2045

Florida's Strategic Intermodal System

MULTI-MODAL UNFUNDED NEEDS PLAN UPDATE

Executive Summary
June 2017

SIS Strategic Intermodal System

FDOT

2045

FLORIDA'S STRATEGIC INTERMODAL SYSTEM

MULTI-MODAL UNFUNDED NEEDS PLAN EXECUTIVE SUMMARY

Prepared by the Florida Department of Transportation | Systems Planning Office | June 2017 | FDOT.gov

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GOALS, OBJECTIVES, AND PROCESS

What is the SIS?

The Strategic Intermodal System (SIS) is Florida's high priority network of transportation facilities vital to the state's economy. The Governor and Legislature established the SIS in 2003 to focus the state's limited transportation resources on facilities most significant to interregional, interstate, and international travel. The SIS is the state's highest priority for transportation capacity investments and is the primary tool in implementing the Florida Transportation Plan (FTP), the state's long-range transportation vision and policy plan. The SIS Policy Plan is a primary avenue of FTP implementation. Recognizing the importance of the SIS, the Department updated the SIS Policy Plan in tandem with the FTP to ensure consistency between the documents.

There are three goals that guide how transportation investments and decisions should support Florida's future economic prosperity, quality of life, and quality places. These goals are:

- To provide agile, resilient, and quality infrastructure;
- To provide efficient and reliable mobility for people and freight; and
- To provide more transportation choices for people and freight.

Although Florida's population and economy have changed over time, the intent of the SIS has remained the same. To that end, the SIS consists of the state's largest and most significant commercial service airports, spaceports, deep-water seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways and highways. These hubs, corridors, and connectors are the fundamental structures which satisfy the transportation needs of the state's travelers and visitors, support the movement of freight, and provide transportation links to external markets.

The following three (3) SIS objectives frame the SIS process:

- ***Interregional Connectivity*** – Enhance connectivity between Florida's economic regions and between Florida and other states and nations for both people and freight.
- ***Intermodal Connectivity*** – Provide for safe and efficient transfers for both people and freight between all transportation modes.
- ***Economic Competitiveness*** – Provide transportation systems to support statewide goals related to economic diversification and development.

All SIS facilities are eligible for state transportation funding, regardless of mode or ownership. The SIS is the primary focus of FDOT capacity improvement funds; however, it is not the single funding source for all projects.

SIS Designation

SIS facilities are designated through the use of objective criteria and thresholds based on quantitative measures of transportation and economic activity. These facilities are responsible for the movement of people and goods at a high rate and generally support major flows of interregional, interstate, and international travel and commerce. Facilities that do not currently meet the established criteria and thresholds for designation, but may in the future, are referred to as "Emerging SIS" facilities. These facilities experience lower levels of people and goods movement, but demonstrate strong potential for future growth and development. The SIS focuses primarily on the completion of end-to-end trips, rather than individual modes or facilities. This emphasis ultimately results in the defining, planning, and managing of Florida's overall transportation system.

Florida's SIS was established to enhance economic competitiveness and mobility by focusing limited state resources on those transportation facilities that

are critical to Florida's economy and quality of life. Specifically, the SIS supports Florida's economic growth and competitiveness by reducing business costs for transportation and logistics and enhancing access to domestic and global markets. Improvements to the SIS enable greater access and connectivity between highway and rail systems to the state's most critical seaports, airports, and other terminals. The SIS also supports intermodal solutions along key trade and economic corridors.

Designated SIS and Emerging SIS Facilities

Facility Type	SIS	Emerging SIS
Commercial airports	**7**	**11**
General aviation relievers	**2**	**-**
Spaceports	**2**	**-**
Deepwater seaports	**7**	**5**
Passenger terminals	**26**	**9**
Rail freight terminals	**5**	**2**
Rail corridors (miles)	**1,704**	**420**
Waterways (miles)	**1,950**	**312**
Highways (miles)	**3,535**	**760**
All Connectors (miles)	**542**	**-**
Urban Fixed Guideways (miles)	**135**	**-**
Military Access Facilities	**9**	**-**

SIS Planning Process

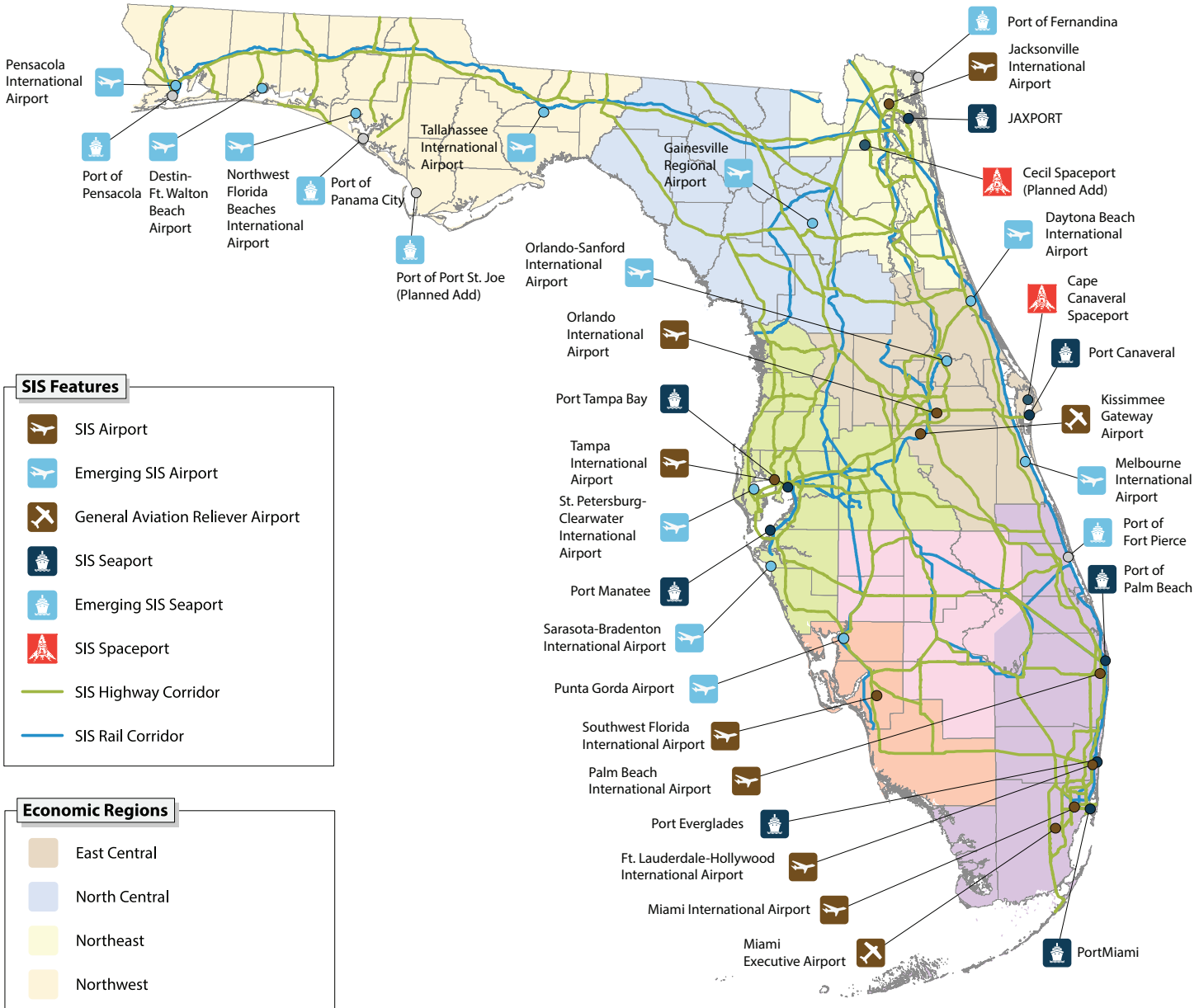
As previously stated, the SIS planning process is based on policy guidance established in the FTP. This process provides the framework for planning, programming, and implementing transportation projects. It also ensures that the limited transportation funds are invested in the most efficient and effective manner. To that end, the SIS planning process is comprised of the following funding plans:

- ***SIS Multi-Modal Unfunded Needs Plan:*** The SIS Multi-Modal Unfunded Needs Plan (MMUNP) represents a compilation of unfunded transportation projects on the SIS that promote increased mobility and reduce congestion. Funding for projects in this plan is not expected to be available during the 25 to 30 year timeframe of the SIS Funding Strategy (Ten Year Plan and Cost Feasible Plan).

- ***Cost Feasible Plan (CFP):*** The CFP illustrates projects on the SIS which are considered financially feasible during the last fifteen years (Years 11 to 25) of the State's SIS Long Range Plan, based on current revenue forecasts. Projects in this plan could move forward into the 10 Year Plan as funds become available. They may also move back into the Unfunded Needs Plan if revenue falls short of projections or the cost estimates and/or priorities change.

- ***SIS 10 Year Plan:*** Every fall, projects from the CFP are selected for inclusion in the new 10th year of the SIS 10 Year Plan, which consists of the 2nd 5 Year Plan and the SIS Work Program (1st 5 Year Plan). The Work Program is presented annually to the Legislature and drives the funding, implementation, and construction of the Department's projects.

STRATEGIC INTERMODAL SYSTEM



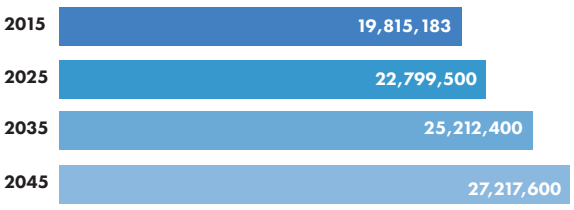
Source: FDOT systems Planning Office, May 2017

DEMOGRAPHIC TRENDS

Population

The population and economy of Florida continues to grow. Since 2010, the population has increased 9.3% to 20,271,272 persons. In 2014, Florida surpassed New York as the third most populous state in the nation. The Miami-Dade/Broward/Palm Beach metropolitan area ranked as the eighth most populous in the nation, surpassing 6 million for the first time in 2016. Based on Bureau of Economic and Business Research (BEBR) data, Florida's population is projected to reach 27.2 million by 2045. This anticipated rise in population denotes a 25% increase over the next 30 years. The following chart depicts the projected population growth through 2045:

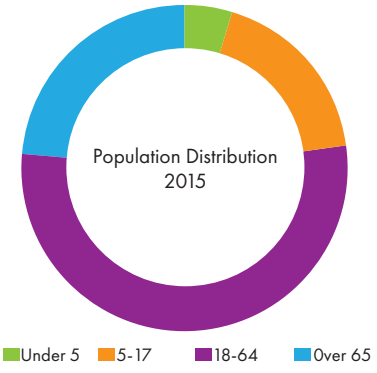
Population

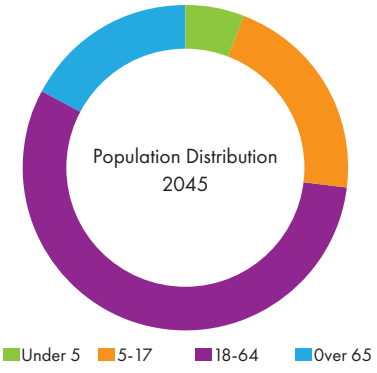


**Source BEBR Medium*

By 2045 the top three counties in terms of population will be Miami-Dade, Broward, and Hillsborough counties. Southeast Florida is projected to maintain its status as the major population center in the state by 2045. Other large regions will include the Orlando and Tampa Bay area.

Of note, persons 65 years of age and older made up 19.4% of the state's population in 2015. That figure is up from 17.3% in 2010. Since 2000, this age group has been the fastest growing population segment. With the continued retirement of "baby boomers", this trend is expected to continue. Their future needs are unique due to their off-peak travel patterns and need for more diverse transportation modal options. Conversely, persons aged 5 and younger, along with persons age 6 to 18 experienced a decline in total population percentage for 2015. In 2010, persons 5 and younger represented 5.7% of the population, while persons age 6 to 18 accounted for 21.3%. Those numbers dropped to 5.4% and 20.3 respectively. The following charts depict the state's population distribution for 2015 and 2045:





Demographic Trends (continued)

Employment / Income

When looking at the state's work force, approximately 48% of Florida's total population makes up the state's available labor force. Of that total, 95.1% are gainfully employed in some capacity. As of March 2017, Florida's unemployment rate stood at 4.8%. The per capita income for Florida in 2015 was $44,101 with the median household income being $47,212. Based on the U.S. Bureau of Economic Analysis, Florida's gross domestic product (GDP) totaled $882.8 billion in 2015.

Tourism

A record 112.8 million tourists visited Florida in 2016, spending $108.8 billion. As a result of tourist spending, $11.3 billion in state and local tax revenue was generated. Visitor spending also supported 1.4 million jobs.

Approximately 87% of tourists to the state are domestic. Canada is currently the top country for international visitation to the state, followed by the United Kingdom. Brazil, Argentina, and Colombia round out the top five in total visitors. In 2016, international travelers originated from 190 countries.

Florida is well-known for its beaches and waters. Visitors from around the world are drawn to the state's 2,200 miles of shoreline and 663 miles of beaches. Ninety-two percent of visitors to Florida's beaches come from other states or overseas. Approximately 40% of all U.S. visitors reported beach and waterfront activities as one of their top activities when visiting Florida.

Florida welcomes millions of families each year to its amusement and theme parks. In 2016, an estimated 66 million tourists visited the Orlando area alone. A large majority of these tourists visited Walt Disney World, the largest single-site employer in the nation (66,000 employees).

Florida continues to be the premier embarkation center for cruise lines in the U.S. Home to the world's three (3) largest cruise ship companies, the state accounted for more than half of the U.S. based cruise line employment. In addition, Port Everglades, PortMiami, and Port Canaveral represent the three busiest cruise ports in the world.

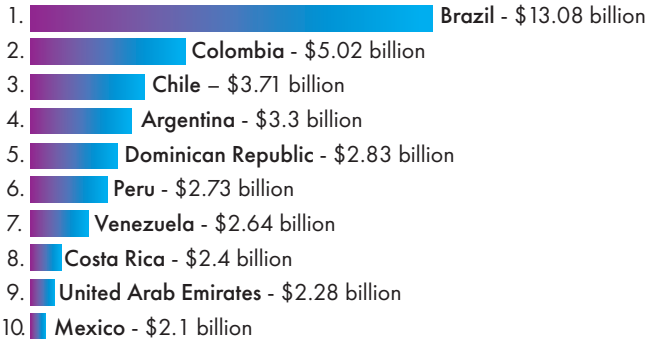
Cruise Passengers by Port:
PortMiami – 4.9 million
Port Canaveral – 4.2 million
Port Everglades – 3.9 million
Port Tampa Bay – 900,000
JaxPort – 185,000

Trade

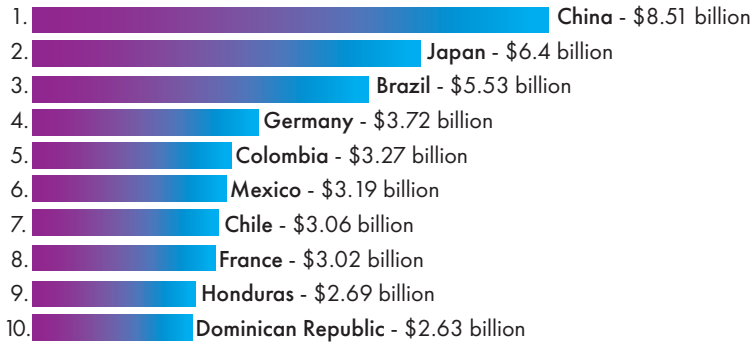
Florida is one of the largest export states in the U.S. and is a major gateway for merchandise trade between North America, Latin America, the Caribbean and other world regions. Forty percent of all U.S. exports to Latin America pass through Florida. Given its extensive highway system, rail network, aviation freight, seaport facilities, and overall geographic location, Florida is well positioned to continue playing a key role in the movement of goods throughout the country and world.

Florida's total merchandise trade (exports + imports) totaled $147.4 billion in 2015. Merchandise exports shipped from Florida to other countries totaled $73.3 billion in 2015, while merchandise imported into the state totaled $74.1 billion. Florida's leading exports and imports commodities include motor vehicles, ships/boats, aircraft/spacecraft parts, engine parts, machinery, telecommunications equipment, furniture, agricultural products, seafood, livestock, minerals, and forestry products.

Merchandise Trade EXPORTS - Top 10 Countries



Merchandise Trade IMPORTS - Top 10 Countries

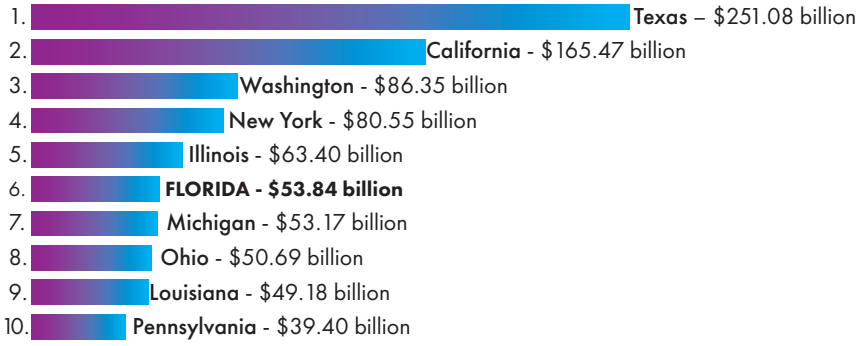


1. **China** - $8.51 billion
2. **Japan** - $6.4 billion
3. **Brazil** - $5.53 billion
4. **Germany** - $3.72 billion
5. **Colombia** - $3.27 billion
6. **Mexico** - $3.19 billion
7. **Chile** - $3.06 billion
8. **France** - $3.02 billion
9. **Honduras** - $2.69 billion
10. **Dominican Republic** - $2.63 billion

Merchandise Trade FLORIDA ORIGIN EXPORTS – Top 10 Countries

1. **Canada** - $3.86 billion
2. **Brazil** - $3.69 billion
3. **Mexico** - $2.71 billion
4. **Colombia** - $2.54 billion
5. **Venezuela** - $2.02 billion
6. **Germany** - $1.77 billion
7. **Dominican Republic** - $1.7 billion
8. **Peru** - $1.7 billion
9. **Chile** - $1.68 billion
10. **United Arab Emirates** - $1.54 billion

Merchandise Trade EXPORTS – Top 10 States (2015)



1. **Texas** – $251.08 billion
2. **California** - $165.47 billion
3. **Washington** - $86.35 billion
4. **New York** - $80.55 billion
5. **Illinois** - $63.40 billion
6. **FLORIDA - $53.84 billion**
7. **Michigan** - $53.17 billion
8. **Ohio** - $50.69 billion
9. **Louisiana** - $49.18 billion
10. **Pennsylvania** - $39.40 billion

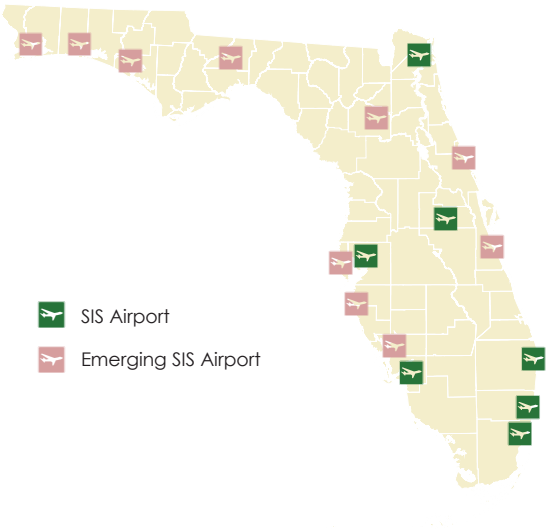
UNFUNDED NEEDS BY DISTRICT & MODE

SIS Unfunded Needs

District	Aviation	Highway	Rail	Seaport	Spaceport	Transit	Total
District 1	$50,000	$6,761,166,053	$2,391,700,000	$123,000,000	$0	$2,003,700,000	$11,279,616,053
District 2	$24,015,000	$7,389,193,000	$139,758,000	$1,871,400,000	$36,800,000	$111,370,000	$9,572,536,000
District 3	$33,000,000	$8,672,419,000	$86,643,000	$97,800,000	$0	$0	$8,889,862,000
District 4	$173,000,000	$5,384,938,000	$1,825,333,000	$1,896,105,000	$0	$8,651,691,000	$17,931,067,000
District 5	$70,000,000	$12,311,957,450	$1,256,000,000	$550,000,000	$970,474,000	$460,500,000	$15,618,931,450
District 6	$54,707,842	$5,927,453,000	$3,390,422,500	$1,657,700,000	$0	$505,334,500	$11,535,617,842
District 7	$634,015,910	$9,103,975,730	$889,873,000	$419,910,000	$0	$10,105,661,000	$21,153,435,640
Turnpike Enterprise	$0	$8,758,059,000	$0	$0	$0	$0	$8,758,059,000
Statewide Rail	$0	$0	$2,240,085,000	$0	$0	$0	$2,240,085,000
Total	**$988,788,752**	**$64,309,161,233**	**$12,219,814,500**	**$6,615,915,000**	**$1,007,274,000**	**$21,838,256,500**	**$106,979,209,985**

Aviation

Florida currently has 20 airports that are designated as SIS facilities. Of those airports, seven (7) are designated as SIS airports and two (2) are classified as SIS General Aviation Reliever Airports. The remaining eleven are Emerging SIS airports. Aviation needs, for the purpose of this plan, have been identified by the airports, in coordination with district offices, and the statewide aviation plan. The Florida Joint Automated Capital Improvement Program (JACIP) is the electronic database utilized by airports, FDOT, and the FAA in planning aviation needs.



SIS Aviation Unfunded Needs

District	Project Costs	%
District 1	$50,000	0%
District 2	$24,015,000	2%
District 3	$33,000,000	3%
District 4	$173,000,000	18%
District 5	$70,000,000	7%
District 6	$54,707,842	6%
District 7	$634,015,910	64%
Total	**$988,788,752**	**100%**

Example Aviation projects in the SIS Unfunded Needs Plan

District	Project
District 1	Punta Gorda Airport Ground Transportation Study
District 2	Jacksonville International Apron Construction
District 3	Tallahassee International Air Freight Facility Expansion
District 4	Palm Beach International Terminal Improvements
District 5	Melbourne International Terminal Expansion
District 6	Miami International Concourse Improvements
District 7	Tampa International Taxiway Extension

Highways

SIS highway improvements are identified, planned, and funded to improve safety, connectivity, and promote economic development opportunities within the state. Typical highway projects include roadway widenings, interchange improvements, managed lanes,

access management, along with new facilities. These investments enhance the viability of gateways, corridors, and intermodal logistics centers throughout the state. Identified projects also allow for the utilization of technologies and innovative practices that improve the efficiency of interregional travel by connecting modes within the SIS. In addition, a key objective of the potential investments identified within this plan is to balance state, regional and local transportation needs with future land use decisions.

SIS Highway Unfunded Needs

District	Project Costs	%
District 1	$6,761,166,053	11%
District 2	$7,389,193,000	12%
District 3	$8,672,419,000	13%
District 4	$5,384,938,000	8%
District 5	$12,311,957,450	19%
District 6	$5,927,453,000	9%
District 7	$9,103,975,730	14%
Turnpike	$8,758,059,000	14%
Total	**$64,309,161,233**	**100%**

Example Highway projects in the SIS Unfunded Needs Plan

District	Project
District 1	I-75 at SR 82 Interchange Modification
District 2	I-295 Managed Lanes
District 3	I-10 Lane Additions
District 4	I-75 at Sawgrass Expressway Interchange Mod.
District 5	SR 528 Lane Additions
District 6	SR 836 Managed Lanes
District 7	I-275 Managed Lanes
Turnpike	Suncoast Parkway 2 (Citrus County)

Rail

Investments to Florida's rail system are critical to the state's economy, in that they promote the movement of freight and passengers. In addition, Florida's population growth has provided new challenges to the state's overall transportation system, including rail. Efficient, seamless rail operations are also supported by the timeliness of freight movement on the state's highway system.

The Florida Rail System Plan recognizes rail as contributing significantly to safe and interconnected passenger and freight mobility service throughout the state.

Needs have been provided within the Needs Plan to improve and enhance rail operations. A number of these investments have been identified by districts and regional transportation authorities and have the potential to be funded through effective public private partnerships.

SIS Rail Unfunded Needs

District	Project Costs	%
District 1	$2,391,700,000	20%
District 2	$139,758,000	1%
District 3	$86,643,000	1%
District 4	$1,825,333,000	15%
District 5	$1,256,000,000	10%
District 6	$3,390,422,500	28%
District 7	$889,873,000	7%
Statewide	$2,240,085,000	18%
Total	**$12,219,814,500**	**100%**

Example Rail projects in the SIS Unfunded Needs Plan

District	Project
District 1	CSX Corridor Grade Separations
District 2	Jacksonville Port Authority Switchyard
District 3	Alabama and Gulf Coast Railway Track Upgrade
District 4	Florida East Coast Railway Grade Separations
District 5	Orlando Amtrak Station Renovations
District 6	Tri-Rail Coastal – Aventura Link
District 7	Tampa Port Authority at Redwing Rail Extension
Statewide	Intercity Passenger Rail – Florida Component of Jacksonville to New Orleans link

Seaports

Florida's seaports continue to grow and evolve into more efficient and attractive global gateways for both passengers and freight.

Florida's cruise ports continue to strengthen and expand their leadership role as the largest passenger cruise market in the world. Florida's container ports consistently increase their share of Florida goods previously moving through competing trade routes.

Unfunded Needs by District & Mode (continued)

Furthermore, Florida's waterways, seaport system, and intermodal network continue to attract large-scale manufacturing and logistics services, as well as marine commercial and recreational activities. The state's 12 SIS seaports, shown on the map below, are recognized as significant contributors to the dynamic growth of the state's economy

SIS Seaport Unfunded Needs

District	Project Costs	%
District 1	$123,000,000	2%
District 2	$1,871,400,000	28%
District 3	$97,800,000	2%
District 4	$1,896,105,000	29%
District 5	$550,000,000	8%
District 6	$1,657,700,000	25%
District 7	$419,910,000	6%
Total	**$6,615,915,000**	**100.00%**

Example Seaport projects in the SIS Unfunded Needs Plan

District	Project
District 1	Port Manatee Intermodal Container Facility – Phase II
District 2	Jaxport Dames Point Marine Terminal Berth Upgrades
District 3	Port of Pensacola Berth Rehab
District 4	Port of Palm Beach Intermodal Cargo Transfer Facility
District 6	PortMiami Multi-Modal Terminal
District 7	Port Tampa Bay – Eastport Waterside Development & Improvements

Spaceports

FDOT and Space Florida work closely together to plan and facilitate space transportation services on spaceport properties throughout the state. Space Florida promotes and assists Florida's aerospace business sector by providing launch facilities, financial services, and innovative education programs. FDOT, as authorized by Section 331.360, F.S., provides funding assistance for projects that improve aerospace transportation facilities, encourage coordination between airports and spaceports, and foster interagency efforts to improve space transportation capacity and efficiency. These programmed funds are used to stimulate private sector investment and commercial spaceport development within the state. The Federal Aviation Administration's (FAA's) licensure of commercial spaceports at Cape Canaveral in 1997 and Cecil Spaceport in 2010, coupled with the potential for additional system elements in the future, puts Florida in the position of having an expanding system of spaceports.

SIS Spaceport Unfunded Needs

District	Project Costs	%
District 2	$36,800,000	4%
District 5	$970,474,000	96%
Total	**$1,007,274,000**	**100.00%**

Example Spaceport projects in the SIS Unfunded Needs Plan

District	Project
District 2	Cecil Spaceport Hangar Development
District 5	Cape Canaveral Spaceport Vertical Processing and Launch Pad

Transit

Transit projects for the Needs Plan are broken down into following three categories: 1) designated SIS facilities, 2) projects that have the potential to meet SIS designation criteria and thresholds, and 3) facilities that support the SIS. Transit projects have been identified from FDOT corridor master plans and regional transportation plans. Intermodal centers, as well as inter-county passenger services are also included. In this report, transit projects include public transportation facilities that operate on dedicated right-of-way that cross multiple urbanized counties, consistent with Federal Transit Administration regulations. This may include bus rapid transit (BRT) or light rail. Transit projects also include passenger hubs and terminals. Most transit projects are categorized as "potential SIS" as they are currently not on the system.

SIS Transit Unfunded Needs

District	Project Costs	%
District 1	$2,003,700,000	9%
District 2	$111,370,000	1%
District 4	$8,651,691,000	40%
District 5	$460,500,000	2%
District 6	$505,334,500	2%
District 7	$10,105,661,000	46%
Total	**$21,838,256,500**	**100.00%**

Example Transit projects in the SIS Unfunded Needs Plan

District	Project
District 1	US 41 Collier - Lee Bus Rapid Transit
District 2	Jacksonville Transportation Center
District 4	West Palm Beach Transit Hub
District 5	Kissimmee Transit Circulator
District 6	Palmetto Metrorail Intermodal Terminal
District 7	Westshore Multi-Modal Center

Florida Automated Vehicles (FAV)

The Department is also planning for the deployment of autonomous and connected vehicle technologies on public roadways with the establishment of the Florida Automated Vehicles (FAV) initiative. Automated Vehicles is an umbrella term that includes both autonomous and connected vehicle technologies. Autonomous Vehicles (AV) are characterized as any vehicle equipped with advanced sensors (radar, LIDAR, cameras, etc.) possessing the capability to recognize its surroundings and activate steering, braking, and acceleration without operator input. Connected Vehicles (CV) employ "vehicle-to-vehicle" and "vehicle-to-infrastructure" communication to provide real-time warnings to a human driver to assist in avoiding crashes. Within the planning horizon of the 2045 Multi-Modal Unfunded Needs Plan, it is estimated that approximately 50% of vehicle sales will be autonomous vehicles. Therefore, it is anticipated that the Department will continue researching the feasibility of dedicated AV or CV lanes, modifying roadway designs, and developing best management practices as part of this initiative.

Conclusion

Projects within this plan represent improvements that, through coordination with transportation partners and the local planning process, have been identified to help meet travel demand, integrate modes, improve efficiencies, and reduce congestion. The FTP goals and SIS objectives, along with SIS Eligibility and Designation criteria have been used in the development of this plan.

Projects referenced in this plan were identified using FDOT modal plans, transportation corridor plans, regional plans, MPO and Expressway Authority plans, and other partner plans. Most of the identified needs are attributed to one of the seven FDOT districts, while others, such as rail needs, are statewide, and therefore are not assigned by district. Similarly, Florida's Turnpike System, overseen by the Florida Turnpike Enterprise, is not confined to one particular district.

The Unfunded Needs Plan does not imply a commitment to fund or build, but rather is an identification and recognition of additional capacity and mobility needs. As planning and engineering studies are completed, the resulting proposed project recommendations may not be to widen existing facilities, but rather construct a new alignment or an alternative non-highway (rail or transit) improvement.

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FDOT