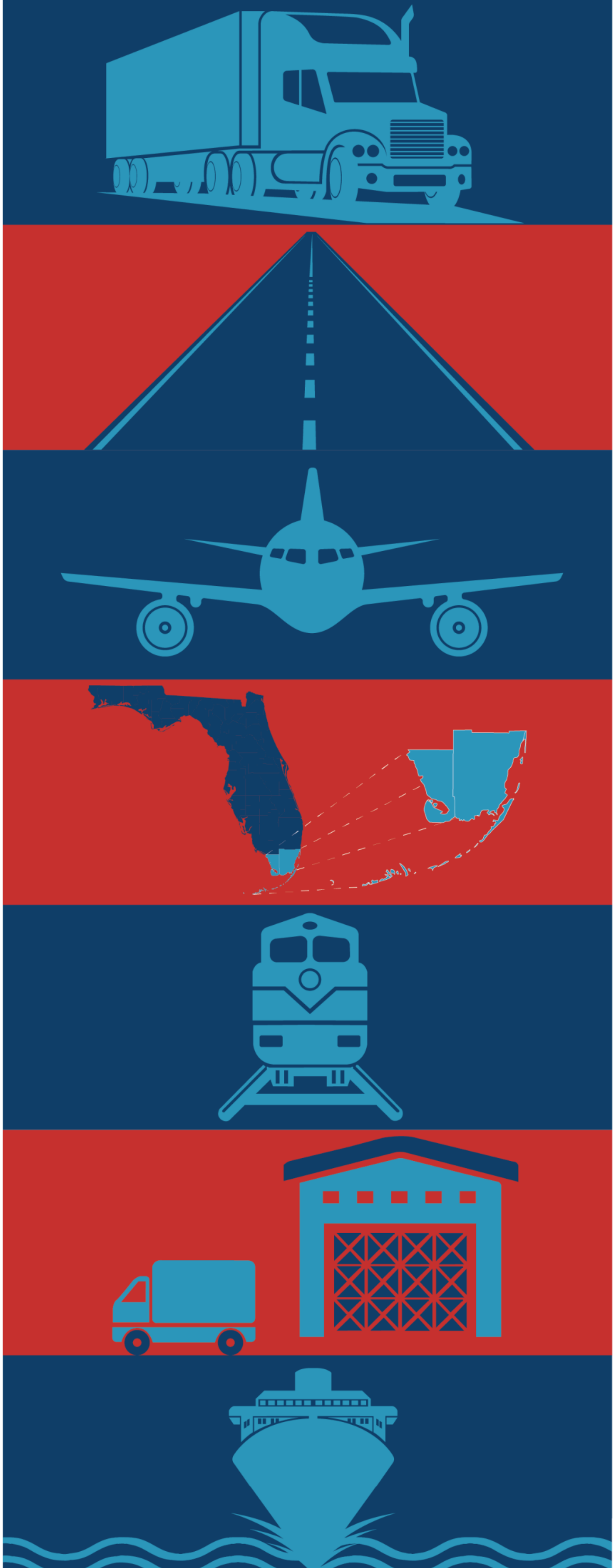

District Six Miami-Dade Countywide Freight Improvement Plan

Freight and Logistics Network Components

FPID: 437957-1-12-01

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FDOT

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Abbreviations List

Abbreviation	Complete Name/Phrase	Abbreviation	Complete Name/Phrase
AGS	Automated Gate Systems	**PHFS**	Primary Highway Freight System
CBP	U.S. Customs and Border Protection	**POMTOC**	Port of Miami Terminal Operating Company
CRFC	Critical Rural Freight Corridor	**PPP**	Public-Private Partnership
CUFC	Critical Urban Freight Corridor	**REOI**	Requests for Expressions of Interest
FDOT	Florida Department of Transportation	**RFI**	Request for Information
FEC	Florida East Coast	**RoRo**	Roll-On/Roll-Off
FMTP	Freight Mobility and Trade Plan	**SFCT**	South Florida Container Terminal
FTZ	Foreign Trade Zone	**SFLC**	South Florida Logistics Center
IHS	Interstate Highway System	**SFRC**	South Florida Rail Corridor
ILC	Intermodal Logistics Centers	**SFRTA**	South Florida Regional Transportation Authority
ITS	Intelligent Transportation Systems	**SG**	Strategic Growth
LNG	Liquefied Natural Gas	**SHS**	State Highway System
MIA	Miami International Airport	**SIS**	Strategic Intermodal System
MIC	Miami Intermodal Center	**STRAHNET**	Strategic Highway Network
MPO	Metropolitan Planning Organization	**TEU**	Twenty-Foot Equivalent Unit
NHFN	National Highway Freight Network	**TPO**	Transportation Planning Organization
NHS	National Highway System	**UDB**	Urban Development Boundary
NMFN	National Multimodal Freight Network	**USDOT**	U.S. Department of Transportation
OCR	Optical Character Recognition	**VICC**	Vertically Integrated Cargo Community
OPF	Opa-Locka Executive Airport		

1.0 Introduction

The *Miami-Dade Countywide Freight Improvement Plan*, an initiative by the Florida Department of Transportation (FDOT) District Six, is intended to enhance freight and logistics capacity, improve economic competitiveness through a more efficient transportation network, and provide a prioritized project bank for future infrastructure improvements to achieve these ends.

The purpose of the *Freight and Logistics Network Components Memorandum* is to provide a system-level overview of the physical components of the freight and logistics network within District Six. It includes an inventory of key freight facilities and the land use settings in which they function.

This memorandum serves as a foundational document for understanding the current state of freight and logistics infrastructure, identifying gaps and opportunities for improvement, and guiding future investments. By detailing the relationship between freight activities and land use, as well as the hierarchy and functionality of the network, this document aims to inform decision-making processes and strategic planning efforts.

2.0 Freight System Framework

The following framework encompasses a range of strategies and initiatives that align freight-specific investments with broader network improvements. Key components include the targeted allocation of resources to enhance freight infrastructure, such as roadways, railways, seaports, and intermodal facilities, as well as coordinating these investments with general transportation enhancements to improve safety, reduce congestion, and increase overall connectivity.

The framework also involves defining the hierarchy of the network components, understanding their roles within the freight system, and ensuring that freight activities are compatible with existing and planned land uses. District Six can optimize mobility while minimizing impacts on communities and the environment by continuing to classify land use contexts and assessing their implications for freight operations. Additionally, continued coordination with FDOT District Four and District One is crucial for addressing regional transportation challenges and ensuring seamless connectivity across South Florida.

2.1 Relation of Freight Investments to General Network Improvements

The relationship between freight investments and general network improvements within District Six is characterized by a collaborative and integrated approach to transportation planning.

Freight Investments

Freight investments refer to the targeted allocation of resources to enhance the infrastructure and operations associated with transporting goods. These resources include funding, technology, workforce, and materials dedicated to improving key components such as roadways, railways, seaports, airports, intermodal facilities, and pipelines used for freight movement. The goal of these investments is to increase the efficiency, capacity, and reliability of the freight transportation system, thereby supporting economic growth and competitiveness.

General Network Improvements

The general network encompasses the broader transportation infrastructure supporting people and goods movement. This includes highways, local roads, bridges, transit systems, and other components that form the backbone of the transportation system. General network improvements refer to enhancements and upgrades to this infrastructure aimed at improving safety, reducing congestion, increasing capacity, and enhancing overall connectivity.

Integration of Freight Investments and General Network Improvements

Integrating freight investments with general network improvements is crucial for enhancing the overall efficiency and capacity of the transportation system. By aligning freight-specific projects with broader infrastructure initiatives, FDOT District Six and its partners ensure that freight projects are not developed in isolation but are part of a comprehensive approach to transportation planning. This alignment optimizes resource allocation, minimizes disruptions, and maximizes the overall benefits to the transportation system.

Collaborative Efforts Across Government

The relationship between freight investments and general network improvements is strengthened through the collaborative efforts of FDOT District Six with its partners. These investments are strategically planned and implemented through various federal, state, regional, and local programs:

- **Federal**: The federal government provides essential funding opportunities[1] and guidelines for freight-related projects. Many of its programs emphasize enhancing freight mobility and reliability while addressing key bottlenecks and infrastructure gaps.
- **State**: The Florida Freight Mobility and Trade Plan (FMTP) is a guiding document outlining the strategic framework for freight investments across the State. The FMTP identifies critical freight corridors and prioritizes projects that align with the State's economic and transportation goals. This plan ensures that freight investments are coordinated with general network improvements, promoting a seamless integration of freight and passenger transportation systems.
- **Regional**: The *Miami-Dade Countywide Freight Improvement Plan* aligns with the broader objectives of FDOT District Six's transportation planning efforts. By focusing on key freight corridors and facilities, the plan ensures that investments in freight infrastructure support overall network efficiency. This includes improving roadway conditions, enhancing intermodal connectivity, and ensuring compatibility with land-use developments.
- **Local**: FDOT District Six works closely with municipal governments, planning agencies, and community stakeholders to integrate freight investments with local transportation improvements. The aim is to address specific local needs and challenges, such as reducing congestion in urban areas, improving last-mile connectivity, and ensuring that freight operations are compatible with residential and commercial land uses. Local coordination involves detailed planning to optimize truck routes, enhance safety measures, and ensure that freight facilities, such as distribution centers and truck parking areas, are strategically located to minimize community impacts while maximizing operational efficiency.

[1] For more information, please visit https://www.fdot.gov/planning/policy/federal-grants/default.shtm

2.2 Network Hierarchy and Function

The freight network within District Six is organized through several established hierarchies that facilitate efficient planning, management, and implementation of improvements.[2] These hierarchies include the National Highway Freight Network (NHFN) (**Figure 1**), Strategic Intermodal System (SIS) (**Figure 2**), and other regional and local designations, providing a structured framework for understanding and optimizing the various components of the freight system. The forthcoming National Multimodal Freight Network (NMFN) will also significantly shape the freight infrastructure landscape.

By leveraging these existing frameworks, FDOT District Six can better allocate resources, identify bottlenecks, and implement targeted improvements to enhance freight mobility.

The National Highway Freight Network

The NHFN, encompassing the Primary Highway Freight System (PHFS), Critical Urban Freight Corridors (CUFC), and Critical Rural Freight Corridors (CRFC), plays a crucial role in supporting long-haul and regional freight transportation. The designation of these corridors initially involved submissions from FDOT Districts based on regional freight priorities, followed by state-level designations considering available mileage. The NHFN undergoes periodic update cycles, allowing Districts to request additions or deletions as necessary.

The Strategic Intermodal System

The SIS prioritizes significant transportation facilities such as major highways, rail corridors, seaports, and airports. These facilities are essential for high-capacity, long-distance freight movement and receive focused investment and development. The designation of SIS facilities is based on specific criteria established by FDOT's Systems Planning, with some flexibility for Districts to designate or re-designate SIS intermodal connectors, ensuring comprehensive connectivity within the network.

Regional and Local Designations

In addition to these federal and state-managed networks, some counties and Metropolitan Planning Organizations (MPOs), such as the Miami-Dade Transportation Planning Organization (TPO), work within these frameworks to address regional priorities and specific freight needs. These local designations reflect regional priorities, enhance funding opportunities, and ensure that local perspectives are integrated into the broader freight planning process. The Miami-Dade TPO, for instance, identifies critical infrastructure projects and develops subarea freight plans to address specific freight mobility strategies, ensuring alignment with regional and state frameworks.

Local governments have the authority to create truck route restrictions on local roads they operate and maintain. While FDOT typically does not restrict trucks on state roads, some municipalities may request such restrictions. This collaborative approach between state and local entities ensures that freight operations are optimized while addressing community concerns and land use compatibility.

[2] For more information about these networks, please see the *Freight Networks Summary Memorandum*.

Figure 1. National Highway Freight Network in District Six

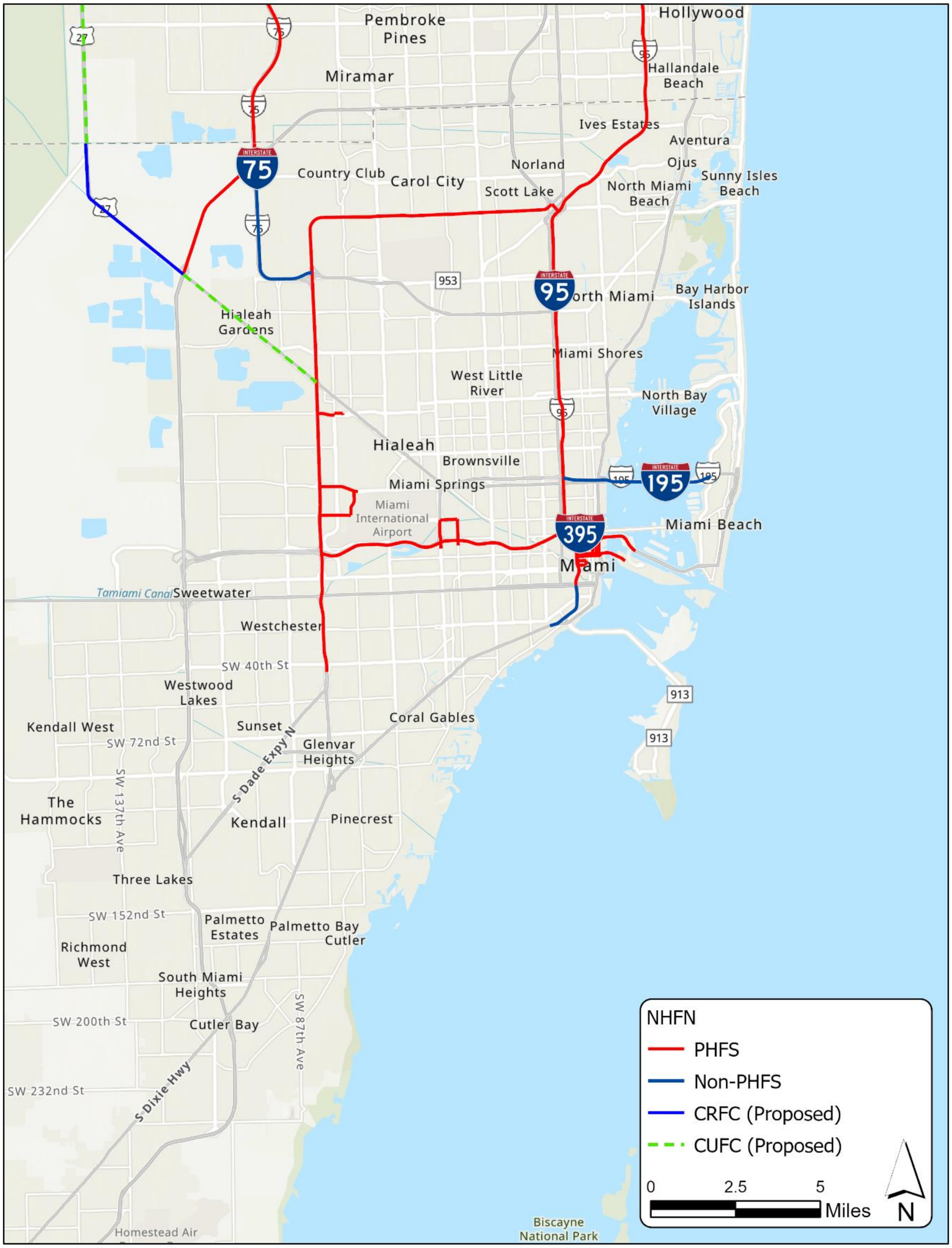
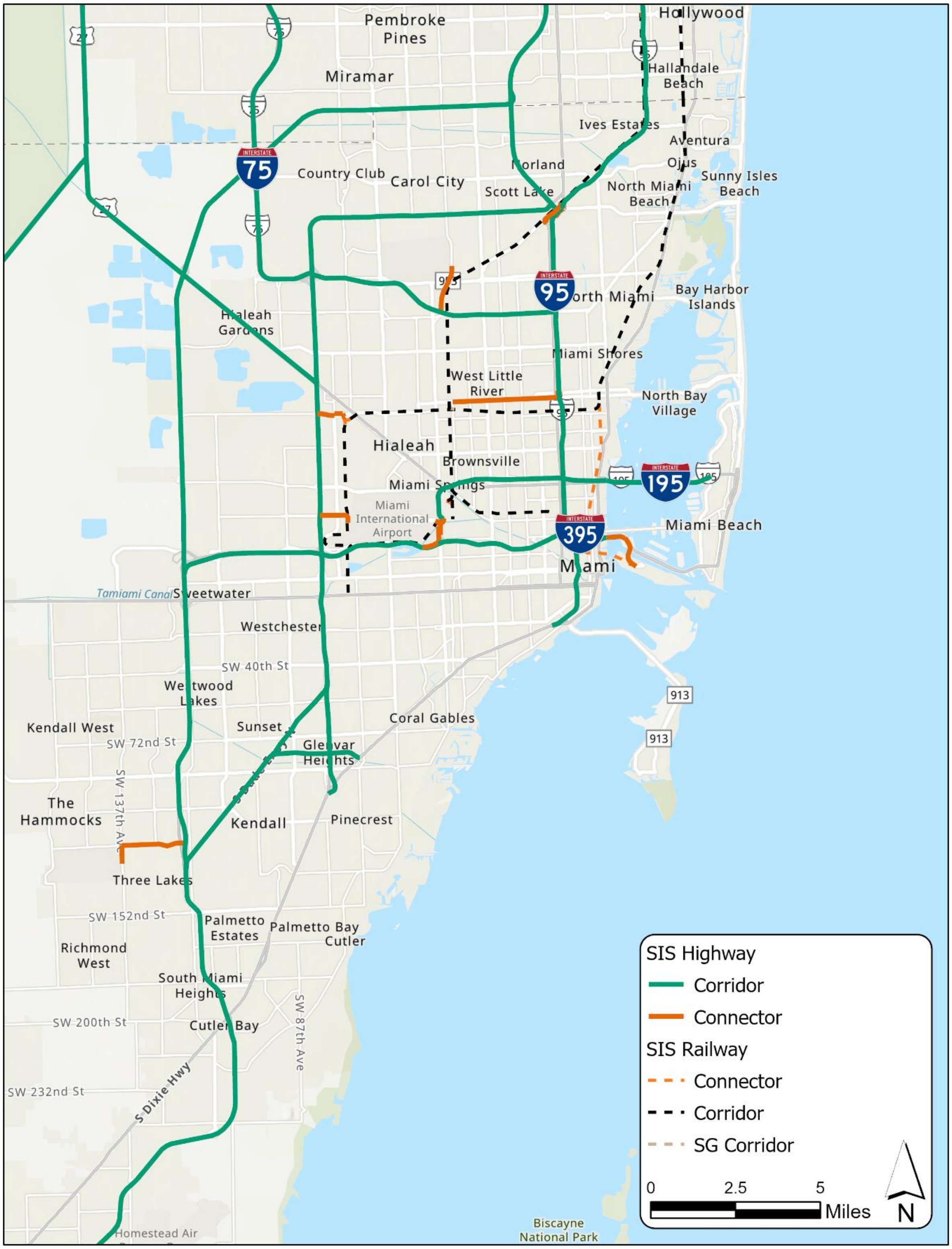


Figure 2: Strategic Intermodal System in District Six



The National Multimodal Freight Network

The NMFN is being developed by the U.S. Department of Transportation (USDOT) to strategically enhance the efficiency and connectivity of the nation's freight transportation system. The NMFN aims to assist states in directing resources effectively to improve freight system performance, ensuring the smooth and efficient movement of goods. While the NMFN is similar but separate from the NHFN, efforts will be made to maintain consistency between the two networks, supporting integrated freight planning and investment.

The NMFN will encompass various modes of freight transportation, including highways, railroads, seaports, airports, and pipelines, aiming to create a cohesive and efficient multimodal network. This initiative supports national multimodal freight policy goals and helps prioritize federal investments in freight infrastructure.

To create the NMFN, USDOT is actively seeking input from a diverse range of stakeholders, including transportation system users, providers, MPOs, local governments, ports, airports, railroads, and other supply chain logisticians. This broad participation ensures that the network reflects the needs and priorities of various entities involved in freight transportation.

The Request for Information (RFI) outlines specific goals, criteria, thresholds, and data sources that will guide the designation of the NMFN. Critical factors considered include volume, value, tonnage, strategic importance of freight, access to key facilities, economic impacts, connectivity, and critical freight corridors identified by states or MPOs.

The development process for the NMFN includes drafting a proposed network map based on stakeholder feedback, which will be published for public comment in late spring 2024. Following this review period and additional input, the final NMFN is expected to be designated by December 2024. States will play a significant role in proposing additions to the network, ensuring that regional and local priorities are incorporated into the national framework.

2.3 Freight Activity and Land Use Compatibility

Assessing the compatibility of freight activities with existing and planned land uses is crucial for effective transportation planning within FDOT District Six. Ensuring that freight movement supports economic growth while minimizing negative impacts on communities and the environment is essential. This assessment involves analyzing current land use patterns, identifying potential conflicts, and developing strategies to harmonize freight activities with other land uses.

Miami-Dade County's logistics infrastructure includes diverse land uses critical for freight activities, such as transportation hubs, industrial zones, agricultural areas, and mining operations. The County's primary interregional corridors, including I-75, I-95, US-27, and the Turnpike, are pivotal in facilitating efficient freight transportation. These corridors connect vital locations such as PortMiami, Miami International Airport (MIA), and various intermodal logistics centers (ILC). However, the proximity of these freight corridors to residential areas, commercial zones, and environmental conservation areas necessitates careful planning to ensure land use compatibility.

Industrial and Transportation Land Uses

Industrial land uses, such as warehouses, distribution centers, and manufacturing facilities, are predominantly concentrated in the north-central and northwestern portions of Miami-Dade County. Areas like Doral, Medley, Hialeah, and Opa-Locka are strategically located near major transportation hubs and corridors. The concentration of industrial activities in these regions supports efficient freight operations but requires continuous evaluation to ensure that these uses remain compatible with surrounding land uses.

Transportation land uses encompass critical infrastructure such as airports, seaports, rail terminals, and key roadway corridors. These facilities are essential for the region's freight network, facilitating the movement of goods both domestically and internationally. Ensuring compatibility between these transportation hubs and adjacent land uses involves addressing traffic congestion, noise, and emissions, which can affect nearby residential and commercial areas.

Agricultural and Mining Land Uses

Agricultural land uses, primarily located in the southern and western parts of the County, generate significant freight activity due to the seasonal nature of agricultural production and the need for efficient distribution channels. Integrating these areas into the broader freight network ensures that agricultural products are transported efficiently without disrupting other land uses.

Mining activities, particularly aggregate mining in the Lake Belt area of northwestern Miami-Dade County, generate substantial truck and rail traffic. These operations provide essential raw materials for construction and other industries but require careful management to mitigate impacts on surrounding communities and the environment.

2.4 FDOT Context Classification System

Understanding the context of land use is crucial for planning and managing the freight network within District Six. The FDOT Context Classification System (**Figure 3**) provides a structured approach to classifying land use contexts and understanding their implications for freight operations. FDOT District Six can optimize freight mobility while ensuring compatibility with surrounding land uses by identifying the context in which freight activities occur.

Figure 3. FDOT Context Classification System

The FDOT Context Classification System comprises eight context classifications that broadly identify the various built environments in Florida. These classifications are based on existing or future land use characteristics, development patterns, and roadway connectivity. The eight context classifications are:

1. **C1 - Natural**: Lands preserved in a natural or wilderness condition, including areas unsuitable for settlement due to natural conditions.
2. **C2 - Rural**: Sparsely settled lands, including agricultural land, grassland, woodland, and wetlands.
3. **C2T - Rural Town**: Small concentrations of developed areas immediately surrounded by rural and natural areas, often including historic towns.
4. **C3R - Suburban Residential**: Mostly residential uses within large blocks and a disconnected or sparse roadway network.
5. **C3C - Suburban Commercial**: Mostly non-residential uses with large building footprints and large parking lots, typically within large blocks and a disconnected or sparse roadway network.
6. **C4 - Urban General**: A mix of uses set within small blocks with a well-connected roadway network, often extending long distances and connecting to residential neighborhoods.
7. **C5 - Urban Center**: A mix of uses set within small blocks with a well-connected roadway network, typically concentrated around a few blocks and identified as part of the civic or economic center of a community, town, or city.
8. **C6 - Urban Core**: Areas with the highest densities and building heights, usually within FDOT-classified Large Urbanized Areas (population greater than one million), and often regional centers and destinations.

2.5 Relationship to FDOT District Four and District One

Effective coordination between FDOT District Six, FDOT District Four through Broward County, and FDOT District One through Collier County is crucial for ensuring the seamless integration and efficiency of the transportation network in South Florida. These regions share key transportation corridors and infrastructure, necessitating collaborative planning and project implementation to address shared challenges and opportunities.

Coordination with FDOT District Four through Broward County

FDOT District Six and District Four collaborate extensively, particularly along critical corridors such as I-75, I-95, US-27, and the Turnpike. These highways are vital links between Miami-Dade and Broward Counties, providing continuous connectivity to freight facilities and intermodal terminals. Congestion and bottlenecks are particularly prevalent along the county line between Miami-Dade and Broward, where these major roadways intersect. Joint efforts are required to improve and expand the existing freight network, considering operational and design constraints such as street width, roadway configuration, and geographic limitations due to environmental conservation areas.

Broward County, serving as the gatekeeper for District Four, plays a crucial role in managing transportation infrastructure and facilitating efficient freight movement across the region. Collaborative projects include developing and managing the 95 Express Lanes, which require synchronized planning, construction, and management to meet regional transportation needs without causing disruptions. Furthermore, the ports within District Four, such as Port Everglades and the Port of Palm Beach, significantly support freight activities within District Six. These ports provide extensive connectivity and integration with the broader freight network through highway access, foreign-trade zone warehouses, and intermodal rail transfer facilities.

Coordination with FDOT District One through Collier County

Coordination between FDOT District Six and District One focuses on ensuring that projects in adjacent areas are compatible and contribute to a cohesive transportation network. Key routes like I-75 and US-27 provide east-west connectivity between the districts, supporting the movement of goods across South Florida. Collier County, serving as the gatekeeper for District One, plays a pivotal role in facilitating access and movement within the District.

District One includes significant freight facilities such as SeaPort Manatee, a primary seaport for southwest Florida. This port handles various cargo types and serves critical roles in the region's fuel and construction industries. The Port's rail connectivity further facilitates efficient freight movement, linking to CSX Railroads' Class I mainline for service to the East Coast. Additionally, the Southwest Florida Regional Intelligent Transportation Systems (ITS) Architecture coordinates traffic information and traffic control across district boundaries, enhancing the overall efficiency and safety of the transportation network.

Joint Coordination Efforts

The collaboration extends beyond individual projects, encompassing broader planning initiatives and emergency management strategies. For instance, the joint management of ITS ensures that real-time traffic information and control systems are seamlessly integrated across district boundaries, enhancing mobility and safety. Moreover, emergency coordination efforts, such as those required for managing evacuations along I-75 through Alligator Alley, involve close cooperation between District Six, District Four, and District One to ensure adequate response and management during critical events.

3.0 Transportation Links

Miami-Dade County's transportation network is a critical backbone for the region's economic vitality, supporting the efficient movement of goods, services, and people. This section provides a comprehensive overview of the key components of the transportation infrastructure within Miami-Dade County, which includes roadways, railroads, waterways, and pipelines. Each of these elements plays a vital role in maintaining the seamless flow of freight and passenger traffic, contributing to the County's position as a major logistics hub in South Florida.

3.1 Roadways

The roadways within District Six form a critical component of the freight and logistics network, supporting the movement of goods and services throughout Miami-Dade County. These roadways, including federal, state, and regional highways, are essential for efficient freight transportation, connecting key industrial areas, ports, airports, and intermodal facilities.

The federal highway network, part of the NMFN, includes major interstates such as I-75, I-95, and I-195. These interstates are crucial for long-haul freight movement, facilitating the flow of goods into and out of the County. The National Highway System (NHS) also plays a significant role with its subsystems, including the Interstate Highway System (IHS), Other Principal Arterials, and the Strategic Highway Network (STRAHNET), all contributing to the region's freight capacity.

State highways are another vital element, with the State Highway System (SHS) encompassing significant routes that support both passenger and freight traffic. The SIS stands out within the SHS, prioritizing transportation facilities that support economic activities and mobility, including key corridors and intermodal connectors that link hubs such as ports and airports to the main transportation network.

The Southeast Florida Regional Freight Network and the Miami-Dade TPO Freight Network integrate these elements to ensure cohesive freight movement across municipal and county boundaries. These networks include designated truck routes and restrictions that help manage the flow of freight traffic, reduce congestion, and enhance safety.

For a comprehensive inventory and evaluation of these key roadways and further details on their specific roles within the freight network, refer to the *Freight Networks Summary Memorandum* from January 2024, which provides an in-depth analysis of the federal, state, and regional highway systems in District Six. This document offers detailed maps, tables, and descriptions of each component, ensuring a thorough understanding of the transportation infrastructure supporting Miami-Dade County's freight logistics.

3.2 Railroads

Rail infrastructure plays a crucial role in Miami-Dade County's transportation network, supporting both freight and passenger services. **Table 1** highlights the key SIS railroads within the County, which total 57.10 miles of track. These railroads facilitate the movement of goods and people, contributing significantly to the region's economic vitality and mobility.

Table 1. Strategic Intermodal System Railroads within Miami-Dade County

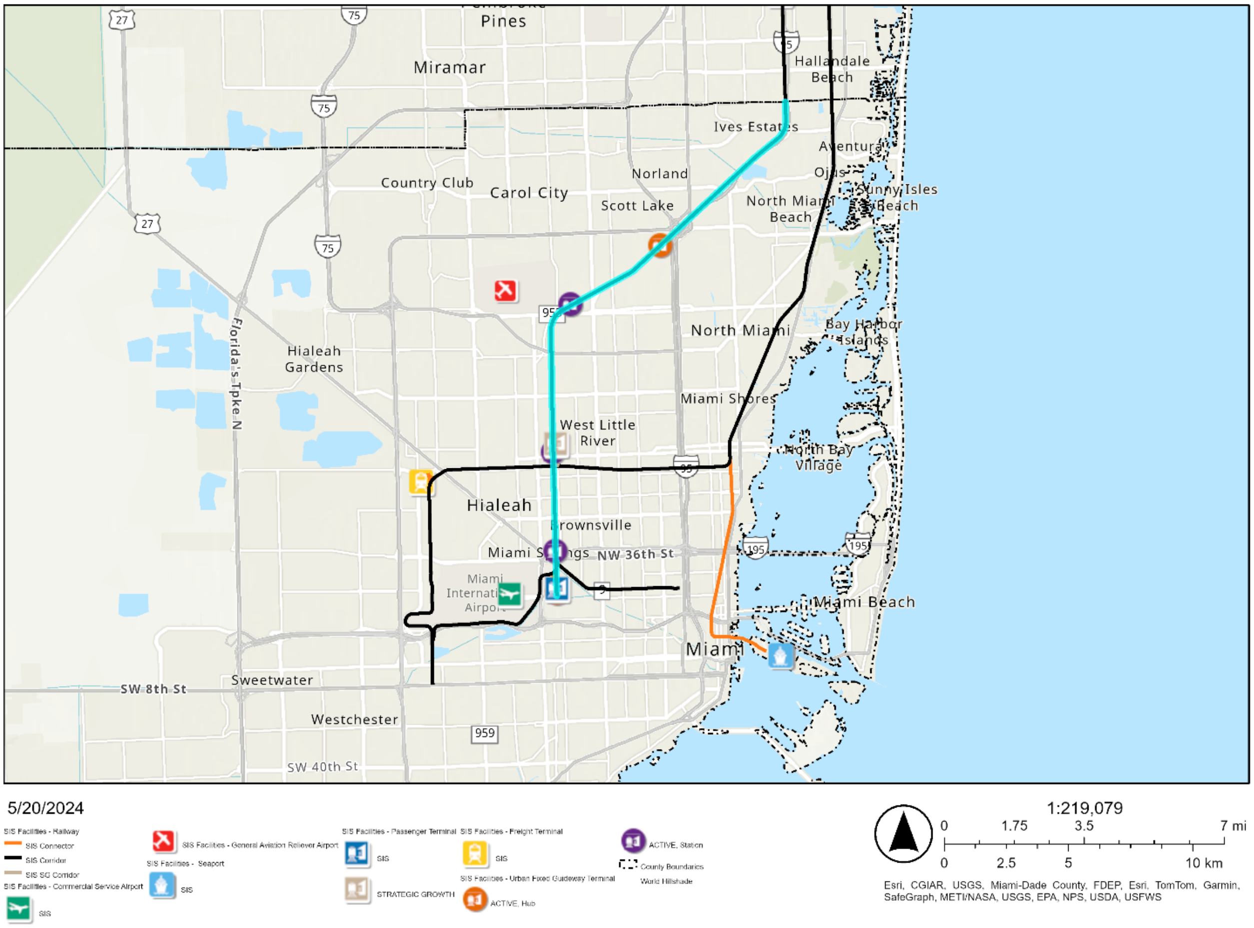
Facility	Rail Line	Type	Length
Tri-Rail FDOT SIS Railroad Mainline	FDOT	SIS Corridor	15.11
CSXT Spur (Downtown Spur Mainline)	CSXT	SIS Corridor	3.39
CSXT Mainline – SXH	CSXT	SIS Corridor	4.36
FEC Mainline – C	FEC	SIS Corridor	10.06
FEC Mainline – LR	FEC	SIS Corridor	17.20
Iris Connection	FDOT	SIS SG Corridor	0.22
PortMiami Rail Connector	FEC	SIS Connector	5.86
Miami Hialeah FEC Intermodal Terminal Rail Connector	FEC	SIS Connector SIS Connector	0.32 0.30
Miami Intermodal Center Rail Connector	CSX	SIS Connector	0.28
		Total	**57.10**

Source: FDOT; ArcGIS – Strategic Intermodal Facilities – Railway (5/8/2024)

South Florida Rail Corridor (SIS Corridor)

The South Florida Rail Corridor (SFRC) (highlighted **blue** in **Figure 4**) is a vital double-tracked SIS corridor.

Figure 4. South Florida Rail Corridor



This line enters the County from the north along I-95, runs west near Miami Gardens, and intersects with several key locations, including:

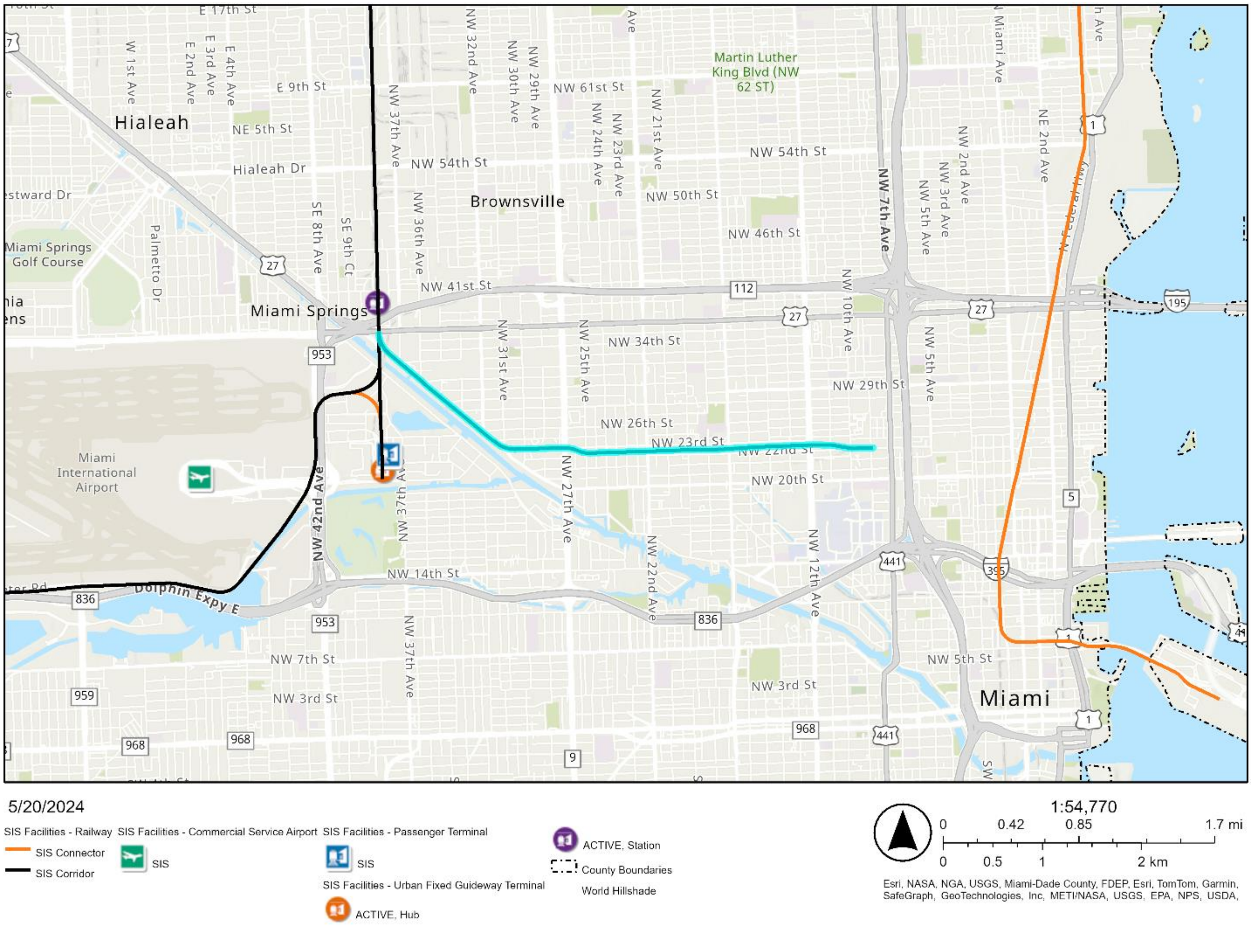
- **Golden Glades Station**: A major multimodal hub.
- **Opa-Locka Station**: Serving the Opa-Locka area.
- **Miami-Opa Locka Executive Airport**: Near the airport, supporting freight operations.
- **Metrorail Transfer Station**: Facilitates transfers between Tri-Rail and Miami-Dade Metrorail.
- **Hialeah Market Station**: Access to industrial and commercial zones.
- **Miami Greyhound/Miami Intermodal Center (MIC)**: A central transportation hub.
- **Miami Airport Station**: Directly connected to MIA.

The SFRC connects with the CSXT Spur (Downtown Spur Mainline) and the CSXT Mainline – SXH, allowing Tri-Rail passenger trains and freight trains to operate in either direction based on scheduling needs. Stations like MIC and the Metrorail Transfer Station provide seamless intermodal transfers, promoting overall mobility.

CSXT Spur – Downtown Spur Mainline (SIS Corridor)

The CSXT Spur – Downtown Spur Mainline (highlighted **blue** in **Figure 5**) is a rail segment primarily used for freight operations.

Figure 5. CSXT Spur – Downtown Spur Mainline



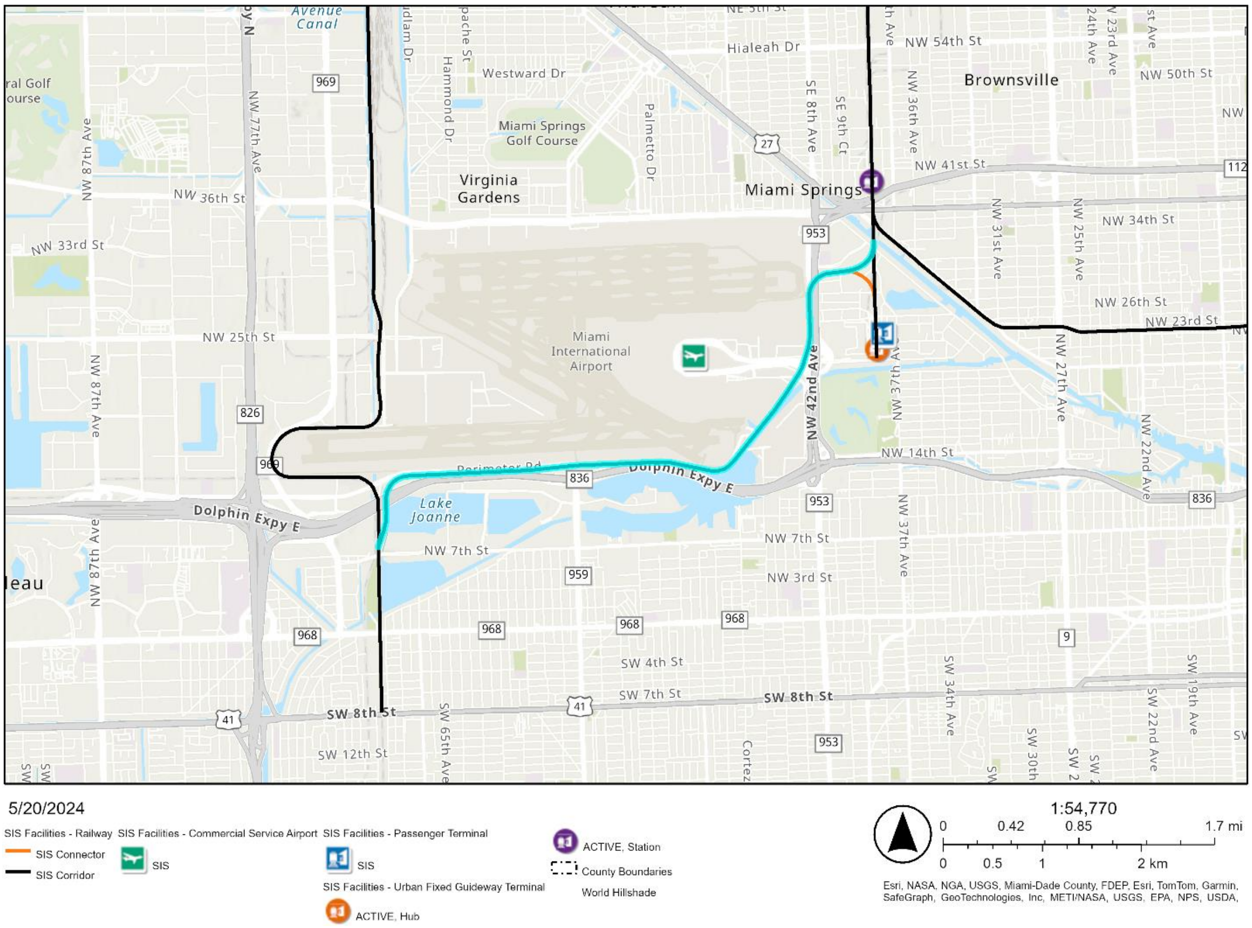
Branching off from the main CSXT line near MIA, it runs roughly 3.5 miles eastward, supporting various industrial zones and commercial facilities, particularly near the Miami River. It is predominantly used for freight services, serving a diverse range of industries that receive single-car loads. This is crucial for local logistics and supply chain operations. Critical aspects of the spur include:

- **Operational Characteristics**: Supports switching operations for local businesses, significantly contributing to the economic activities of the surrounding industrial areas.
- **Historical Context**: Originally a double-track mainline used for passenger traffic, it transformed into a single-track industrial spur while retaining its 1950s character.
- **Indirect Support for PortMiami**: While not directly connected to PortMiami, it facilitates freight movements in nearby industrial regions, indirectly supporting broader logistics and supply chains.

CSXT Mainline - SXH (SIS Corridor)

The CSXT Mainline – SXH (highlighted blue in **Figure 6**) is a critical rail segment that branches off the SFRC near MIA.

Figure 6. CSXT Mainline



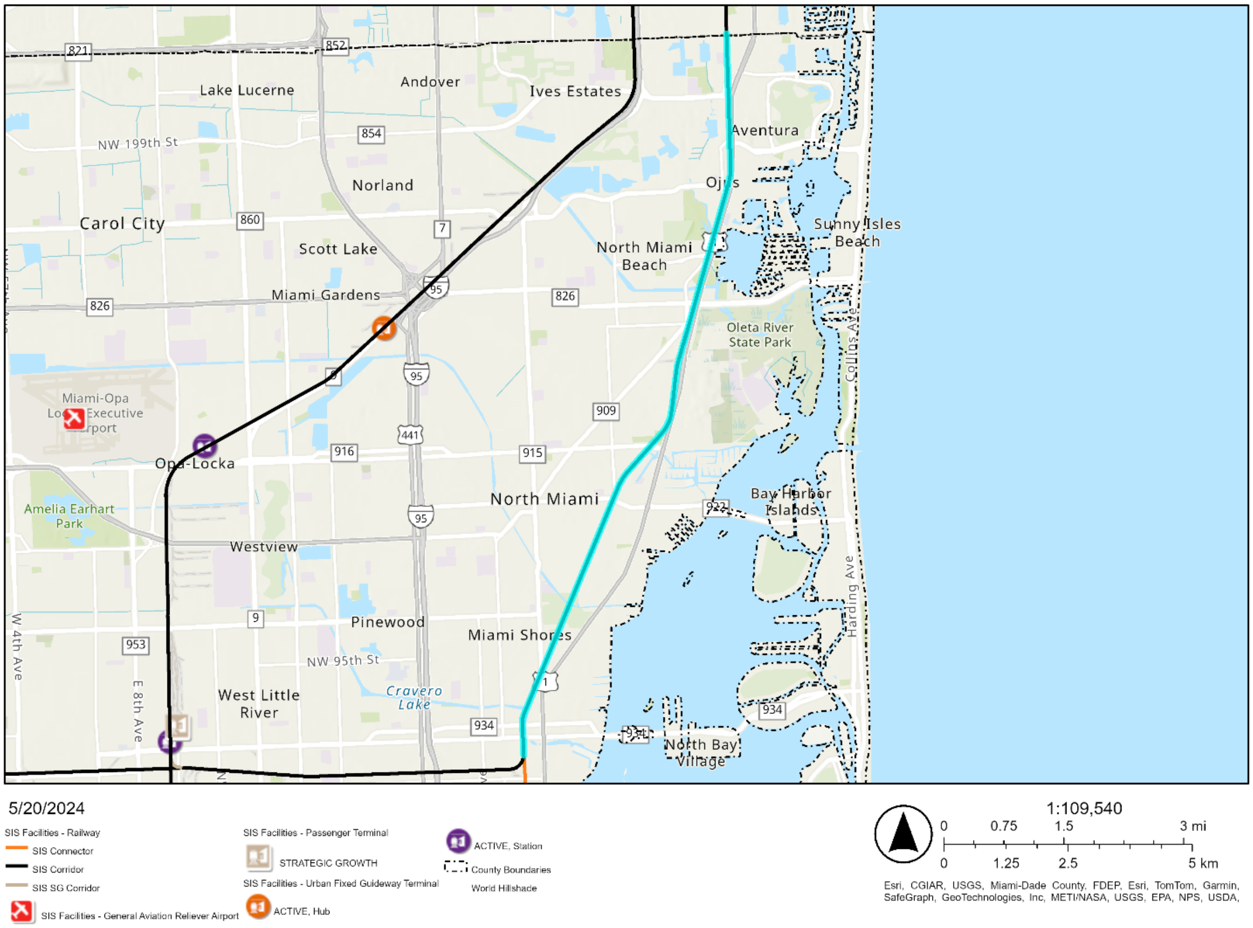
This mainline runs along the southeastern border of the airport, extending westward for 4.36 miles before merging with the Florida East Coast (FEC) mainline. This connection facilitates extensive regional freight operations and links to broader national rail networks.

The mainline is essential for transporting various goods and supporting logistics and supply chains for numerous industries. The integration with the FEC mainline enhances connectivity to major ports such as PortMiami, Port Everglades, and the Port of Palm Beach, although MIA does not directly utilize this line for freight purposes.

FLORIDA EAST COAST MAINLINE – C (SIS CORRIDOR)

The FEC Mainline – C (highlighted **blue** in **Figure 7**) is a crucial double-tracked rail segment in Miami-Dade County, supporting regional economic development and efficient rail movements.

Figure 7. FEC Mainline – C



Beginning at the Miami-Dade and Broward County border and heading south through several key areas:

- **Aventura**: Known for its major retail hub, Aventura Mall.
- **North Miami Beach**: A diverse urban area with residential and commercial zones.
- **North Miami**: Home to industrial zones and educational institutions.
- **Miami Shores**: Primarily a residential community.

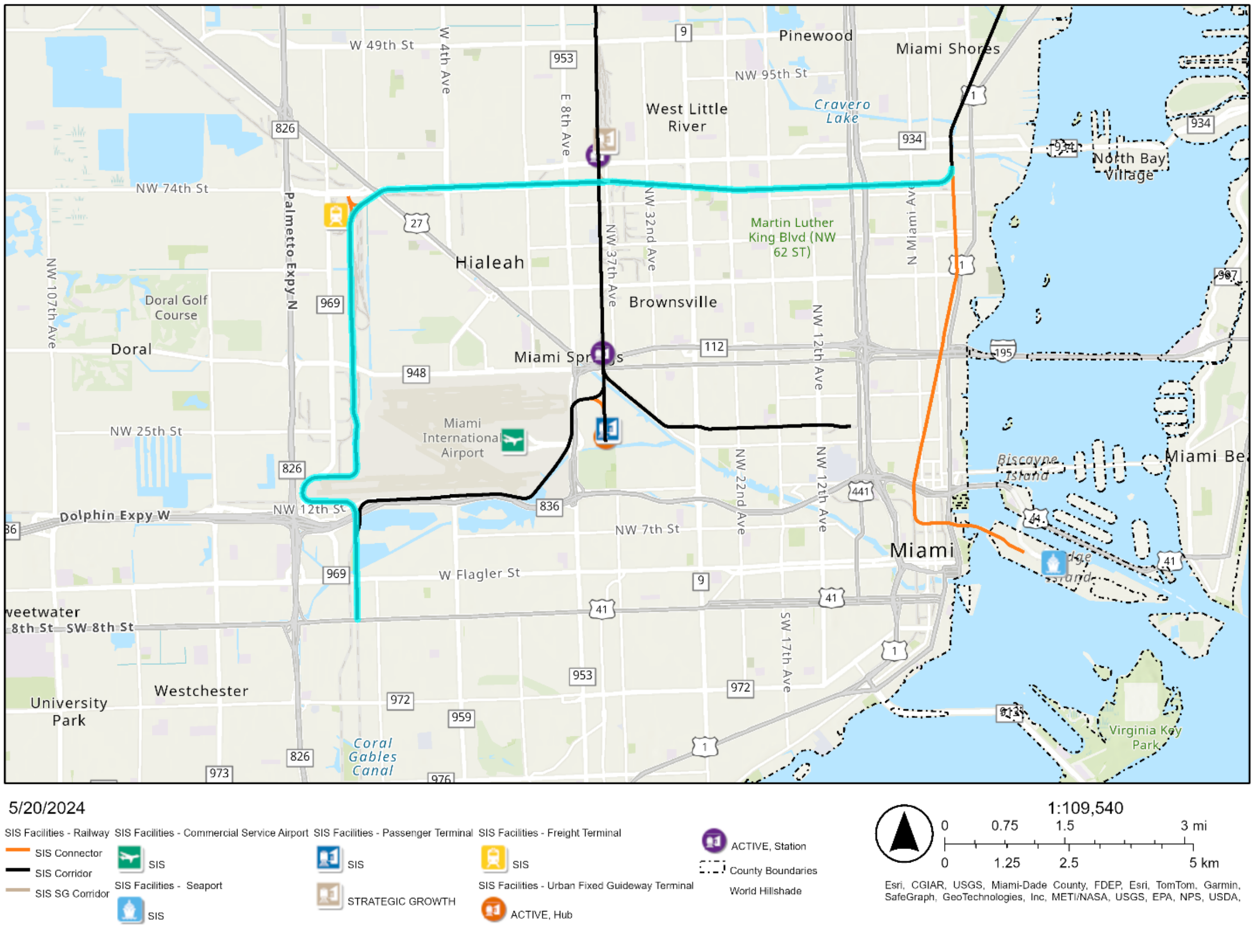
The line then splits into the FEC Mainline LR and the PortMiami Rail Connector. Key features include:

- **Brightline Service**: Shares tracks with Brightline, a high-speed passenger rail service connecting Miami, Fort Lauderdale, West Palm Beach, and Orlando.
- **Double-Tracked with Sidings**: Allows efficient movement of both freight and passenger trains, with occasional sidings for passing.
- **Branch Connections**: The FEC Mainline LR continues westward, while the PortMiami Rail Connector links directly to PortMiami, facilitating cargo transfer between rail and maritime transport.

Florida East Coast Mainline – LR (SIS Corridor)

The FEC Mainline – LR (highlighted blue in **Figure 8**) is a crucial rail segment in Miami-Dade County, supporting both freight and passenger services and enhancing the region's transportation network.

Figure 8. FEC Mainline – LR



This double-tracked line picks up from the FEC Mainline – C and moves west, starting in Little River. It continues through Gladeview before turning south in Hialeah. As it progresses through Hialeah, it passes through the FEC Railway Hialeah Yard South, an area dense with rail spurs, and wraps around the west side of MIA, where it links up with the CSXT Mainline – SXH.

Along its route, the FEC Mainline – LR traverses several key areas:

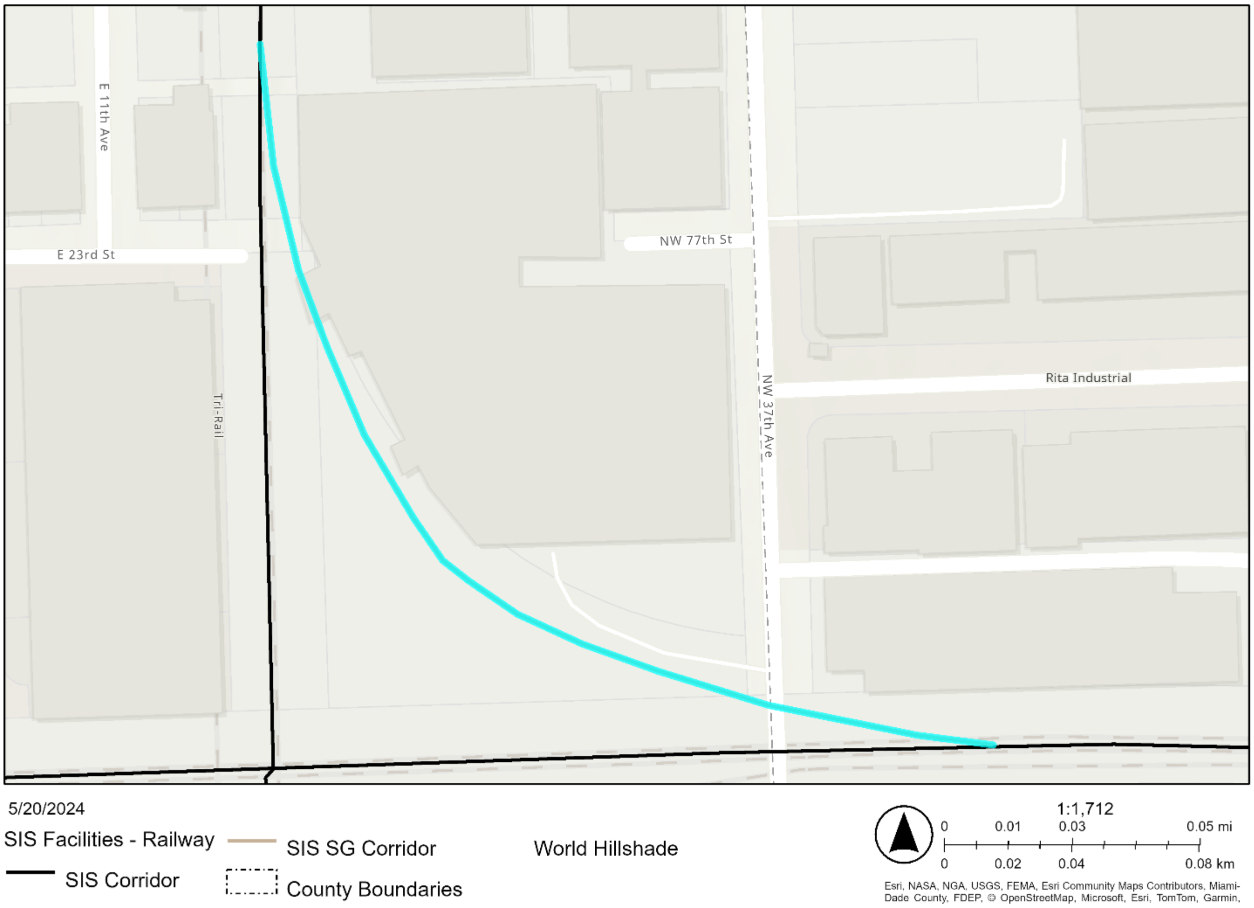
- **Little River and West Little River**: This segment includes a freight-intensive area known as the Hialeah Market Tri-Rail.
- **Hialeah**: It passes through significant logistics hubs, including the Miami Hialeah FEC Intermodal Terminal, which is connected by the Miami Hialeah FEC Intermodal Terminal Rail Connector.

These areas highlight the line's importance in handling and distributing freight efficiently, contributing significantly to the local economy.

Iris Connection (SIS SG Corridor)

The IRIS Connection segment (highlighted **blue** in **Figure 9**), located southeast of the intersection of E 25th St and E 8th Ave in Hialeah, is a SIS Strategic Growth (SG) Corridor.

Figure 9. Iris Connection

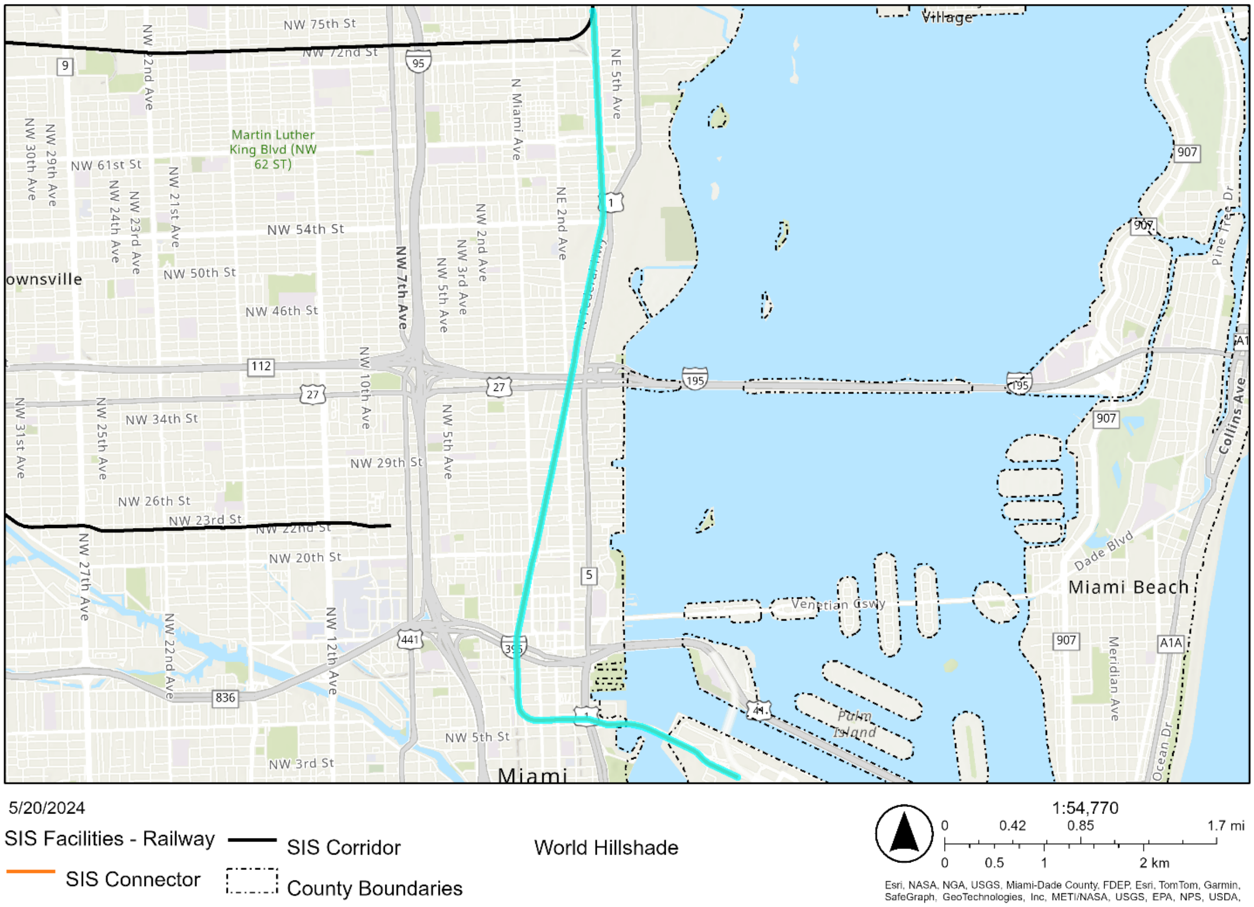


This 0.22-mile segment, managed by FDOT, connects the north-south FDOT SIS Railroad Mainline with the east-west FEC Mainline – LR. The IRIS Connection enhances connectivity for key industrial areas such as McFarlin Industrial Park and Bodin Industrial Park by providing a direct rail link for freight movement between these major rail lines. This segment supports local businesses, optimizes logistics and distribution activities, and contributes to the region’s economic growth.

PortMiami Rail Connector (SIS Connector)

The PortMiami Rail Connector (highlighted **blue** in **Figure 10**) is a crucial, largely double-tracked 5.86-mile railroad segment within Miami-Dade County, enhancing connectivity between the FEC Mainline—C and PortMiami.

Figure 10. PortMiami Rail Connector



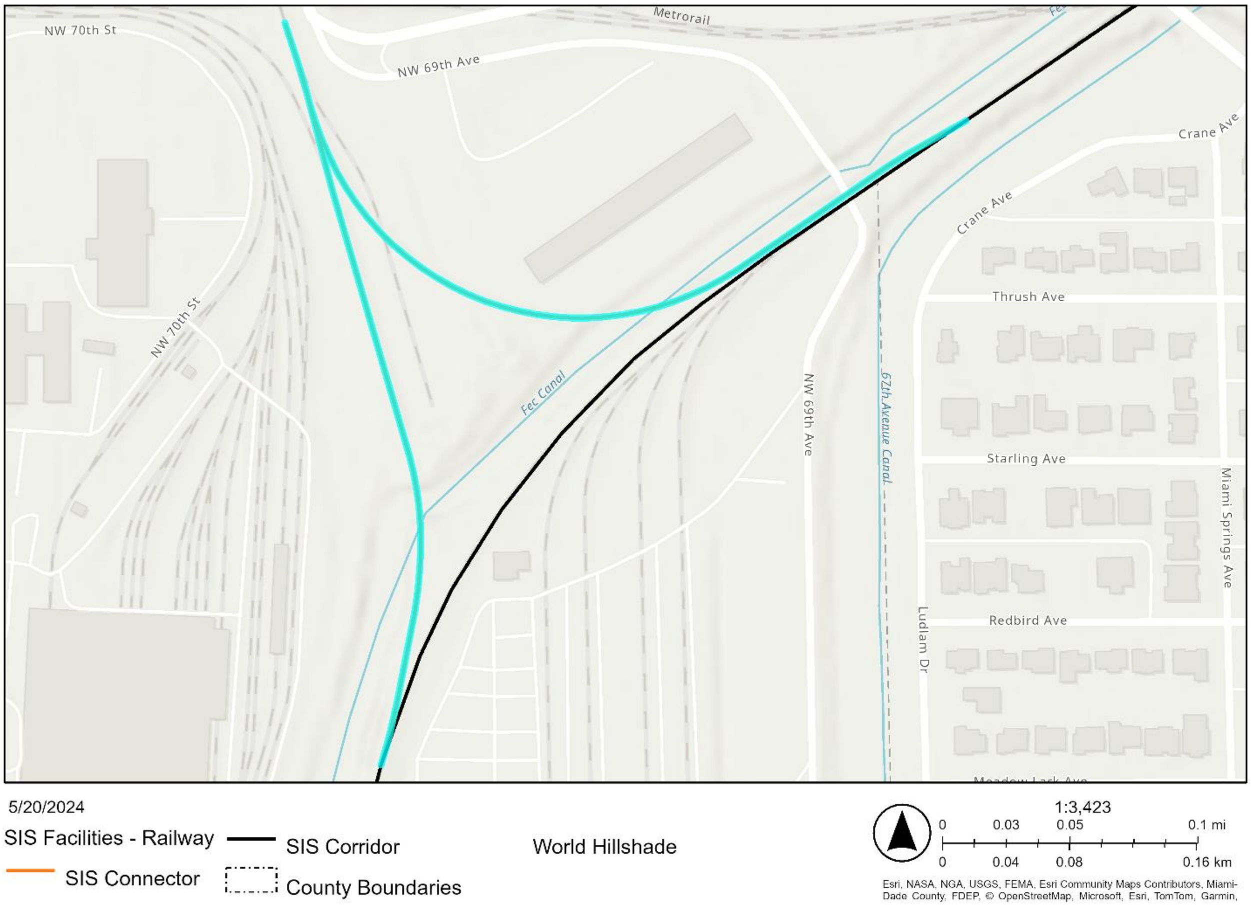
Key segments of the connector include:

- **Eastern Side of Little Haiti**: The connector begins at the split from the FEC Mainline – C and travels south through this area.
- **Miami Design District**: Known for its high-end retail stores and art galleries, the rail line continues through this bustling district, hugging US-1 to the east.
- **Wynwood and Edgewater**: The connector proceeds through these vibrant neighborhoods, characterized by a mix of residential, commercial, and artistic spaces.
- **Downtown Miami**: As it enters downtown, the rail line passes significant landmarks such as the Kaseya Center, a major venue for sports and entertainment events.
- **Port Boulevard Bridge**: The connector heads east, crossing this essential bridge that links the mainland to PortMiami, facilitating seamless cargo transfers between rail and maritime transport.
- **Port of Miami Terminal Operating Company (POMTOC)**: The line terminates at this primary cargo terminal, ensuring efficient offloading from trains to ships, crucial for international trade and regional economic growth.

Miami Hialeah FEC Intermodal Terminal Rail Connector (SIS Connector)

The Miami Hialeah FEC Intermodal Terminal Rail Connector (highlighted **blue** in **Figure 11**), a designated SIS Connector, serves as a vital link between the FEC Mainline – LR and the freight-intensive Medley area.

Figure 11. Miami Hialeah FEC Intermodal Terminal Rail Connector



The rail connector is crucial in supporting the Town of Medley, a vital freight hub due to its strategic location and significant industrial presence. Medley freight-intensive landscape features:

- A high concentration of warehouses, distribution centers, and cold storage facilities essential for the storage and movement of goods
- Manufacturing plants that rely on the proximity to freight facilities for efficient raw material receipt and finished product distribution
- Construction supply companies benefit from the transport of heavy and bulky materials
- Mineral and rock mining operations, including aggregate and cement production, rely on the regional network for the movement of bulk materials essential to the construction industry

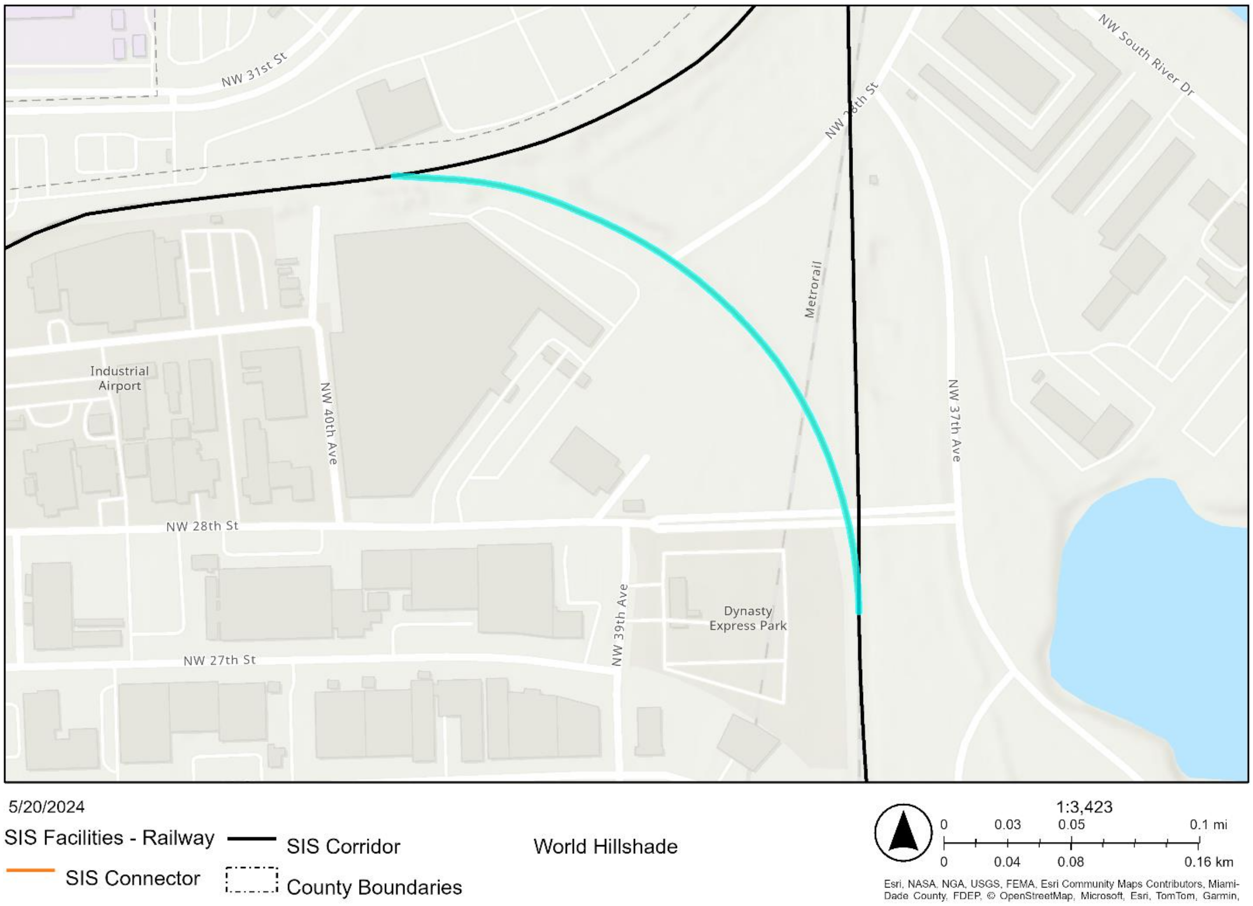
Medley's freight infrastructure includes key facilities, such as the FEC Rail Yard, which accommodate the movement of containers, automobiles, and aggregates. This rail yard is an important intermodal facility that links the area to other major transportation networks.

For detailed insights into Medley's freight activities and infrastructure, please review *The Town of Medley Freight Mobility Improvement Plan* from 2017.

Miami Intermodal Center Rail Connector (SIS Connector)

The MIC Rail Connector (highlighted blue in **Figure 12**) is a 0.28-mile segment linking the FDOT SIS Railroad Mainline with the CSXT Mainline – SXH.

Figure 12. Miami Intermodal Center Rail Connector



This link, situated just east of the MIA and North of the MIC, enhances the regional rail network's overall efficiency and connectivity. It ensures a seamless connection between the FDOT SIS Railroad Mainline and the CSXT Mainline – SXH, allowing for uninterrupted train movement. The MIC is a major passenger and freight hub, facilitating the transfer of goods between different modes of transportation, including rail, air, and road.

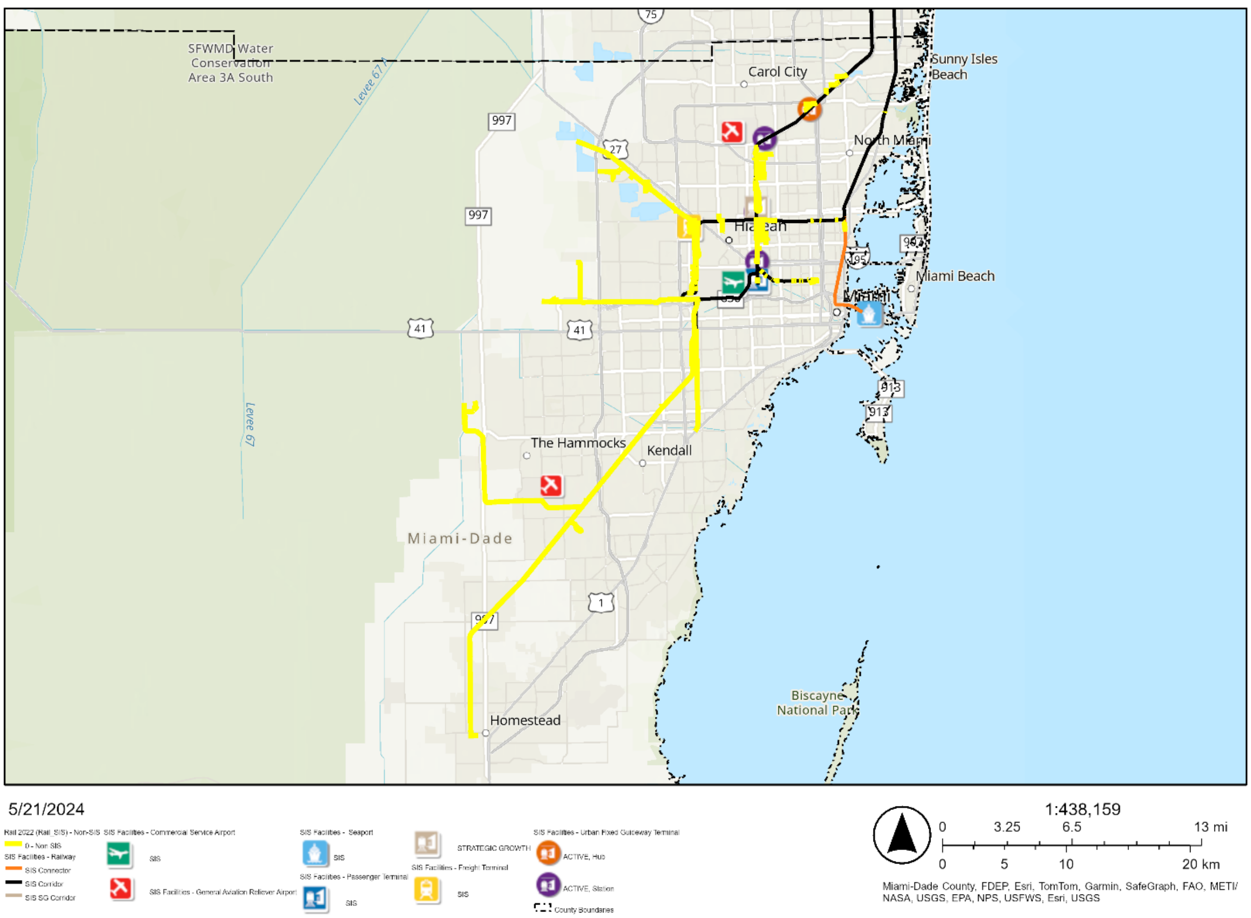
NON-STRATEGIC INTERMODAL SYSTEM RAILROADS

The Non-SIS railroads in Miami-Dade County (highlighted yellow in **Figure 13**) support local and regional freight and passenger movement. Although not part of the primary SIS network, these railroads are integral to the County's transportation infrastructure. This local infrastructure supports Miami-Dade's bustling economy by handling, sorting, and distributing freight through spurs, yards, and sidings.

These railroads enhance local connectivity by linking industrial zones and commercial areas to the broader transportation network, ensuring efficient transport of goods from production sites to markets and raw materials to manufacturing facilities.

Primarily supporting freight operations managed by CSX Transportation, Inc. and FEC Railway, these lines are vital for efficiently handling and distributing goods. By offering an alternative mode of transport for heavy goods, they help reduce traffic congestion on roadways and enhance the overall efficiency of the transportation system.

Figure 13. Non-SIS Railroads in Miami-Dade County



As shown in **Table 2**, non-SIS railroads include various types of lines: mainlines for through movement, yards for assembling and disassembling trains, spurs connecting to industrial sites, sidings for allowing trains to pass or be stored temporarily, and connectors linking different segments of the network. Each type serves a specific function, ensuring the smooth operation of both freight and passenger services.

Table 2. Breakdown of Railroad Line Type by Operator and Length (Miles)

Line Type	CSX Transportation, Inc.	Florida East Coast Railway	Total
Mainline	29.61	9.67	39.28
Yard	14.58	23.84	38.42
Spur	58.30	36.93	95.23
Siding	1.05	1.30	2.35
Connector	0.60	0.64	1.24
Total	**104.14**	**72.38**	**176.51**

Source: FDOT; ArcGIS – Strategic Intermodal Facilities – Railway (5/8/2024)

Railroad Crossings

Miami-Dade County has a total of 327 railroad crossings (highlighted **green** in **Figure 14**), categorized into three types:

- **At-Grade Crossings**: 279
- **Railroad Overpasses**: 5
- **Railroad Underpasses**: 42

Figure 14. Railroad Crossings in Miami-Dade County

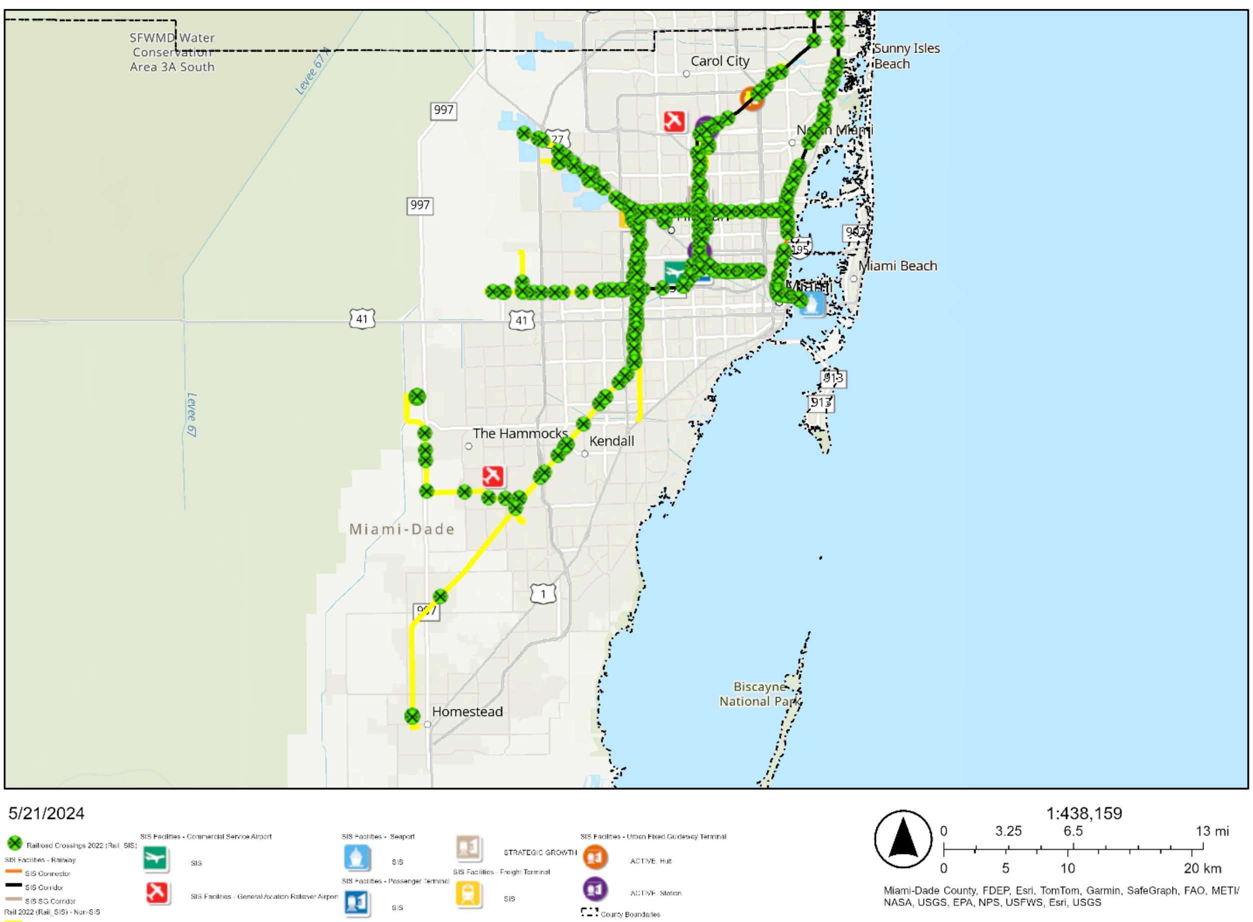


Table 3 shows the distribution of railroad crossings by railroad operators and type. At-grade crossings constitute the majority of the 327 railroad crossings in Miami-Dade County, with 279 in total, accounting for approximately 85.3 percent of all crossings. These crossings are predominantly used by highway vehicles and are common in urban areas where roads and railways intersect at the same level. They pose safety risks and often require improvement projects to enhance safety and efficiency.

There are five railroad overpasses in Miami-Dade County, making up about 1.5 percent of the total crossings. Railroad underpasses, totaling 42, represent about 12.8 percent of the total crossings. These grade-separated crossing orientations are crucial for reducing conflicts between rail and road traffic, and they serve both vehicles and pedestrians, indicating their strategic placement in urban areas with high traffic volumes.

Table 3. Number of Railroad Crossings by Railroad Operator and by Type

Rail Operator	At-Grade	Railroad Overpass	Railroad Underpass	Total
CSX Transportation, Inc.	91		16	107
Florida East Coast Railway	140	5	16	161
South Florida Regional Transportation Authority	48		10	58
Total	**279**	**5**	**42**	**327**

Source: FDOT; ArcGIS – Strategic Intermodal Facilities Layer – Railroad Crossings 2022 (9/12/2022)

Both CSX Transportation, Inc. and the FEC Railway primarily handle freight operations. CSX manages 107 crossings, which is 32.7 percent of the total crossings in the County. The FEC Railway manages 161 crossings, accounting for 49.2 percent of the total. These freight providers are crucial for moving goods across the region, emphasizing the importance of efficient and safe rail infrastructure to support economic activities.

The South Florida Regional Transportation Authority (SFRTA) operates 58 crossings, primarily used for passenger services, representing 17.7 percent of the total crossings. This dual use underscores the importance of these railroads in meeting the diverse transportation needs of Miami-Dade residents and businesses. The added focus on passenger transport highlights the need for safe and efficient rail crossings to facilitate commuter movements and reduce traffic congestion.

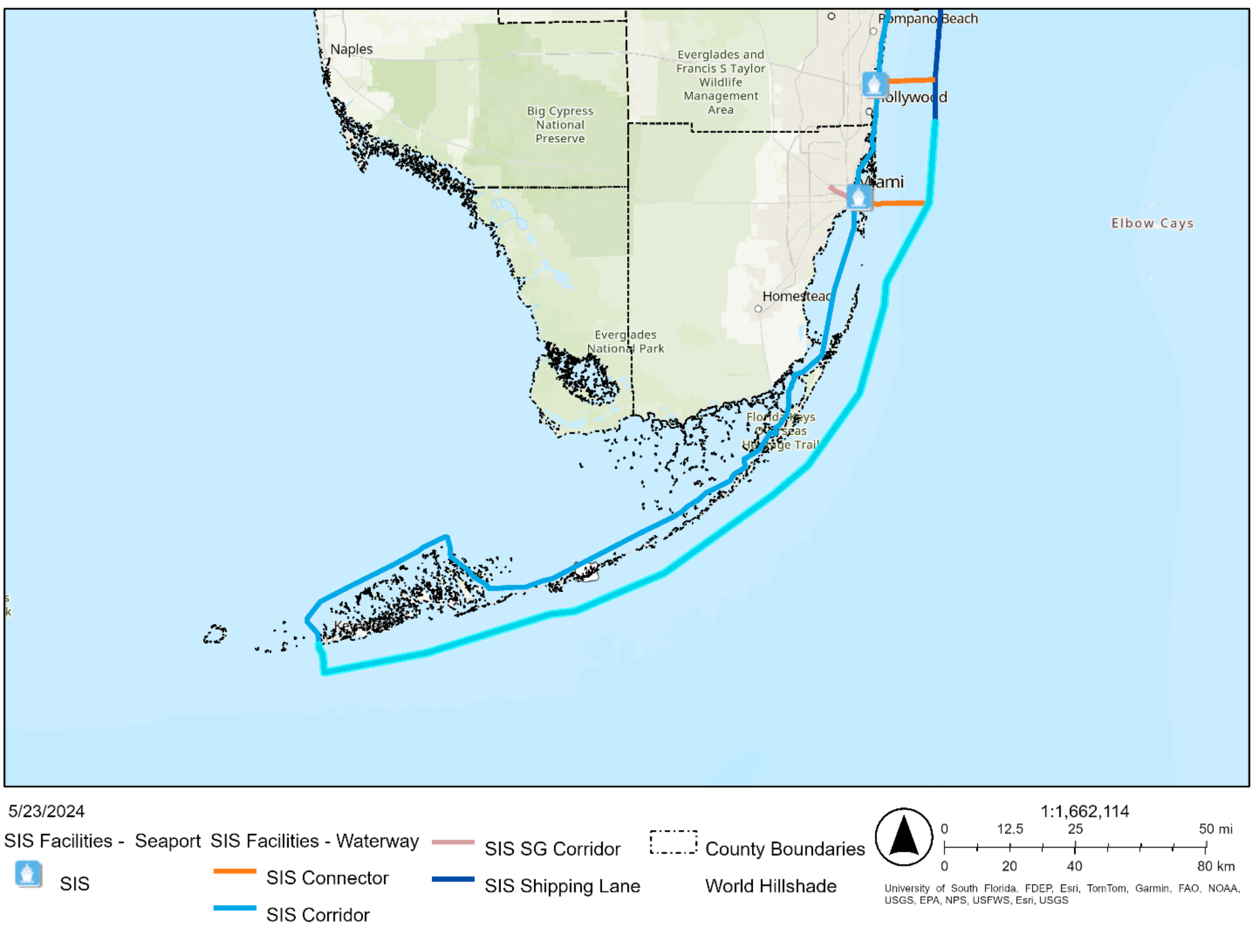
3.3 Waterways

Miami-Dade County boasts a network of strategically important navigable waterways that play a crucial role in the region's freight and logistics operations. These waterways, designated under the SIS, facilitate efficient cargo movement and provide essential connections to international trade routes. The following highlights provide an overview of these critical waterways:

Atlantic Shipping Lane (SIS Shipping Lane)

The Atlantic Shipping Lane (highlighted blue in **Figure 15**) is a designated maritime route supporting large cargo vessels' movement along the Atlantic coast. This lane connects Miami-Dade County to major international shipping routes, ensuring seamless transportation of goods. It is designated as an SIS Shipping Lane with a length of approximately 178.61 miles. The Atlantic Shipping Lane provides a safer and more direct route for freight ships bound for PortMiami, complementing the Atlantic Intracoastal Waterway.

Figure 15. Atlantic Shipping Lane



ATLANTIC INTRACOASTAL WATERWAY (SIS CORRIDOR)

The Atlantic Intracoastal Waterway - North (highlighted **blue** in **Figure 16**) and the Atlantic Intracoastal Waterway – South (highlighted **blue** in **Figure 17**) both run parallel to the Atlantic Shipping Lane and the Atlantic Ocean. These waterways provide a crucial navigation route for vessels, reducing congestion on the open sea and providing a safer passage for smaller boats. It is designated as an SIS Corridor, with the North segment being approximately 14.27 miles long while the South segment stretches about 166.34 miles.

The entirety of the Atlantic Intracoastal Waterway extends 529 miles in Florida, from the Florida/Georgia state line to the Florida Keys. It supports both recreational and freight-related activities, with freight access through PortMiami and the Miami River. Although primarily used for recreational purposes in Miami-Dade County, increased cargo movement could involve direct barge services for specialized cargo.

Figure 16. Atlantic Intracoastal Waterway (North)

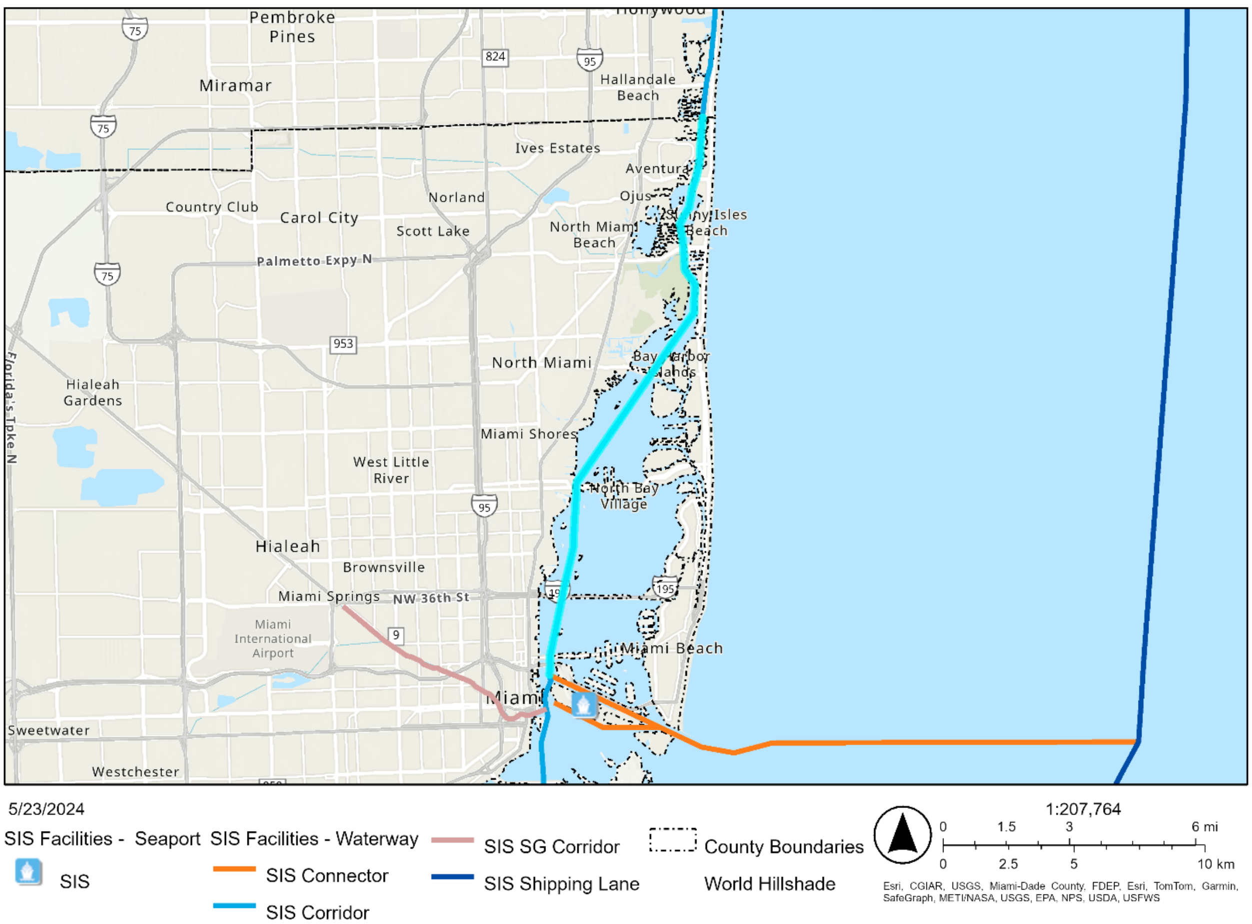
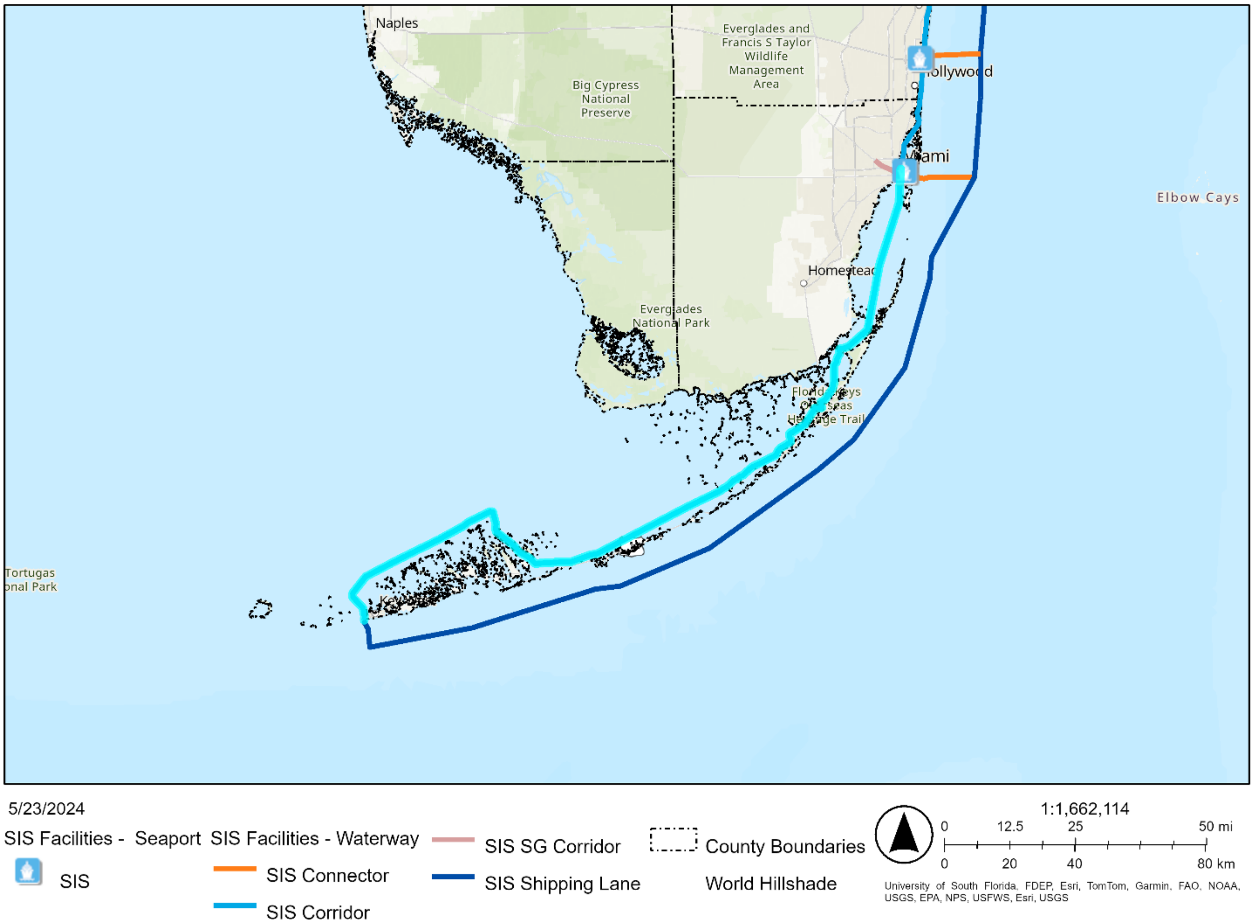


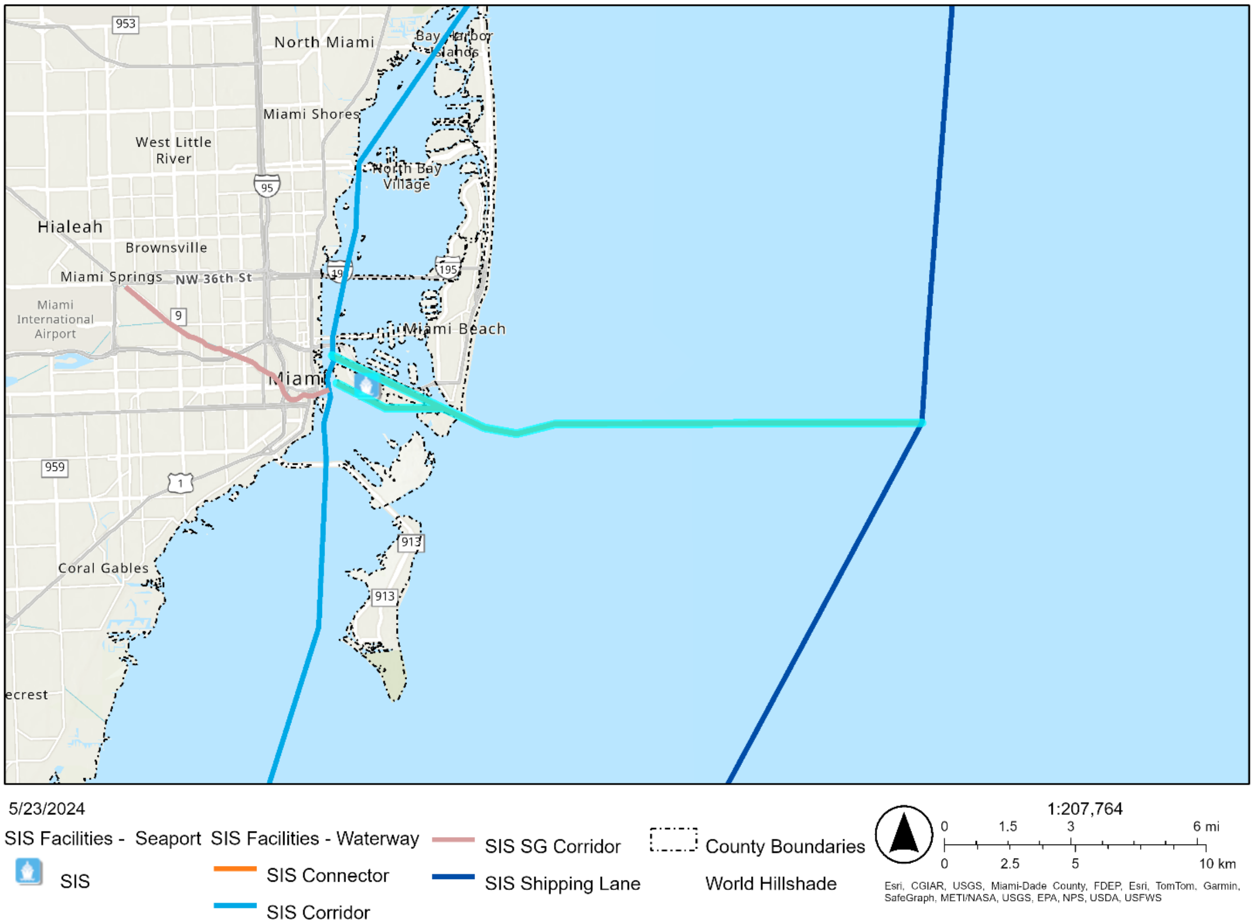
Figure 17. Atlantic Intracoastal Waterway (South)



PortMiami Waterway Connector (SIS Connector)

The PortMiami Waterway Connector (highlighted **blue** in **Figure 18**) links PortMiami to the broader network of navigable waterways, enhancing the efficiency of cargo movement between the port and inland destinations. It is designated as an SIS Connector with a length of approximately 17.10 miles. This connector is crucial for integrating PortMiami into the regional and international trade networks, supporting its role as a major logistics hub.

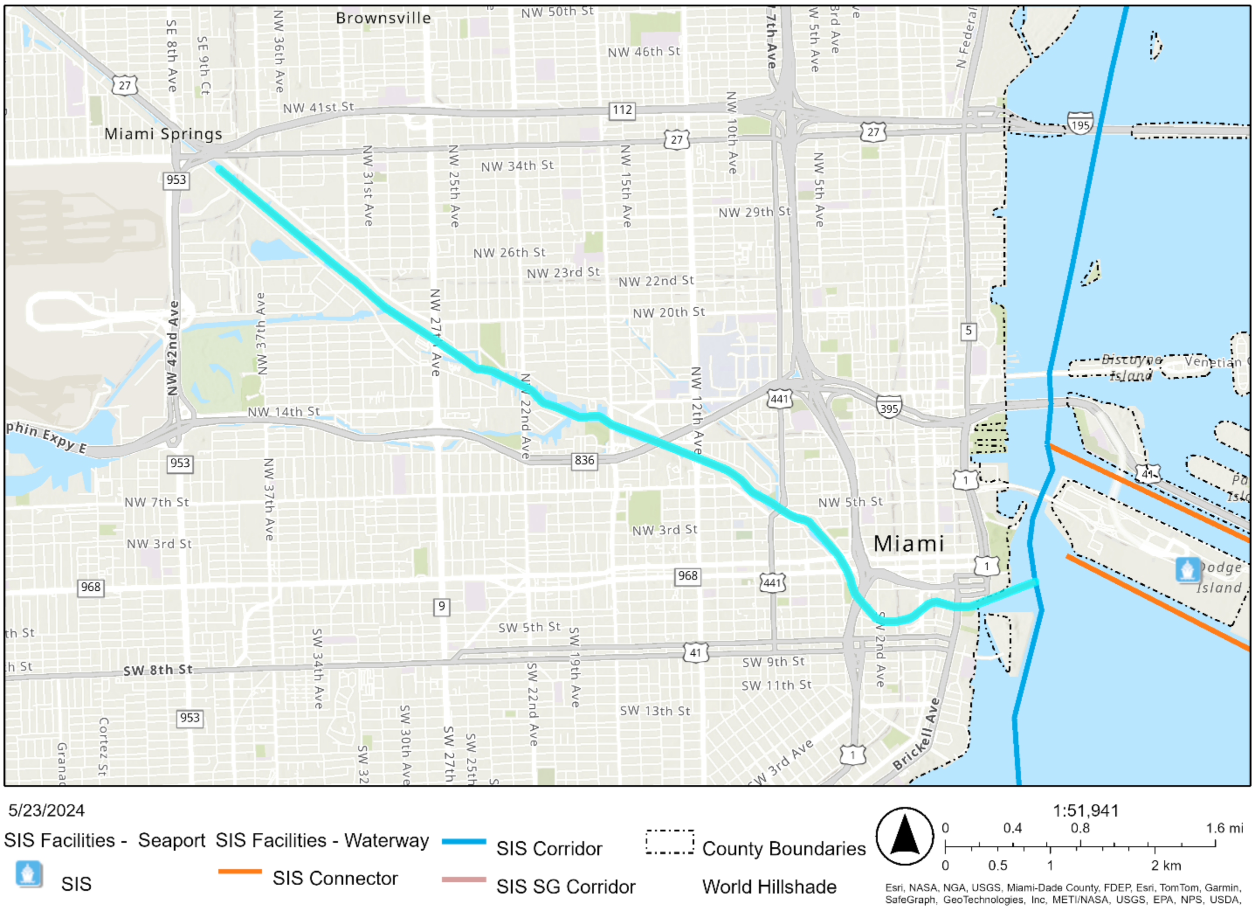
Figure 18. PortMiami Waterway Connector



MIAMI RIVER (SIS SG CORRIDOR)

The Miami River (highlighted **blue** in **Figure 19**) is a crucial waterway for shallow-draft marine shipping. It connects to Biscayne Bay and supports numerous private shipping companies. It is approximately 5.85 miles long and is designated as a SIS SG Corridor. The Miami River has an authorized depth of 15 feet, which serves key niche cargo services. The river continues to handle significant export volumes, focusing on manufacturing equipment and machinery.

Figure 19. Miami River



3.4 Pipelines

Pipeline infrastructure is crucial for statewide energy distribution, which is pivotal in delivering over ten million gallons of jet fuel, gasoline, propane, and other products to Florida via ship and barge. In general, pipelines provide a reliable and cost-efficient means of transporting large volumes of energy products, reducing dependency on road and rail transport, alleviating congestion, and minimizing environmental impact. Regular maintenance and advanced monitoring systems are essential for preventing disruptions and ensuring safety, enhancing the resilience of the freight logistics network.

Florida's pipeline network totals 5,899 miles,[3] facilitating the movement of products, including natural gas and hazardous liquids such as jet fuel. The pipeline infrastructure is relatively limited within Miami-Dade County and FDOT District Six. In contrast, FDOT District Four, particularly around Port Everglades, has extensive pipeline infrastructure. Port Everglades is a major facility for storing and distributing petroleum products, handling about a third of Florida's petroleum supply.

Despite its limited pipeline infrastructure, Miami-Dade County plays a crucial role in supporting the movement of petroleum products and natural gas, essential for local and statewide freight operations. Notably, the transition to liquefied natural gas (LNG) for rail transport has introduced new infrastructure elements that enhance the County's freight logistics capabilities.

Miami-Dade County's pipeline infrastructure includes the critical jet fuel pipeline to MIA and the LNG infrastructure supporting the FEC Railway. The jet fuel pipeline enhances MIA's freight operations by ensuring a steady fuel supply for aviation activities. FEC Railway's transition to using LNG for their locomotives reduces emissions and operational costs, enhancing the sustainability and efficiency of freight rail operations. The LNG plant at the Hialeah Rail Yard supplies LNG for FEC's locomotive fleet, ensuring a reliable and continuous supply. This connectivity ensures Miami-Dade County's integration with Florida's broader freight network, which is vital for the efficient distribution of energy products and supports various economic activities.

Future developments include potential projects to expand pipeline capacity in Miami-Dade and surrounding areas, enhancements to existing infrastructure to support growing demand, and the adoption of advanced technologies for real-time monitoring and predictive maintenance. Efforts to minimize environmental impact through cleaner fuels, more efficient operations, and investment in renewable energy sources and their integration with the existing pipeline network are also underway.

4.0 Freight Facilities

Miami-Dade County's extensive freight facilities form a cornerstone of its economic infrastructure, supporting robust international trade and regional economic development. This section delves into the County's diverse array of freight facilities, including seaports, airports, intermodal facilities, logistics centers, rock mining centers, and truck parking areas. Each component is vital for the seamless movement of goods and contributes significantly to Miami-Dade's status as a pivotal logistics hub in South Florida.

4.1 Seaports

Miami-Dade County has two major ports: PortMiami and the Port of Miami River. These ports play critical roles in international trade and regional economic development, each serving distinct yet complementary functions within the county's maritime infrastructure.

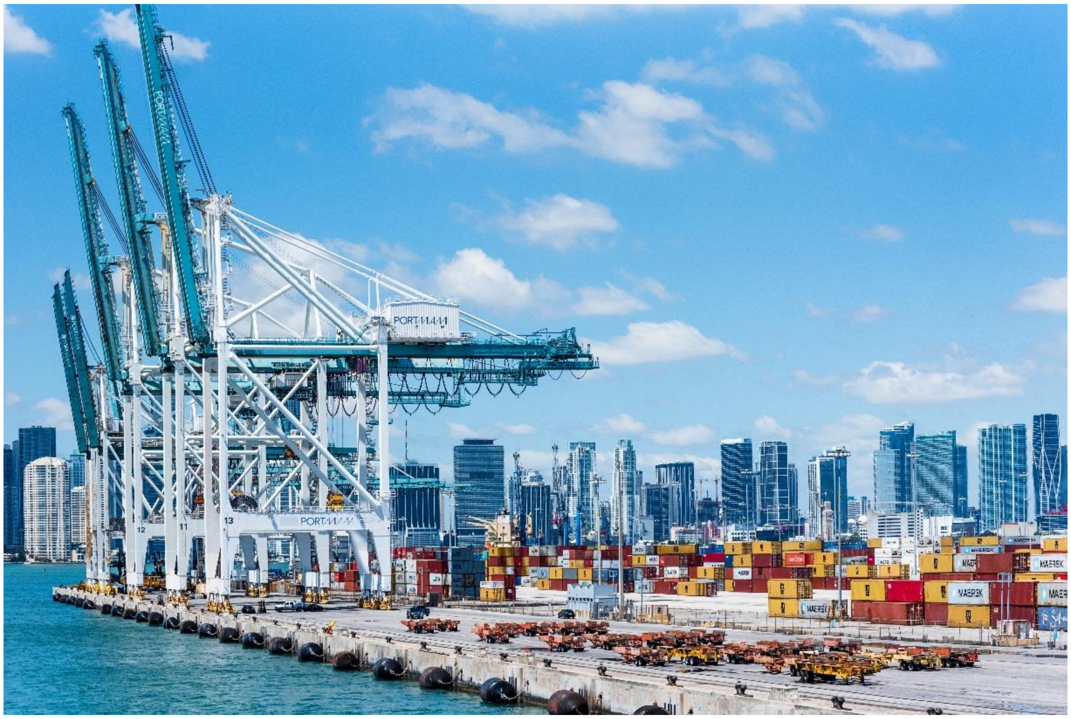
PortMiami

PortMiami is a key player in international trade and cargo movement, equipped with extensive facilities and infrastructure to handle diverse types of cargo. As shown on the PortMiami Address Map, the Port includes several major terminals, such as the South Florida Container Terminal (SFCT) (**Figure 20**), the

[3] FDOT Freight Mobility and Trade Plan, April 2020

Seaboard Marine Terminal, and the POMTOC terminal. These terminals primarily manage large volumes of containerized cargo, measured in twenty-foot equivalent units (TEUs), as well as breakbulk cargo (steel, lumber, oversized machinery) and roll-on/roll-off (RoRo) cargo, including vehicles and heavy equipment.

Figure 20. PortMiami's South Florida Container Terminal



Source: Shutterstock: User Mariusz Bugno

PortMiami is equipped with a variety of cranes to support these operations. The super post-Panamax cranes, located at SFCT and POMTOC, can handle the largest container ships in the world, reaching across vessels up to twenty-two containers wide with a lift capacity of approximately sixty-five tons. Gantry cranes, which operate on tracks, are used across various terminals to facilitate the efficient loading and unloading of container ships.

PortMiami offers extensive warehousing and storage facilities to support its cargo operations. On-dock warehousing provides immediate storage for goods arriving at the port, facilitating quick transfers between ships, trucks, and rail services. The port features state-of-the-art refrigerated warehouses with multiple temperature-controlled chambers essential for handling perishable goods such as pharmaceuticals, fresh produce, and seafood. Bonded warehouses allow for the storage of imported goods under customs bonds, enabling businesses to defer duty payments until the goods are sold or exported. Additionally, the Miami Foreign Trade Zone (FTZ) within the Port offers benefits like duty deferral and reduced tariffs, streamlining customs procedures and encouraging international business.

Managing truck traffic is a critical aspect of PortMiami's operations. The port features designated truck staging areas where trucks can wait before entering terminal gates, reducing congestion and improving the flow of vehicles. Advanced Automated Gate Systems (AGS) use optical character recognition (OCR) and other technologies to process trucks quickly, minimizing wait times. Additionally, dedicated truck lanes and robust traffic control measures help maintain smooth traffic flow within the port. The PortMiami Tunnel directly links interstate highways, enabling trucks to bypass downtown Miami, further reducing congestion and improving transit times. On-dock rail services, provided by FEC, offer seamless connections for cargo transfer between the port and regional distribution centers.

In terms of infrastructure, PortMiami employs advanced technology for cargo handling. Automated systems for inventory management, real-time tracking, and efficient sorting and retrieval improve operational efficiency and reduce the risk of errors. Robust security measures, including surveillance, access controls, and regular patrols, ensure the safety and integrity of stored goods.

Port of Miami River

The Port of Miami River is a crucial component of Miami's freight network. It specializes in shallow-draft marine shipping and serves niche markets primarily in the Caribbean. This Port is situated within central Miami-Dade County near MIA, leveraging its river connection to Biscayne Bay, which traverses the City of Miami and the burgeoning downtown district. The area between NW 22nd Ave and NW 39th Ave is zoned marine industrial, making it a hub for private shipping companies operating along the Miami River.

The Port of Miami River includes a collection of private shipping companies comprising 24 shipping terminals[4] along the Miami River's 5.85-mile section of navigable waters. These terminals trade with over 100 Caribbean ports of call that are not serviced by the larger ships accessing PortMiami. Key terminals such as the Antillean Marine Terminal play a significant role in the Port's operations, handling approximately 34,500 TEUs annually. Other notable operators include Betty K, Bimini Shipping, and Sea Cana Terminal (**Figure 21**). These operators provide scheduled services and significantly contribute to the river's cargo movement.

Figure 21. Port of Miami River Sea Cana Terminal

Source: BEA Architects [webpage]

[4] The total number of river terminals existing today is unclear. The 24 shipping terminals figure comes from a Miami-Dade TPO study from 2007: https://miamidadetpo.org/library/studies/miami-river-corridor-multi-modal-transportation-plan-final-report-2007-08.pdf

The port's infrastructure includes essential handling equipment such as ship-to-shore cranes, reach stackers, and side loaders, facilitating efficient loading and unloading of vessels. Container storage areas are strategically located to ensure smooth transitions between different modes of transport, supporting the port's throughput capacity. Despite managing only about 6 percent of the volume handled by PortMiami, the Miami River operates at about 50 percent of its capacity, indicating substantial reserve capacity for future growth, which is vital for accommodating increased cargo volumes and supporting economic expansion.

Regarding warehousing and storage, the Port features bonded warehouses that allow for the storage of imported goods under customs bonds, enabling deferred duty payments and benefiting businesses engaged in international trade. Additionally, temperature-controlled warehouses can handle perishable goods such as pharmaceuticals, fresh produce, and seafood.

Efficient truck traffic management is critical to the Port of Miami River's operations. Designated truck staging areas and advanced traffic control measures are in place to reduce congestion and improve vehicle flow within the port area. Seamless connections to regional distribution centers are maintained through on-dock rail services, enhancing the efficiency of cargo transfer and distribution. While the marine shipping traffic generates a relatively small share of the traffic in this sector of the County, its truck trips are as vital to the shippers and customers involved as those in more freight-oriented districts such as Doral and Medley.

The Port employs advanced cargo handling technology, including automated inventory management systems, real-time tracking, and efficient cargo handling, which improve operational efficiency and reduce the risk of errors. Robust security protocols, including surveillance, access controls, and regular patrols, ensure the safety and integrity of the port's operations and stored goods.

4.2 Airports

The following section provides a detailed overview of the region's key airports involved in air freight operations. MIA and Opa-Locka Executive Airport (OPF) support international and domestic cargo movements. These airports are equipped with extensive facilities and advanced technologies to ensure efficient handling and distribution of goods.

Miami International Airport

MIA is a critical hub for air freight, playing a pivotal role in international trade, particularly with Latin America and the Caribbean. MIA also has strong connections to Europe, Asia, and the Middle East, solidifying its position as a key center for international trade and cargo distribution.

As the number one airport in the U.S. for international trade in 2022, MIA handled over 2.8 million tons of cargo. MIA continuously upgrades its freight operations to meet growing demand and enhance its capabilities, encompassing extensive facilities and advanced technologies.

The following facilities and services support MIA's cargo operations:

- **Runways**: MIA has four runways, ranging from 8,600 feet to 13,016 feet, designed to accommodate a wide range of aircraft, including the largest cargo planes. The runway dimensions for each are:
    1. **Runway 8L/26R**: Measuring 8,600 feet in length and 150 feet in width, this runway supports a variety of aircraft. It is integral to maintaining a smooth operational flow for both cargo and passenger flights.

2. **Runway 8R/26L**: At 10,506 feet long and 200 feet wide, this runway can handle larger aircraft, making it suitable for heavy cargo planes. The additional width provides ample space for wide-body aircraft operations.
3. **Runway 9/27**: This is the longest runway at MIA, measuring 13,000 feet in length and 150 feet in width. It is capable of accommodating the heaviest and largest cargo aircraft, even under fully loaded conditions.
4. **Runway 12/30**: Measuring 9,354 feet in length and 150 feet in width, this runway supports a wide range of aircraft sizes, contributing to the airport's flexible operational capacity.

- **Freight Warehouses**: MIA offers over 2.7 million square feet of warehouse and office space dedicated to cargo operations. This includes on-airport and off-airport facilities designed to handle a variety of goods. The warehousing facilities have advanced technologies for efficient handling, storage, and inventory management. These warehouses support diverse cargo, from general merchandise to high-value items.
- **Cold Storage**: MIA features state-of-the-art cold storage facilities essential for handling perishable goods. These facilities include multiple temperature-controlled chambers that maintain the specific conditions required for various perishables, such as pharmaceuticals, flowers, fresh produce, and seafood. The cold storage infrastructure ensures the quality and safety of sensitive goods during transit.
- **Freight Operators**: Numerous freight forwarders operate at MIA, providing comprehensive logistics and handling services, ensuring smooth customs processing and timely delivery of goods. The airport manages significant volumes of high-value items, including electronics, machinery, and luxury goods, with enhanced security measures in place. General cargo includes a wide variety of products, such as textiles, automotive parts, and industrial machinery. Major cargo airlines serving MIA include FedEx, UPS, DHL, and LATAM Cargo. These airlines operate both dedicated freighter aircraft and belly cargo on passenger flights.
- **Customs and Regulatory Services**: U.S. Customs and Border Protection (CBP) has a significant presence at MIA, ensuring efficient processing of imports and exports. The customs facilities are equipped to handle large cargo volumes, expedite clearance processes, and ensure compliance with all regulatory requirements. MIA's inclusion in the Miami FTZ offers benefits like duty deferral and reduced tariffs, encouraging international business, and simplifying customs procedures.
- **Trucking**: Trucking is a critical component of MIA's freight operations. The airport is well-connected to major highways, including I-95 and SR-836 (Dolphin Expressway), facilitating efficient ground transportation. Designated truck lanes, advanced gate systems, and truck staging areas help manage the flow of vehicles, reduce congestion, and improve overall efficiency. Trucking services ensure seamless distribution of goods from the airport to regional and national markets.
- **Rail Connections**: MIA benefits from on-dock rail services provided by FEC. These services offer a seamless connection between the airport and the broader rail network, enhancing the movement of goods to and from MIA. The rail connections are particularly advantageous for heavy or bulk cargo, reducing reliance on road transport and contributing to environmental sustainability by lowering emissions.

- **Technology**: MIA employs advanced tracking technologies to monitor the movement of goods in real-time, providing visibility into the status and location of cargo at all times. Automation is heavily utilized within MIA's cargo facilities, improving operational efficiency with automated sorting systems, inventory management software, and electronic documentation processes. Data analytics are used to optimize logistics operations, identify areas for improvement, and implement strategies to enhance overall efficiency.

To further enhance its capabilities, MIA is developing the $2 billion Vertically Integrated Cargo Community (VICC) (**Figure 22**). This state-of-the-art, five-story facility will double the airport's cargo capacity. The VICC will feature automated and traditional cargo processing areas, with robotic technology on the first two floors and conventional operations on the third and fourth floors. The top floor will provide amenities for workers, such as restaurants, retail spaces, and potentially a daycare center. The VICC is projected to generate $35.5 billion in economic benefits over its 50-year lease and create over 3,000 permanent jobs in cargo operations. MIA is committed to sustainability, incorporating solar panels in the VICC to generate up to 3,600 MWh of clean energy annually. Consolidating cargo operations within the VICC will reduce CO_2 emissions by 10,000 metric tons annually.

Figure 22. Concept Rendering of the Vertically Integrated Cargo Community at MIA

Source: Global Miami Magazine

Opa-Locka Executive Airport

OPF is a critical general reliever airport located approximately seven miles north of MIA. It is essential in supporting air freight operations, particularly for light cargo traffic to the Caribbean region. OPF handles over 1,600 annual general aviation air cargo operations, primarily ad-hoc. This support enhances air freight facilitation within the state and region, particularly regarding ground access and proximity to market areas.

The following facilities and services support OPF's cargo operations:

- **Runways**: OPF is equipped with three runways designed to accommodate a wide variety of aircraft, ranging from small general aviation planes to larger cargo aircraft. These runways are meticulously maintained to support the diverse operational needs of the airport:
  - **Runway 9L/27R**: Measuring 8,002 feet in length and 150 feet in width, this is the longest runway at OPF. It is capable of handling larger aircraft and is primarily used for cargo operations and larger general aviation flights. The length and width of this runway provide ample space for takeoff and landing, even under fully loaded conditions.

   - **Runway 9R/27L**: This runway is 4,309 feet long and 150 feet wide. It is mainly utilized by smaller general aviation aircraft but can also accommodate light cargo aircraft. Its shorter length makes it suitable for a variety of smaller and medium-sized planes.
   - **Runway 12/30**: At 6,800 feet long and 150 feet wide, this runway serves a mix of general aviation and cargo flights. Its length allows it to handle a range of aircraft sizes, providing flexibility in operations.
- **Freight Warehouses**: Adjacent to OPF is an Amazon warehouse fulfillment and distribution center spanning over 800,000 square feet. This facility is one of many strategically located throughout Miami-Dade County, including areas near MIA, the Hialeah FEC Rail Yard, and southwest of Doral. These warehouses and smaller distribution centers are crucial for supporting industrial and freight-related development, facilitating efficient handling and storage of various goods.
- **Cold Storage**: While OPF primarily handles light cargo traffic, its proximity to extensive cold storage facilities in the region, including those at MIA, ensures that perishables such as pharmaceuticals, flowers, and food products can be efficiently managed and transported.
- **Freight Operators**: OPF supports a range of general aviation air cargo operations, with numerous freight operators providing logistics and handling services. These operators ensure smooth customs processing and timely delivery of goods, enhancing the efficiency of the airport's cargo operations.
- **Customs and Regulatory Services**: Customs and regulatory services at OPF are robust, ensuring efficient processing of imports and exports. The airport's operations are supported by nearby facilities that offer streamlined customs procedures, encouraging international business and facilitating smooth cargo movements.
- **Trucking**: Trucking services are critical to OPF's freight operations, benefiting from the airport's excellent ground access. The proximity to major highways facilitates efficient ground transportation, ensuring seamless distribution of goods to regional and national markets. The strategic location of warehouses near OPF enhances the efficiency of trucking operations, reducing transit times and improving overall logistics.
- **Rail Connections**: While OPF does not have direct rail connections, its proximity to key rail facilities, such as the Hialeah FEC Rail Yard, enhances its connectivity. This strategic location allows for the efficient transfer of goods between air and rail, supporting multimodal transportation solutions and contributing to environmental sustainability by reducing reliance on road transport.
- **Technology**: OPF employs advanced tracking technologies to monitor the movement of goods, ensuring real-time visibility into the status and location of cargo. Automated systems for inventory management and electronic documentation streamline cargo handling processes, improving operational efficiency. Data analytics are utilized to optimize logistics operations, identify areas for improvement, and implement strategies to enhance overall performance.

4.3 Intermodal Facilities

While similar in name to ILCs, intermodal facilities serve a slightly different purpose within the transportation network. They are specific sites where the transfer of goods between different modes of transport occurs efficiently. These facilities are key to minimizing freight handling while changing from one mode of transport to another, such as from rail to truck or ship to rail. Let's break down their primary functions and features:

- **Transfer Points**: Intermodal facilities are equipped with the necessary infrastructure to facilitate the easy transfer of containers or other cargo units from one transportation mode to another. For example, cranes at these facilities lift containers from trains onto trucks or cargo ships directly onto rail cars.
- **Minimization of Handling**: The design of these facilities focuses on reducing the handling of cargo to prevent damage and decrease loading and unloading times. This efficiency is crucial for perishable goods and high-value items.
- **Cost Efficiency**: Intermodal facilities help reduce transportation costs by optimizing the transfer process. Efficient transfers mean less time spent in transit and storage, which reduces overall logistics costs.
- **Environmental Benefits**: These facilities contribute to environmental sustainability by promoting rail transport, which generally has a lower carbon footprint than road transport for long-distance hauls.
- **Strategic Locations**: Typically, intermodal facilities are strategically located near major ports, railway terminals, or highway intersections to maximize their accessibility to different transport networks.
- **Technology Integration**: Advanced technology systems for tracking and managing cargo flow are integral to modern intermodal facilities. These systems ensure the visibility of goods throughout the transport chain, enhancing security and operational efficiency.

Miami-Dade County is home to several notable intermodal facilities that serve as key nodes in both national and international transportation networks, including:

- **PortMiami**: Often referred to as the “Cargo Gateway of the Americas,” PortMiami has significant intermodal capabilities. It is equipped with on-dock rail service provided by the FEC Railway, allowing direct transfer of goods between ships and trains. This facility enhances the Port’s ability to distribute goods to the eastern U.S. and beyond quickly.
- **The MIC**: Located near MIA, the MIC is a major transportation hub that integrates multiple modes of transportation, including an airport, Metrorail, Tri-Rail, buses, and rental car services. This facility is crucial for passenger movement but also supports cargo transfer through its proximity to the airport’s cargo terminals.
- **Hialeah Intermodal Yard**: Operated by FECR, this facility is pivotal for freight rail transport across the eastern U.S. It supports the consolidation and distribution of cargo coming into and out of the region, linking with PortMiami and other local and regional distribution centers.

These facilities are strategically designed to optimize the transfer of goods between transport modes. Additionally, Miami-Dade County benefits from the strategic positioning of several FTZs, enhancing its capabilities as a global logistics and trade hub. These include:

1. **FTZ 32 - Miami**: Located around MIA, FTZ 32 is a vital hub for swiftly and efficiently handling international air freight. Its focus on high-value and time-sensitive goods like pharmaceuticals and electronics makes it indispensable for industries requiring rapid customs processing and access to major air transportation routes. The zone’s proximity to the airport facilitates quick turnover times, reducing storage needs and costs.

2. **FTZ 166 - Homestead**: Situated in a less congested area of Miami-Dade, FTZ 166 offers logistical advantages for companies involved in light manufacturing, warehousing, and distribution. Its location serves businesses aiming to connect quickly to southern parts of the County and the Florida Keys, providing a strategic point for distribution that avoids the denser traffic of the central metropolitan area.
3. **FTZ 180 – Miami (Wynwood)**: Although currently inactive, the intended purpose of FTZ 180 was to leverage the cultural and commercial vibrancy of the Wynwood area to attract industries such as fashion, technology, and creative arts. The strategic location was chosen for its potential to integrate these industries seamlessly into the urban market dynamics of Miami-Dade.
4. **FTZ 281 – Miami-Dade County**: This extensive zone encompasses several key locations, including PortMiami and multiple other sites across the County. FTZ 281 facilitates various operations, from automobile processing to luxury goods and textile manufacturing. By covering a large area that includes key logistical hubs like PortMiami, this FTZ harnesses its strategic position to enhance the efficiency of global supply chains and foster economic growth across diverse sectors.

Beyond these major examples, Miami-Dade County has smaller or less well-known intermodal facilities that also contribute to the regional transportation network:

- **Railroad intermodal yards**: Smaller yards associated with national railroad networks that facilitate the transfer of cargo between trains and trucks. These are often found alongside major rail lines traversing the County.
- **Dedicated cargo areas at MIA**: While primarily an air cargo hub, MIA's facilities also support intermodal transfers, particularly for goods moving between air transport and ground logistics services.
- **Warehouse districts with intermodal capabilities**: Certain industrial zones or warehouse districts are likely equipped with specialized loading and transfer facilities for moving goods between trucks and warehousing spaces, effectively serving as intermodal transfer points within the supply chain.
- **Private logistics hubs**: Some large retailers or manufacturers may operate private intermodal facilities to manage the distribution of their goods more efficiently. These are typically located near major highways or other transport infrastructure.

While specific details and the scale of these additional facilities may vary, they all play integral roles in supporting the complex logistics environment of Miami-Dade County. To get a comprehensive list or more specific information about all intermodal facilities in the area, contacting local transportation authorities or industry associations might be necessary.

4.4 Intermodal Logistics Centers, Distribution, and Freight Activity Centers

In Miami-Dade County, ILCs, distribution centers, and freight activity centers are essential hubs within the global supply chain, where goods are aggregated, sorted, and prepared for their next journey. These centers are pivotal for receiving goods from various modes of transport—ships, planes, and trucks—and organizing them based on destination, type, and storage requirements. They often provide value-added services such as packaging, assembly, and quality inspections to enhance product marketability.

Additionally, these facilities offer temporary storage to align with distribution schedules, supporting efficient inventory management and just-in-time delivery systems. Once processed, goods are redistributed to retailers, wholesalers, or directly to consumers, leveraging Miami-Dade's strategic location and transport infrastructure to ensure swift and cost-effective delivery. Through these functions, the centers not only facilitate but also optimize the flow of goods, reinforcing Miami-Dade's role as a critical node in both domestic and international commerce.

Intermodal Logistics Centers

According to Florida Statutes, FL Stat § 311.101 (2023), an ILC, including what might also be referred to as an "inland port," is defined as a facility or group of facilities that serve as a point of intermodal freight transfer in an area physically separated from a seaport. These centers engage in activities related to transport, logistics, goods distribution, consolidation, and value-added services. The services and activities of an ILC are intended to support and be supported by shipping through one or more seaports.

FDOT initially developed the ILC Infrastructure Support Program to provide financial assistance for infrastructure projects like roads and rail facilities that facilitate the conveyance and shipment of goods through seaports. While this program was sunsetted in 2020, recent legislative proposals aim to revive it with new funding allocations. This support enables the State to respond effectively to private sector market demands and enhances Florida's trade, logistics, and export-oriented hub capacity.

The South Florida Logistics Center (SFLC) is a prominent ILC in Miami-Dade County. SFLC, located near MIA, offers comprehensive logistics services such as warehousing, distribution, and transloading, with direct access to major highways like I-95, I-75, Florida's Turnpike, and proximity to PortMiami.

Distribution Centers

The many distribution centers within Miami-Dade County play a crucial role in storing, consolidating, and redistributing goods and supporting regional and last-mile deliveries. Most existing industrial property is concentrated in the north-central and northwestern portions of Miami-Dade County (e.g., Doral, Hialeah, Medley, Opa-locka). Notable distribution centers include the Amazon Fulfillment Center in Opa-locka, which handles a vast volume of e-commerce orders for quick deliveries across South Florida, and other vital centers such as the FedEx Ground Distribution Facility in Medley and the UPS Distribution Center in Doral, both providing essential logistics services.

Freight Activity Centers

Freight activity centers are areas with a high concentration of freight-related activities, such as manufacturing, warehousing, and distribution. Medley is known for its dense industrial and warehouse developments, supported by its proximity to MIA, PortMiami, and major highways. Doral is a hotspot for logistics and distribution businesses, strategically located near MIA and major highways, hosting numerous warehouses and logistics firms. Additional freight activity centers include Hialeah, Miami Lakes Business Park, Flagler Station, and Beacon Lakes, each contributing to the County's freight operations with extensive warehousing and logistics services.

4.5 Rock Mining Centers

Miami-Dade County is a critical hub for rock mining activities, with a significant concentration of these operations in the Lake Belt area. The Lake Belt, encompassing 77.5 square miles west and northwest of the City of Miami and east of the Everglades, is Florida's primary source of limestone and limestone aggregate. Half of Florida's annual consumption of these materials originates from this area, making it indispensable for the State's construction and infrastructure projects.

Integrating rock mining centers into Miami-Dade County's freight network is vital for efficiently transporting extracted materials.

- **Roadways**: Major highways such as I-75, US-27, and the Florida Turnpike are strategically located near the mining areas, facilitating the rapid movement of heavy trucks. These highways connect the quarries to construction sites and other end-users across the State, while well-maintained local roads ensure smooth transit to these major thoroughfares.
- **Railroads**: Rail connectivity is another crucial component of the freight network. Many larger quarries in the Lake Belt area have dedicated rail sidings, allowing direct loading of aggregates onto freight trains. The FEC provides essential rail links to PortMiami and other regional markets, supporting efficient bulk transportation and reducing the reliance on road haulage.
- **Seaports**: PortMiami plays a significant role in the export of aggregates. The Port's proximity to the mining centers, combined with efficient rail and road connections, streamlines the export process, facilitating the movement of materials to international markets. Additionally, some materials are transported via barges from nearby waterways, offering a cost-effective and less congested transport solution.
- **Facilities**: The logistics infrastructure supporting these operations includes several distribution centers near highways and rail lines. These centers aid in storing and redistributing aggregates, optimizing the supply chain. Intermodal facilities, which integrate road, rail, and maritime transport, further enhance the flexibility and efficiency of the freight network, ensuring timely delivery of materials from the mining centers to their destinations.

The importance of the Lake Belt area extends beyond its economic contributions, as it also plays a crucial environmental role. This region houses the Northwest Wellfield, the largest drinking water wellfield in the state, providing 40 percent of Miami-Dade County's potable water. Stringent regulations and practices ensure a balance between extensive mining activities and environmental sustainability, safeguarding the water supply and surrounding ecosystems.

The regulatory framework governing mining operations prioritizes environmental protection and community safety. Compliance with local and state regulations is essential for the sustainable integration of mining activities into the freight network. Efforts to minimize the environmental impact of transportation include using cleaner fuels and technologies to reduce emissions from heavy trucks and trains. The strategic location of the Lake Belt mining centers, coupled with robust road, rail, and port connections, ensures the efficient movement of materials both within Miami-Dade County and to external markets.

4.6 Truck Parking

Truck parking is a vital component of the freight transportation system, crucial for ensuring that truck drivers have safe, legal places to rest and comply with hours-of-service regulations. Adequate truck parking facilities are essential to reduce driver fatigue, enhance road safety, and improve operational efficiency.

CURRENT INVENTORY

The FDOT District Six *Miami-Dade County Truck Parking Implementation Master Plan: Technical Memorandum #4 – Recommendations, Implementation Strategy, and Action Plan* (the Truck Parking Report), completed in January 2024, identifies several key sites with potential for development. **Table 4** and **Figure 23** provide a detailed inventory of identified truck parking sites, including their ownership, acreage, current use, and truck parking spaces.

Table 4. Final Sites from 2024 Miami-Dade County Truck Parking Implementation Master Plan

Site	ID	Owner	Zoning	Current Use	Acreage	Truck Parking Spaces
01	30-2914-000-0040	State	Agricultural/Residential	Vacant	130.93	1,907
02	30-2903-000-0010	County	Interim District	Vacant	102.98	1,308
03	08-2120-004-0120	County	Vacant Land-Industrial	Vacant	10.15	70
04	30-2004-000-0010	State	N/A	N/A	64.8	N/A
05	08-2120-004-0150	County	Vacant Land-Industrial	Vacant	8.33	65
06	30-1131-001-0020	State	Agricultural/Residential	Vacant	31.12	409
07	30-1131-001-0030	County	Agricultural/Residential	Vacant	165.10	2,718
08	27-2019-001-0572	Private	Vacant Land-Industrial	Truck Parking	8.35	85
09	30-3016-000-0012	County	Interim District	Vacant	47.60	655
10	22-2032-004-0350	Private	Vacant Land-Industrial	Vacant	12.92	115
11	30-4931-001-0070	State	Interim District	Vacant	19.01	279
12	30-6824-000-0070	County	Interim District	Drainage	4.81	48
13	30-6906-001-0020	Private	Agricultural/Residential	Vacant	5.24	38
14	Multiple	Private	Agricultural/Residential	Vacant	38.62	586
15	30-6005-060-0060	County	Industrial District	Vacant	11.89	137
16	30-4002-040-0020	State	Industrial – Restricted	CST Staging	15.01	316

Source: Miami-Dade County Truck Parking Implementation Master Plan: Technical Memorandum #4 – Recommendations, Implementation Strategy, and Action Plan

Figure 23. Final Sites from 2024 Miami-Dade County Truck Parking Implementation Master Plan

Source: Miami-Dade County Truck Parking Implementation Master Plan: Technical Memorandum #3 – Tier 3 Screening

The Truck Parking Report's evaluation identifies several key sites with potential for development. The most promising sites included the following:

1. **Site 01**: A State of Florida-owned parcel offering 1,907 spaces
2. **Site 02**: A Miami-Dade County site proposing 1,308 spaces
3. **Site 07**: A large Miami-Dade County parcel with the potential for 2,718 spaces

Additional sites range from small parcels with fewer than 100 spaces to larger plots offering hundreds of spaces. Each site has been assessed for feasibility based on factors such as zoning, current use, and environmental constraints. Notably, the Wedge Parcel (Site 16), managed by FDOT, stands out with a proposal for 316 truck parking spaces, although it will only be available post-2027 upon completion of the I-395 construction.

Other Notable Truck Parking Facility Efforts

In addition to the comprehensive inventory, several other notable truck parking facility efforts are underway:

1. **Application No. CDMP20210006: Terra137, LLC, and Blue Heron 6137, LLC**
   - **Proposal**: Develop a minimum of 400 truck parking spaces with additional amenities such as a transloading facility, fueling positions, and commercial spaces for truckers.
   - **Status**: The site plan is under review after receiving approval from Miami-Dade County.
2. **Golden Glades Truck Travel Center**
   - **Location**: Golden Glades Multimodal Transportation Facility.
   - **Proposal**: Development of a minimum of 135 truck parking spaces.
   - **Status**: Project delayed until 2032.
3. **Application No. CDMP20230016: 137 Avenue 8th Street Holdings, LLC, et al.**
   - **Proposal**: Amend CDMP to include a minimum of 800 truck parking spaces.
   - **Status**: In progress, awaiting staff recommendation.
4. **PortMiami Off-Dock Logistics Yard at Opa-locka West Airport**
   - **Proposal**: Develop a 200-acre Off-Dock Logistics Yard.
   - **Status**: The site was removed from consideration for truck parking implementation.

Adequacy Assessment

The current inventory of truck parking facilities in Miami-Dade County is insufficient to meet the growing demand, estimated at approximately 12,190 spaces daily. Most of the County's capacity is clustered in Medley, Hialeah, Opa-Locka, and unincorporated areas, with only 8 percent of the spaces being publicly owned. This significant shortfall leads to illegal parking, congestion, and safety hazards.

The adequacy assessment within the Truck Parking Report reveals several critical challenges, including environmental constraints such as proximity to wetlands and historical areas, regulatory and policy hurdles related to zoning and the Urban Development Boundary (UDB), and the variable quality of existing facilities, many of which lack essential amenities like restrooms, showers, and security measures.

Implementation Strategies

Several strategic actions are recommended to address the truck parking shortage. These include focusing on land acquisition and development, particularly for government-owned parcels, and evaluating private parcels for potential use. Public-private partnerships (PPP) should be leveraged to develop and manage new facilities, using Requests for Expressions of Interest (REOI) to gather proposals from potential partners. Additionally, pursuing state and federal funding programs and grants is crucial for supporting infrastructure development. Implementing supportive policies to streamline the development process and ensure compliance with environmental and zoning regulations is essential. Furthermore, engaging stakeholders, including government agencies, private sector partners, and community groups, is vital for gathering support and addressing concerns.

Refer to the Truck Parking Report for a detailed analysis and comprehensive recommendations.

5.0 Conclusion

This *Freight and Logistics Network Components Memorandum* provides a system-level assessment of the current freight infrastructure components in Miami-Dade County. It discusses the relationships between freight investments and general network improvements, the hierarchical structure of the network, and the integration of freight activities with land use planning. This memorandum serves as a key resource for identifying strategic opportunities and challenges within the freight and logistics sectors in Miami-Dade County. It outlines the essential components of the freight system, including roadways, railroads, waterways, pipelines, and intermodal facilities, and discusses their roles within the broader transportation network. As Miami-Dade County continues to grow and adapt to increasing freight demands, this memorandum provides a comprehensive reference point for future phases of the *Miami-Dade Countywide Freight Improvement Plan*.