

DISTRICT 7

# TAMPA BAY REGIONAL STRATEGIC FREIGHT PLAN



**AN INVESTMENT STRATEGY FOR  
FREIGHT MOBILITY AND ECONOMIC PROSPERITY  
IN TAMPA BAY**

**PLAN UPDATE  
NOVEMBER 2018**



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# TAMPA BAY REGIONAL GOODS MOVEMENT

## Regional Goods Movement: Links to Our Past and to Our Future

Highways. Seaports. Waterways. Airports. Railroads. Distribution Centers. Pipelines. These are the elements that comprise the freight system of the Tampa Bay region which have long governed the area's economic prosperity. The productivity of the region relies on a transportation system that can accommodate market expansion at regional, national, and international levels. As business markets become more diverse, the need to reach global markets and access international consumers is paramount. The region's freight infrastructure provides a critical link to these expanding markets.

To meet anticipated increased production and logistics demands, the freight intermodal activity centers within the region are projected to intensify their activities and expand operations. The anticipated growth and the ability to serve the demands of changing markets will largely depend on the capacity to improve and maintain efficient transportation connections.

Virtually every business and household in the region is dependent on the freight delivery system for shipping and receiving goods. The area's highways, seaports, waterways, airports, railroads, and pipelines sustain the region's economic productivity through the following activities:

- Delivering the products consumers demand to stores
- Transporting raw materials and finished products from industries
- Hauling materials for the construction of roads, schools, businesses, and homes
- Distributing energy resources that power our cities

Trailers and containers represent jobs and production, and indicate a thriving economy. But as the amount of freight increases and the scale and number of facilities expands, the activities associated with freight transport increasingly – and perhaps inevitably – begin to impact the local communities that host them. While both freight interests and communities are concerned with improving the safety, accessibility, and mobility provided by the regional transportation system, the priorities and perspectives of the two sides can be very different. Communities are also affected by unintended impacts to land uses as well as social and business activities within freight corridors. These impacts resulting from freight transport activities are both real and perceived. Thoughtful solutions that provide for good freight accessibility and are sensitive to the land uses and activities within freight corridors are needed to support economic growth and quality communities in the Tampa Bay region.

## Strategic Freight Plan Intent

The Tampa Bay Regional Strategic Freight Plan was developed in response to a steadily increasing emphasis in improving the reliability of freight transport in support of economic development. The Strategic Freight Plan defines an integrated regional freight transportation system, identifies localized freight issues for short-term remediation, and prioritizes regional freight transportation improvements needed to sustain long term economic growth and address the impact of congestion on economic productivity in the region. It also analyzes existing and future community contexts and identifies roadway design considerations to ensure that implemented freight improvements harmonize with the local built environment. In balancing the goals of supporting long-term freight mobility and protecting community character, the Strategic Freight Plan provides a vision for the long-term future of goods movement in the region, one that supports the continued vitality of the regional economy and preserves our quality of life.



*The productivity of the Tampa Bay region relies on a transportation system that can accommodate market expansion at regional, national, and international levels.*

The Strategic Freight Plan provides guidance for planners and engineers to define and develop freight improvement strategies that are appropriate given the freight corridor function, the land uses and activities within the corridor, and the shared users (trucks and personal vehicles) of the corridor. The Strategic Freight Plan accomplishes the following objectives:

### **Identifies strategic freight transportation investments that promote and foster economic development in the region**

Providing a well-planned transportation system to efficiently move goods while preserving personal mobility is a significant concern as our roads become more congested. The Tampa Bay region's economic productivity relies on a transportation system that can handle goods efficiently and safely. Priority transportation investment strategies that improve accessibility and reliability of freight transport and support growth in the region's economic centers have been defined.

### **Responds to goods movement and community livability needs**

Trucks carry 64 percent of the tonnage in the United States, and this is projected to grow by an average of 1.2 percent annually through 2045. Approximately, seventy percent of all truck vehicle-miles were traveled on urban roadways in 2014, and 17 percent of those were on urban interstates. Goods movement and personal travel are increasing simultaneously. Freight industry needs and community livability are at a crossroads. Creative solutions are needed to balance freight accessibility and personal mobility. Nationally, the effect of traffic congestion on economic productivity is notable. Research suggests that without remediation, overall congestion costs in the United States could rise 50 percent by 2030 to \$186 billion in direct and indirect losses. In the Tampa Bay area, truck congestion costs a total of \$237 million annually. These added transportation costs are passed on to consumers in the form of increased costs for most products sold on the open market.

The Strategic Freight Plan identifies investment strategies to facilitate freight transport on the region's priority freight corridors with thoughtful consideration of the effects that the strategies have on roadway congestion, adjacent land uses, and social and business activities.

### **Positions the Tampa Bay region to take advantage of growth in the global economy**

The Tampa Bay region is geographically situated to benefit from the emerging economies of Central and South America. However, for our region to take advantage of a constantly changing world economy, infrastructure improvements are needed to the freight transportation system, especially the facilities serving the region's seaports and major intermodal freight activity centers. A transportation system that provides good accessibility and travel flow is a key factor affecting a region's business costs, market access, and overall competitiveness for attracting large-scale business investments. Implementing policies, strategies, and actions that improve transportation accessibility and provide a seamless conduit between intermodal facilities can stimulate economic growth.

### **Positions the region for new funding opportunities to implement infrastructure improvements**

Since the passage of the landmark Intermodal Surface Transportation Efficiency Act (ISTEA) in 1991, subsequent federal legislation has increasingly emphasized the importance of planning for and implementing a transportation system that supports freight mobility and economic development. Moving Ahead for Progress in the 21st Century (MAP21) provided incentives for states to prioritize projects that improve freight movement and foster economic development. The current federal transportation legislation, Fixing America's Surface Transportation (FAST Act), signed in 2015, provides five years of funding for freight through the National Highway Freight Program and FASTLANE grant program. In 2017, the U.S. Department of Transportation introduced the Infrastructure for Rebuilding America (INFRA) grant program, a retooled FASTLANE program that shifts grant criteria to focus on projects that can leverage non-federal dollars.

In 2015 the Florida Legislature passed legislation allowing local designation of a Freight Logistics Zone (FLZ), defined as "a grouping of activities and infrastructure associated with freight transportation and related services within a defined area around an intermodal logistics center." The Hillsborough Metropolitan Planning

Organization (MPO) and the Polk Transportation Planning Organization (TPO) joined together in partnership to designate the Hillsborough+Polk Freight Logistics Zone (FLZ). The intent of the designation and accompanying strategic plan is to serve as a framework for directing potential funding to freight infrastructure. It is also a resource for economic development stakeholders at all levels from the public, private, and nonprofit sectors who are interested in the continued growth and prosperity of Hillsborough and Polk counties. The Plan is intended to be maintained with periodic updates, evolving in parallel with the growth and emerging needs of the local freight economy to advance the planning and funding of infrastructure that facilitates freight movement across the two-county region. The FLZ encompasses areas of both counties that play a significant role in the generation of freight activity and/or hold future potential for freight-related development that will make a substantial positive contribution to local economic competitiveness.

The Hillsborough/Polk County area is a major hub of freight movement in Central Florida where local planning authorities and other stakeholders have been working extensively for some time to evaluate freight needs, identify key infrastructure and centers of activity, and plan for an improved freight transportation network. A new Intermodal Logistics Center (ILC) near Winter Haven in Polk County has been developed and is surrounded by over 1,500 acres of land available for future expansion.

### **Integrates freight considerations into the planning, project development, and roadway design processes**

There is an increasing awareness of the need to address freight mobility concerns when planning and improving our transportation system. To that end, a framework for integrating freight mobility considerations into the regional and local planning processes has been defined. It includes the processes, information, and tools that decision-makers and planners will need for effectively addressing freight mobility issues.

As with most transportation issues, freight mobility issues are multi-faceted in nature and span a diverse spectrum of topics. However, as freight mobility concerns grow in importance, gaining a true understanding of regional freight dynamics is paramount for our decision-makers and planners. A continued dialogue among the region's transportation, economic, and land use planning experts, as well as with private freight providers and intermodal agencies is needed to properly plan for and implement strategies and policies that address freight transport needs.

### **Study Area**

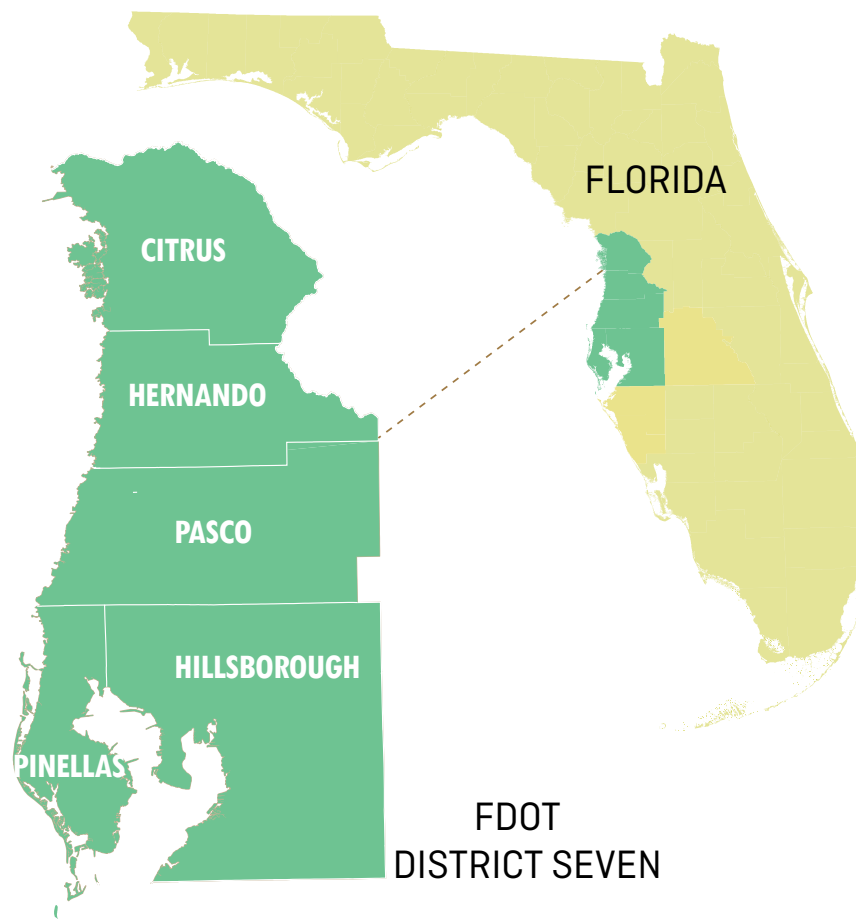
The Strategic Freight Plan study area includes all of the counties (Citrus, Hernando, Hillsborough, Pasco, and Pinellas) that comprise Florida Department of Transportation (FDOT) District Seven. The study area is shown in **Figure 1**.

Major economic generators within the Tampa Bay region including Port Tampa Bay, Tampa International Airport, CSXT Intermodal yards, and other significant distribution facilities in the region all rely on an effective system to transport freight using the region's roadways, rail lines, waterways, and pipelines.

### **Positioning the Tampa Bay Region for Success**

The Tampa Bay region's central location within Florida uniquely qualifies the region for enormous growth potential in trade activity serving state, national, and international markets. Factors such as the population growth in West Central Florida, continued development of the Interstate-4 corridor as a distribution hub, potential for future trade with Cuba, and overall expansion of Latin American and Caribbean markets will undoubtedly spur increased goods movement across the state and in the Tampa Bay region. Florida has the opportunity to emerge as an important trade hub linking the southeastern U.S. with trading partners to the south, west, and east.

Figure 1: Study Area



### Growth of the Interstate-4 Corridor as a Distribution Hub

Hillsborough County has historically served as a freight distribution hub for the Tampa Bay region and beyond mainly due to the intense freight activities supporting Port Tampa Bay and CSX freight rail operations. These significant freight distribution activities have expanded along the Interstate 4 corridor due to a number of factors, including:

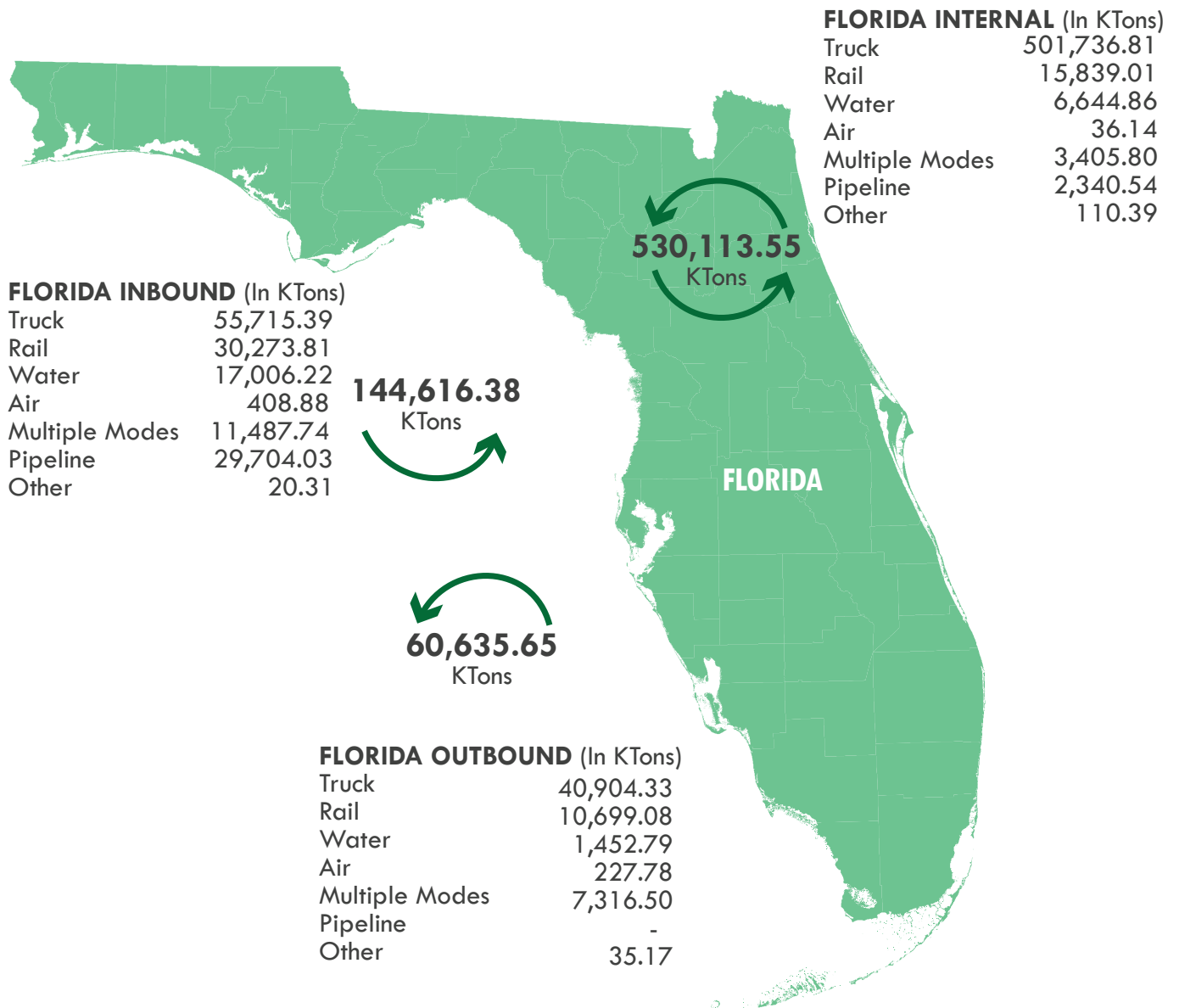
- Nearby Polk County’s centralized location to Florida markets and reduced transportation costs
- Abundant available land for distribution services with a relatively low land value
- Large workforce and technical training institutions that develop skills needed for the freight distribution industry
- Business friendly environment that incentivizes companies to locate there

CSX Transportation recently constructed an intermodal distribution center in the Winter Haven area of Polk County, complementing the many companies with distribution facilities along the I-4 corridor. The CSXT Integrated Logistics Center’s (ILC) location enables it to function as a centralized transportation and logistics hub for CSXT. The ILC terminal is the first of its kind in the southeastern United States, handling the transfer of new automobiles as well as containers from railcars to trucks. The contents of the containers are consumer goods such as merchandise, food products, and building materials. Shipments from the ILC are distributed to retailers throughout Florida. The ILC is expected to increase the reliability and efficiency of freight movement while reducing transport costs.

## Moving Florida to Greater Economic Productivity

Florida serves as a freight gateway to the nation. Goods produced in the United States are exported to other countries in the Caribbean and Latin America through Florida’s roads, ports, rail lines, and airports. Conversely, this freight infrastructure serves to transport products imported from other nations to be distributed in Florida and other parts of the country. In 2015, Florida moved approximately 735 million tons of freight to, from, and within its borders, as shown in **Figure 2**. It is anticipated that in the year 2045, Florida will move approximately one billion tons of freight supporting greater economic activity within the state.

**Figure 2: 2015 Commodity Flows in Florida**



## REGIONAL FREIGHT TRANSPORT NETWORK

The Tampa Bay region's freight transportation network is a valuable resource for the promotion of commerce, the creation of jobs, and the improvement in the quality of life of its residents. Tampa Bay's freight transportation system includes regional freight activity centers (FACs) and the freight transportation network that connects FACs to markets across the state and country. Freight activity centers include seaports, airports, intermodal freight rail facilities, as well as clusters of industrial activity.

The freight transportation network provides for the mobility of the broad range of goods traveling through the Tampa Bay region. The capacity and efficiency of the roads, railroads, waterways, pipelines, and freight aviation facilities that compose the freight network – and how well these modes interact with each other – influences the region's economic competitiveness. The various roles and characteristics of the component modes of the freight network are described below.

### Roadways

The Tampa Bay region's freight roadway network supports most of the freight tonnage moving through the five-county area. Roadways serve most overland freight traffic between Tampa Bay and other markets across the state and nation and handles most freight movements within the region. Much of the delay in the delivery of cargo and goods to their destination is experienced on the roadway network because this is the only part of the freight network that is shared with other users. Through thoughtful roadway design strategies the roadway operational conditions and travel experience for all users can be enhanced.

The development and refinement of the regional freight network is primarily based on the freight function of certain corridors within the broader regional highway network. A variety of considerations and conditions define the function of the freight network components.

**Limited access facilities** provide uninterrupted flows for high volumes of traffic and serve to connect the Tampa Bay region to the rest of the state and country. These limited access facilities include all Interstate highways and tolled roadways within FDOT District Seven including I-4, I-75, I-275, and I-375 as well as the Selmon Expressway, Selmon-Interstate 4 Connector, Veterans Expressway, and Suncoast Parkway. These roadways are the primary trade corridors for trucks and also serve as major commuter corridors.

**Regional freight mobility corridors** provide high capacity connections between limited access facilities and freight activity centers. These facilities also serve regional through movement for longhaul trucks and host high volumes of truck traffic. Regional freight mobility corridors are a vital part of the freight roadway network and have a secondary role of distributing freight to commercial and other local destinations. All the regional freight mobility corridors in the Tampa Bay region also serve as important corridors for commuters traveling to major employment centers.

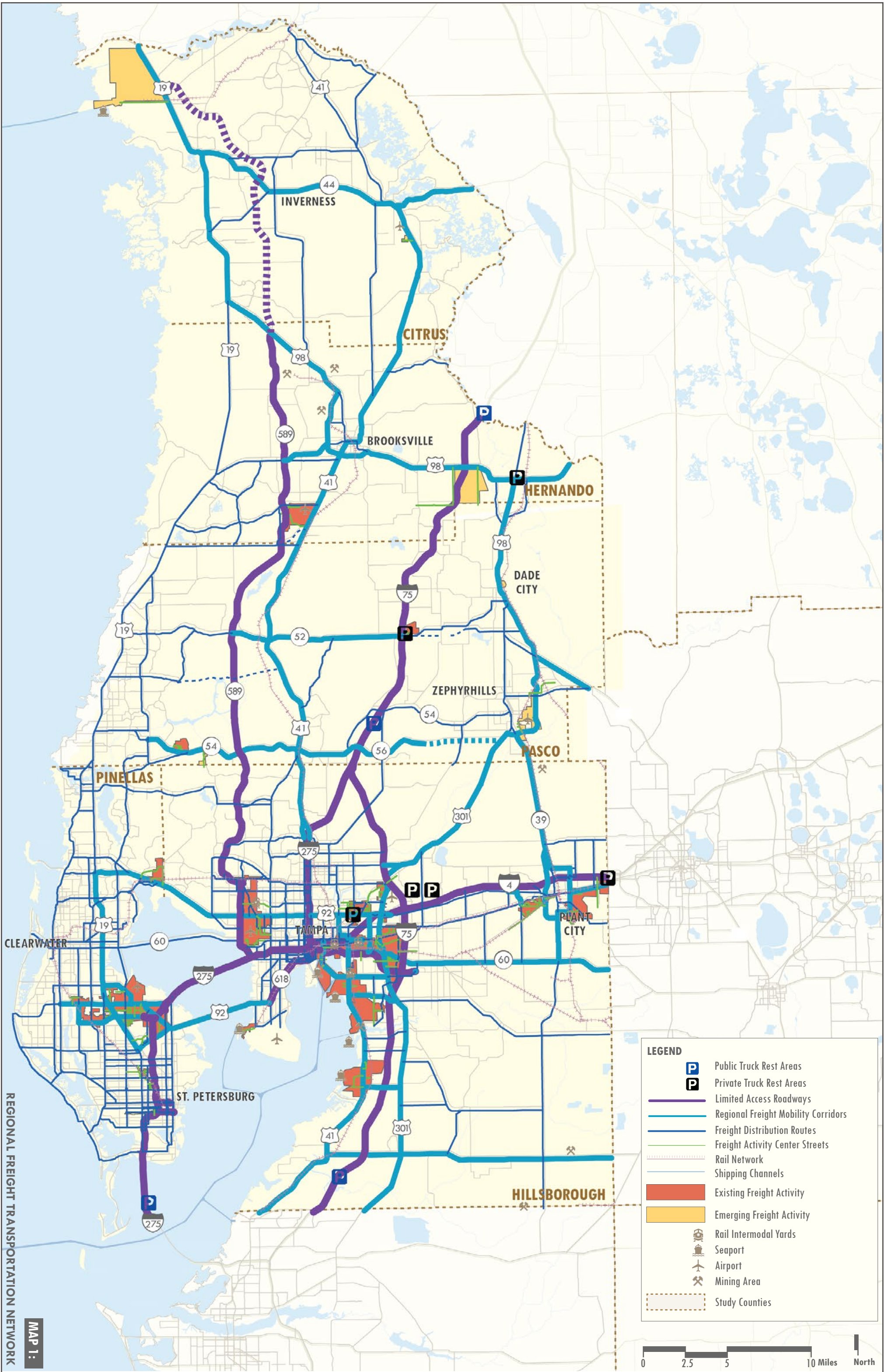
**Freight distribution routes** include state roadways and other truck routes designated in local truck ordinances at the county and municipal levels. Freight distribution routes serve to distribute truck traffic to local distribution centers. By law, trucks must remain on designated freight routes until they reach the closest point to their destination before turning on to local streets for delivery.

**Freight activity center streets** are publicly owned / maintained roadways that provide direct access to freight activity centers from freight distribution routes and/or regional freight mobility corridors. FAC streets also provide internal circulation within freight activity centers.

**Truck rest areas** within the Tampa Bay region, both public and private, are another important component of the freight roadway network. Truck rest areas play a crucial role in the Hours of Service limits placed on truck drivers by providing safe and convenient locations for truckers to rest. There are five public and eight private rest areas within the five-county Tampa Bay region. In total, these rest areas equate to approximately 615 truck parking spaces (192 public and 423 private).

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**LEGEND**

- Public Truck Rest Areas
- Private Truck Rest Areas
- Limited Access Roadways
- Regional Freight Mobility Corridors
- Freight Distribution Routes
- Freight Activity Center Streets
- Rail Network
- Shipping Channels
- Existing Freight Activity
- Emerging Freight Activity
- Rail Intermodal Yards
- Seaport
- Airport
- Mining Area
- Study Counties

REGIONAL FREIGHT TRANSPORTATION NETWORK

MAP 1:





## Railroads

Railroads are an efficient mode for transporting containerized, bulk, and break bulk cargoes between the region's freight activity centers and statewide and national destinations. The freight railroad network in the Tampa Bay region consists primarily of CSXT mainline tracks, sidings, branch lines, and spurs serving FACs and other industrial activity areas. CSXT operates and maintains nearly 2,900 miles of rail lines across Florida, with a large number of those miles serving the Tampa Bay region. In 2016, CSX handled more than 1.1 million carloads of freight on the state's rail network.

In addition to the CSXT lines, the Florida Northern Railroad operates a short line track in Citrus County, serving the Crystal River energy complex.

## Freight Activity Centers

As important economic engines of the Tampa Bay region, freight activity centers are a critical component of the region's freight transportation network. These centers contribute to the area's base employment and typically generate intense freight activity. Freight activity centers have been identified throughout the Tampa Bay region to provide context for where industrial and freight logistics activity is heaviest and to define strategies for preserving and improving mobility on the transportation corridors that serve them.

While all the region's freight activity centers generate high levels of truck traffic, depending on the types of freight activities, some of the centers also have significant transshipment operations supporting multiple modes including freight rail, air cargo, and sea vessels. With some exceptions, most of the region's FACs have sufficient capacity for expansion and future industrial land use designations that provide for this growth. The intensity of the region's freight activity centers varies primarily depending on the types of freight activities.

The majority of the region's FACs are proximate to the I-4 corridor that provides high quality transportation facilities for the transport and distribution of goods. These include high speed limited access facilities such as the Selmon Expressway and Selmon / I-4 Connector, as well as CSXT freight rail lines. Freight terminals at Port Tampa Bay and the air cargo operations at Tampa International and St. Petersburg/Clearwater International Airports anchor the western part of the corridor. Major CSXT intermodal yards are located north of Tampa International Airport in the Anderson Road Industrial Park, northeast of Port Tampa Bay in the South-East Tampa Industrial area, and in Plant City.

The I-75 corridor is also an important freight corridor serving Port Tampa Bay and distribution facilities in Hillsborough and Hernando Counties. While I-75 is the primary limited access facility serving FACs in the corridor, US 41 and US 301 both serve as important regional freight mobility corridors. In addition, CSXT freight rail lines provide service to both Port Tampa Bay and to the distribution centers in the I-75 corridor.

## Seaports

The most significant economic generator in the Tampa Bay region is **Port Tampa Bay** (PTB). A 2015 economic impact study found that the port contributes nearly \$17.2 billion to the regional economy and directly supports around 85,000 jobs.

Port Tampa Bay is the largest port in the country in terms of acreage with 2,754 acres of publicly owned land, 5,093 acres of maritime dependent uses, and another 7,708 acres of other port-related uses. Much of this land remains undeveloped, positioning the port for future expansion and sustainable growth. Additionally, PTB is one of the region's principal gateways for goods bound for and arriving from foreign and domestic producers and markets due to its favorable geography as one of the closest U.S. deepwater seaports to the Panama Canal and its proximity to the bustling I-4 corridor.



*Port Tampa Bay is the largest, most diversified port in Florida and contributes nearly \$17.2 billion to the regional economy and directly supports around 85,000 jobs.*

Port Tampa Bay is Florida's largest and most diversified deepwater port in terms of tonnage, handling approximately 36 percent of all waterborne commerce passing through the state. In 2015, Port Tampa Bay handled over 37 million tons of cargo (including liquid fuels, fertilizer, and other bulk and liquid bulk commodities) and over 55,000 TEU containers. Additionally, pipelines from Port Tampa Bay provide efficient, cost-effective transportation of fuels to major users including MacDill Air Force Base, Tampa International Airport, and Orlando International Airport, keeping thousands of tanker trucks off the regional roadway every day. The addition of new Post-Panamax cranes and planned container yard expansion provides infrastructure to support continued growth of the region.

## Airports

Airports provide fast connections between Tampa Bay and distant origins and destinations for time-sensitive and high value cargo. Major air cargo providers in the Tampa Bay region include Federal Express (FedEx), United Parcel Service (UPS), and the U.S. Postal Service (USPS). The region's two major cargo airports, **Tampa International Airport** and **St. Petersburg-Clearwater International Airport**, handled over 163,078 total metric tons of cargo in 2017.

Tampa International Airport has rapidly expanded in recent years, as part of a roughly \$2.3 billion, long-term renovation and expansion that will transform the airport experience over the next decade and allow the airport to eventually double its passenger traffic to 34 million. Similarly, St. Petersburg / Clearwater Airport has \$120 million in infrastructure improvements planned over the next five years (2017-2022) to meet the growing number of visitors passing through its gates as well as to prepare their Airport Master Plan to determine their long-term development needs.

Other airports in the Tampa Bay region with smaller cargo operations or with the potential for future cargo operations include Inverness Airport, Hernando County Airport, Zephyrhills Municipal Airport, and Tampa Executive Airport. Most of these airports are adjacent to industrial and warehousing land use clusters. These uses generate substantial truck traffic and are included within the FACs that encompass the airports. While heightened security requirements and rising fuel costs are factors in the air cargo market, moderate growth in air cargo and supporting trucking and freight activity around airports is expected because of industrial recruiting and economic development strategies throughout the Tampa Bay region promoting these FACs and providing incentives for their development.

## CSXT Intermodal Facilities

CSXT is a private company that serves clients in many of the FACs throughout the Tampa Bay region, and it also operates several rail facilities that generate significant rail and truck freight activity. The primary intermodal facility is the Uceta Yard south of Broadway Avenue in East Tampa. The CSXT intermodal facility is divided into two rail yards. At the north yard, approximately 85,000 containers are transferred between CSXT rail cars and trucks annually. The south yard is used for bulk transfer and to marshal phosphate and other product-specific trains. Nearby, the CSXT TRANSFLO Yard south of SR 60 is used for intermodal transfer of chemicals, petroleum, and other bulk products from rail to truck.

CSXT also operates the Total Distribution Services, Inc. (TDSI) Auto Yard, a 100-acre facility extending along both sides of Sligh Avenue east of Anderson Road and north of Tampa International Airport. The Auto Yard is a facility used to unload new auto-mobiles and has a capacity of 3,600 vehicles. The new automobiles are transported by truck to automobile dealerships throughout the region.

The Integrated Logistics Center (ILC) in nearby Winter Haven will serve as a centralized transportation and logistics hub for CSXT, providing additional capacity to relocate some of the intermodal activities at the TDSI Auto Yard and a rail to truck transfer facility for consumer goods such as merchandise, food products, and building materials.

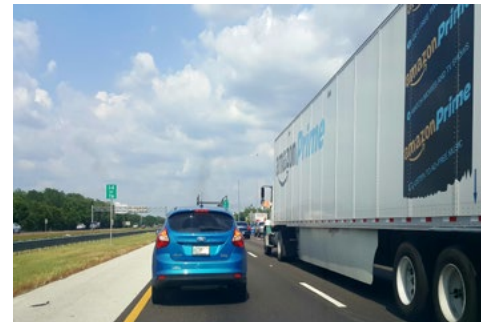
Additional freight rail activity is generated by other CSXT yards. The East Tampa yard, located west of US 41 and north of the Alafia River, serves the Mosaic Company fertilizer plant, delivering bulk phosphate rock and ammonia. The Rockport bulk loading facility, located east of US 41 and south of Causeway Boulevard, is used to transfer bulk phosphate products from trains to ships. Near the Hillsborough County–Pasco County line, the CF Industries Plant City phosphate fertilizer manufacturing plant is served by a rail yard linked to the CSXT network.

## Distribution Centers

Distribution centers are specialized warehouses where goods are stocked for redistribution to retailers, wholesalers, or in some cases, individual customers. These warehouses are critical components of an evolving supply system in which goods are delivered to markets on an as-needed basis, reducing in-store inventories and providing cost efficiencies to retailers and consumers. Distribution centers have emerged as major employment centers in the Tampa Bay metropolitan area, and most notably along the I-4 corridor. Companies such as Amazon, Advance Auto Parts, Best Buy, Haverty’s, Home Depot, O’Reilly’s, Publix, Rooms to Go, Wal-Mart, and many others have located major distribution centers in the area.

This area is centrally located to large regional markets and served by high-speed, high-volume roadways and long-haul rail providing a high level of accessibility to Florida markets and to the southeastern U.S. Additionally, land values in these areas are more affordable than in more urban areas, while public-private partnerships like the Plant City Economic Development Council offer incentives to spur industrial development. Finally, located nearby is a growing logistics workforce with specialized training through institutions like the Florida Polytechnic University, University of South Florida, and Polk State College, bolstering the area’s attractiveness as a site for distribution activity.

In 2014, Amazon built a 1.1 million square foot distribution center, or “fulfillment center” to fill online orders in southern Hillsborough County. Since then it has more than doubled its workforce, from 1,000 full time employees to more than 2,500. Distribution center activities will serve an increasingly important role in streamlining supply chains and ensuring the efficient and affordable delivery of goods to markets throughout the state, especially as container cargo traffic increases through the region’s seaports.



*Realizing the benefits of the centrally-located I-4 corridor, Amazon built a 1.1 million square foot distribution center in southern Hillsborough County.*

In 2016, FDOT District Seven developed a Freight Facility Geodatabase to maintain a record of industrial sites that either generate significant truck trip activity or are likely to generate activity in the future based on growth potential. FDOT uses the database to inform investment and policy decisions with respect to the freight transportation infrastructure in region. The database is coordinated with the FDOT Central Office Freight Facility Data Set. The geodatabase identifies Department of Revenue (DOR) Land Use Group 4 that represent industrial and warehousing land uses.

## Mining Activities

A major industry that generates significant truck and rail freight traffic in the Tampa Bay region is the mining of rocks and minerals, most notably phosphate and limestone. Mining is land intensive, and once extraction of minerals at various sites has been completed, the land is reclaimed and restored for other useable purposes and new mining areas are identified. Due to these industry characteristics, the mining areas in the region have not been identified as regional freight activity centers. However, mining is one of Florida’s oldest industries and remains a substantial contributor to the state economy as well as a key driver of seaport, rail, and trucking activity in the Tampa Bay region.

Phosphate mining occurs in central Florida’s “Bone Valley” region, which includes portions of Hillsborough and nearby Polk, Manatee, Hardee, and DeSoto Counties. Phosphate is a key component of agricultural fertilizers and is the region’s primary export. The phosphate is mined, and fertilizer is manufactured in proximity to the mines. During FY 2016, approximately 7.4 million tons of phosphate rock and products were shipped through Port Tampa Bay. To a lesser extent, finished phosphate and fertilizer products are also shipped through Port Manatee. The U.S. Gulf Coast and East Coast of South America have consistently been the largest sources of demand for phosphate.

## ASSESSMENT OF FREIGHT MOBILITY NEEDS

### Plan Objectives

The Strategic Freight Plan is guided by the overarching goal of providing a safe, secure, effective and efficient freight transportation system that fosters the economic vitality and livability of the Tampa Bay region. Eight objectives define the structure of the plan. The Goods Movement Advisory Committee (GMAC) developed plan objectives addressing freight mobility considerations and others addressing the compatibility of freight transport activities with the livability of communities and prosperity of the region’s business centers. Freight mobility objectives focus on the performance of the freight transportation network, emphasizing safety, security, connectivity, and mobility, so that goods can be efficiently transported to destinations. Compatibility objectives address the preservation of community, economic and environmental assets to ensure the economic competitiveness and quality of life for the Tampa Bay region.

The plan objectives guided the development and evaluation of freight mobility needs throughout the region. Performance measures were defined and applied in the evaluation of freight mobility needs to determine how well certain freight transportation improvement needs and strategies achieve the plan objectives. This analysis resulted in the identification of priority transportation investments for the region.

### Strategic Freight Plan Objectives

#### Freight Mobility Objectives

1. Improve safety conditions on the freight transportation system.
2. Improve accessibility and connectivity for freight transport to designated freight activity centers.
3. Improve mobility conditions and the overall performance of the freight transportation system.
4. Improve the security of the freight transportation system for efficient and reliable goods movement.

#### Freight Compatibility Objectives

1. Improve safety, accessibility, and mobility conditions where the freight and passenger transportation systems interact.
2. Improve protection and mitigation for communities, neighborhoods, and natural resources which are impacted by the freight transportation system.
3. Improve the freight transportation system’s contribution to the economic competitiveness of the region and its communities.
4. Implement regional and local coordination of plans and policies that encourage an integrated approach to freight and livability issues.

## Types of Freight Mobility Needs

The identified freight related needs in the region were organized into four categories: capacity, operational, maintenance, and safety and security needs. The capacity and operational needs were evaluated as part of the Strategic Freight Plan to determine the most pressing freight mobility priorities in the region. The maintenance, safety and security needs are inventoried and were coordinated with state and local agencies so that these needs could be considered in their respective roadway maintenance programs. The various types of freight mobility needs are described below:

### Capacity Improvements

Capacity needs include adding new travel lanes, special purpose truck lanes, or frontage roads to existing roadways and constructing new roadways or interchanges to better enable a facility or network to meet travel demand, reduce congestion and enhance system reliability. It also includes separated grade crossings at freight railroads through the construction of bridge overpasses. Capacity needs are generally recommended in response to or in anticipation of congestion resulting from roadway volumes that are too high to be served efficiently by the existing facility or network.

### Operational Strategies

In many cases, the flow of traffic along a roadway can be improved through operational strategies such as, signal timing optimization, Intelligent Transportation System (ITS) strategies, improved signage and wayfinding, or enhancements to throughway and/or intersection geometry. From a goods movement perspective, operational improvements can be designed to better accommodate trucks, which tend to have wide turning movements and slow acceleration. Addressing truck operations issues along a corridor or at an intersection can significantly improve travel time reliability along a roadway as well as accessibility to industrial and commercial uses. Operational needs at specific locations (freight hot spots) were identified.

### Maintenance

In addition to the capacity and operational needs, the ongoing maintenance of transportation facilities is a significant factor in providing efficient and economical goods movement. Facility maintenance is typically scheduled by implementation agencies, public works departments, private owners (e.g., CSXT), or port and aviation authorities on a separate basis from capacity and operational improvements implementation. The identified maintenance needs have been catalogued and provided to the appropriate entities for review and inclusion in future maintenance work.

### Safety and Security

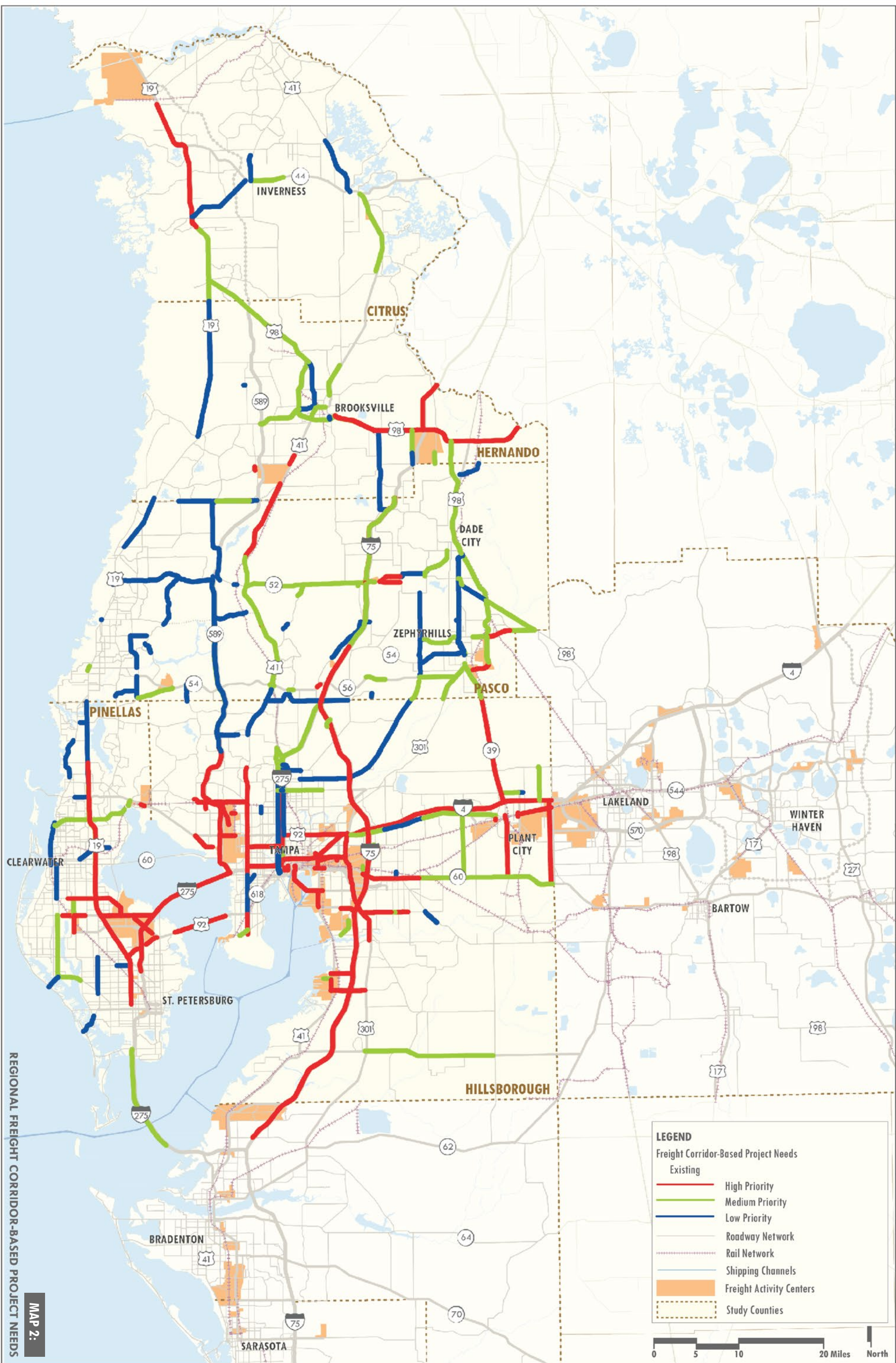
The needs assessment process yielded several needed improvements that address safety and security issues. Safety needs address potential hazards posed by freight operations to industry and/or logistics personnel, non-freight users of the shared transportation network, or property. Issues potentially impacting safe railroad and roadway operations were identified in the corridor screening process. Security needs address measures taken to protect strategic transportation infrastructure, vehicles, cargoes, and personnel from potential threats posed by nature and people. Security needs were identified through coordination with intermodal entities (airports and seaports), whose facilities and operations are subject to security requirements stipulated in federal legislation.

## Regional Freight Mobility Needs

The freight system performance evaluations indicate the relative priority of the identified corridor-based and freight hot spots as they pertain to supporting regional goods movement. The regional priority corridor-based needs are displayed in **Map 2**. Freight operational hot spot priorities are shown in **Map 3**. Needs are ranked high, medium, and low from a freight mobility perspective. Complete tables of corridor-based and freight hot spots that include the project limits/locations, scoring details, and regional rankings are presented in **Appendix A** under separate cover.

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MAP 2: REGIONAL FREIGHT CORRIDOR-BASED PROJECT NEEDS

**LEGEND**

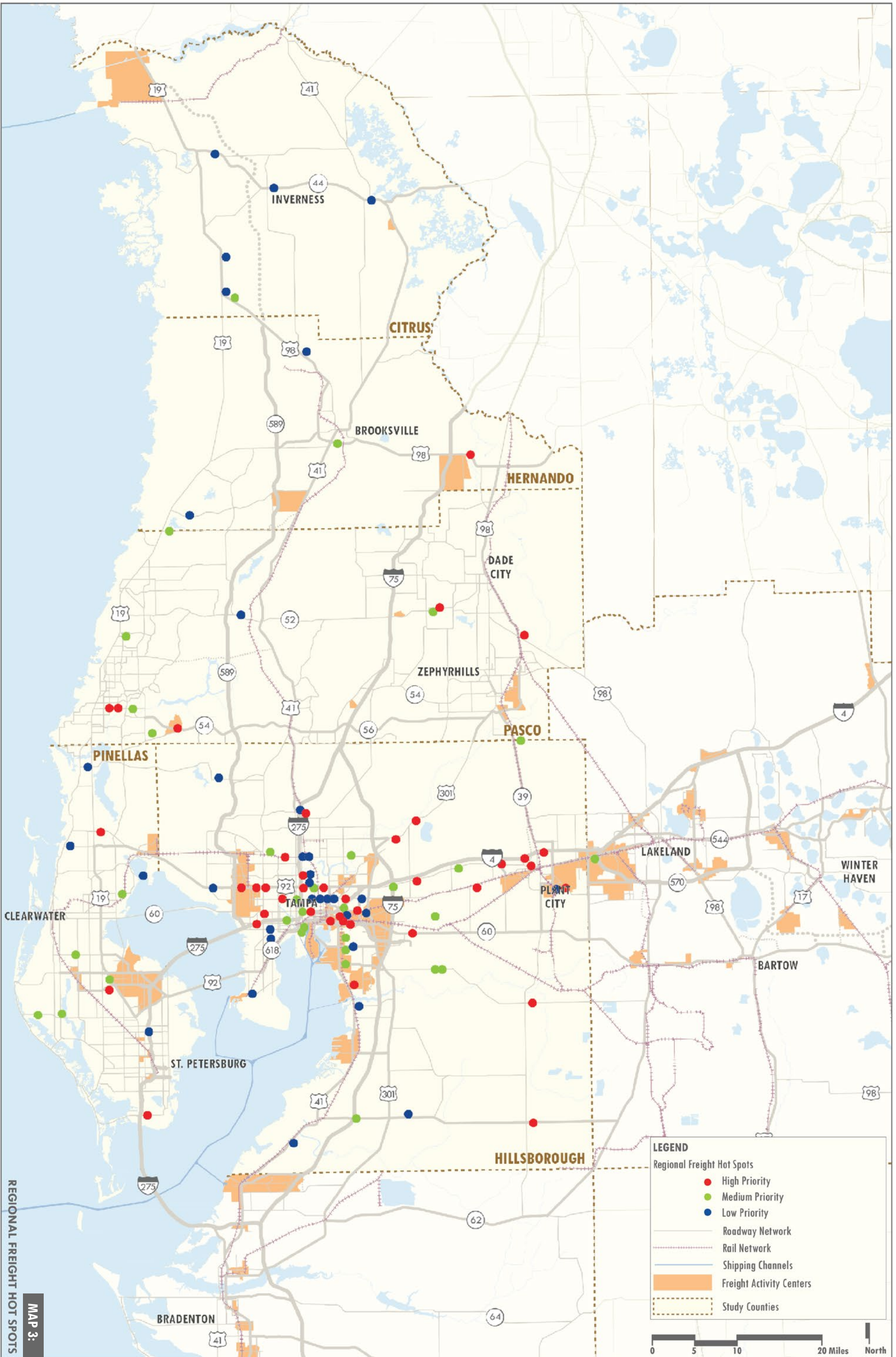
Freight Corridor-Based Project Needs

- Existing
- High Priority
- Medium Priority
- Low Priority
- Roadway Network
- Rail Network
- Shipping Channels
- Freight Activity Centers
- Study Counties



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MAP 3: REGIONAL FREIGHT HOT SPOTS

# POLICY FRAMEWORK AND PRIORITY INVESTMENT STRATEGIES

## Policy Framework for Freight Strategy Development

The Strategic Freight Plan includes a policy framework that is used to guide the development of specific strategies to address freight mobility needs in the Tampa Bay region. The policy framework provides guidance for the implementation of roadway capacity and operational strategies on the freight transportation network. Potential strategies for a given roadway facility should support the primary function(s) of the facility and consider the land uses and activities within the corridor as well as the shared uses of the corridor.

### Facility Function

A key consideration in defining appropriate transportation improvement strategies to address defined mobility needs on the freight transportation roadway network is the primary function of the roadway. To maintain and improve freight travel conditions on the roadway network, the improvement strategies considered within the corridor should support the primary freight function of the roadway. The freight transportation network serves four primary freight transport functions - mobility, connectivity, circulation, and accessibility.

- **Mobility** - to move high volumes of truck traffic at relatively high speeds.
- **Connectivity** - to provide efficient connections between freight activity centers.
- **Circulation** - provides for efficient distribution throughout the region.
- **Accessibility** - to provide direct access for trucks entering and leaving activity centers.

The freight transportation network has been organized into four facility types, each providing primary and secondary freight transport functions. These facility types and their primary functions are shown in **Figure 3**.

**Figure 3: Freight Facility Type and Function**

Facility Type	Freight Facility Function			
	Mobility	Connectivity	Circulation	Access
Limited Access Facilities	Primary	Secondary	Limited	Limited
Regional Freight Mobility Corridors	Primary	Primary	Secondary	Secondary
Freight Distribution Routes	Secondary	Secondary	Primary	Secondary
Freight Activity Center Streets	Limited	Limited	Primary	Primary



## Freight Activity and Land Use Compatibility

The Strategic Freight Plan study area covers a sizeable region that includes five counties and more than 50 municipalities. Each jurisdiction has its own plans for growth and development documented in comprehensive plans and detailed in other documents like neighborhood or special area plans. These plans express the long-term livability visions for these communities. Investment strategies developed to improve freight travel conditions within freight corridors should also consider and support the existing land uses and long-term growth vision for the area. To understand the geography of freight activity and livability planning initiatives throughout the region, a freight and land use compatibility analysis was performed that utilizes local land use and special planning area data and truck traffic statistics.

The compatibility analysis provides a general sense of the land use character in the vicinity of each of the identified freight mobility needs. The analysis guides the development of strategies and freight-supportive roadway design given the constraints and opportunities presented by the local context of a specific facility. The compatibility analysis utilizes regional and local land use planning data and regional truck traffic data to identify areas where potential conflicts exist between freight activity and community livability. The general kinds of data used in the analysis include the following:

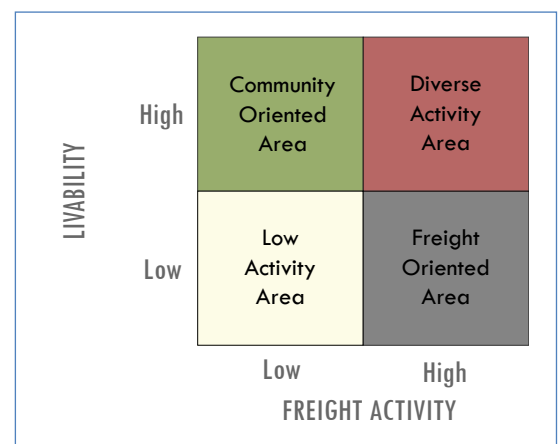
- Future land use
- Planned rapid transit station areas (quarter-mile buffers around station locations)
- Community redevelopment areas
- Local activity centers defined in MPO LRTPs
- Regional activity centers defined in regional LRTPs
- Intensity of freight activity centers
- Projected future truck traffic

The data were collected from the region’s MPOs, local jurisdictions, FDOT, and other entities. Using Geographic Information System (GIS) applications, the planning information was mapped on a countywide grid for each county in the study area; each cell in the grid was scored according to the type of land uses and intensity of freight activity in the area to identify areas of the county where livability and freight activity is emphasized, and areas where livability and freight activity conflict with each other. The analysis resulted in the identification and designation of four area types (context areas) with different considerations for roadway design appropriate for freight-related transport and commuter travel.

### Context Areas

The freight activity and land use compatibility analysis identified four general area types characterized by the land uses and activities that exist or are anticipated. It identified areas with higher densities or residential and employment centers that are characterized with a certain emphasis on livability and other areas that are characterized by higher levels of freight activity, such as industrial or distribution centers. Comparing these designations revealed areas where livability or freight activity is emphasized exclusively as well as areas where both livability and freight activity are important. **Figure 4** shows the context areas matrix used to perform the analysis. The context areas are described below.

Figure 4: Context Areas



**Low activity areas** are characterized by land uses that would generally be compatible with freight mobility, but actual freight activity (truck traffic) in these areas is low. **Community oriented areas** have low freight traffic and are characterized by medium-to high-density residential, office, and mixed uses that create pedestrian, bicycle, and automotive traffic. **Freight oriented areas** have high levels of truck traffic and land uses that are compatible with high levels of goods movement such as industrial and commercial areas. **Diverse activity areas** have elements of both community oriented and freight oriented areas. Freight activity is high in these areas, either in terms of truck traffic or industrial and commercial land uses (or both), but there are also fairly dense residential and/ or office uses.

## Priority Freight Investment Strategies

The Strategic Freight Plan includes a needs analysis, which provided the foundation to identify priority freight investment strategies. A combination of planning and intermodal agency input, a capacity analysis, and an issue assessment undertaken as part of the Strategic Freight Plan comprise the inventory of freight mobility needs for the region. The prioritization of various potential improvement strategies for the regional freight roadway network is based primarily on the existing and estimated future travel conditions within each corridor. The analysis accounts for the proximity and relationship of a given roadway to the region's freight activity centers, the intensity of the freight activity centers, accessibility to industrial employment areas, and the compatibility of goods movement with the respective land use context. Investment strategies include new and expanded roads to provide more capacity, operational strategies to improve travel conditions, separated grade crossings to relieve traffic bottlenecks on key freight and commuter corridors, and focused subarea studies to identify additional solutions for improved freight access and mobility. The priority freight investment strategies for the region are depicted in **Table 1** and portrayed on **Map 4**.



*The priority freight investment strategies provide a plan for improved freight mobility and accessibility to economic centers in the region.*

Multiple regional freight investment priorities are focused within the Interstate-4 corridor, serving major regional freight activity centers such as the Port Tampa Bay, CSXT Intermodal yards, and the freight distribution centers in Plant City. Other priority investments will improve freight access to significant freight centers such as Tampa International Airport, St. Petersburg Clearwater International Airport, Hernando County Airport, and major distribution centers in the region.

Other roadway capacity improvements serving Port Tampa Bay and port related uses within the Port Activity Center boundary include the widening of portions of US 41 and US 301 as well as operational strategies on these same facilities. Separated grade crossings are recommended at freight rail crossings on US 41 and SR 60 in the area near Port Tampa Bay as well as on SR 50 in Hernando County.

In the northern part of the region several roadway capacity improvements are needed to improve accessibility to industrial uses in the area. These include the widening of SR 50 east of I-75 and a separated grade crossing at the CSX rail-line on SR 50 east of US 98.

The identified priority freight investment strategies provide a plan for improved freight mobility and accessibility to economic centers in the region. Recent federal and state policy has incentivized projects that support freight mobility and economic development. The FDOT, MPOs and freight planning partners should use the recommendations in this plan to leverage funding opportunities to implement the priority investment strategies.

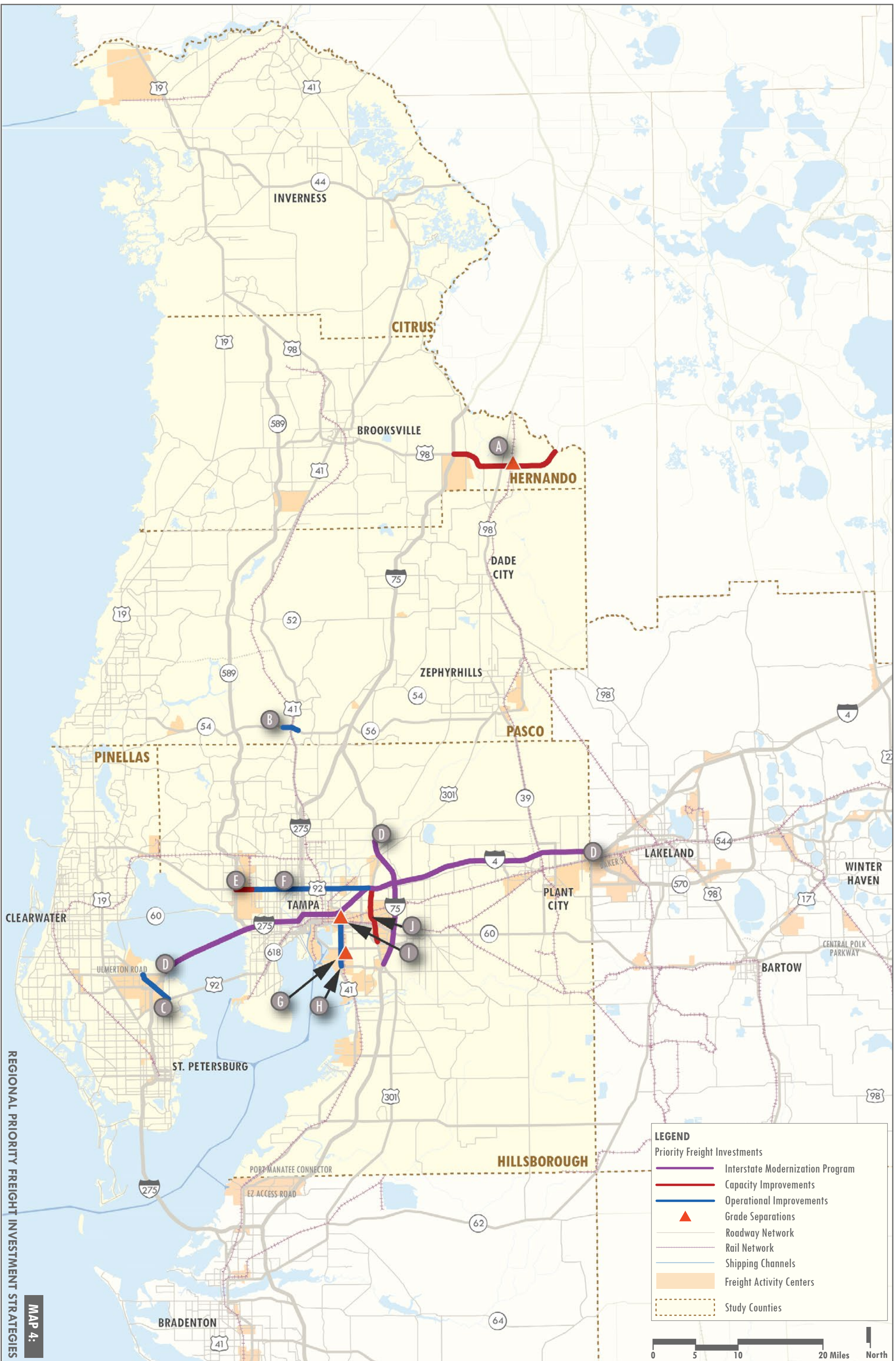
Table 1: 2018 Freight Priorities

Ref	On Street	From Street	To Street	Improvement Need	Base Year Lanes	Future Year Lanes	County	Status
FDOT District 7								
A	SR 50	I-75	Sumter County Line	Capacity Improvements	4	6	Hernando	In Design FY 2018/2019
		West of CSX S Line	East of CSX S Line	Grade Separation	2	4	Hernando	
B	SR 54	West of U.S. 41/CSX	East of US 41/CSX	Operational Improvements	6	6	Pasco	
C	SR 686   Roosevelt Blvd.	Gandy Blvd.	SR 688   Ulmerton Road	Operational Improvements	4	4	Pinellas	
D	I-4	I-4/Selmon Connector	I-75	Interstate Modernization Program	6	6+ML*	Hillsborough	
	I-4	I-75	County Line Road	Interstate Modernization Program	6	6+ML*	Hillsborough	
	I-75	Fowler Ave.	US 301	Interstate Modernization Program	6	6+ML*	Hillsborough	
	I-275	Howard Frankland Bridge	N/A	Interstate Modernization Program	8	8 +4ML*	Pinellas / Hillsborough	
E	SR 580 (Hillsborough Ave.)	SR 589	Cargo Rd.	Capacity Improvements	6	8	Hillsborough	
F	Hillsborough Ave.	SR 589	50th St.	Operational Improvements	6	6	Hillsborough	
		50th St.	I-4	Operational Improvements	4	4	Hillsborough	
G	CSX @ U.S. 41 (Rockport)	At U.S. 41 (Rockport)	N/A	Grade Separation	0	6	Hillsborough	CST FY 2026
		Madison Ave.	Causeway Blvd.	Capacity Improvements	4	6	Hillsborough	
H	US 41	Causeway Blvd.	I-4	Operational Improvements	6	6	Hillsborough	
I	SR 60	West of US 41/CSX	East of US 41/CSX	Grade Separation	4	4	Hillsborough	
J	US 301	Selmon Expressway	I-4	Capacity Improvements	4	6	Hillsborough	

\*Managed Lanes



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MAP 4: REGIONAL PRIORITY FREIGHT INVESTMENT STRATEGIES

**LEGEND**

Priority Freight Investments

- Interstate Modernization Program
- Capacity Improvements
- Operational Improvements
- ▲ Grade Separations
- Roadway Network
- Rail Network
- Shipping Channels
- Freight Activity Centers
- Study Counties



# IMPLEMENTATION GUIDANCE AND RESOURCES

## Freight Roadway Design Considerations

In 2015 FDOT District Seven developed *Freight Roadway Design Considerations* (FRDC), accessible on the Freight Moves Tampa Bay website. The guidance document is a resource for transportation planners and design engineers for considering and implementing truck-friendly design solutions in a variety of freight- and community-oriented contexts. The document identifies considerations for selecting appropriate design strategies relative to the function of the Regional Freight Network, the multimodal aspects of certain corridors, and the various land use contexts throughout the Tampa Bay region. Elements of the FRDC support and expand upon modal planning and concepts in other FDOT manuals applicable statewide.

The primary objective of the FRDC is to ensure that both freight movement considerations and community livability objectives are balanced by promoting and selecting design strategies that most effectively accommodate truck movements in conjunction with the needs of other roadway users and community constituents.

The major design topics relating to freight are described below, along with general information about how variations in these elements relate to the context areas and the effect on the mobility of trucks and other system users.



## Freight Oriented Areas



Intersections in *Freight Oriented* context areas should be designed to optimize the operational efficiency of trucks. This is particularly important where two facilities on the freight network meet, but applies generally to all intersections. The above graphic demonstrates the following recommended strategies:

- 1 Truck channels** facilitate right turn movements for trucks while providing space for pedestrian refuge and signal poles and equipment. They give the truck storage space that is outside the departing through lane for the yield condition, creating better operating and safety conditions for through traffic.
- 2 Median nosings** can be designed to allow additional space for trucks making left turns on or off the mainline facility. They assist trucks in departing left turn lanes and entering receiving lanes. They can be set back from the crosswalk further than normal or striped, depending on the width of the median and the need to guide vehicles into a particular turning pattern.
- 3 Left turn lanes** should be designed as single lanes where volumes and the intersection signal phasing and timing strategy support it. Dual lefts can be problematic for traffic in adjacent lanes and opposing traffic in the middle of the intersection where the truck wheel tracking distance is the greatest. Dual lefts can also make it difficult for trucks to enter the receiving lane.
- 4 Extended left turn lanes** provide additional storage for trucks and other vehicles. Signal timing and phasing should be designed to allow for processing slower-moving trucks.
- 5 Corner radii** should be designed to accommodate trucks turning on and off the mainline facility. In some cases, trucks can use two receiving lanes to complete the turn and each intersection radius can be sized accordingly.

## Diverse Activity Areas

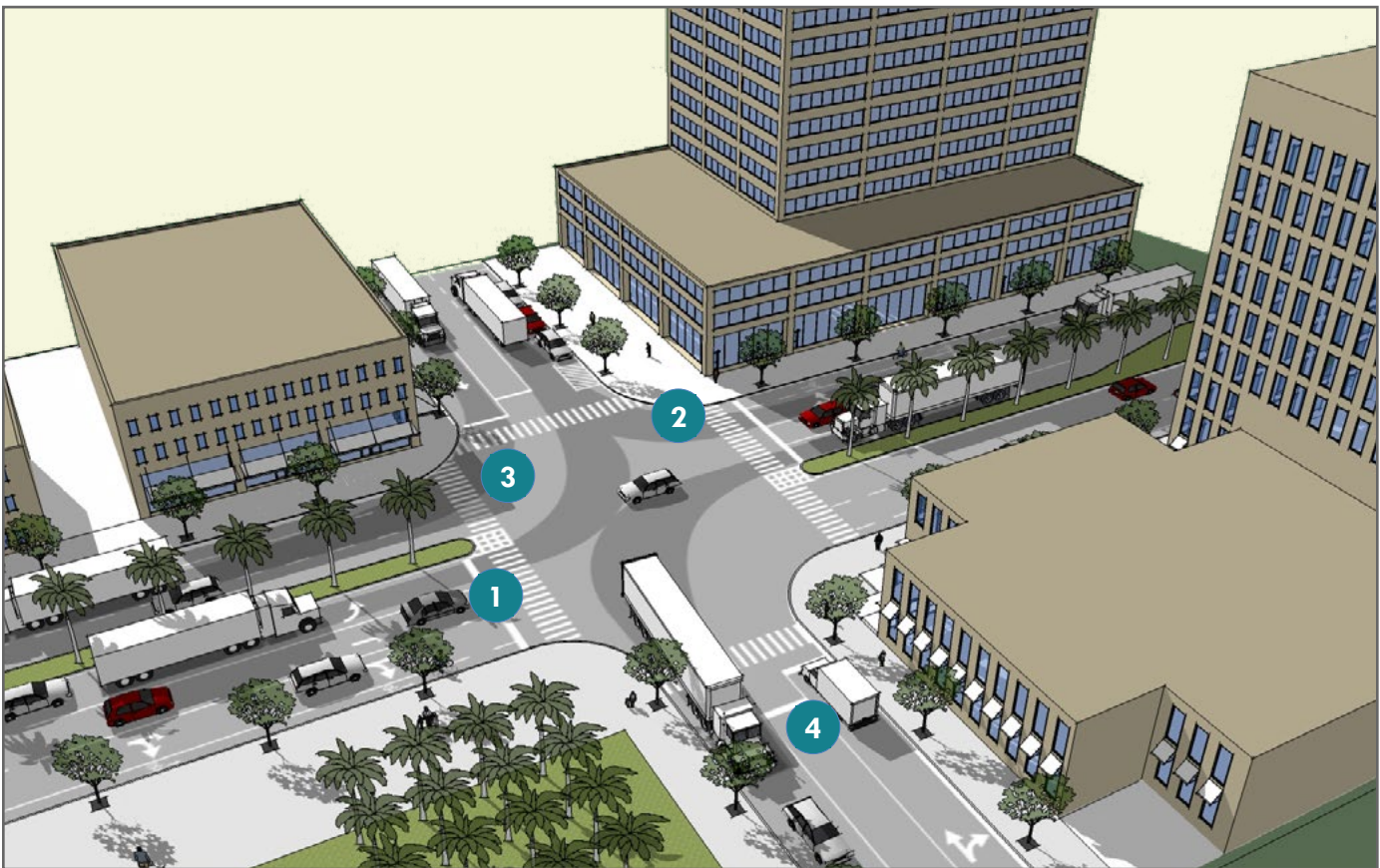


Intersections in *Diverse Activity* context areas should be designed to facilitate truck movements while balancing the needs of other users of the roadway. This often has to occur in constrained rights-of-way where established curb lines, existing infrastructure and equipment and limited right-of-way widths shape truck-friendly solutions. The above graphic demonstrates the following recommended strategies:

- 1 **Corner radii** should be designed to accommodate trucks turning on and off the mainline facility while maximizing the use of receiving lanes to complete the turn. Tapered curbs and multiple-radius curbs can be used in lieu of increasing a single radius curb to accommodate the truck turn.
- 2 **Tapered medians** or **expanded receiving lanes** on the side street provide additional turning space where the receiving lanes are inadequate and/or where the corner radius cannot or should not be increased. Tapered medians and expanded receiving lanes do not increase the crossing distance for pedestrians like increased corner radii do. They also do not require additional right-of-way in retrofit conditions.
- 3 **Tapered curbs** can expand the area for trucks to make left and right turns from the mainline facility to the side street. They do increase the crossing distance for pedestrians. Tapered curbs need to be considered as retrofits in light of a number of conditions, including right-of-way, sidewalk width, drainage and location of equipment.
- 4 **Bicycle lanes** provide a secondary benefit for trucks beyond their primary function. When trucks are turning right out of a shared through lane, the offset from the curb provides the truck more room to turn by shifting the inside wheel tracking away from the corner radius. When present on the side street, bicycle lanes increase the effective receiving area width.



## Community Oriented Areas



Intersections in *Community Oriented* context areas should be designed to accommodate trucks while optimizing the roadway operations for other vehicles and facilitating safe, comfortable and convenient pedestrian access. These areas often have constrained rights-of-way, a limited number of through lanes and shared turn lanes. Roadways should be designed so that smaller trucks can operate. Larger trucks need to be anticipated on the mainline facility, but may not be the appropriate design vehicle for side street conditions and turns due to physical limitations or lack of need due to very low large truck volumes. The above graphic demonstrates the following recommended strategies:

- 1 Median nosings** can be set back from the crosswalk further than normal on facility where large truck turns are anticipated. Extended median nosings with crosswalks in advance of the nosing do not typically interfere with small truck turning movements.
- 2 Curb extensions/bulb outs and on street parking** should be avoided in the portions of receiving lanes that would allow for expanded outside wheel tracking. Providing this space makes it easier for trucks to turn right and left off the mainline facility onto the side street. On street parking should be avoided on mainline facilities on the Freight Network.
- 3 Corner radii** should be designed to accommodate larger trucks on and off the mainline facility at intersections with other facilities on the Freight Network and at major arterials. Radii should be designed to accommodate smaller trucks turning on and off the mainline facility at secondary side streets.
- 4 Stop bar set backs** allow for larger trucks to make left turns from the mainline facility onto the side street by providing more space for inside wheel tracking. Depending on the departure lane and corner condition, they can also help facilitate right turns from the mainline facility onto the side street. The stop bar can be staggered for multiple lane approaches with no median such that only the stop bar on the outside lane is set back from the crosswalk.

## Goods Movement Advisory Committee (GMAC)

The GMAC guides and informs the freight planning process in the Tampa Bay region. It includes representation from transportation and land use planning agencies, intermodal entities, economic development groups, and the trucking industry within the Tampa Bay region. The GMAC has the following key roles in support of the coordinated planning process in the region:

- Provide a framework to address freight mobility issues in the transportation planning process;
- Ensure meaningful participation of the freight industry and economic development interests in the planning process;
- Identify improvements and strategies to facilitate the safe and efficient movement of freight while minimizing impacts to community and environmental assets; and
- Recognize and develop transportation and land use policies that support freight mobility and economic development

The GMAC guided development of the initial Strategic Freight Plan. It continues to meet 3-4 times a year to discuss and collaborate on new freight initiatives as they arise in the Tampa Bay region as well as to hear presentations from industry representatives. While the GMAC provides a formal collaboration for the discussion of freight initiatives, planners, intermodal entities, and other industry groups are constantly working together outside of these meetings to keep the freight in Tampa Bay moving efficiently.

## Freight Moves Tampa Bay Website

The Freight Moves Tampa Bay website has been developed to provide planning practitioners, decision-makers, and the public with a comprehensive resource of freight activity and related information in the Tampa Bay region. The website provides maps and data characterizing the following primary elements of the Strategic Freight Plan:

- Regional freight activity centers
- Regional freight transportation system
- Plan objectives and performance measures
- Freight mobility needs
- Freight compatibility analysis
- Regional priority freight investment strategies
- Freight strategy implementation guidance

Additionally, the website includes information to further the understanding of key issues affecting freight transport and economic development in the region. Several brief “white papers” have been prepared describing topics relevant to the freight industry and economic opportunity for the region.

## Comprehensive Freight Improvement Database

The Comprehensive Freight Improvement Database (CFID) is a multifaceted database containing a rich array of attribute and spatial information about issues affecting goods movement in the Tampa Bay region. The database provides a single-source of information for use by the FDOT, local governments, intermodal agencies, and other freight stakeholders to support a multitude of planning and economic development initiatives.

CFID provides an inventory of identified freight mobility problems and needs at specific locations throughout the region (freight hot spots) and on corridors that are part of the region’s freight transportation network. Strategies and projects identified to address these needs are monitored by maintaining an inventory of transportation improvement projects and schedules for current and planned projects.