a location in the area of Okeechobee and the HEFT for long-term truck parking and staging. Area should provide the amenities necessary for drivers to serve Miami-Dade County while meeting their Federal Hours of Service requirements. Develop truck staging area near NW 36th Street and NW 37th Ave for the Port of Miami River.
	1	Way-Finding Sign Improvement Program	Improve county-wide for movements to/from regional freight hubs
	1	Freight Rail Safety and Security	Projects that enhance safety and security of freight transportation, including grade crossing improvements, grade separation projects, signal upgrades, etc.
	1	Short Sea Shipping Pilot Project	Conduct a Pilot Project of short sea shipping to evaluate if containers could be transported effectively from the POM to the Port of Miami River using shallow draft vessels to relieve congestion at the POM and reduce truck traffic.
	1	NW 25 St Viaduct	Construction is currently underway on the East Segment from SR 826 to NW 67th Avenue. Includes reconstruction/widening of NW 25th Street and the construction of a viaduct from just east of SR 826 to NW 68th Ave. Funding for phase II of the 25th Street Viaduct is not currently in FDOT's 5-Year work program.

Freight Plan Project Recommendations

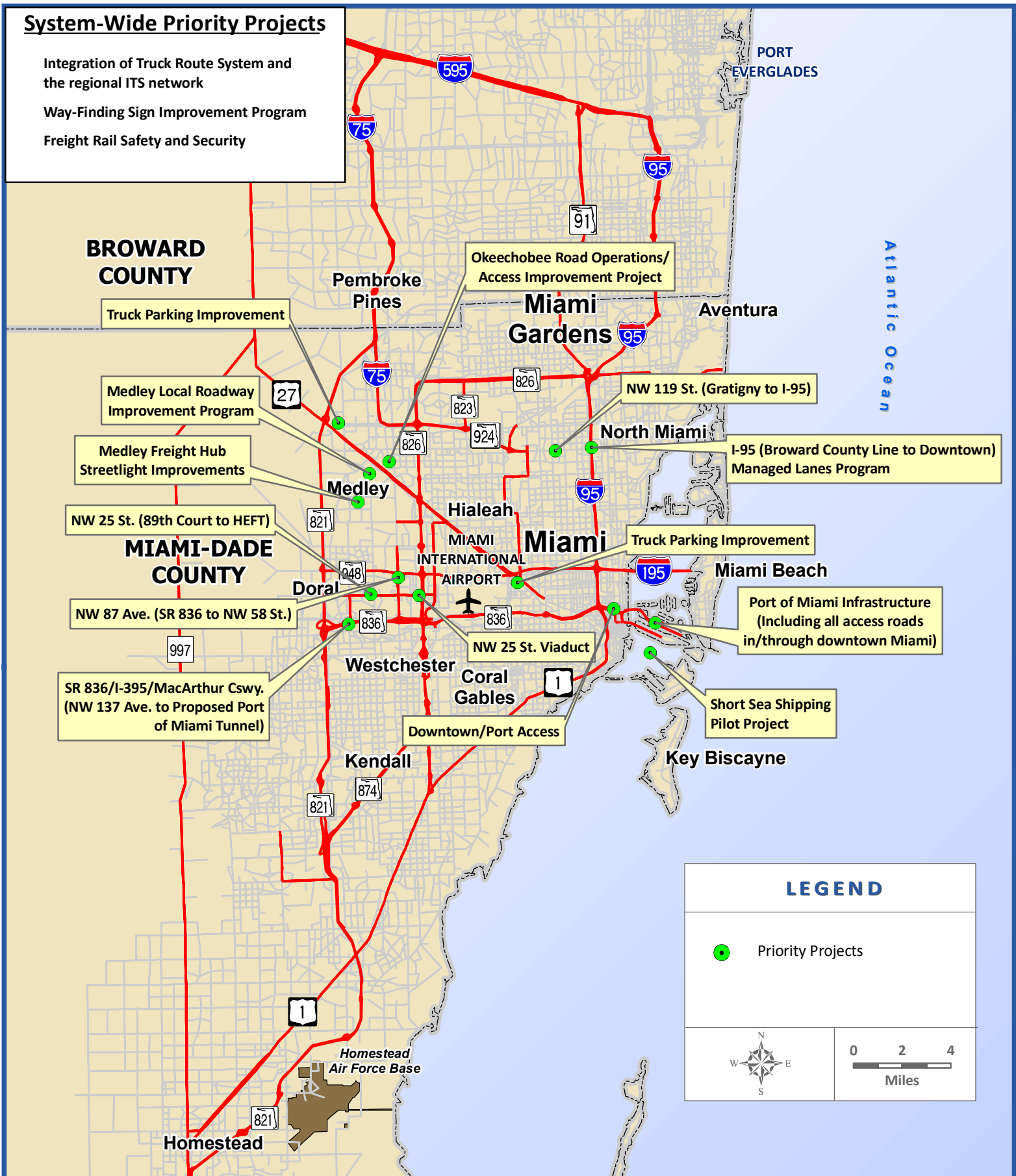
New Project	Priority	Project	Details
	2	NW 12 St/NW 87 Ave Signal Improvements	Signal Improvements and provide grade separation on NW 12th St between NW 87th Ave and SR 836.
	2	Port of Miami Operations	PierPass Feasibility Study to examine the impact of implementing congestion mitigation incentives for off-peak operations.
	2	I-95 Expanded use of HOT lanes	Promote truck access to the current HOT lanes
	2	SR 826/Palmetto interchange improvements (btwn SR 874 and Okeechobee)	Improvements to the mainline have increased traffic flow; interchanges are in need of upgrading to keep pace
	2	NW 36 St/NW 72 Ave Signal Improvements	Signal Improvements
	2	NW 36 St/NW 87 Ave Signal Improvements	Signal Improvements
	2	NW 41 St/NW 107 Ave Signal Improvements	Signal Improvements
☒	2	NW 87th Ave Extension	Extend NW 87th Ave to connect the freight hubs of Doral and Medley, thereby reducing the truck demand on the Palmetto Expressway. 4 lanes from NW 58th St to 95th St
	2	NW 87 Ave. (NW 36 St to NW 58 St)	Expand from 4 to 6 lanes
	2	Freight Rail Landside Access	Projects that enhance landside access, including intermodal ramps and truck access to railroad terminals.
	2	Freight Rail Line Upgrade and Extension	Includes double track improvements on the FEC and projects that increase the capacity of the freight rail network, including double-track projects, line extensions, and upgrades to accommodate 286k railcars, etc.
	2	Freight Rail Maintenance and Repair	Projects associated with line and structure maintenance, including bridge rehabilitation, track and tie replacement, resurfacing, and repairs to signs and signals. Repair FEC rail bridge into the Port of Miami.
☒	2	Improvement of high risk/highly congested rail crossings	Reduce congestion and noise, and improve safety

Freight Plan Project Recommendations

New Project	Priority	Project	Details
<input checked="" type="checkbox"/>	2	Medley Bridge/Canal Improvement Program	Improve the connections between Okeechobee Road and Medley through a combination of bridge widening and canal improvements. (NW 121 Way, NW 116 Way, NW 105 Way, NW 79th Ave)
<input checked="" type="checkbox"/>	2	Medley Gateway Establishment	Provide business and wayfinding signing, including a Medley area business directory
	2	Port of Miami Dredging Phase III	Complete site preparatory work for dredging project include the strengthening of the South Channel Cargo Wharf bulkhead, purchase two new Post-Panamax cranes, and deepen channel to 50'/52'
<input checked="" type="checkbox"/>	2	NW South River Drive Widening	Widen NW South River Drive to include shoulders and improved access management (btwn NW 107th Ave and NW 74th Ave)
	3	Krome Avenue	Widen to 4-lanes (SW 8th street to SE 1st Ave. (US1) in Florida City) Improve intersections to accommodate truck movements Implement Homestead bypass
<input checked="" type="checkbox"/>	3	SR 826/I-75 Interchange Improvements	Add additional capacity (additional lane) from NB 826 (Palmetto) to NB I-75
<input checked="" type="checkbox"/>	3	SR 826/SR 91/I-95 Interchange congestion improvements	Improve turning radius/speeds on ramp from NB SR 91 (Turnpike) to WB 826 (Palmetto)
	3	NW 107 Ave (btwn NW 41 St and NW 25 St)	Expand from 4 to 6 lanes
	3	Port of Miami-Cargo Yard Freight Accessibility Program	Site work, access road, paving and drainage, utility work, demolition of existing Shed G in R.O.W. and relocation to a new Warehouse (to be constructed) south of Shed E as part of the the freight accessibility program.
	3	Port of Miami-Bulkhead Restoration/Repair	Create a new Bulkhead (wharf 155-160) to protect and restore a dilapidated cargo area and maintain existing freight accessibility through: site work, infrastructure improvement, paving and drainage. Safety project to rehabilitate the bulkhead wall system and pavement of the South Cargo Wharf from approximately berths 165 to 177. Project includes: waterway infrastructure improvement, site work
	3	Port of Miami-Seaboard Marine Cargo Yard Improvements	Part of the agreement with Seaboard to improve the yard and to support their existing terminal operations at the port. Work to be done in 5 phases including apron and pavement enhancements and drainage improvements in this area. Apron work includes site preparation including excavation, placement of subgrade and lime rock base, and resurfacing to accommodate heavy crane loads.
	3	Port of Miami-Environmental improvements and Equipment Protection	Electrification of all gantry cranes for more sustainable operations. Project will increase freight movement efficiency and help reduce noise levels and air pollution. Project also includes cargo yard preparation for the arrival of two new Post-Panamax cranes to increase cargo throughput. Installation of new canopies at the cargo gates to prevent equipment weathering.

System-Wide Priority Projects

Integration of Truck Route System and the regional ITS network
Way-Finding Sign Improvement Program
Freight Rail Safety and Security



LEGEND

● Priority Projects



0 2 4
Miles

FIGURE 24: MIAMI-DADE FREIGHT PLAN PRIORITY PROJECTS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, and Corradino Group Truck Route System



Gannett Fleming



8 Plan Implementation

This section provides a succinct description of a recommended framework for the implementation of the Miami-Dade County Freight Plan. There are seven primary areas of attention for the effective implementation of this plan. Each is covered below.

8.1 General Roles & Responsibilities—FTAC and MPO

FTAC:

The primary responsibility for Freight Plan implementation rests with the FTAC. FTAC should establish a process for periodic review of the plan that aligns with the elements described in this section. FTAC should consider Freight Plan Implementation as a standing item for all of its meetings. This would provide an opportunity to review implementation progress as well as to identify actions and initiatives to advance the Plan's goals and objectives. FTAC will also carry out an important advisory role in assisting the MPO with the integration of the freight plan with updates of the MPO Long Range Transportation Plan. This is necessary to ensure a strong linkage between the two plans. The FTAC should make at least one status presentation on plan implementation annually to the MPO Board. This will help to keep freight issues and needs before the region's policy-makers.

MPO:

As noted the MPO is responsible for incorporating the freight plan with the Long Range Plan. The MPO is also responsible for evaluating Freight Plan projects as part of its development and update of the Transportation Improvement Program. The MPO should also integrate and routinely consider the Freight Plan in regular activities such as:

- Public involvement and communication
- Multi-modal corridor studies
- Air quality activities
- Integration with other committees and task forces in order to be systematic and consistent in its efforts.

8.2 Project Prioritization & Programming

The freight plan identifies possible project investments and a general categorization of priorities. This project inventory should be routinely considered as part of updating all MPO plans and programs. Any update of the TIP, for example, should consider this project inventory and efforts should be made to maximize investments in those projects that provide the greatest freight benefit. Some basic plan implementation measures should be established that demonstrate the number and dollar value of projects that make regional goods movement more effective and efficient.

Likewise, this plan should be used as a resource for considering the freight dimensions of **any** candidate project. Working with FDOT and others, the MPO should attempt to ensure that all projects (as applicable) consider freight at the planning, project development, design and construction phases as well as with maintenance and operations of the system.

8.3 Action Planning and Tracking

This plan's policy component is oriented around the eight goal areas and the supporting objectives for each goal. Policy plans and strategic plans become increasingly challenging as broad direction is translated into specific actions. This applies no less to this plan. The FTAC has acted on a set of goals and objectives that it believes provide high level direction for its activities as well as for the regional investment. The selection of specific actions and initiatives, however, for moving forward on objectives entails:

- The identification of lead and support organizations
- Scheduling
- Resources
- Commitment to move forward.

The more realistic approach is for FTAC to regularly identify a manageable set of actions or initiatives to address the various goals and objectives.

As such, it would not have been realistic for this plan to have included illustrative or recommended actions. Such plans often wither. The more realistic approach is for FTAC to regularly identify a manageable set of actions or initiatives to address the various goals and objectives. This may begin with only a few actions and initiatives, but will gain more momentum over time as success is realized through implementation. This process should have a wide range of partners including those organizations that are represented on FTAC and the various public modal agencies, municipalities and other stakeholders.

An action tracker should be maintained and updated on a quarterly basis which generally coincides with FTAC meetings. A basic format could be used such as the following:

FTAC Action Tracker

Goal/Objective:			
	Action or Initiative	Responsible Lead and Support Organizations	Status
			Benefits/Impacts
1			
2			
3			

The fourth column (Benefits/Impacts) would be strictly optional, but provides a means to briefly document the benefits of various actions and initiatives. In so doing this builds support momentum and is useful for plan monitoring as discussed in the next section.

8.4 Plan Monitoring and Performance Measures

8.4.1 Plan Monitoring—Goal Attainment

As noted above, the Plan's goals represent its overall policy direction. Efforts should be made to periodically evaluate progress in implementing the actions and initiatives that support advancing the goals and objectives. The action plan format, as recommended, can be rolled up on an annual basis in terms of an accomplishments report to the MPO. Plan monitoring is geared toward making sure the plan is implemented.

8.4.2 System Monitoring--Performance Measurement

System monitoring is geared toward evaluating how the plan (projects and policies) impacts system performance over time. As such, system monitoring for freight is a longer term endeavor, but is essential. It will be increasingly important in the years ahead, as freight traffic increases and as infrastructure ages and capacity becomes increasingly strained.

The FTAC and the MPO should settle on a few key freight system measures derived from this plan for which data is available, collected on a regular basis and reviewed in order to effectively evaluate system performance. Measures should be adopted that address areas such as:

- Freight mobility—access, V/C ratios on key freight corridors etc.
- Freight facilities—e.g., truck parking availability in relation to demand
- Other measures important to shippers and carriers such as system delay.

8.4.3 Communication—Freight Sector, MPO, Public

Freight planning has been encouraged since the passage of ISTEA in 1991, but has advanced slowly across the nation. One reason, among others, is the limited degree to which communication has occurred at every level. FTAC has a unique opportunity to work with the MPO, FDOT and others to communicate needs, the value of the industry, accomplishments, etc. This ability to “market”, oddly enough, is essential to the operation of the freight businesses, but the need is as great in terms of being advocates in a highly competitive public infrastructure investment process.

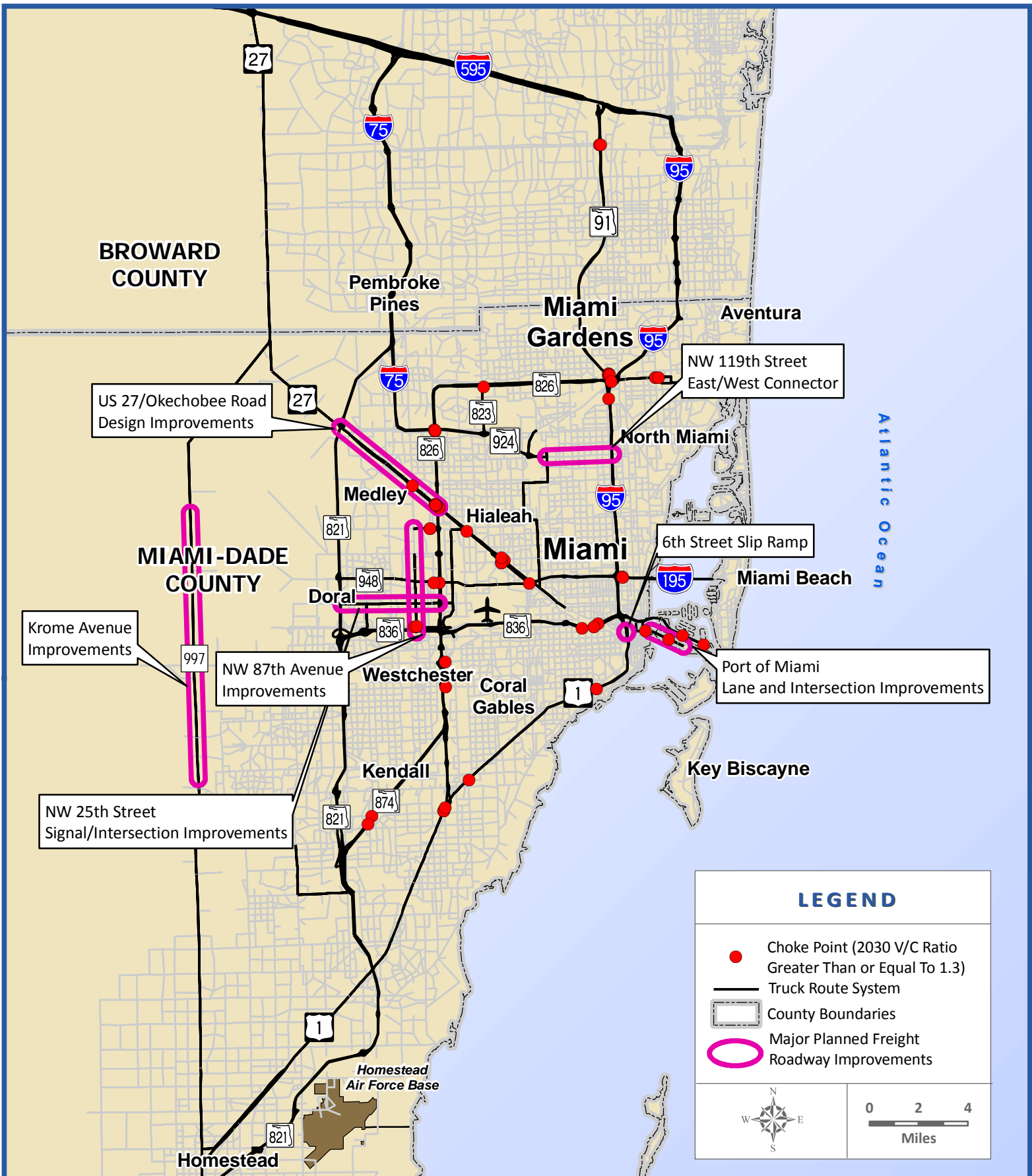
The Freight Plan should be communicated broadly as should its accomplishments on a regular basis. The FTAC should consider a subcommittee structure, including one that would focus on communication, education and public information.

8.4.4 Plan Updating

The freight plan is intended to be dynamic. It should be updated as conditions change in order to maximize its value for planning and decision making.



9 Appendices



APPENDIX 9.1: HIGHWAY CHOKES POINTS AND MAJOR EXISTING PLANNED PROJECTS

Miami-Dade Freight Plan

Map Projection: Florida Stateplane, East Zone; Datum NAD 1983 - Survey Feet

Map Source: ESRI Data, Miami-Dade County Enterprise Technology Services Department, Broward County Planning Services Division, and Corradino Group Truck Route System

1 Medley Sub Area Study Summary

Located 10 miles northwest of Downtown Miami, the Medley area has extensive regional freight activity. A high concentration of warehouses and distribution centers make Medley an important origin and destination for regional goods and a key part of the County economy.

Because of the high concentration of industrial and freight logistics related businesses, Medley's freight infrastructure is essential to the economy of the area. Roadways are the primary means of moving goods and are the critical linkages between Medley, consumers, and other freight infrastructure within the county and beyond.

Traffic is expected to increase throughout the area on all roadways. Truck movements are expected to match or exceed the growth of auto traffic on these roadways critical to Medley's freight industries.

The Florida East Coast Railway's (FEC) Hialeah Yard is a 360 acre facility located just to the east of Medley in unincorporated Miami-Dade (northwest of the Miami Airport). The yard handles the movement of containers, automobiles and stone between the yard and points in northern Florida and throughout the country.

Of the nearly 900 trucks surveyed as part of the Miami-Dade Freight Plan, about 14 percent were trucks that were either originating from or destined for the Medley area.

These trucks originated from or were destined to locations throughout the country, but most (90+ percent) were local trips. The trucks surveyed utilized most major routes in the area with Okeechobee Road being the primary access routes to and from Medley.

Potential Improvements and Supportive Policies

Even given the pressures and conditions of the freight system in Medley, there are opportunities to improve the infrastructure which would allow the city to maintain its competitive niche for freight and logistics. These include:

Maintenance and Operations

- Adjust the signal timing on Okeechobee Road
- Improve local road/pavement conditions
- Improve turning radii for trucks
- Widen South River Drive
- Improve access over the Miami River
- Establish and implement street lighting enhancements.
- Take steps as feasible to shorten project timelines
- Consider an ordinance adoption to ensure freight impacts are considered

Signing and Wayfinding

- Install a directory of companies at the gateway to the Medley freight logistics and industrial area
- Provide advance information to drivers
- Develop ITS applications that provide early warning of congestion and alternative routing
- inventory locations that pose a problem and establish advisory signing for alternate routing

Capacity and Congestion

- Increase capacity through select road widening projects.
- Promote a comprehensive logistics strategy that benefits all firms.

Intermodal Connectivity

- Explore the potential for complimentary operating adjustments (rail and truck carriers and shippers) and scheduling that would minimize the impact of delay at rail crossings.
- Revisit the earlier proposal and plan to connect 87th Ave between Medley and Doral

Safety and Security

- Determine a location(s) for truck parking/staging

Policies and Regulations

- Promote regular dialogue between the Medley Freight businesses and local elected and appointed officials

