

FLORIDA RAIL SYSTEM PLAN

NOVEMBER 2023

Chapter 2

Florida's Existing Rail System



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Chapter 2 Florida's Existing Rail System

This chapter provides an overview and inventory of the state's existing rail system, describes the trends that will impact the future need for rail in Florida, and identifies the needs and opportunities for passenger and freight rail services in the state.

2.1 Description and Inventory

The history of railroading in Florida spans more than 175 years and is intricately linked to the state's growth and development. Most of the significant railroading activities occurred in the first half of the 20th century with the opening of peninsular Florida and a boom in railroad construction. Fewer rail investment activities occurred in the second half of the 20th century, largely because of the construction of the National System of Interstate and Defense Highways (commonly known as the Interstate Highway System), which largely made the automobile the preferred choice for personal mobility and increased the trucking industry's share of freight movement. Figure 2-1 provides a historical rail timeline in Florida since the 1830s.

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Figure 2-1 | History of Rail in Florida

HISTORY OF RAIL IN FLORIDA



Florida Railway & Navigation Co. steam engine

1836
The first steam-powered railroad line in the state began operation

1845

Florida became a state; Railroad developers began piecemeal projects to link east and west Florida

1880

With state support and the Internal Improvement Act of 1855, Florida's railroad network grew to more than 500 miles of track

1880 - 1912

Rail mileage in Florida increased four-fold; Henry Plant linked central and west Florida to the rest of the country, and Henry Flagler built a railroad from Jacksonville south along Florida's east coast, eventually reaching Key West



Overseas extension bridge to Key West



Visitors arriving in Florida

EARLY 1900S

Florida's developing industrial centers, luxury destinations, agricultural sectors, and growing communities were connected by train

MID 1900S

Construction of the National System of Interstate and Defense Highways after World War II made the automobile the preferred choice for personal travel and increased the trucking industry's share of freight transportation



Diesel-electric locomotives replaced steam in the '40s

1988 - 1989

FDOT purchased the South Florida Rail Corridor from CSX Transportation; Tri-Rail began commuter rail operations in southeast Florida

2009

Florida Rail Enterprise was established under the authority of FDOT to coordinate the development and operation of publicly funded passenger rail systems in the state



Double-stacked containers of cargo move by rail between Florida and markets across North America



Robert Blanchette, President of TGV of Florida, Inc., presents his bullet train proposal to the Florida High Speed Rail Transportation Commission

2014

SunRail began commuter service in the Orlando area

2016

The widened Panama Canal expanded shipments of containerized freight through Florida seaports and onto trains to reach interior U.S. markets



Cargo ship crossing Panama Canal

2018

Brightline began service between Miami, Fort Lauderdale, and West Palm Beach



Brightline train arriving at station

Freight rail is a vital asset to the growing state of Florida, providing a critical link to business markets across the state, nation, and ultimately the world. The railroads that operate on

Chapter 2: Florida's Existing Rail System

Florida's rail network transport many tons of goods and fall under three classifications based on their annual operating revenues.¹ The classifications are:

- **Class I:** Carriers having annual carrier operating revenues of \$943,898,958 or more after applying the railroad revenue deflator formula. As of 2021, there are 7 Class I lines in U.S., of which two serve Florida.
- **Class II:** Carriers having annual carrier operating revenues of less than \$943,898,958 but in excess of \$42,370,575 after applying the railroad revenue deflator formula. As of 2021, there are 22 Class II lines in U.S., of which one serves Florida.
- **Class III:** Carriers having annual carrier operating revenues of \$42,370,575 or less after applying the railroad revenue deflator formula. As of 2021, there are 584 Class II lines in U.S., of which 13 serve Florida.

Table 2-1 shows that most of the rail mileage in the state is owned by the Class I railroad CSX Transportation (CSX) and Class II railroad Florida East Coast Railway (FEC). These railroads own a total of 2,189.743 track-miles.

Table 2-1 | Rail Mileage in Florida

| Railroad | Miles Owned* | Percent |
|---|-----------------|-------------|
| CSX Transportation | 1627.545 | 42.19% |
| Norfolk Southern | 126.272 | 3.27% |
| Central Florida Rail Corridor (CFRC) | 64.2 | 1.66% |
| South Florida Regional Transportation Authority (Tri Rail) | 71.581 | 1.86% |
| Florida East Coast Railway | 562.198 | 14.57% |
| Class III rail lines | 1405.751 | 36.44% |
| Totals | 3857.547 | 100% |

* Includes mainline, siding, spur, connector, yard, and storage miles. Route miles shown elsewhere refer to aggregate length, excluding yard tracks, sidings, and parallel lines.

** Includes switching, terminal, private operators and US Government.

Source: FDOT Freight & Rail Office, 2021

See Appendix G for an overview of Florida's rail freight commodity flows and forecast information. Florida's freight and passenger rail system is shown in Figure 2-2.

¹ <https://www.stb.gov/reports-data/economic-data/>

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Figure 2-2 | Florida's Rail System



Source: FDOT Freight & Rail Office, 2023

2.1.1 Existing Freight Rail System

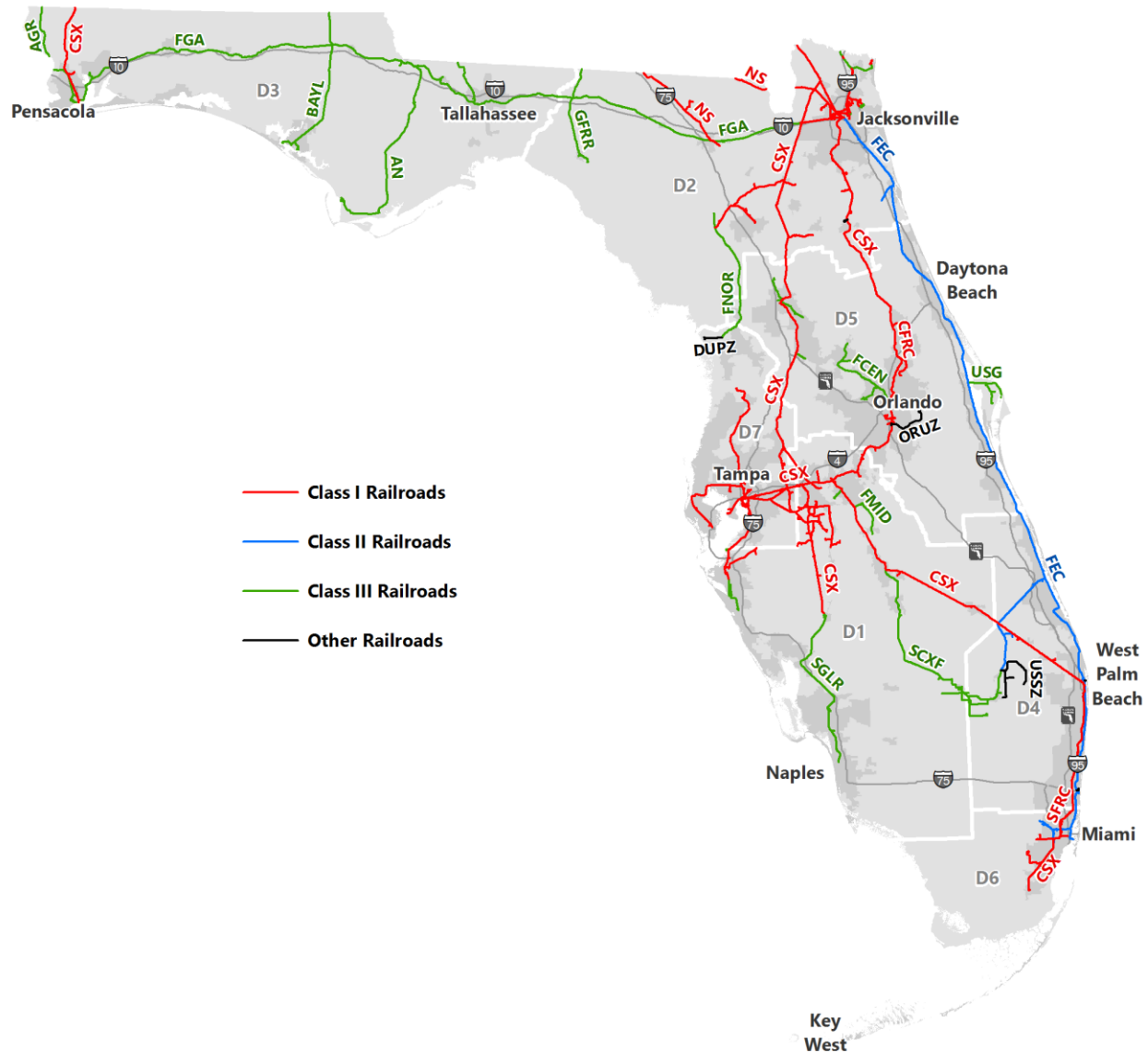
Florida's freight rail system is operated by two Class I railroads, one Class II railroad, and multiple Class III railroads that are further categorized as switching and terminal railroads or short lines. Florida's freight rail network has 2,738.31 mainline miles and more than 3,800 track-miles. Freight rail is a vital asset that supports the state's economy and mobility. The majority of Florida's rail mileage is owned by freight railroads, allowing Florida businesses to reach markets around the world.

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Class I Railroads

Two of the seven Class I railroads in the U.S. serve Florida – CSX Transportation (CSX) and Norfolk Southern Railway (NS). With few exceptions, the two systems are located, and dominate rail transportation, east of the Mississippi River. The location of all Class I, II, and III railroads is shown in Figure 2-3.

Figure 2-3 | Florida's Freight Rail Line Locations



Source: FDOT Freight & Rail Office, 2023

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CSX Transportation

CSX Transportation operates more than 20,000 miles of track in 23 eastern, southern, and midwestern states, the District of Columbia, and the Canadian provinces of Ontario and Quebec. Nearly two-thirds of Americans live within CSX's service territory. CSX has access to more than 70 ocean, river, and lake port terminals along the Atlantic and Gulf Coasts, the Mississippi River, the Great Lakes, and the St. Lawrence Seaway. CSX is the largest railroad in Florida providing statewide service and has its corporate headquarters in Jacksonville. Major commodities produced or consumed by Florida that move by rail on CSX include containerized consumer goods, phosphates, coal, stone, food and agricultural products, and light trucks.



CSX Interchanges

Interchanges are locations where railroads meet and exchange railcars. CSX can interchange freight rail traffic with one Class I carrier (NS), one Class II (FEC), and several Class III railroads (short lines) in Florida. Designated interchange locations and connecting carriers are listed below and shown in Figure 2-4.

- Cantonment – Alabama and Gulf Coast Railway (AGR)
- Chattahoochee – AN Railway (AN)
- Cottondale – Bay Line Railroad (BAYL)
- Yulee – First Coast Railroad (FCRD)
- Orlando – Florida Central Railroad (FCEN)
- West Lake Wales – Florida Midland Railroad (FMID)
- Winter Haven – FMID
- Ocala – Florida Northern Railroad (FNOR)
- Foley – Georgia and Florida Railroad (GFRR)
- Arcadia – Seminole Gulf Railway (SGLR)
- Oneco – SGLR
- Port Manatee Junction – Port Manatee Railroad (PMR)
- Sebring – South Central Florida Express (SCXF)
- Jacksonville – NS, FEC, JXTP, SCXF (the latter via haulage rights)
- West Palm Beach – FEC
- Marcy – SCXF (via trackage rights)
- Newberry – FNOR
- Oleander – FEC
- Lake City – NS
- Baldwin – Florida Gulf and Atlantic Railroad (FGA)
- Pensacola – FGA

Major Yards and Other Facilities

CSX has several major carload, intermodal, and other facilities in Florida. These facilities, along with the railroad's port connections, are described in subsequent sections.

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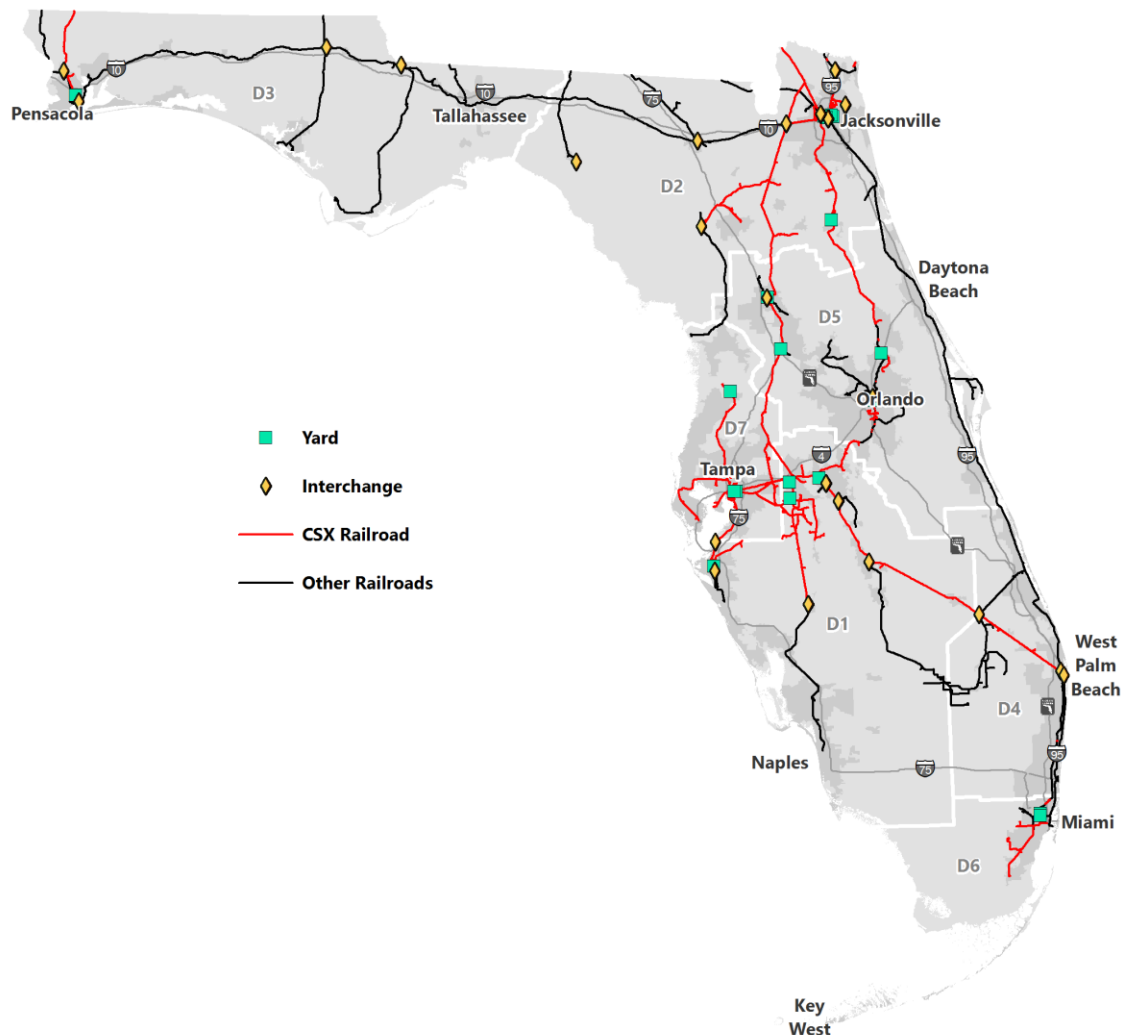
CSX Trackage Rights and Joint Trackage

CSX has trackage rights over GFRR between Quitman, Georgia and Foley, Florida, and over FG&A between Baldwin and Pensacola, Florida and between Tallahassee, Florida and Bainbridge, Georgia. By contract CSX also operates over the Central Florida Rail Corridor (SunRail commuter line) between DeLand and Kissimmee and the South Florida Rail Corridor (Tri-Rail commuter line) between Mangonia Park and Miami.

CSX Divisions and Subdivisions in Florida

CSX's Florida network is comprised of parts of two divisions, Jacksonville and Atlanta, and 28 subdivisions. Descriptions of the subdivisions can be found in Appendix A.

Figure 2-4 | CSX Interchanges and Yards



Source: FDOT Freight & Rail Office, 2023

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Norfolk Southern Railway

Owned by Norfolk Southern Corporation, Norfolk Southern Railway (NS) operates approximately 19,300 route miles in 22 states east of the Mississippi River. NS serves every major port on the East Coast between New York City and Jacksonville, as well as multiple private terminals, and serves additional ports on the Gulf Coast, Great Lakes, and numerous rivers. Major commodities moved by NS in Florida include containerized goods, automobiles and automotive parts, agricultural products, and metals and construction materials. NS has the least mileage of the major railroads in Florida, providing service only in the northeastern corner of the state.



NS Interchanges

NS has the ability to interchange freight rail traffic with one Class I (CSX) and one Class II (FEC) in Florida. Designated interchange points and connecting carriers are listed below and shown in Figure 2-5.

- Jacksonville – CSX, FEC, Jacksonville Port Terminal Railroad (JXPT), South Central Florida Express (SCXF, via haulage rights over FEC)

Major Yards and Other Facilities

NS has major carload, intermodal, and other facilities in Florida. These facilities, along with the railroad's port connections, are described in subsequent sections.

NS Trackage Rights

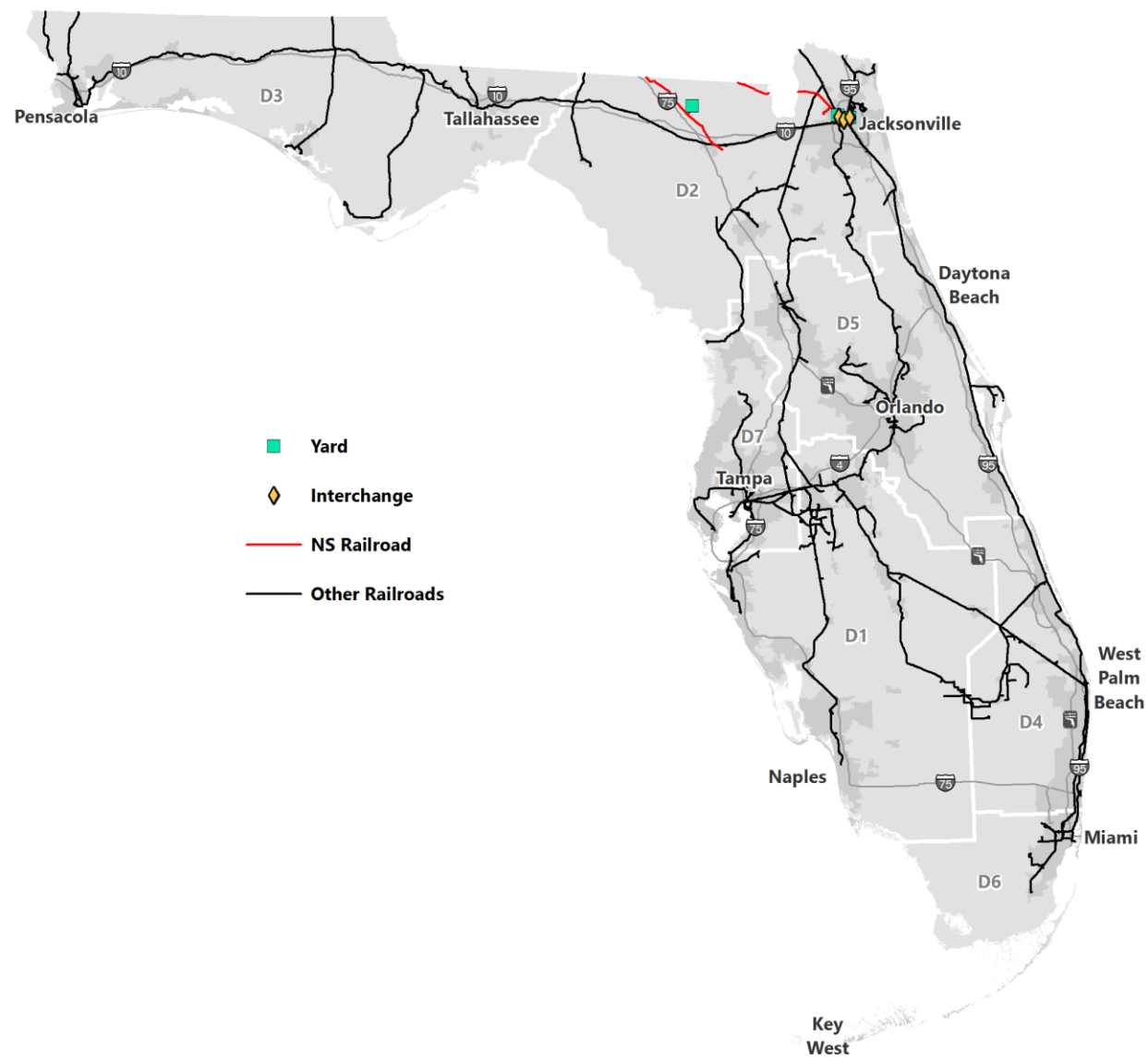
NS has trackage rights between Jacksonville and Palatka over CSX.

NS Divisions and Districts in Florida

The NS network in Florida is comprised of parts of one operating division, Georgia, and two NS districts (NS phrasing for subdivision) as shown in Figure 2-2. Descriptions of the districts are located in Appendix A.

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Figure 2-5 | NS Interchanges and Yards



Source: FDOT Freight & Rail Office, 2023

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Class II Railroads

Florida East Coast Railway

FEC is the only Class II rail carrier in Florida. FEC is an intrastate railroad with 351 miles of mainline track running along the east coast of the state



between Jacksonville and Miami. FEC operates the only intermodal rail service along Florida's east coast. FEC is the exclusive rail provider for PortMiami, Port Everglades, and the Port of Palm Beach. Grupo México Transportes (GMXT), the leading rail freight transportation company in Mexico, successfully completed the acquisition of FEC in 2017.

FEC moves a variety of commodities including pulp, paper and allied products, chemicals, petroleum products, stone, clay and glass, primary metal products, machinery, automobiles, waste and scrap materials, and hazardous materials.

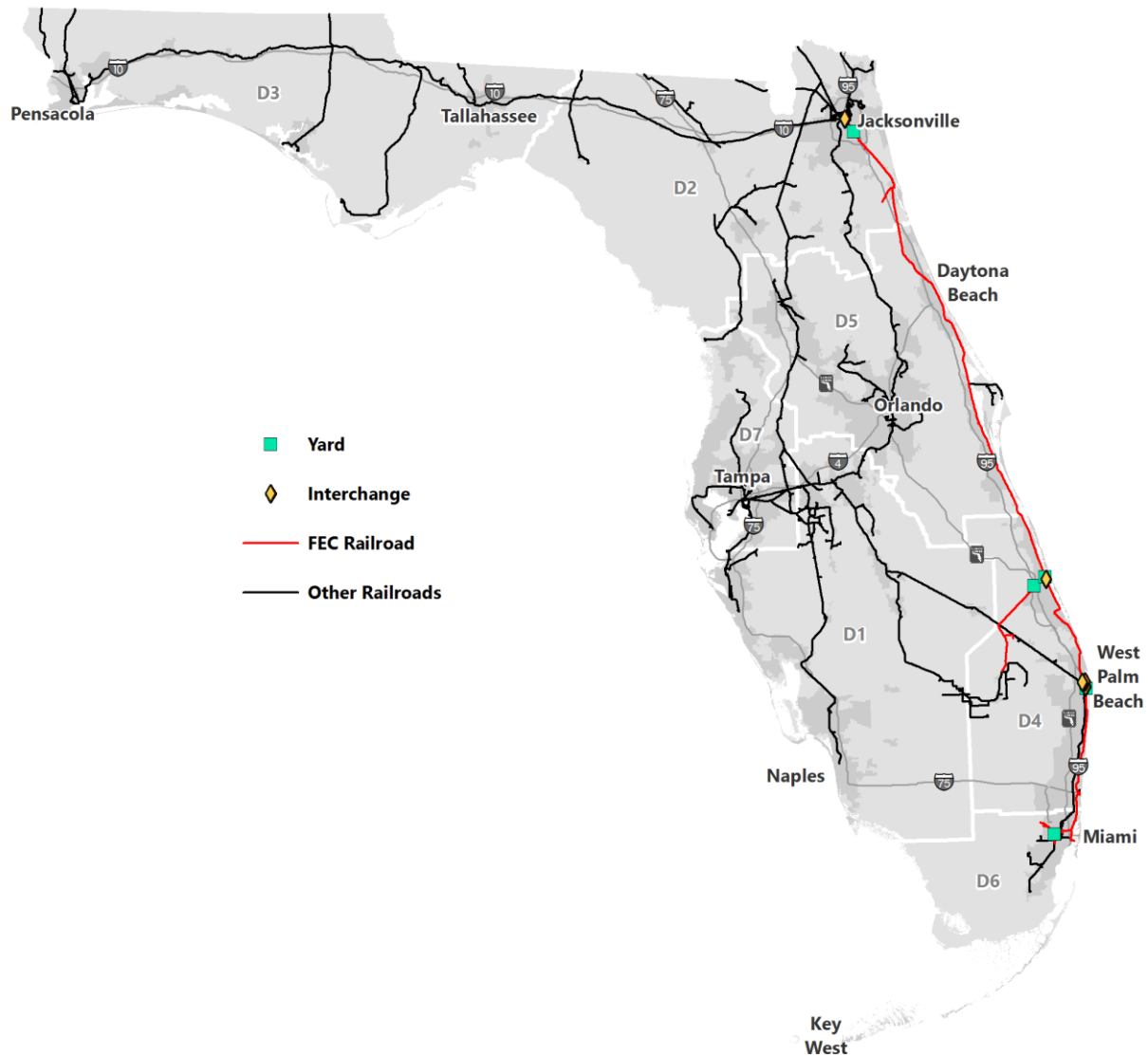
FEC Interchanges include:

- Jacksonville – NS, CSX
- Fort Pierce – FEC
- West Palm Beach – CSX, Port of West Palm Beach Railroad
- Oleander – CSX

Also, see Figure 2-6.

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Figure 2-6 | FECR Interchanges and Yards



Source: FDOT Freight & Rail Office, 2023

Major Yards and Other Facilities

FEC has major carload, intermodal, and other facilities in Florida. These facilities, along with the railroad's port connections, are described in subsequent sections.

A description of the FEC main line appears in Appendix A.

Class III Railroads in Florida

Florida's Class III railroads, also known as short line or local railroads, and their mileage are shown in Table 2-2 and Figure 2-3. Many of the short line railroads were developed with the

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paper mill industry in Florida and still carry lumber, wood products, and pulp and paper products.

Table 2-2 | Short Line Railroads in Florida

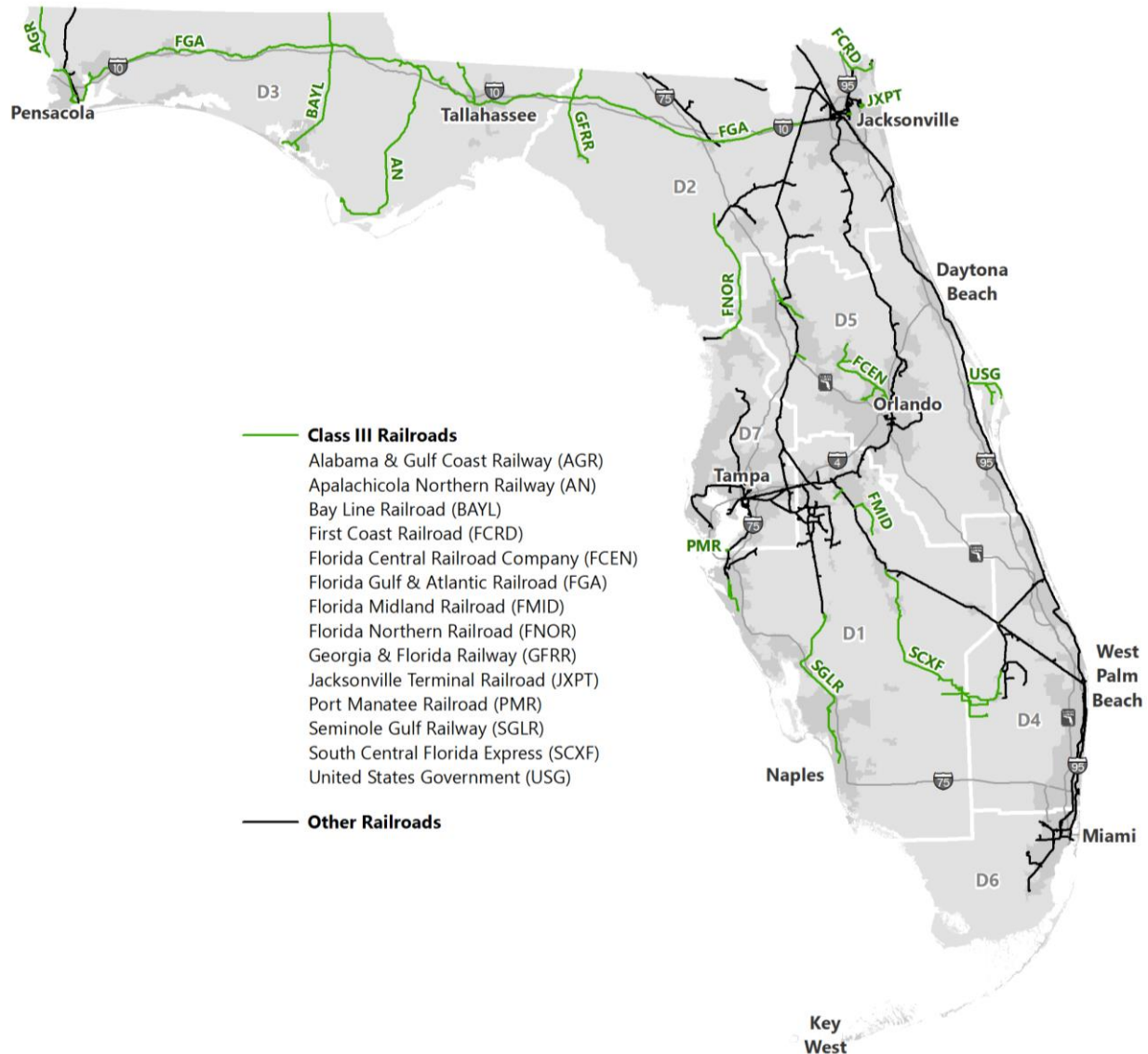
| Railroad | SCAC | Parent Company | Miles Owned |
|---|------|--|-------------|
| Alabama & Gulf Coast Railway LLC | AGR | Genesee & Wyoming Inc. | 53.568 |
| Apalachicola Northern Railway | AN | Genesee & Wyoming Inc. | 114.82 |
| The Bay Line Railroad, LLC | BAYL | Genesee & Wyoming Inc. | 96.371 |
| City of Pensacola (Port of Pensacola) | CPP | City of Pensacola (Port of Pensacola) | 1.6365 |
| Duke Energy | DUPZ | Duke Energy | 10.325 |
| Florida Central Railroad | FCEN | Regional Rail LLC. | 80.731 |
| First Coast Railroad | FCRD | Genesee & Wyoming Inc. | 21.465 |
| Florida Gulf & Atlantic Railroad LLC | FGA | RailUSA, LLC | 407.058 |
| Florida Midland Railroad | FMID | Regional Rail LLC. | 33.701 |
| Florida Northern Railroad | FNOR | Regional Rail LLC. | 96.641 |
| Georgia and Florida Railway | GFRR | Georgia & Florida Railway LLC | 46.358 |
| Georgia Pacific Railway | GPAJ | Georgia Pacific Corporation | 8.358 |
| Jacksonville Port Terminal Railroad | JXPT | Watco | 6.7 |
| Port Manatee Railroad | PMR | Regional Rail LLC | 2.266 |
| Orlando Utilities Commission | ORUZ | Orlando Utilities Commission | 25.273 |
| Port of Palm Beach District Railway | PPBD | Port of Palm Beach | 1.663 |
| South Central Florida Express | SCXF | US Sugar Corporation | 168.057 |
| Seminole Gulf Railway | SGLR | Seminole Gulf, LP | 107.506 |
| United States Government | USGG | United States Government | 34.646 |
| US Sugar Railroad | USSZ | US Sugar Corporation | 60.095 |
| Florida Power & Light Company | XFPW | Florida Power & Light Company | 21.406 |
| Port Everglades Authority | XIPA | Port Everglades Authority | 2.195 |

Source: FDOT Freight & Rail Office, 2023

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Privately owned railroads are identified as Other in Figure 2-7.

Figure 2-7 | Florida's Class III Railroads



Source: FDOT Freight & Rail Office, 2023

Alabama and Gulf Coast Railway, LLC

This Class III carrier operates the former BNSF Railway line between Pensacola, Florida and Columbus, Mississippi, and between Kimbrough, Alabama and Mobile, Alabama. It is running from the Alabama-Florida State Line to a terminus in Pensacola. Originally operated by the States Rail organization, it is now part of Genesee and Wyoming, Inc (acquired in 2012). The major commodities transported in Florida by this railroad are lumber and wood products, as well as pulp, paper, and allied products. It interchanges traffic with CSX at Cantonment, Florida. It interchanges with CSX in Mobile and several other railroads in other states. For more information, please refer to the link here: <https://www.gwrr.com/agr>

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Apalachicola Northern Railway, LLC

The Class III AN Railway operates entirely within the state of Florida between Chattahoochee and Port St. Joe. Major commodity groups transported are chemicals, lumber, and wood products. It connects and interchanges with CSX in Chattahoochee. Genesee and Wyoming acquired the railroad in 2005. While AN Railway is not currently serving Port St. Joe, the City of Port St. Joe has been pursuing efforts to revive this line. For more information, please refer to the link here: <https://www.gwrr.com/an>

Bay Line Railroad, LLC

The Bay Line (formerly Atlanta and St. Andrews Bay Railway Company) operates from Panama City, Florida to Dothan, Alabama where it connects with CSX. Major commodities are non-metallic minerals, lumber and wood products, steel and scrap, chemicals, food, and feed products. It has been owned and operated by Genesee and Wyoming since 2005.

There are three transloading/warehousing facilities located on this railroad. All three are located in Panama City: Conrad Yelvington, Empire Transload, and Bay Line Transload Choice Terminal. It also serves Port Panama City. For more information, please refer to the link here: <https://www.gwrr.com/bayl>

First Coast Railroad, Inc.

This member of the Genesee and Wyoming group operates in Florida. Its two lines run from a connection with CSX at Yulee to Fernandina Beach, where it serves the Port of Fernandina Beach, and to the Georgia-Florida State Line in route to Kingsland, Georgia. Principal commodities consist of chemicals, as well as forest, pulp/paper, and petroleum products. There are three transloading/warehousing facilities located on this railroad. Two are in Fernandina Beach: Manly Siding and Nassau Terminal Kinder Morgan. The third facility, BlueLinx Corp, is located in Yulee. For more information, please refer to the link here: <https://www.gwrr.com/fcrd>

Florida Central Railroad Company

This short line, formed in 1986 from former CSX branch lines, is located northwest of Orlando. The approximately 81 miles operated by the Class III railroad are comprised of its main track between Orlando and Umatilla and branches from Tavares to Sorrento and from Sorrento to Winter Garden. Florida Central Railroad (FCEN) also operates trackage rights through Orlando to Taft Yard for interchange with CSX. The railroad is operated by Regional Rail LLC in Florida, and one of three Florida lines that Regional Rail purchased from the Pinsky Railroad Company in 2019. Principal commodities handled by the railroad consist of food or kindred products, lumber and wood products, chemicals, automobiles, and nonmetallic minerals. Transload services are available at multiple locations. An excursion train that had been operated by another party between Tavares and Mt. Dora ended in 2019. For more information, please refer to the link here: <https://www.regional-rail.com/florida-central>

Florida Gulf & Atlantic Railroad

Florida Gulf & Atlantic Railroad, LLC (FGA) operates a 407-mile network that includes a mainline that crosses the Florida Panhandle following the I-10 corridor between Baldwin and Pensacola and a branch line that runs between Tallahassee, Florida and Attapulgus, Georgia. FGA began operations in 2019 as a subsidiary of shortline holding company Rail USA, which

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purchased the rail lines from CSX. Rail USA was acquired by Australian-based Macquarie Infrastructure Partners in 2021. FGA interchanges daily with CSX in Baldwin and Pensacola, as well as with AN in Chattahoochee and BAYL in Cottondale. Principal commodities handled by railroad are Aggregates, Grain, Chemicals, Minerals, Clay, Metals, Lumber, and Machinery. There are 10 active transload locations along this railroad. For more information, please refer to the link here: <https://railusa.com/railroads/florida-gulf-atlantic-railroad>

Florida Midland Railroad Company, Inc.

Another of the three Pinsky group railroads purchased by Regional Rail LLC in 2019, Florida Midland Railroad was formed after the Florida Central (1987). This Class III carrier operates two disconnected lines, also CSX spin-offs, in central Florida: West Lake Wales to Frostproof and Winter Haven to Bartow Air Base. The two-line segments connect with 10 miles of trackage rights over CSX. FMID transports nonmetallic minerals, food and kindred products, lumber or wood products, and chemicals or allied products. Transloading services are available at multiple locations along the railroad: Eagle Lake Terminal, Bartow Airbase Transload, Adams Team Track, West Lake Wales Transload, Gas Track Terminal, and Uptown Team Track. For more information, please refer to the link here: <https://www.regional-rail.com/florida-midland>

Florida Northern Railroad Company, Inc.

The third of three Pinsky group carriers acquired by Regional Rail LLC in 2019, Florida Northern Railroad (FNOR) runs from Lowell to Candler and from High Springs to Red Level Junction. FNOR's Lowell-Candler line passes through Ocala, where it crosses and connects with the CSX main line; FNOR also interchanges with CSX at Ocala and operates a 2-mile industrial track. FNOR also interchanges with CSX at Newberry. Major commodities transported are nonmetallic minerals, steel and scrap, lumber and wood products, food and kindred products, coal, and chemicals. Transloading services are available at multiple locations along the railroad: FNOR Ocala Yard Terminal, Silver Spring Shores Lumber Transload, FNOR Newberry Transload, FNOR Dunnellon Terminal, Williston Yard Transload, and Intec Boxcar Transload and Warehouse. For more information, please refer to the link here: <https://www.regional-rail.com/florida-northern>

Georgia and Florida Railway, LLC

Georgia and Florida Railway (GFRR) operates trackage spun off by NS running south from Adel, Georgia, and crossing the Georgia-Florida State Line near Ashville, to reach Perry and Foley. GFRR's network also includes three lines in South Georgia radiating from Albany, including a line to Adel. GFRR is one of many railroads operated by OmniTRAX, Inc. In Florida, GFRR transports principally wood products, aggregates, pulp, paper, and allied products. It interchanges with both NS and CSX, the latter having trackage rights over the line from Foley, Florida to Quitman, Georgia. For more information, please refer to the link here: <https://omnitrax.com/georgia-florida-railway>

Jacksonville Port Terminal Railroad

In 2017, shortline holding company Watco established the Jacksonville Port Terminal Railroad, which assumed the operations of the former Talleyrand Terminal Railroad at the Jacksonville Port Authority's Talleyrand Marine Terminal along the St. Johns River. JXPT's 10 miles of track

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extend from the marine terminal west to F&J Junction north of downtown Jacksonville, where JXPT interchanges with CSX and NS. Principal commodities handled are automobiles, chemicals, farm and food products, intermodal containers, and pulp and paper. For more information, please refer to the link here: <https://www.watco.com/service/rail/jacksonville-port-terminal-railroad-jxpt>

Port Manatee Railroad

Port Manatee Railroad LLC (PMR) provides rail switching, on-dock rail car loading and off-loading, and rail car storage and staging on track owned the Manatee County Port Authority. The Port historically had provided its own switching services since rail operations first began in 1970. However, in 2021, the port authority signed a 15-year agreement with shortline holding company Regional Rail LLC to replace the Port as the operator of the line on December 1, 2021. Regional Rail established the PMR as a Class III railroad to operate the port-owned rail infrastructure, which has a capacity of more than 300 rail cars. PMR connects with CSX at Port Manatee Junction. For more information, please refer to the link here:

<https://www.seaportmanatee.com/about-us/port-facts/>

Seminole Gulf Railway L P

Since 1987, the Class III Seminole Gulf Railway has operated two separate lines formerly operated by CSX, Oneco (Bradenton) to Bee Ridge near Sarasota and Arcadia to Bonita Springs just inside the Collier County Line. Seminole Gulf Railway (SGLR) interchanges with CSX at Oneco and Arcadia, respectively. The Seminole Gulf management is also associated with the Bay Colony Railroad of Massachusetts. Major commodity groups associated with the lines are lumber or wood products, food and kindred products, LP gas, steel and scrap, and nonmetallic minerals. The railroad also operates a dinner train out of Fort Myers to Punta Gorda and back as well as a 5-mile-long industrial track in Sarasota. The railroad was severely impacted by Hurricane Ian – category 4 hurricane on September 28, 2022. As of January 2023, the railroad has faced catastrophic damage with six rail bridges damaged or destroyed and the current timeframe to restore rail service is being measured in months. For more information, please refer to the link here: <https://www.floridarail.com/>

South Central Florida Express

Based in Clewiston, this Class III rail carrier operates a U-shaped network (some former CSX) extending from Sebring through the sugar cane fields and refineries south of Lake Okeechobee to Lake Harbor, with branches to Okeelanta and Fort Pierce, the latter branch leased from FEC between Lake Harbor and “Cana” near Fort Pierce. In addition, the railroad has a haulage agreement with FEC to Jacksonville. South Central Florida Express (SCFX) is a subsidiary of U.S. Sugar, Inc. and connects with the company’s private internal railroad at Clewiston. Major commodities are sugar cane and products, chemicals, and plastics. SCFX interchanges traffic with CSX, FEC, and NS; the latter via haulage rights on FEC to Jacksonville. For more information, please refer to the link here: <https://www.southcentralfloridaexpress.com/> In 2021, SCFX began offering public excursion train rides at Clewiston pulled by a restored steam locomotive. For more information, please refer to the link here: <https://sugarexpress.com/>

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Switching and Terminal Companies

There are various switching and terminal railroads in the state: St. Johns River Terminal Company and Port of Palm Beach District Railway. The latter railroad performs on-terminal switching and connects with FEC. Jacksonville Port Terminal Railroad and Port Manatee Railroad are common carrier Class III railroads that also operate as switching and terminal operations. For more information, please refer to following links:

<https://www.portofpalmbeach.com/121/General-Information>

<https://seaportmanatee.com/about-us/port-facts/>

<https://www.watco.com/service/rail/jacksonville-port-terminal-railroad-jxpt/>

St. John's River Terminal Company is a member of the Norfolk Southern Railway corporate family. The Orlando Utilities Commission's (OUC) Stanton Spur is a spur line running east from FDOT's Central Florida Rail Corridor (a former section of the CSX A Line between Poinciana and DeLand) near Sand Lake Road, south of the Orlando International Airport, and northwest to the Curtis H. Stanton Energy Center northeast of the crossing of SR 417 and SR 528. CSX serves the line, delivering coal trains.

Additional detail on these short lines is found in Appendix B.

Abandoned and Rail Banked Lines

Abandonments, Discontinuances, and Service Cessation

49 U.S.C. Statute 10903 governs the filing and procedure for common carrier application to abandon or discontinue rail operations over any part of its railroad lines as detailed in 49 CFR Part 1152. Abandonment or discontinuation requires a federal Surface Transportation Board (STB) finding "that the present or future public convenience and necessity require or permit the abandonment or discontinuance." The STB procedures require evidence from the railroad that continued operation on the line in question would be a burden. This evidence can be challenged by shippers who feel that they will be harmed by the abandonment. 260.0161, Florida Statutes (2018) discusses coordination with the Department of Transportation on abandoned and to-be-abandoned railroad rights-of-way.

The principal requirements for discontinuance or abandonment are that the railroad certify that no local traffic has moved over the line for two years, that any overhead traffic can be routed over other lines, and that no formal complaint is filed by a rail service user.

Rail Banking

Rail banking is a process established under federal law that allows public entities to preserve railroad rights-of-way for future reactivation of rail service, to protect rail transportation corridors, and to encourage energy efficient transportation use. Many rail banked lines have been converted to recreational trail uses.

Since 2015, just over 45.75 miles have been the subject of potential abandonments or rail banking, as listed in Table 2-3 and shown in Figure 2-8.

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Table 2-3 | Railroad Abandonments in Florida since 2015

| Railroad Name | Section Abandoned | Status | Docket Number |
|---------------|---|--|----------------------------------|
| NS | 0.24-mile rail line between mileposts 215.96 B (near SE Timberwolf Drive) and 216.20 B (near Pounds Hammock Road and Black Bear Street) (the Line), in Columbia County, Fla. The Line traverses United States Postal Service Zip Code 32025. | NS filed a verified notice of exemption to discontinue service as of July 2015. | Docket No. AB 290 (Sub-No. 379X) |
| FEC | 1.21-mile rail line on its South Little River Branch Line, between mileposts LR 11+3989 and LR 13+0000 (the Line), in Miami-Dade County, Fla. The Line traverse U.S. Postal Service Zip Codes 33144 and 33126. | On August 6, 2018, FEC and LT1 notified the Board by letter that they had reached an interim trail use/rail banking agreement for the portion of the Line covered by the replacement NITU. | [Docket No. AB 70 (Sub-No. 6X)] |
| FCEN | 4.4-mile portion of rail line between milepost ASD 818.1 in Eustis, through a milepost equation at the Eustis Canal Bridge where milepost ASD 817.0 = milepost ASC 815.1, to the end of the line at milepost ASC 818.4 in Umatilla, in Lake County, Fla. (the Line). The Line traverses U.S. Postal Service Zip Codes 32726 and 32784. | FCEN filed a verified notice of exemption to discontinue service as of July 2016. | Docket No. AB 319 (Sub-No. 5X) |
| FNOR | 5.3-mile rail line from milepost 756.8 in Lowell, to milepost 762.1 in Zuber, in Marion County, Fla. (the Line). The Line traverses U.S. Postal Service Zip Codes 34482, 32686, and 34475. | FNOR has filed a verified notice of exemption under 49 C.F.R. pt. 1152 subpart F—Exempt Abandonments and Discontinuances of Service to discontinue service as of October 2016. | Docket No. AB 507 (Sub-No. 2X) |

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| Railroad Name | Section Abandoned | Status | Docket Number |
|---------------|---|--|---------------------------------|
| SGLR | 1.71-mile segment of its line of railroad known as the Venice Branch, between milepost SW 890.29 and milepost SW 892.00 outside of the City of Sarasota, in Sarasota County, Fla. (the Line). SGLR will also be abandoning a connecting industrial spur. The Line traverses United States Postal Service Zip Codes 34233 and 34238. | The exemption is scheduled to become effective on December 6, 2017. | Docket No. AB 400 (Sub-No. 6X) |
| CSX | 0.23-mile rail line on its Deerhaven Subdivision, Jacksonville Division, between milepost ARB 738.42 and milepost ARB 738.65, the end of the line, in Alachua County, Fla. (the Line). The Line traverses U.S. Postal Service Zip Code 32609. | The exemption would become effective on January 25, 2019. | Docket No. AB 55 (Sub-No. 786X) |
| SGLR | 7.68-mile segment of its rail line known as the Venice Branch. The segment to be abandoned extends between milepost SW 890.29 on the north side of Ashton Road and milepost SW 884.70, and between milepost AZA 930.30 and milepost AZA 928.21 on the north side of State Highway 780 (Fruitville Road), partly lying within the City of Sarasota, Sarasota County, Fla., with the remainder lying within unincorporated Sarasota County (the Line). The Line traverses U.S. Postal Service Zip Codes 34232, 34233, and 34237. | Seminole Gulf Railway, L.P. (SGLR), has filed a verified notice of exemption under 49 C.F.R. pt. 1152 subpart F—Exempt Abandonments to abandon as of April 2019. The exemption is scheduled to become effective on May 15, 2019. | Docket No. AB 400 (Sub-No. 7X) |
| CSX | Approximately 12.5-mile rail line on its Jacksonville Division, Homestead Subdivision between milepost SXH 54.5 and milepost SXH 67.0 in Miami-Dade County, Fla. (the Line). The Line traverses U.S. Postal Service Zip Codes 33177, 33187, 33170, 33031, and 33030. | CSX Transportation, Inc. (CSX), has filed a verified notice of exemption to discontinue service as of March 2019. | Docket No. AB 55 (Sub-No. 789X) |
| CSX | Approximately 11.62-mile of rail line on CSX's Southern Region, Jacksonville Division, West Coast Subdivision, | GHL's request for an extension of the NITU negotiating | Docket No. AB 55 (Sub-No. 718X) |

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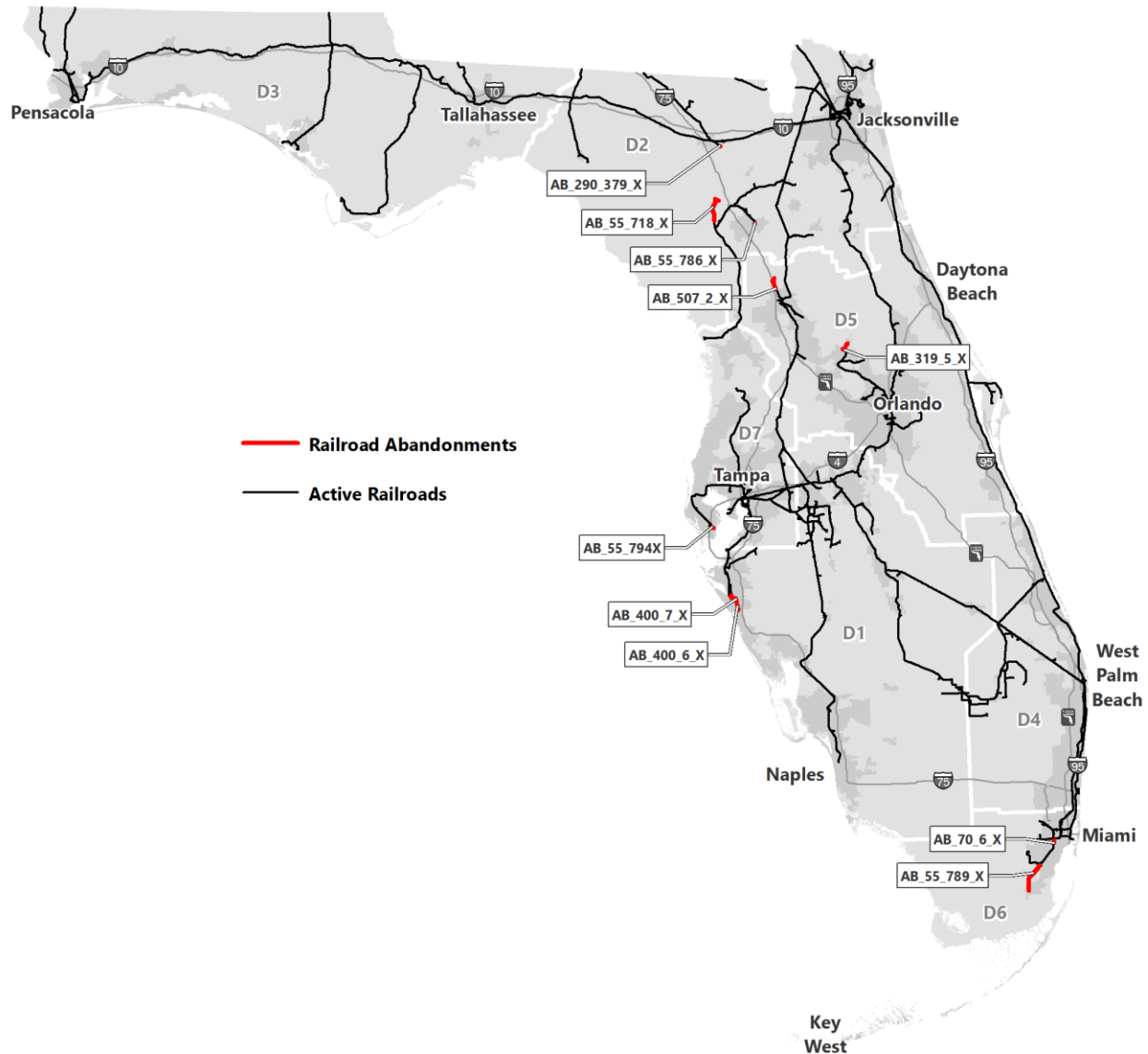
| Railroad Name | Section Abandoned | Status | Docket Number |
|---------------|---|--|---------------------------------|
| | between milepost AR 716.88, at High Springs, and milepost AR 726.69, at Newberry, and milepost ARB 717.11, at High Springs, and milepost ARB 718.92, at High Springs, in Alachua County, Fla. (the Line). | period is granted; the NITU negotiating period is extended until February 16, 2021. | |
| CSX | Approximately 0.86-mile rail line on its Clearwater Subdivision, between milepost ARE 897.57 and milepost ARE 898.43, in St. Petersburg, Pinellas County, Fla. (the Line). The Line traverses U.S. Postal Service Zip Codes 33701, 33705, and 33713. | GHL's request for an extension of the NITU negotiating period is granted; the NITU negotiating period is extended until July 11, 2021. | Docket No. AB 55 (Sub-No. 794X) |
| Total | 45.75 miles | | |

Source: Surface Transportation Board, 2022

Additional information on abandoned and railbanked lines can be viewed on the STB map here: <https://stb.maps.arcgis.com/home/index.html>

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Figure 2-8 | Railroad Abandonment in Florida



Source: FDOT Freight & Rail Office, 2023

2.1.2 Existing Passenger Rail Systems

There are three types of passenger rail systems in Florida:

- **Intercity passenger rail** services connect cities and regions, on routes that have long distances (typically 100 miles or more) and intermediate station stops in major population, employment, and tourist centers. Intercity trains may use dedicated tracks or tracks that are owned by other rail agencies or freight railroads.

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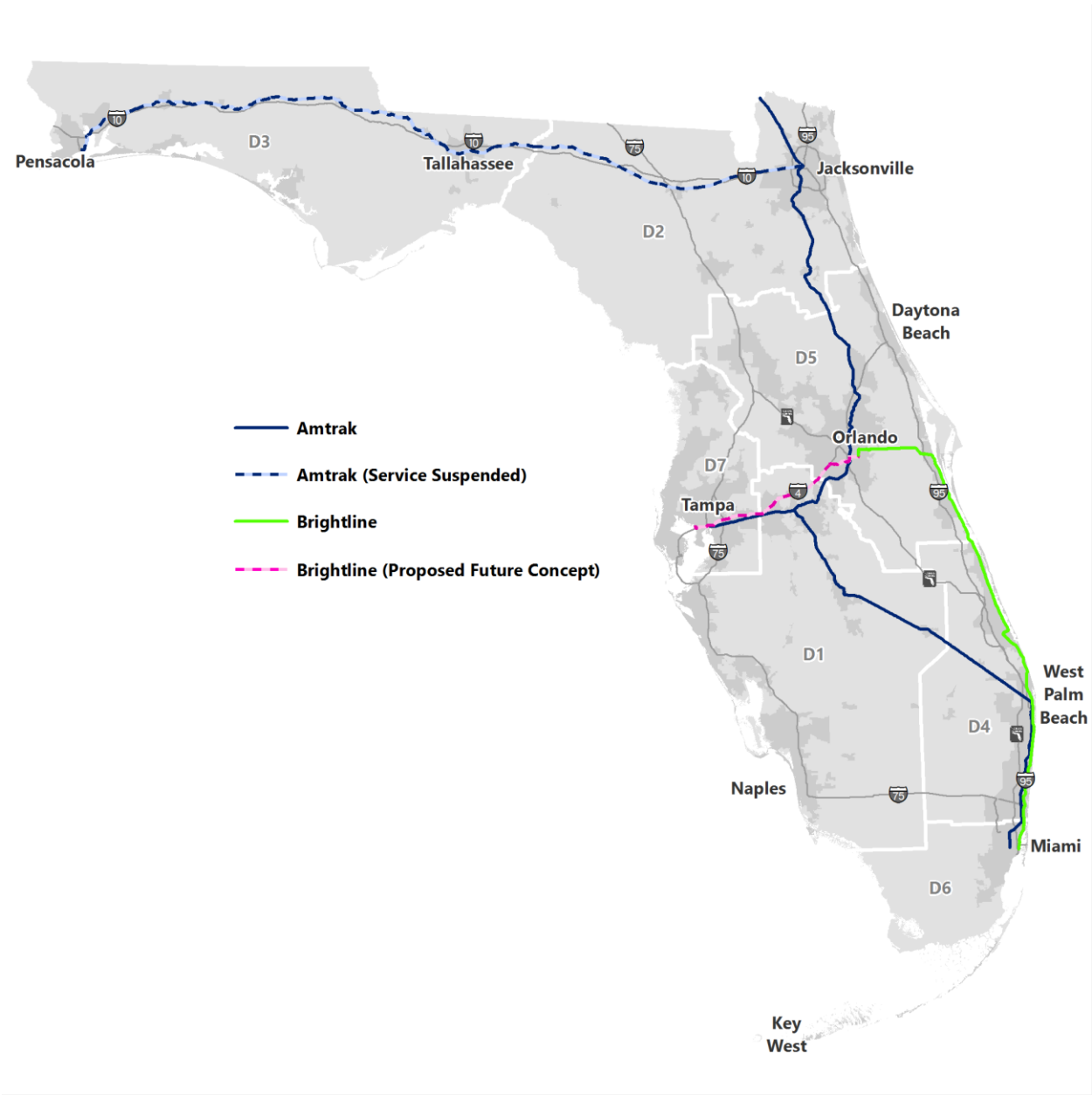
- **Commuter rail** services operate within a large metropolitan region, typically serving work commuters and local travelers on routes that connect suburban locations and city centers. Commuter trains typically use tracks that are part of the existing U.S. rail network. Commuter trains in Florida use tracks owned by FDOT.
- **Urban rail transit** operates within a city or urbanized area and are designed to move large volumes of people. Urban rail transit takes several forms in Florida, including heavy rail (metro), light rail (streetcar), and people mover (driverless) systems. These urban rail transit systems operate on dedicated tracks.

Intercity Passenger Rail

Limited long-distance passenger rail service in Florida is currently provided by Amtrak, the national passenger rail system in the U.S. The privately owned Brightline passenger railroad operates intercity service between downtown Miami and Orlando International Airport, with plans for further extensions along I-4 to the Tampa Bay area. See Figure 2-9.

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Figure 2-9 | Florida's Intercity Passenger System



Source: : FDOT Freight & Rail Office, 2023

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Amtrak

Amtrak operates three National Network (long-distance) trains through Florida:²



- The Auto Train (daily Lorton (Virginia)-Sanford (Florida))
- The Silver Meteor (daily New York-Washington-Richmond-Charleston-Savannah-Jacksonville-Orlando-Miami)
- The Silver Star (daily New York-Washington-Raleigh-Columbia-Savannah-Jacksonville-Orlando-Tampa-Miami)

Amtrak does not own or control any railroads in Florida. It relies on other railroads, called host railroads, to provide track access for Amtrak's passenger trains. In Florida, Amtrak operates mostly over CSX freight trackage (359 miles), but also operates over the FDOT-owned Central Florida Rail Corridor between DeLand, Orlando and Poinciana (64 miles), and the South Florida Rail Corridor between Mangonia Park and Miami (72 miles), which is owned by FDOT and managed by South Florida Regional Transportation Authority. Florida's population within 25 miles and 50 miles of an Amtrak station is 12.4 million (66% of FL population) and 15.5 million (82% of FL population), respectively.

The Silver Meteor and Silver Star are operated with coaches, sleeping cars, a dining car, and a lounge car. Both routes share many stations, but the Silver Star follows an inland route through the Carolinas and is the only Amtrak train to serve Tampa. The Silver Meteor was suspended from January 24, 2022, to October 2022 as part of Amtrak's service cuts, citing "staffing challenges resulting from the COVID-19 pandemic and the highly active Omicron variant."

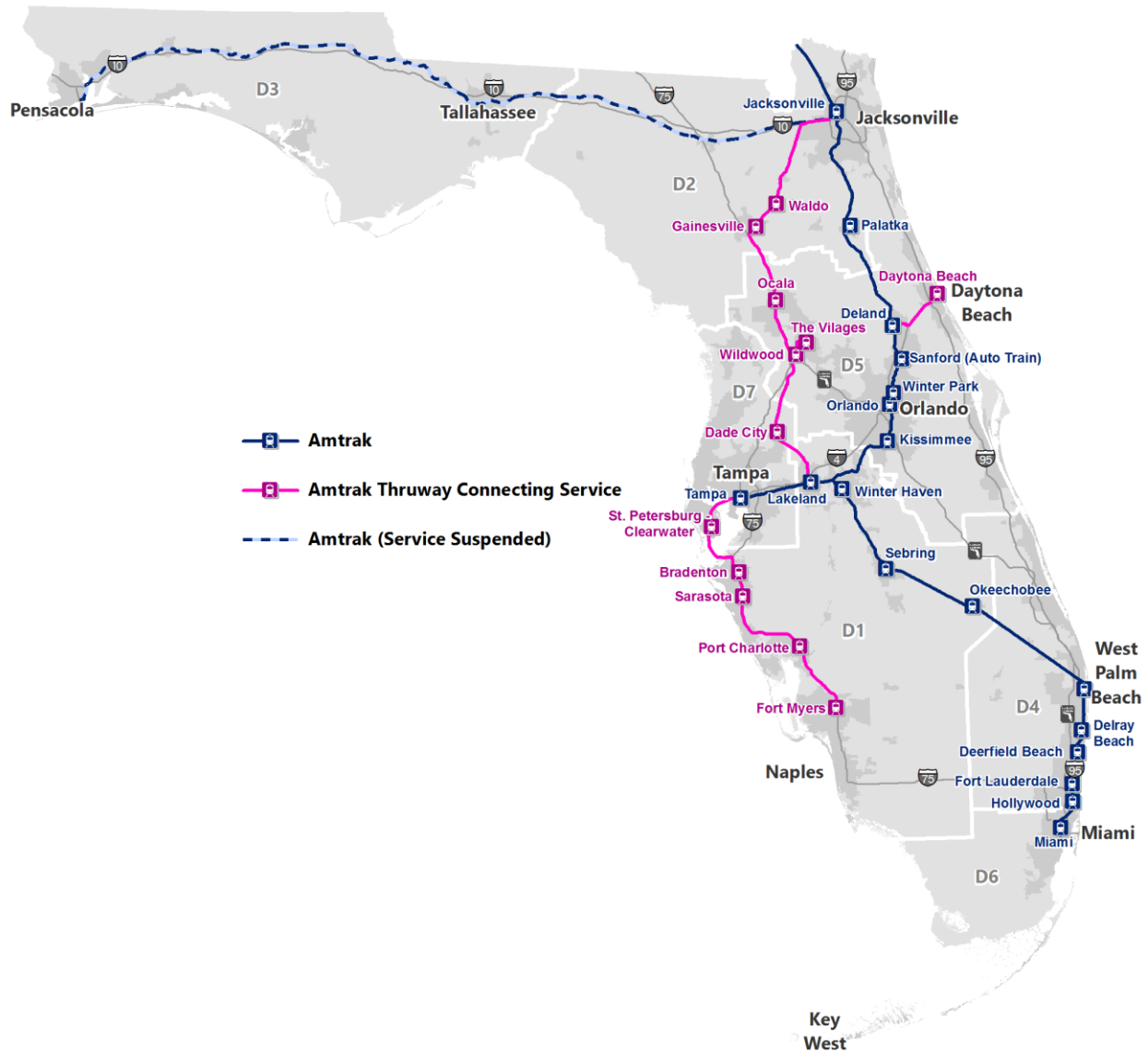
Auto Train is a daily overnight service between Virginia and Florida. It is one of its kind in the U.S. Auto Train rolling stock includes bi-level passenger cars and auto carriers. This unique train carries passengers and their vehicles on a 16½ hour overnight trip between Northern Virginia and Florida.

A fourth service, the Sunset Limited, has been suspended since 2005. The Sunset Limited was a long-distance train that operated three times per week in each direction between Orlando and Los Angeles. After Hurricane Katrina struck the Gulf Coast in 2005, the train's eastern terminus was cut back to New Orleans, ending passenger rail service to the Florida stations in Chipley, Crestview, Lake City, Madison, Pensacola, and Tallahassee. See Figure 2-10.

² www.amtrak.com/home.html

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Figure 2-10 | Amtrak Intercity Passenger Network in Florida



Source: FDOT Freight & Rail Office, 2023

Brightline Florida

Brightline is the only privately owned and operated intercity passenger railroad in the U.S. Its intercity passenger rail service was privately funded and developed, and opened for revenue operations in 2018, serving Miami-Dade, Broward, and Palm Beach counties on a 67-mile route between Miami and West Palm Beach, providing 17 weekday roundtrips, ten on Saturday, and nine on Sunday.

brightline

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In 2018, during its first partial year of operation, Brightline carried 579,000 passengers. In 2019, the first full year of operation, Brightline served 1 million passengers.

As a result of COVID-19, Brightline suspended its passenger rail service on March 25, 2020. Full services returned on November 8, 2021. In December 2022, Brightline began service at two new stations: Aventura and Boca Raton.

A route extension from West Palm Beach to the Orlando International Airport opened for revenue service on September 22, 2023, extending the Maimi-Orlando corridor to 235 miles, with an initial service of eight daily roundtrips..³ On October 9, 2023, Brightline increased service to Orlando, providing 15 daily roundtrips..⁴ Brightline is actively planning a further extension from Orlando International Airport west to Tampa, with two planned intermediate stops serving the Orange County Convention Center and the major theme parks in Central Florida..⁵ Brightline also has plans for building a new station in PortMiami.

Currently operating, under construction, and future routes are depicted in Figure 2-11. For the latest information visit <https://www.gobrightline.com/>.

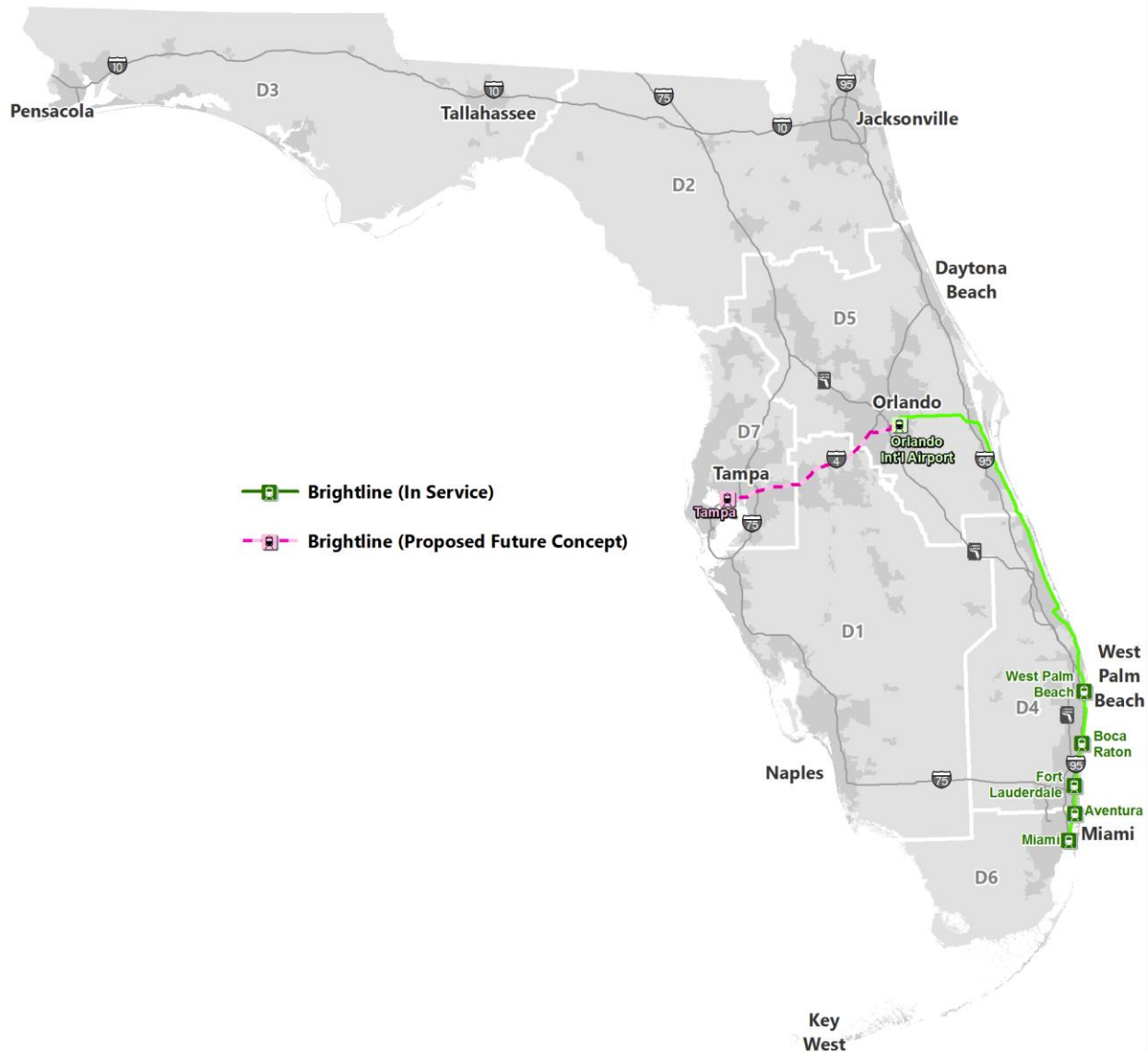
³ [Brightline doubling daily routes to Orlando next week \(sun-sentinel.com\)](https://www.sun-sentinel.com)

⁴ <https://www.gobrightline.com/press-room/2023/brightline-to-go-from-16-to-30-trains-between-orlando-and-miami>

⁵ <https://emma.msrb.org/P11740810.pdf>

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Figure 2-11 | Brightline Intercity Passenger System in Florida



Source: FDOT Freight & Rail Office, 2023


Commuter Rail

FDOT has led the development of Florida's two commuter rail systems: South Florida Regional Transportation Authority's Tri-Rail system and the SunRail commuter rail service. The state of Florida purchased the 72-mile South Florida Rail Corridor upon which Tri-Rail operates from CSX in 1988. In 2011, the state completed its purchase of the 61.5-mile Central Florida Rail Corridor upon which SunRail operates. FDOT constructed and continues to provide significant

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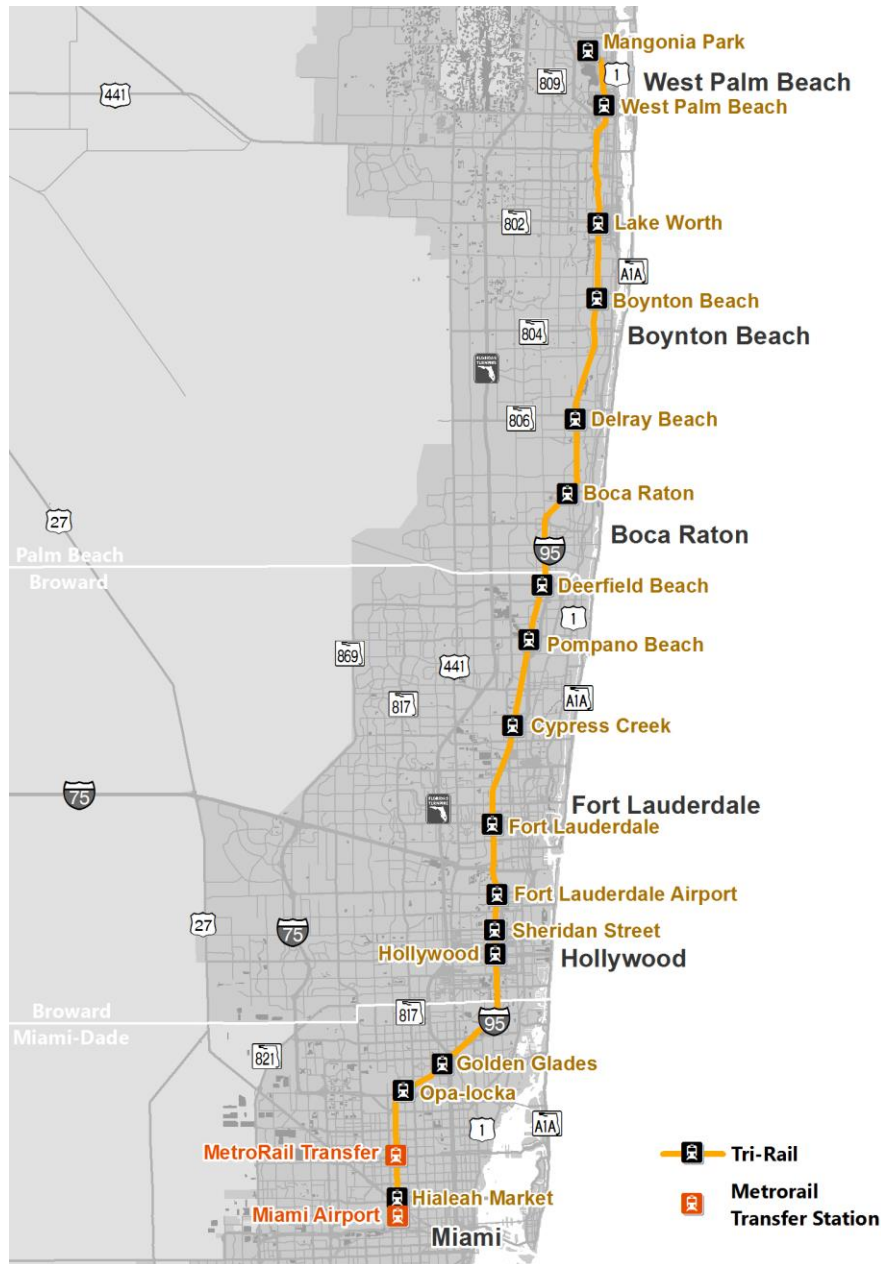
funding support for Tri-Rail and SunRail capital, operating and maintenance expenses, and continues to manage and operate the SunRail commuter rail service for now.

Tri-Rail Commuter Rail System

Tri-Rail, operated by South Florida Regional Transportation Authority,  is a commuter rail service operating since 1989 connecting Miami, Fort Lauderdale, and West Palm Beach in south Florida. This rail service operates on the South Florida Rail Corridor (SFRC) owned by FDOT. Current operations are shown in Figure 2-12. Tri-Rail serves 18 stations along a 72-mile route between Miami and Mangonia Park via West Palm Beach. Five of these 18 stations have both Tri-Rail and Amtrak service. There are 50 weekday and 30 weekend/holiday trains. Weekday peak-hour headways are 20 and 30 minutes and 60 minutes for off-peak headways (including weekends and holidays). Miami Intermodal Center (MIC) connects Tri-Rail to Metrorail, bus services, and Miami International Airport (MIA), and to rental cars. Tri-Rail ridership in 2021 was a weekday average of 6,500. The pre-pandemic weekday average was 15,000. Tri-Rail provides connections to Broward County Transit, Miami-Dade County Department of Transportation and Public Works (Metrorail and Metrobus), Palm Tran, taxis and local municipality trolleys and community bus systems. The total active fleet is nine train sets (21 locomotives, 21 cab cars, 29 coach cars). Termini are the (MIC) in the south and Mangonia Park Station in the north, and service runs on the former CSX Miami Subdivision between Hialeah Market Station in Miami and the Mangonia Park Station. The line has shuttle connections to the two area international airports, Ft. Lauderdale and West Palm Beach, and an automated People Mover connection from the MIC to MIA. More detail on Tri-Rail appears in Appendix C. For additional information visit <https://www.tri-rail.com/>.

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Figure 2-12 | Tri-Rail System



Source: FDOT Freight & Rail Office, 2023

SunRail System

SunRail is a commuter rail service that currently operates over 49 miles with 16 stations through Volusia, Seminole, Orange, and Osceola counties. SunRail began operations in May 2014. See Figure 2-13. Developed and constructed by FDOT, SunRail currently runs from Debary to Poinciana. The corridor is owned by FDOT, and service is provided by FDOT, with guidance from the Central Florida Commuter Rail Commission. Phase 1 covers 32 miles with 12 stations along



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Figure 2-13 | SunRail System



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Urban Rail Transit

The option for residents and visitors to utilize urban rail transit and thereby avoid state highway and local roadway congestion delays contributes measurably to the economic and environmental well-being of the city center and outlying areas. Figures 2-14 through 2-16 and Table 2-4 depicts the coverage, frequency, ridership, and connections of the four urban rail transit systems in the state.

Table 2-4 | Urban Rail Transit Systems Descriptions

| System | Primary Location | Coverage | Frequency | Connections | Ridership |
|---|------------------|---|--|----------------------------------|----------------------|
| Metrorail⁶ | Miami | Two lines, 23 stations, 25-mile network | 10 minutes (per line) in peak periods, 15-30 minutes in off-peak | Brightline, Metromover, Tri-Rail | 9.7 million in 2021* |
| Metromover⁷ | Miami | Three lines, 21 stations, 4.4-mile network | 90 seconds in peak periods, 3 minutes off-peak | Metrorail | 4 million in 2021* |
| Jacksonville Skyway⁸ | Jacksonville | Two lines, eight stations, 2.5-mile network | 4 minutes in peak periods, 8 minutes off-peak | - | 296,300 in 2021** |
| Tampa, TECO Line Streetcar⁹ | Tampa | One line, 11 stations, 2.7 miles | 15 minutes daily | - | 1+million in 2022 |

* Miami-Dade Ridership Reports

** APTA Ridership

⁶ <https://www.miamidade.gov/global/transportation/metrorail.page>

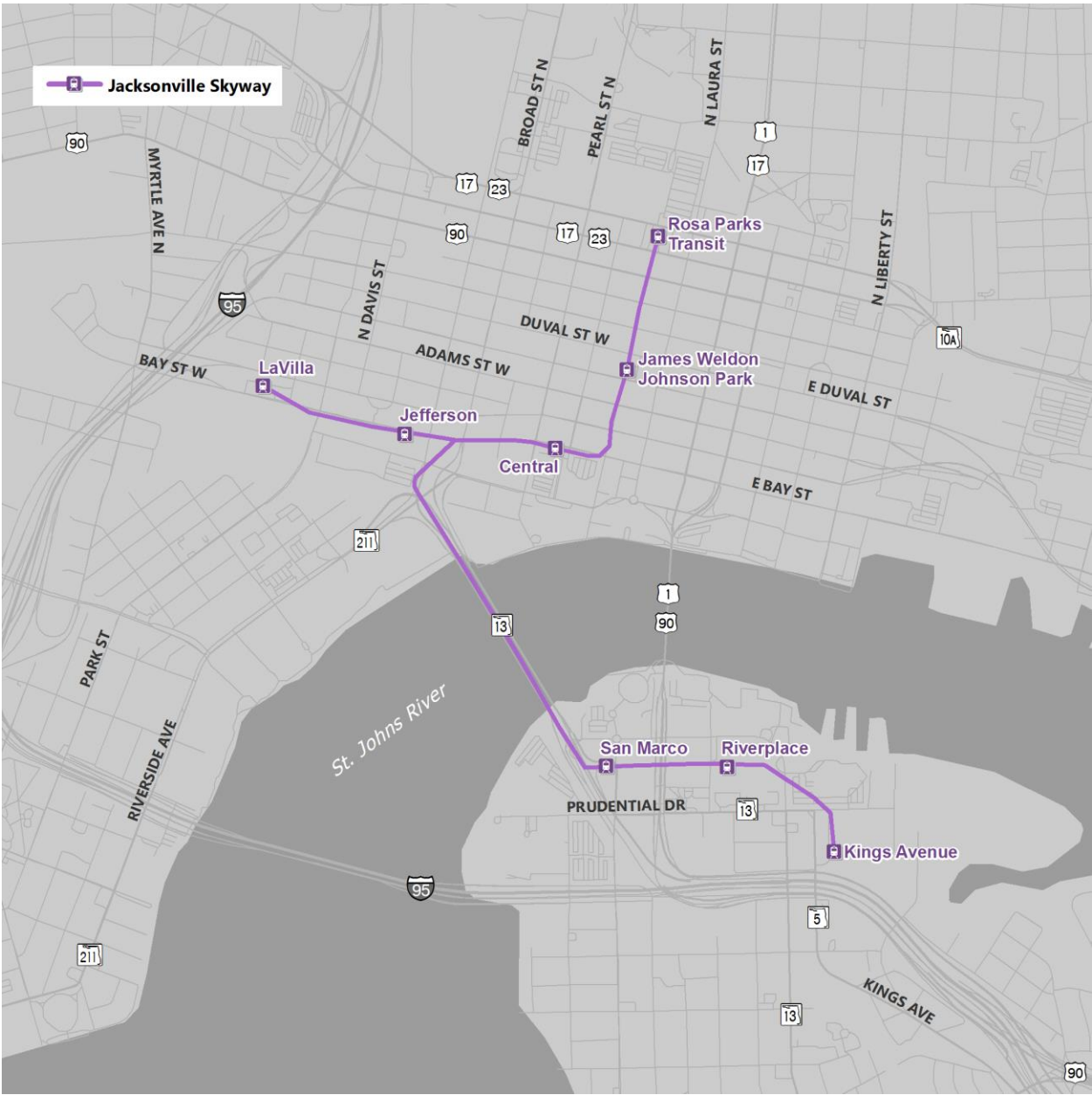
⁷ [Metromover \(miamidade.gov\)](https://www.miamidade.gov/transportation/metromover.page)

⁸ [Skyway \(jtafla.com\)](https://www.jtafla.com/skyway)

⁹ [TECO Streetcar \(tecocolinestreetcar.org\)](https://tecocolinestreetcar.org)

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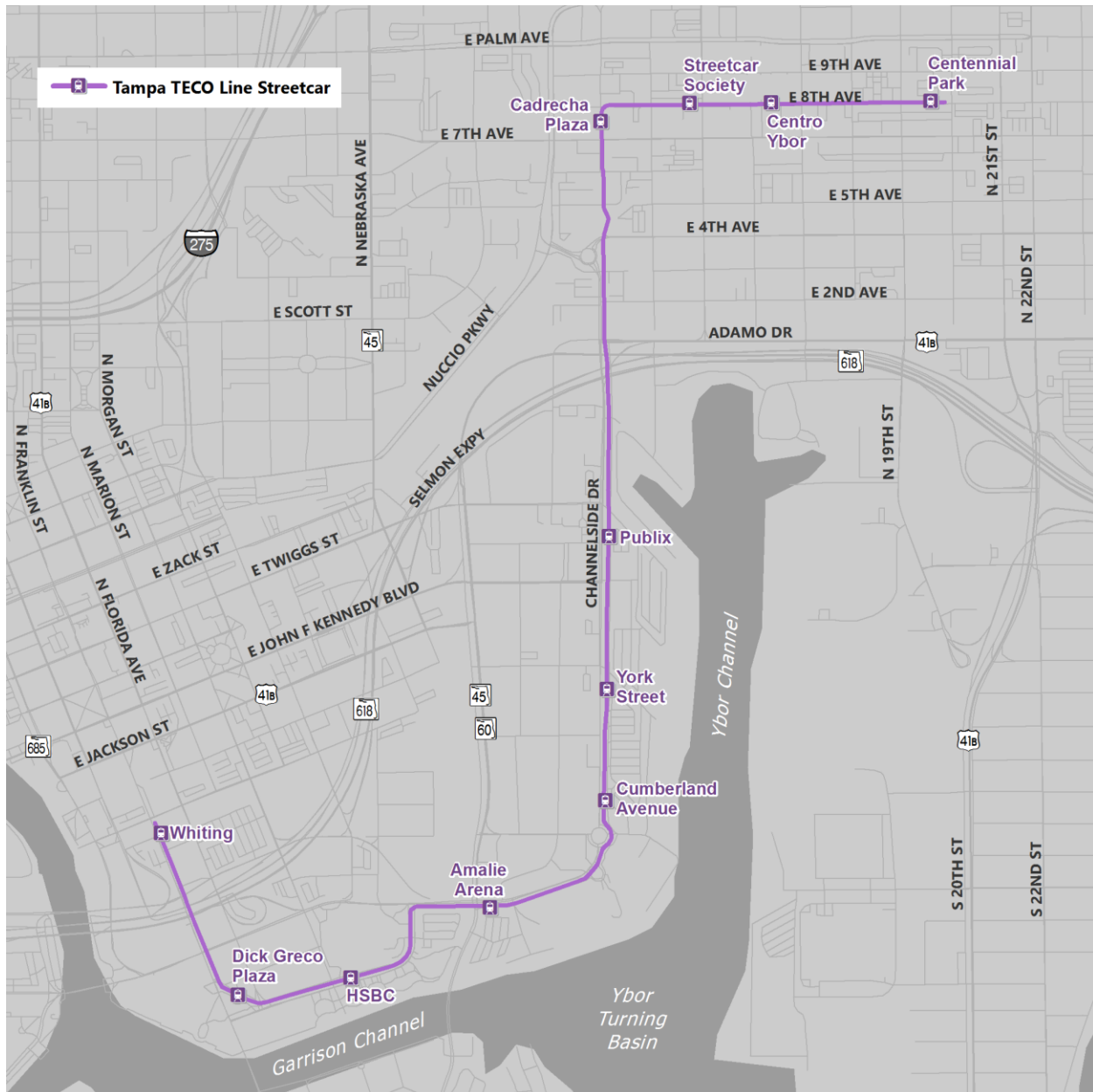
Figure 2-15 | Jacksonville Skyway Network



Source: FDOT Freight & Rail Office, 2023

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Figure 2-16 | Tampa TECO Line Streetcar Network



Source: FDOT Freight & Rail Office, 2023

Tourist Railroads

There are four tourist railroads in Florida, offering trips that showcase scenic or historic areas of the state. These rail trips offer a glimpse of an activity that was once part of daily life. The railroads also serve to preserve equipment, buildings, artifacts, and industrial skills from earlier eras.

In addition to preserving railroad history, tourist railroads attract visitors, generating income not only for these railroads but also for restaurants, hotels, and other visitor service establishments.

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Tourist railroads can provide an opportunity to introduce the general public to the contemporary rail industry and its key role in the state's economy.

The four tourist railroads in the state are:

- The Florida Railroad Museum, in Parrish (Manatee County)
- The Gold Coast Railroad Museum, in Miami
- The Seminole Gulf Railroad, in Fort Myers
- Sugar Express in Clewiston

Details on the four tourist railroads appears in Appendix C.

2.1.3 Major Freight and Passenger Facilities

Yards

Yards provide for the making and breaking up of trains, classification of cars, and car storage. Many also provide auxiliary services such as car repair, locomotive maintenance, and serving as a home for intermodal facilities. The role of large or major yards has decreased over time as the railroads have increased the use of unit trains. Unit trains do not need intermediate classification and, other than periodic servicing and crew changes, do not need to stop between origin and destination.

There are six major yards in Florida: three on the CSX network, one on NS and two on FEC. Four of the yards are in Jacksonville, which is a major junction of CSX lines, the end of the line for NS and FEC, and a major interchange point for all three. In addition, the Jacksonville area is a major generator of rail traffic and a rail connection point for two seaports. The other major yard for CSX is in Tampa. It represents a connection point for several CSX subdivisions and provides support to the Tampa Bay region, a significant generator of rail traffic due in large part to the Port of Tampa and a significant number of private terminals located on Tampa Bay. The FEC yard in Miami (Hialeah) is the southern end of the railroad and serves a major port and other large generators of traffic such as local limestone producers. Below is a listing of all yards in Florida.

- Bradenton: Tropicana Yard (CSX)
- Fort Pierce: Fort Pierce Yard (FEC)
- Jacksonville: Bowden Yard (FEC)
- Jacksonville: Moncrief Yard (CSX)
- Jacksonville: Simpson Yard (NS)
- Baldwin: Baldwin Yard (CSX)
- Jacksonville: Duval Yard, Busch Yard, Export Yard (CSX)
- Lakeland: Winston Yard (CSX) (closed but now reopened)
- New Smyrna Beach: New Smyrna Beach Yard (FEC)
- Miami: Hialeah Yard (FEC)
- Miami: Hialeah Yard (CSX)
- Orlando: Taft Yard (CSX)
- Tampa: Rockport Yard, Uceta Yard, and Yeoman Yard (CSX)
- Winter Haven: Central Florida Intermodal Logistics Center (CSX)
- Mulberry: Mulberry Yard (CSX)
- Hialeah: Hialeah Yard (owned by state of Florida and shared with Tri-Rail and Amtrak)

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- Wildwood: Wildwood Yard (CSX)

Freight Rail Intermodal Facilities

Typically, freight intermodal is thought of as rail transport of containers and trailers, but in the true definition it can be any modal transfer. The following list shows intermodal facilities in Florida.

- Jacksonville (CSX, FEC, and NS have intermodal terminals in Jacksonville)
- Cocoa (FEC)
- Fort Lauderdale (FEC)
- Fort Pierce (FEC)
- Miami (FEC)
- Tampa CSX)
- Titusville (FEC)
- West Palm Beach (FEC)
- Winter Haven – Central Florida ILC (CSX)

Trailers/Containers

All three major carriers in Florida have facilities to transfer trailers and containers between rail and trucks and rail and vessels. FEC leads with seven such facilities, CSX with three, and NS with two. All three railroads have facilities in Jacksonville. The Ft. Lauderdale facility opened in 2014 as a near-dock terminal at Port Everglades and one of the two intermodal facilities in Miami is an on-dock facility at the Port of Miami.

Bulk Transfer

Both Class I railroads have a network of railroad-owned or private transloading facilities. The NS-owned network is known as Thoroughbred Bulk Terminals (TBT), and the CSX-owned network is known as TransFlo.

See Table 2-5 for an inventory of the larger facilities along NS and CSX.

Table 2-5 | Transload Services and Additional Facilities Along Norfolk Southern Railroad and CSX

| Facility Types | Facility | Address | Commodities |
|----------------------|---------------------------------------|--|---|
| NS Transload | Jacksonville NS TBT | 3440 W. 20th St., Jacksonville FL 32254 | Aggregate, Dry Bulk, Ethanol, Liquid Bulk, Lumber, Steel |
| NS Transload | Miami NS TBT | 3601 NW 62nd St., Miami FL 33147 | Aggregate, Dry Bulk, Ethanol, Liquid Bulk, Steel |
| NS Transload | Seonus Stevedoring Services Jax | 2085 Talleyrand Avenue, Jacksonville FL 32206 | Lumber, Paper Palletized Loads |
| CSX Transload | TRANSFLO Terminal Services Inc. | 2591 W 5th St, Sanford, FL 32771 | Agricultural Products |
| CSX Transload | TRANSFLO Terminal Services Inc. | 3796 Warrington St, Jacksonville, FL 32254 | Agricultural Products |

Source: <https://nsites.nscorp.com/>

Source: <https://csx.com>

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Additionally, FEC has multiple transload services and facilities along Florida's east coast listed in Table 2-6.

Table 2-6 | Transload Services and Additional Facilities Along Florida East Coast Railway

| Facility Types | City | Facility | Address | Services |
|---|-----------------|---|---|--|
| Transload | St. Augustine | Matco | SR 204, Hastings, FL 32145 | Transloading (bulk) |
| Transload | Riviera Beach | Matco Reload | 1490 Doctor Martin Luther King Jr Blvd, Riviera Beach, FL 33404 | Transloading (bulk) |
| Port Facility | Riviera Beach | Port of Palm Beach | - | Intermodal (COFC & TOFC), Carload |
| Transload/Rail Terminal/ Rail Yard | Fort Pierce | Decks & Docks Lumber Company and FEC Railway Terminal | 253 Florida Avenue, Fort Pierce, FL 34950 | Intermodal (COFC & TOFC), Drayage & OTR, Carload and Transloading (bulk) |
| Transload | Jacksonville | FEC Railway Transload | 7160 Phillips Highway, Jacksonville, FL 32256 | Transloading (bulk) |
| Transload/Rail Terminal | City Point | Ambassador Services Cocoa Reload Yard | 3325 Beau Geste Road, Cocoa, FL 32926 | Intermodal (COFC & TOFC), Drayage & OTR |
| Transload | Pompano Beach | Matco Reload | 1263 Hammondville Road, Pompano Beach, FL 33069 | Transloading (bulk) |
| Transload | Fort Lauderdale | FEC Railway Transload | 3125 S. Andrews Avenue, Ft. Lauderdale, FL 33316 | Intermodal (COFC & TOFC), Drayage & OTR, Carload dimensional freight |
| Transload | Fort Lauderdale | Omni Transload/Decks and Docks Lumber Partner Transload | 3125 S. Andrews Avenue, Ft. Lauderdale, FL 33316 | Transloading (bulk) |
| Transload | Miami | Southern Warehouse | 7210 NW 77 Street, Miami, FL 33166 | Transloading (bulk) |
| Transload | Miami | Dependable Warehouse and Distribution | 2900 NW 75 th Street, Miami, FL 33147 | Transloading (bulk) |
| Transload | Miami | Omni Transload – Airport | 6885 NW 25 th Street, Miami, FL 33122 | Transloading (bulk) |
| Transload | Hialeah | Omni Transload – Hialeah | 1055 East 21 st , Hialeah, FL 33013 | Transloading (bulk) |

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| Facility Types | City | Facility | Address | Services |
|-------------------------------------|--------------|--------------------------------------|--|---|
| Rail Terminal/ Rail Yard | Miami | FEC Railway Terminal and Rail Yard | 6875 NW 58th St, Miami, FL, USA | Intermodal (COFC & TOFC), Drayage & OTR, Carload, Transloading (bulk) |
| Rail Terminal | Jacksonville | FEC Railway Terminal | 6140 Philips Highway, Jacksonville, FL | Intermodal (COFC & TOFC), Drayage & OTR |
| Rail Yard | Jacksonville | FEC Railway Rail Yard (headquarters) | 7150 Philips Highway, Jacksonville, FL | Carload and Transloading (bulk) |
| Intermodal facility | Titusville | FEC Railway Intermodal facility | 395-393 Indian River Ave, Titusville, FL 32796 | Intermodal (COFC & TOFC), Drayage & OTR |
| Port Facility | Miami | FEC Railway / Port Miami Terminal | 1015 North America Way, Miami, FL | Intermodal (COFC) |

Automobile Distribution

All three major carriers have automobile distribution facilities. CSX has five facilities in its TDI Vehicle Handling System in Florida. Florida has one NS facility and one FEC facility. Automobile distribution facilities are listed in Table 2-7.

Table 2-7 | Automobile Distribution Facilities

| Railroad | Location | Address |
|------------|-------------------|--|
| CSX | Jax-Blount Island | 9240 Blount Island Blvd, Blount Island, FL 32226 |
| | Jacksonville | 5761 W 12th St, Jacksonville, FL 32254 |
| | Orlando | 1401 E Landstreet Rd, Taft, FL 32824 |
| | Tampa | 7001 Anderson Rd, Tampa, FL 33634 |
| | Palm Center | 100 Auto Ramp, Jupiter, FL 33478 |
| NS | Jacksonville | 7330 Old Kings Road, Jacksonville, FL 32219 |
| FEC | Miami (Hialeah) | 7300 NW 69th Ave, Miami, FL 33166 |

Source: CSX, NS and FEC websites

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2.1.4 Seaport Freight Terminals

Florida's 15 public seaports are recognized as significant contributors to the dynamic growth of the state's economy and significant facilitators of the movement of container and bulk cargo. Of these, 11 handled bulk and other general cargoes and ten handled containerized cargo in FY 2019-2020. Nine seaports have active rail service. Port Canaveral is currently without direct rail access, using drayage trucks to move cargo to/from offsite rail terminals.

Seaport Cargo Tonnage Volumes

Cargo tonnage volumes for the 11 cargo-handling seaports are displayed in the following two tables for 2015 to 2020. Total tonnage in 2019 was 111.9 million tons which is the highest level since 2011 and over 11.5 percent increase from 2011. There has been an 8.4 percent drop in 2020 from 2019 which can be attributed to COVID-19.

Table 2-8 | Florida Seaport Cargo Tonnage

| Florida Seaport | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|--------------------|
| Port Canaveral | 4,151,726 | 5,524,478 | 5,990,735 | 6,417,125 | 6,329,095 | 4,778,369 |
| Port Everglades | 24,001,663 | 24,681,331 | 25,233,820 | 25,734,854 | 25,574,776 | 21,477,099 |
| Port of Fernandina | 303,981 | 296,874 | 285,279 | 277,000 | 422,500 | 510,000 |
| Port Fort Pierce | 0 | 56,600 | 82,000 | 69,370 | 558 | 0 |
| JAXPORT | 17,704,738 | 19,017,794 | 19,743,799 | 20,739,400 | 20,716,794 | 20,074,196 |
| SeaPort Manatee | 6,517,733 | 6,888,757 | 7,797,889 | 8,968,898 | 9,776,076 | 9,011,733 |
| Port Miami | 8,613,739 | 8,777,974 | 9,162,340 | 9,611,960 | 10,121,570 | 9,725,274 |
| Port of Palm Beach | 2,094,069 | 2,519,255 | 2,449,039 | 2,567,393 | 2,565,936 | 2,477,853 |
| Port Panama City | 2,032,426 | 1,880,401 | 1,748,387 | 1,706,595 | 1,754,000 | 1,751,986 |
| Port of Pensacola | 217,695 | 201,009 | 231,935 | 114,714 | 211,272 | 188,220 |
| Port Tampa Bay | 37,374,291 | 37,525,453 | 38,101,623 | 34,060,821 | 34,462,971 | 32,851,039 |
| Total | 103,012,061 | 107,369,926 | 110,826,846 | 110,268,130 | 111,935,549 | 102,845,770 |

Source: 2020 FDOT - Florida Seaport and Waterways Plan

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Table 2-9 displays seaport tonnages broken down by imports, exports, domestic, and total tonnage by fiscal year. In 2019, seaports imported 36.6 million tons, exported 14.5 million tons, and handled domestic cargo movements inbound and outbound totaling 51.3 million tons.

Table 2-9 | Imports, Exports, and Domestic Tonnages

| Florida Seaport | Imports | Exports | Domestic | Total |
|-----------------|------------|------------|------------|-------------|
| FY19-20 | 35,571,237 | 16,204,105 | 50,856,210 | 102,631,552 |
| FY18-19 | 40,478,112 | 17,298,821 | 53,937,345 | 111,744,277 |
| FY17-18 | 38,729,636 | 17,891,659 | 53,646,835 | 110,268,130 |
| FY16-17 | 35,407,319 | 17,637,575 | 57,781,952 | 110,826,846 |
| FY15-16 | 40,503,439 | 16,287,415 | 50,579,072 | 107,369,926 |
| FY14-15 | 40,458,288 | 18,989,078 | 43,564,694 | 103,012,060 |

Note: No cargo reported or projected for ports of Citrus, Key West, St. Joe or St. Petersburg at this time.

Source: Five-Year Florida Seaport Mission Plans

Seaport Container Volumes

The number of containers at Florida Seaports from 2011 to 2020 is expressed in 20-foot equivalents (TEUs), in Table 2-10. The table provides annual totals for the 11 ports which have provided container service and includes annual statewide totals at the bottom. Between FY14-15 to FY18-19 there has been 13.8 percent growth in container traffic at Florida seaports. The top three seaports have exceeded one million TEUs for the past five years (2020 being the exception).

Table 2-10 | Containers in TEUs at Florida Seaports

| Florida Seaport | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 |
|--------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| Port Canaveral | 751 | 2,745 | 11,394 | 7,126 | 1,490 | 1,603 |
| Port Everglades | 1,060,507 | 1,037,226 | 1,076,893 | 1,108,466 | 1,053,079 | 945,512 |
| Port of Fernandina | 8,059 | 8,133 | 10,006 | 8,000 | 14,000 | 20,000 |
| JAXPORT | 1,076,252 | 1,124,742 | 1,189,531 | 1,431,391 | 1,358,756 | 1,298,333 |
| Port Manatee | 25,778 | 26,210 | 39,726 | 38,199 | 57,255 | 88,466 |
| Port Miami | 1,007,782 | 1,028,156 | 1,024,335 | 1,083,586 | 1,120,914 | 1,066,740 |
| Port of Palm Beach | 271,277 | 267,280 | 279,290 | 292,304 | 282,900 | 272,965 |
| Port Panama City | 34,304 | 29,954 | 29,456 | 38,092 | 35,750 | 50,996 |
| Port of Pensacola | 74 | 17 | 0 | 3,448 | 0 | 0 |
| Port Tampa Bay | 56,742 | 49,716 | 56,555 | 87,526 | 105,663 | 141,030 |
| Total | 3,541,526 | 3,574,179 | 3,717,186 | 4,098,138 | 4,029,807 | 3,885,645 |

Source: 2020 FDOT - Florida Seaport and Waterways Plan

Seaport-Rail Service Providers

As stated earlier, nine seaports have rail service. The seaports and service providers are the subject of Table 2-11. Four seaports including Port of Palm Beach, Port Panama City, Port Everglades, and Port Manatee operate their own railroads performing switching, storage, and staging throughout port terminals. An in depth review of each seaport-rail historical and current services is provided in Appendix J.

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Table 2-11 | Seaport Rail Service

| Florida Seaport | Class I | Class II | Class III or Port |
|----------------------|---------|----------|-------------------|
| Port Manatee | CSX | - | PMR |
| Port of Fernandina | CSX | - | FCRD |
| Port of Jacksonville | CSX, NS | - | JXPT |
| Port Panama City | - | - | BAYL |
| Port Pensacola | CSX | - | AGR, FGA |
| Port Everglades | - | FEC | XIPA |
| Port of Palm Beach | - | FEC | PPBD |
| Port Miami | - | FEC | - |
| Port Tampa Bay | CSX | - | - |

Source: FDOT Seaport Office and FDOT Freight and Rail Office

2.1.5 Passenger Stations

Amtrak Stations

Amtrak trains stop at 19 stations in Florida. Amtrak shares stations with Tri-Rail and SunRail commuter rail systems several locations. These stations are shown in Table 2-12.

Table 2-12 | Amtrak Station Stops in 2021

| Stations | Code |
|-----------------|------|
| Deerfield Beach | DFB |
| DeLand | DLD |
| Delray Beach | DLB |
| Fort Lauderdale | FTL |
| Hollywood | HOL |
| Jacksonville | JAX |
| Kissimmee | KIS |
| Lakeland | LAK |
| Lakeland | LKL |
| Miami | MIA |
| Okeechobee | OKE |
| Orlando | ORL |
| Palatka | PAK |
| Sanford | SFA |
| Sebring | SBG |
| Tampa | TPA |
| West Palm Beach | WPB |
| Winter Haven | WTH |
| Winter Park | WPK |

Source: Amtrak website, <https://www.greatamericanstations.com/news/amtrak-state-fact-sheets/> and <https://www.railpassengers.org/resources/ridership-statistics/>

Most of these stations are only used by Amtrak, and many serve both the Silver Star and Silver Meteor. An inventory of Amtrak stations appears in Appendix D.

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Brightline Stations

Brightline intercity passenger trains stop at six stations in Florida: MiamiCentral, Aventura, Fort Lauderdale, Boca Raton, West Palm Beach, and Orlando. The MiamiCentral Station provides connections to Metrorail, Metrobus, MetroMover and the Miami Trolley. The Orlando Station is located at the Orlando International Airport adjacent to Terminal C.

Tri-Rail Stations

There are 18 Tri-Rail stations between Mangonia Park and Miami Intermodal Center. Six in Palm Beach County, seven in Broward, and five in Miami-Dade County. All of them are served by local transit. Five stations are also stops on Amtrak's Silver Meteor and Silver Star trains (Deerfield Beach, Delray Beach, Fort Lauderdale, Hollywood, and West Palm Beach). Three stations offer convenient access to international or regional airports (Miami International Airport, Fort Lauderdale/Hollywood International Airport, and Palm Beach International Airport). Additional details on Tri-Rail stations appear in Appendix C.

SunRail Stations

There are 16 SunRail Stations between DeBary and Poinciana. Three stations - Winter Park, Orlando, and Kissimmee – are also Amtrak stops. All of them are served by local transit. Additional details on SunRail stations appear in Appendix C.

2.1.6 Performance Evaluation of Passenger Rail Services

This section provides an overview of the metrics associated with intercity passenger and commuter rail operations in Florida. Where information is available it describes the ridership, operating, and financial results for these services. Since Amtrak operates through multiple states, route-level statistics are reported.

Performance of Amtrak Services

As was noted earlier, Amtrak operates three long-distance intercity trains through Florida. The performance characteristics for these trains are outlined below. The COVID-19 pandemic contributed to the significant ridership declines seen in 2020 and 2021, as many Americans limited or refrained from traveling and the number of Silver Meteor/Silver Star train departures per week was cut in half. By the time the company released its preliminary fiscal year 2020 financial results on November 23, 2020, systemwide ridership and revenue on Amtrak was approximately 25 percent of pre-COVID-19 levels.¹⁰ During the pandemic, Amtrak initiated precautions to ensure the health and safety of passengers and employees on board its trains, including limiting reservations to less than half of a train's capacity in order to allow for social distancing. The Coronavirus Aid, Relief, and Economic Security (CARES) Act, which was signed into law on March 27, 2020, included \$1.04 billion for Amtrak to supplement revenue shortfalls from reduced ridership and continue operations in the short term. Even before the funding expired at the end of the federal fiscal year, prompting service cuts systemwide, Amtrak had reduced the service levels of its Florida trains.

¹⁰ https://media.amtrak.com/2020/11/amtrak-fiscal-year-2020-prioritized-customer-safety-advanced-infrastructure-and-fast-tracked-technology/#_ftn1

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In July 2020, operation of the Silver Star was cut to three consecutive days per week, on a weekend-oriented schedule, and the Silver Meteor ran on the other four days per week. This pattern provided one daily round-trip long-distance train between Miami and New York. On days when the Silver Star was not operating, Amtrak provided a Thruway bus connection between Tampa and Orlando, where Tampa passengers could transfer to and from the Silver Meteor.¹¹ The Auto Train continued to operate daily. An additional \$1 billion in federal funding that was made available to Amtrak in The Coronavirus Response and Relief Supplemental Appropriations Act of 2021 allowed the company to recall more than 1,200 furloughed employees systemwide and restore both the Silver Meteor and Silver Star to daily operation effective June 7, 2021.¹² When the Omicron variant caused a new increase in COVID-19 cases in January 2022, Amtrak initiated another service reduction, suspending operation of the Silver Meteor. Additional cars were added to the Silver Star, which continued to provide daily service between Miami, Tampa, and New York. Daily Auto Train service continued as well. The Silver Meteor resumed daily operation in October 2022.¹³

Ridership and Passenger-Miles

Amtrak compiles and reports the ridership, financial performance, on-time performance, and customer satisfaction of its trains on a route basis. Table 2-13 provides an overview of the ridership (trips) results for Amtrak routes serving Florida from Fiscal Year 2015 through Fiscal Year 2021.

Table 2-13 | Amtrak Riders ('000s), Routes Serving Florida FY2015 through FY2021

| Route | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------|-------|-------|-------|-------|-------|-------|-------|
| Silver Meteor | 346.1 | 339.4 | 341.4 | 332.8 | 349.4 | 200.1 | 187.0 |
| Silver Star | 383.3 | 364.3 | 373.4 | 363.9 | 385.0 | 218.5 | 187.2 |
| Auto Train | 271.6 | 238.4 | 228.9 | 224.8 | 236.0 | 163.6 | 199.4 |

Source: Amtrak website, <https://www.greatamericanstations.com/news/amtrak-state-fact-sheets/> and <https://www.railpassengers.org/resources/ridership-statistics/>

Passenger-miles per train-mile is a measure of utilization generated by dividing service passenger-miles by route train-miles. The Auto Train eclipses both the Silver Star and Silver Meteor by wide margins, as seen in Table 2-14.

Table 2-14 | Passenger-Miles per Train-Mile

| Service | Apr 15- Mar 17 | Apr 16- Mar 18 | Apr 17- Mar 19 | Apr 18- Mar 20 | Apr 19- Mar 21 |
|---------------|-------------------|-------------------|-------------------|-------------------|-------------------|
| Silver Meteor | 213 | 205 | 198 | 190 | 152 |
| Silver Star | 170 | 166 | 161 | 153 | 131 |
| Auto Train | 344 | 329 | 332 | 326 | 253 |

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations

¹¹ <https://www.usatoday.com/story/travel/2020/06/29/amtrak-reduce-new-york-florida-trains-starting-july-6/3254400001/>

¹² <https://media.amtrak.com/2021/03/with-increased-demand-and-congressional-funding-amtrak-restores-12-long-distance-routes-to-daily-service/>

¹³ <https://www.railwayage.com/news/amtrak-update-most-l-d-trains-back-on-track/>

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Table 2-15 depicts the annual ridership (boardings and alightings) at the 18 Florida Amtrak stations from 2013 to 2021 (Lakeland stations from Table 2-12 are combined for further references).

Table 2-15 | Amtrak Annual Ridership by Station (2015-2021)

| Stations | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|--------------------|----------------|---------------|---------------|-------------|-------------|---------------|---------------|
| Deerfield Beach | 26,463 | 24,150 | 23,407 | 21,895 | 21,066 | 12,262 | 11,094 |
| DeLand | 24,306 | 22,348 | 20,827 | 20,677 | 20,453 | 12,338 | 10,433 |
| Delray Beach | 14,648 | 13,173 | 13,782 | 13,643 | 14,752 | 8,829 | 7,194 |
| Fort Lauderdale | 46,448 | 42,010 | 40,613 | 40,249 | 41,218 | 26,357 | 23,073 |
| Hollywood | 28,019 | 25,739 | 24,312 | 22,348 | 21,652 | 13,067 | 13,042 |
| Jacksonville | 70,836 | 70,066 | 70,049 | 66,085 | 63,969 | 39,872 | 39,709 |
| Kissimmee | 41,093 | 37,366 | 35,416 | 34,774 | 35,726 | 20,757 | 21,158 |
| Lakeland | 21,519 | 20,475 | 19,479 | 18,952 | 19,186 | 10,733 | 7,851 |
| Sanford | 271.4K | 238.3K | 228.9K | 224.8K | 236K | 163.5K | 197.7K |
| Miami | 69,547 | 64,509 | 64,485 | 63,500 | 62,497 | 39,123 | 37,411 |
| Okeechobee | 4,223 | 4,193 | 3,935 | 3,988 | 4,109 | 2,809 | 2,023 |
| Orlando | 142.8K | 134.2K | 128.8K | 124K | 127.2K | 72,267 | 73.3K |
| Palatka | 12,568 | 12,333 | 12,579 | 11,598 | 12,313 | 7,723 | 7,171 |
| Sebring | 17,397 | 16,414 | 15,214 | 13,848 | 14,083 | 9,166 | 8,619 |
| Tampa | 117.4K | 105.7K | 106.5K | 105.7K | 110.3K | 65.7K | 52.4K |
| West Palm Beach | 57,973 | 55,496 | 52,973 | 52,572 | 53,717 | 32,819 | 28,756 |
| Winter Park | 28,309 | 28,197 | 27,253 | 25,844 | 27,047 | 14,828 | 12,993 |
| Winter Haven | 21,965 | 21,682 | 20,598 | 20,515 | 19,757 | 13,321 | 15,227 |
| Grand Total | 1016.9K | 936.4K | 909.2K | 885K | 905K | 565.5K | 569.2K |

Source: <https://www.amtrak.com/home.html>

Financial Performance

Like ridership, financial performance (Table 2-16) was negatively impacted by COVID-19. The table below presents the amount, by percentage of each train's operating costs, that are covered by revenues (e.g., ticket revenue, revenue from the purchase of first-class sleeping car accommodations, revenue from food and beverage purchases, and other sources). The cost recovery ratios presented in the table are measured on a two-year rolling average by fiscal year. Revenue performance for the Auto Train has remained markedly higher than the Silver Meteor or Silver Star.

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Table 2-16 | Percentage of Fully Allocated Operating Costs Covered by Passenger Related Revenue (Including State Revenue)

| Service | Apr '15- Mar '17 | Apr '16- Mar '18 | Apr '17- Mar '19 | Apr '18- Mar '20 | Apr '19- Mar '21 |
|---------------|---------------------|---------------------|---------------------|---------------------|---------------------|
| Silver Meteor | 53% | 52% | 51% | 50% | 39% |
| Silver Star | 48% | 49% | 50% | 49% | 35% |
| Auto Train | 97% | 89% | 87% | 88% | 75% |

Notes: Same including or excluding State Revenue. Fully Allocated Costs exclude Depreciation, Interest and Other Post-Employment Benefits. Fully Allocated Costs include allocations of substantial Common and Joint Costs that would continue to be incurred by Amtrak if a route was discontinued. These continuing costs would then be allocated to other routes if the route were discontinued.

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations

At the end of FY19, Amtrak employed 634 Florida residents. Total wages of Amtrak employees living in Florida were \$52,765,573 during FY19.

On-Time Performance

Amtrak defines On-Time Performance (OTP) as the total number of trains arriving on-time at a station divided by the total number of trains operated on that route. A train is considered on-time if it arrives at its destination within an allowed number of minutes, or tolerance, of its scheduled arrival time. Trains are allowed a certain tolerance based on how far they travel. A consistent and high on-time performance is believed to make the rail service more attractive to riders, especially those traveling shorter distances. The on-time performance of the three Amtrak services in Florida is shown in Table 2-17. "All-Stations On-time performance" represents the percentage of stations at which the train arrives within 15 minutes of the scheduled arrival time.

Table 2-17 | All-Stations On-Time Performance, Routes Serving Florida FY2015 through FY2021

| Service | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|---------------|-------|-------|-------|-------|-------|-------|-------|
| Silver Meteor | 57.8% | 48.3% | 44.0% | 43.6% | 49.4% | 65.6% | 59.9% |
| Silver Star | 48.1% | 42.5% | 38.6% | 37.6% | 35.8% | 57.8% | 49.4% |
| Auto Train | 72.1% | 57.7% | 53.3% | 70.9% | 75.0% | 76.2% | 74.8% |

Source: Federal Railroad Administration

The on-time performance standard for long-distance trains established by the Passenger Rail Investment and Improvement Act of 2008 is 80 percent.

On November 16, 2020, the Federal Railroad Administration (FRA) published a final rule establishing metrics and minimum standards for measuring the performance and service quality of intercity passenger trains.¹⁴ Metrics and standards were established for four categories of performance and service: on-time performance and train delays, customer satisfaction, cost recovery, and public benefits. Under the FRA's final rule, on-time performance will be measured

¹⁴ <https://railroads.dot.gov/newsroom/press-releases/fra-publishes-final-rule-establishing-metrics-and-minimum-standard-0>

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using a “customer on-time performance” metric, which measures the percentage of intercity rail passengers who arrive at their detraining point, including intermediate stations, no later than 15 minutes after the published scheduled arrival time. The final rule required Amtrak and its host railroads to certify Amtrak schedules and set a customer on-time performance minimum standard of 80 percent for any two consecutive calendar quarters. Performance measuring under the final standards took effect in the first full calendar quarter after May 17, 2021.

Causes for Amtrak train delays can be attributed to several reasons including the host railroad, Amtrak itself, or other delays such as grade-crossing collisions. These represent the key reasons for delays that negatively impact OTP.

- **Train Interference Delays** are related to other train movements in the area. These can be delays from freight trains as well as other Amtrak trains.
- **Passenger Operating Delays** are related to equipment turning and servicing, engine failures, passenger train holds for connecting trains and buses, crewing, and detours.
- **Slow Orders** are delays from reduced speeds to allow safe operation due to track problems.
- **Freight Railroad Operational Delays** are all other freight railroad delays and delays related to the railroad infrastructure and/or maintenance work being done on the tracks or signaling systems.
- **All Other Delays** could include delays caused by the weather and non-railroad third-party factors such as customs and immigration, a bridge opening for waterway traffic, police activity, grade-crossing accidents, or loss of power due to a utility company failure.

Customer Satisfaction Indicator

Amtrak's Customer Satisfaction Indicator (CSI) scores measure the satisfaction by passengers, on an 11-point scale, on aspects of their trip. For example, a CSI score of 80 means 80 percent of respondents rated the aspect of their trip in the top three boxes of the 11 steps of the scale.

Measures rated include:

- **Overall Service** is the measure for the respondents rating for their overall trip experience.
- **Amtrak Personnel** is the measure for the respondents rating Amtrak reservations personnel, station personnel, train crew, and on-board service crew.
- **Information Given** is the measure for the respondents rating all information they received pertaining to their trip.
- **On-Board Comfort** is the measure for the respondents rating seat or sleeping compartment comfort, air temperature, and ride quality.
- **On-Board Cleanliness** is the measure for the respondents rating the cleanliness of the train and on-board restrooms.
- **On-Board Food Service** is the measure for the respondents rating the quality of the food and snacks purchased on-board the train.

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Table 2-18 shows the CSI scores. The highest scores were in Personnel.

Table 2-18 | Customer Satisfaction Indicator, FY2021 Q2

| Causes of Delay | Amtrak Standard | Routes | | |
|-----------------------|-----------------|---------------|-------------|------------|
| | | Silver Meteor | Silver Star | Auto Train |
| Overall Service | 82 | 73 | 69 | 74 |
| Amtrak Personnel | 80 | 82 | 81 | 89 |
| Information Given | 80 | 75 | 69 | 80 |
| On-Board Comfort | 80 | 77 | 74 | 68 |
| On-Board Cleanliness | 80 | 73 | 71 | 83 |
| On-Board Food Service | 80 | 53 | 50 | 53 |

Source: FRA Quarterly Report on the Performance and Service Quality of Intercity Passenger Train Operations

Performance of Brightline Florida Service

Brightline Florida carried more than 1 million passengers in its first full year of operations in 2019. As a result of COVID-19, Brightline suspended its passenger rail service on March 25, 2020. Full services returned on November 8, 2021. In 2022, Brightline Florida carried more than 1.2 million passengers, exceeding its pre-COVID ridership. Table 2-19 shows annual ridership and average fare per passenger for Brightline Florida trains.

Table 2-19 | Brightline Florida Performance Metrics

| Operation Performance Metrics | 2018 | 2019 | 2020* | 2021* | 2022 |
|-------------------------------|---------|-----------|---------|---------|-----------|
| Ridership | 579,205 | 1,012,804 | 271,778 | 159,474 | 1,230,494 |
| Average Fare per Passenger | \$12.27 | \$16.88 | \$18.08 | \$11.32 | \$20.03 |
| Passholders | -- | 322 | 635 | -- | |

*As a result of COVID-19, Brightline suspended its passenger rail service on March 25, 2020. Full services returned on November 8, 2021.

Source: Florida Development Finance Corporation, Brightline Series 2019B report (msrb.org) and Brightline Monthly Ridership and Revenue Report, December 2022

Performance of Tri-Rail Service

Tri-Rail ridership averaged approximately 15,000 one-way (unlinked) trips per weekday for its regular commuter service in 2019, prior to the COVID-19 pandemic. Table 2-20 shows annual ridership and OTP for Tri-Rail trains. Ridership increased 4 percent and on-time performance went up 17 percent from 2016 to 2019. Historically, from FY 2016 through FY 2020, Tri-Rail recorded its highest ridership in FY 2019 (5,454,612), and its lowest in FY 2021 (2,310,628).

Table 2-20 | Tri-Rail Operations Performance Metrics

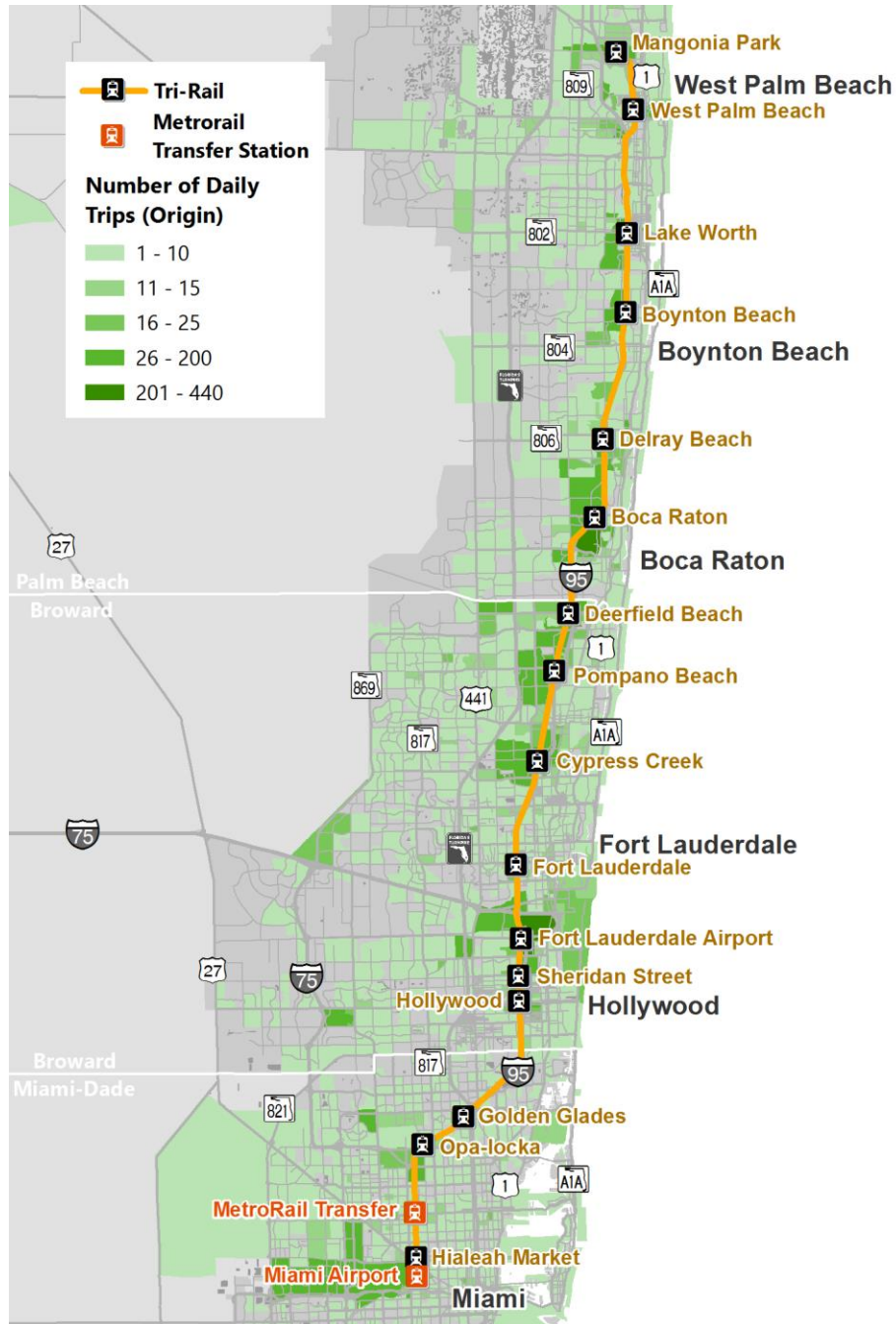
| Operation Performance Metrics | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------|-----------|-----------|-----------|-----------|-----------|-----------|
| Ridership | 5,241,825 | 5,166,465 | 5,356,774 | 5,454,612 | 2,626,275 | 2,310,628 |
| On-Time Performance | 80.80% | 90.91% | 91.51% | 94.28% | 91.50% | 92%* |

Source: FDOT Sourcebook (2021)

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Figure 2-17 and Figure 2-18 illustrates the originating trips and terminating trips via Tri-Rail, respectively.

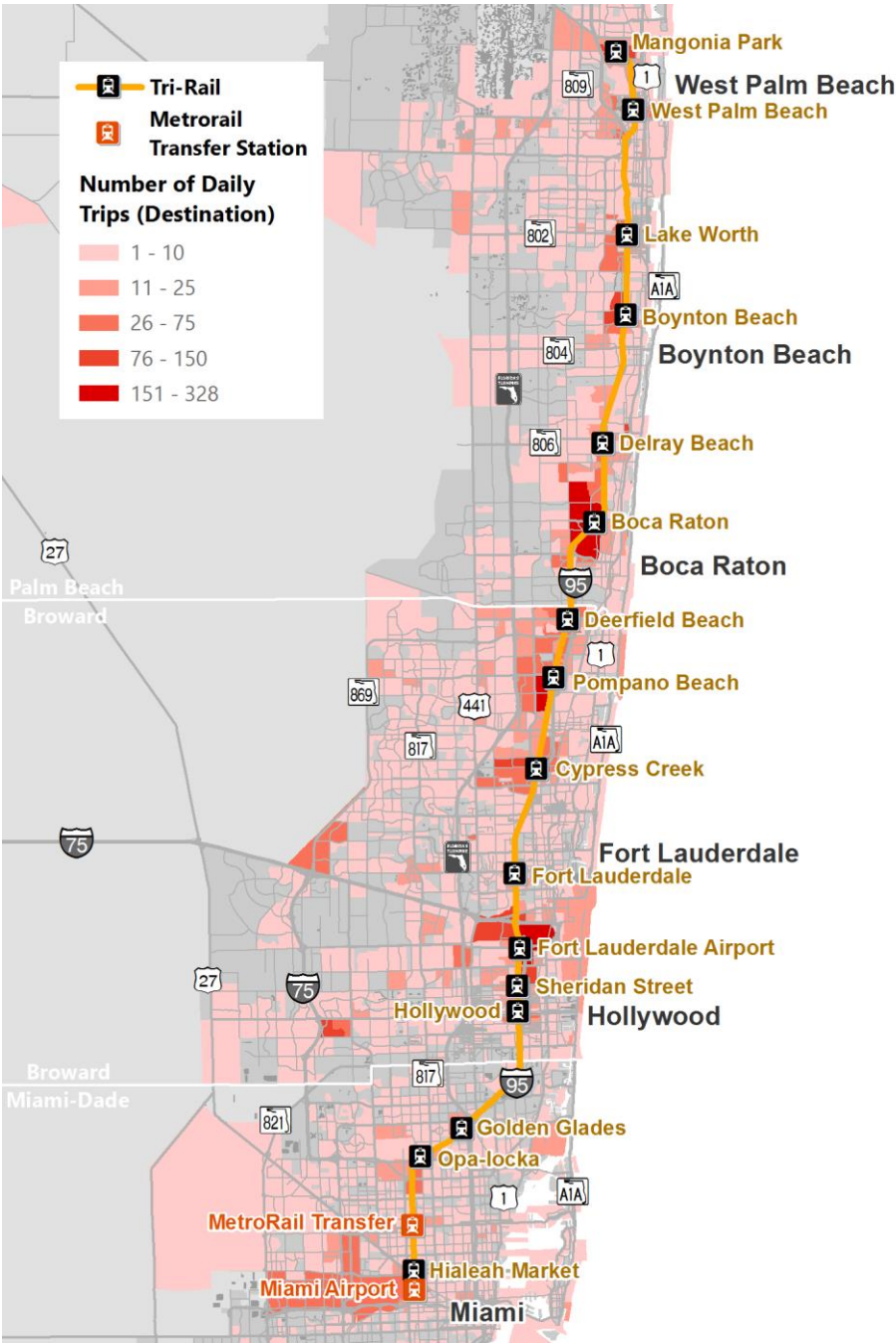
Figure 2-17 | 2019 Weekday Originating Trips (Daily) via Tri-Rail



Source: Replica, 2022

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Figure 2-18 | 2019 Weekday Terminating Trips (Daily) via Tri-Rail



Source: Replica, 2022

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Performance of SunRail Service

COVID-19 caused a reduction of more than 50 percent of passenger trips in 2020 and 2021, as seen in Table 2-21. Figure 2-19 and Figure 2-20 illustrate the originating trips and terminating trips via SunRail, respectively. As seen in Table 2-22, on-time performance of SunRail trains averaged 96-98 percent between 2016 to 2020.

Table 2-21 | SunRail Ridership by station

| Stations | 2019 | 2020 | 2021 |
|-----------------------|------------------|------------------|----------------|
| DeBary | 107,717 | 80,265 | 47,550 |
| Sanford | 74,615 | 58,773 | 31,811 |
| Lake Mary | 85,969 | 68,219 | 29,596 |
| Longwood | 64,553 | 50,801 | 25,555 |
| Altamonte Springs | 69,467 | 56,191 | 30,467 |
| Maitland | 51,156 | 44,715 | 17,798 |
| Winter Park/Amtrak | 128,932 | 97,760 | 54,257 |
| Advent Health | 87,164 | 74,175 | 43,702 |
| LYNX | 153,046 | 137,829 | 76,471 |
| Church Street | 168,870 | 139,179 | 41,824 |
| Orlando Health/Amtrak | 76,221 | 70,558 | 37,067 |
| Sand Lake Road | 75,379 | 57,659 | 29,268 |
| Meadow Woods | 101,920 | 104,766 | 47,613 |
| Tupperware | 43,312 | 38,822 | 19,291 |
| Kissimmee/Amtrak | 98,479 | 88,897 | 50,524 |
| Poinciana | 82,854 | 74,954 | 40,911 |
| Total | 1,469,654 | 1,243,563 | 623,705 |

Source: <https://sunrail.com/>

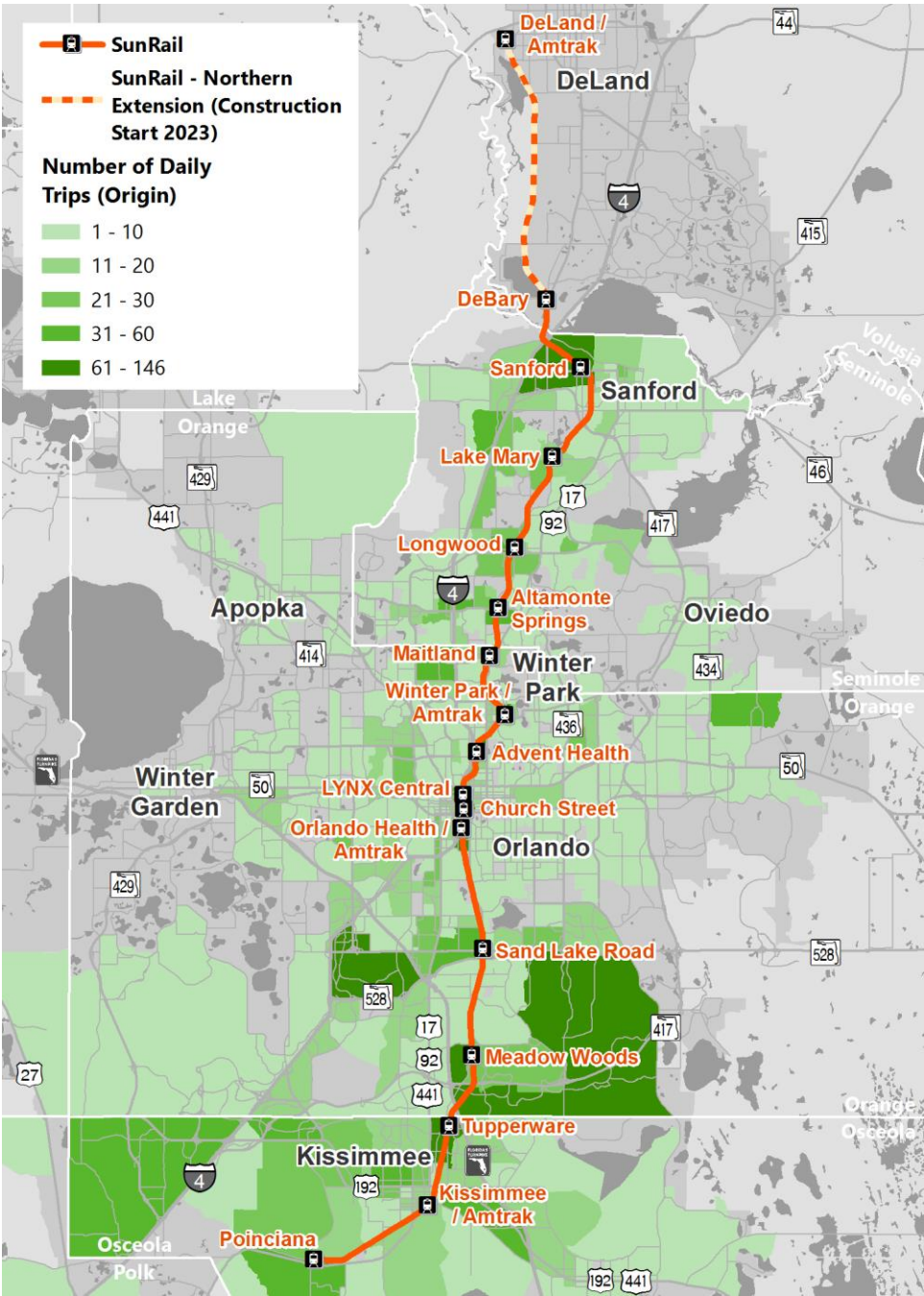
Table 2-22 | SunRail Operations Performance Metrics

| Operation Performance Metrics | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 |
|-------------------------------|---------|---------|---------|-----------|-----------|---------|
| Ridership | 910,380 | 901,156 | 831,460 | 1,469,654 | 1,243,563 | 623,705 |
| On-Time Performance | 96.30% | 96.80% | 94.30% | 95.65% | 97.42% | 96% |

Source: FDOT Sourcebook, 2021

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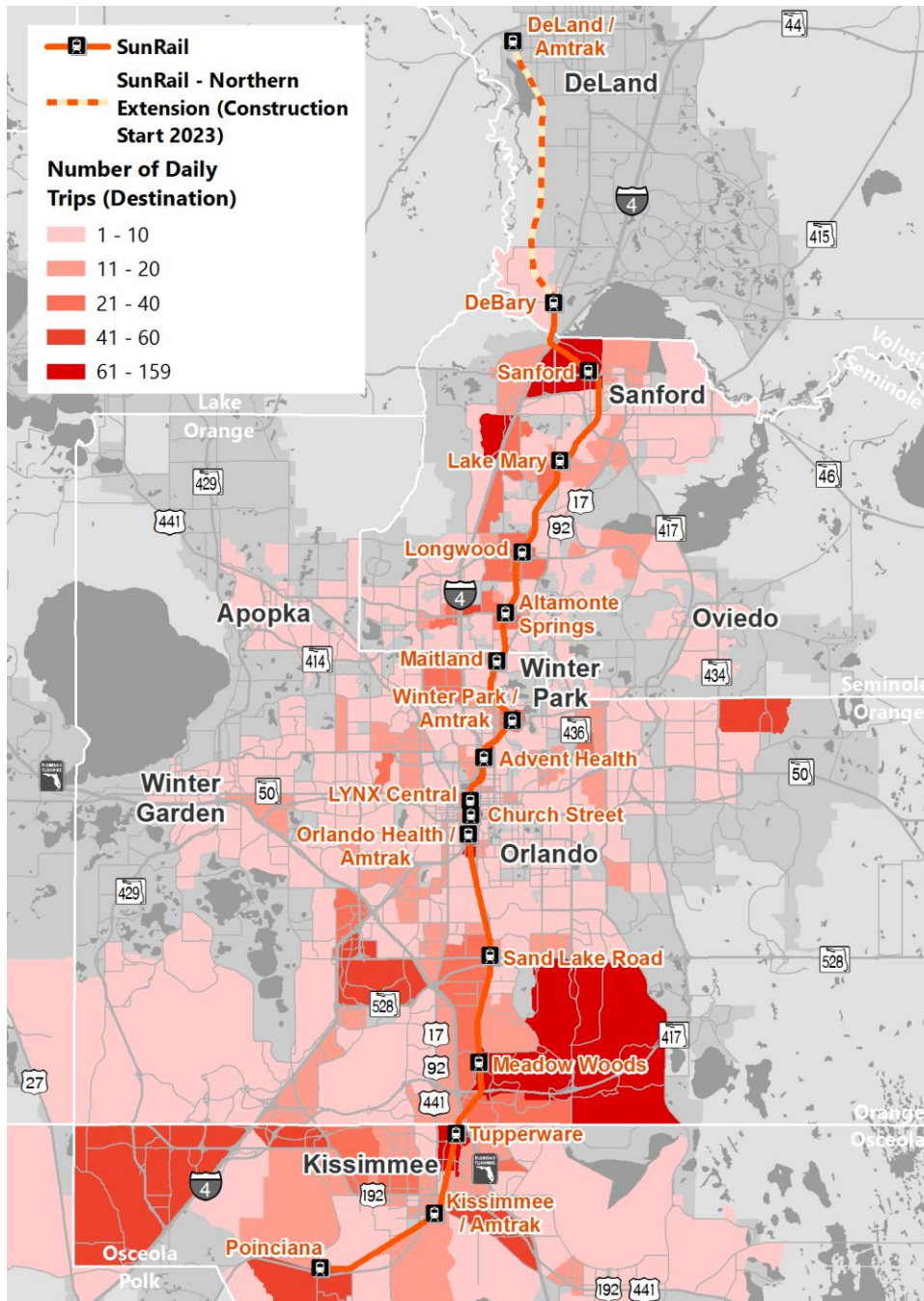
Figure 2-19 | 2019 Weekday Originating Trips (Daily) via SunRail



Source: Replica

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Figure 2-20 | 2019 Weekday Terminating Trips (Daily) via SunRail



Source: Replica

The construction of SunRail's Phase 2 Northern expansion includes one new commuter SunRail station at DeLand, Florida and approximately 12 miles of expanded commuter rail service between the DeBary Station and the DeLand Amtrak Station in Volusia County on the existing Central Florida Rail Corridor (CFRC). The Phase 2 Northern Expansion is currently expected to open by summer 2024.

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2.1.7 Public Financing for Rail Projects and Services

FDOT, as well as several local public agencies and private entities in the state, have utilized federal and state transportation funding programs for rail infrastructure improvements where they were eligible and appropriate. The following is a short summary of state and federal rail funding resources utilized for railroad improvements in Florida in the recent past.

State Sponsored Rail Funding

State funding for transportation projects in Florida is generated from the State Transportation Trust Fund (STTF). The STTF is funded through several revenue sources that include, but are not limited to, the statewide fuel tax, state motor fuel excise tax, state comprehensive enhanced transportation tax, aviation fuel tax, initial vehicle registration fees, vehicle title fees, document stamps, and rental car fees.

FDOT administers several financing and funding programs from the funding available through the STTF and other trust funds and resources including federal, local, and private funds for transportation projects within the state.

The following is a summary of state funding programs for which rail improvements are eligible. The designation criteria for these programs include rail improvement eligibility as of May 2022; however, designation criteria evolve annually.

FDOT Rail Bridge Management Program

A developing program, the goal of the FDOT Rail Bridge Program is to protect and preserve the state's infrastructure investment and to clearly establish FDOT's criteria for the identification, inspection, maintenance, design, and construction for FDOT's rail bridges. The program is in the process of establishing a statewide Rail Bridge Management Plan that will comply with Part 237 of the Code of Federal Regulations.

The Florida Department Owned Rail Bridge Management Program (FL DOR BMP) will standardize and state the Department's railroad bridge inspection and reporting policy. The FDOT will adopt this FL DOR BMP for all bridge structures along state-owned corridors and those railroad and mass transit overpasses maintained by the Department.

Commencing in fiscal year 2024, a designated and funded budget of about \$20 million over five years will ensure the effectiveness of the FDOT Rail Bridge Management Program to execute the inspection, maintenance, repair, replacement, and construction of FDOT's rail bridges. Through the implementation of a standardized FDOT Rail Bridge Management Program, FDOT's Work Program will be able to appropriately code a Rail Bridge section in the Work Program Instructions and distribute funds.

The integration of FDOT-owned rail bridges into a standardized system will allow the Department to meet its responsibility for the infrastructure it owns and maintains, reduce potential loss of life and valuables, and reduce liability.

Florida Rail Enterprise

The State of Florida and FDOT created the Florida Rail Enterprise (FRE) to provide statewide governance for all passenger rail projects, stemming from House Bill 1B in 2009. Currently,

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SunRail and Tri-Rail are two components of the Florida Rail Enterprise. FDOT owns the Central Florida Rail Corridor (CFRC) and the South Florida Rail Corridor (SFRC) on which SunRail and Tri-Rail operate, respectively. The principal goal of the Florida Rail Enterprise Program is to identify, prioritize, and fund the best eligible rail passenger service development projects.¹⁵

New Starts Transit Program

Florida's New Starts Transit Program (NSTP) provides capital funding for new rail transit projects. NSTP funds require a match of local dollars, which together can be used as the required non-federal share of a project seeking Federal Transit Administration Capital Investment Grant (CIG) program funding. Florida statutes limit the funds for fixed-guideway projects not approved for federal funding to no more than 12.5 percent of the costs for final design, right-of-way acquisition, and construction. Over the last 10-years the NSTP has provided over \$300 million towards new transit projects.

State Infrastructure Bank

The State Infrastructure Bank (SIB) is a revolving loan and credit enhancement program. The program can provide loans and other assistance to public and private entities implementing or proposing to implement projects eligible for assistance under state and federal law. Projects must be on the State Highway System that provides for increased mobility on the state's transportation system in accordance with Section 339.55, Florida Statutes or provide for intermodal connectivity with airports, seaports, rail facilities, transportation terminals, and other intermodal options for increased accessibility and movement of people, cargo, and freight.¹⁶

Strategic Intermodal System Program

Eligible projects for the Strategic Intermodal System Program (SIS) Program must have been identified as either Strategic Intermodal System or Strategic Growth facilities and be consistent with the established SIS objectives of interregional connectivity, intermodal, connectivity, and economic development. Typical rail-related projects eligible for the program could include siding, spurs, expansion of capacity through double-tracking of a rail corridor, new rail lines, track upgrades up to FRA Track Class IV, grade separation between modes, sidings, capital improvements for new passenger service along a SIS rail corridor and raising or replacing non-SIS bridges that create a clearance and capacity constraint of a SIS Corridor.¹⁷

Transportation Regional Incentive Program

Transportation Regional Incentive Program (TRIP) was created to improve regionally significant transportation facilities by focusing on "regional transportation areas."¹⁸ State funds are available to provide incentives for local governments and the private sector to help pay for critically needed projects that benefit regional travel and commerce. Projects must be part of an integrated transportation system, consistent with the Strategic Intermodal System, and identified in the Statewide Transportation Improvement Plan (STIP) or Metropolitan Planning Organizations (MPO) long-range plans and Transportation Improvement Plans (TIP). Projects of

¹⁵ [Florida Rail Enterprise Program description.docx](#)

¹⁶ [SIB - Introduction \(fdot.gov\)](#)

¹⁷ [sis_fundingeligibility_2019_final.pdf \(windows.net\)](#)

¹⁸ [Transportation Regional Incentive Program \(fdot.gov\)](#)

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the TRIP are eligible for the State-funded SIB provided the project is matched by a minimum of 25 percent from funds other than SIB.¹⁹

Economic Development Transportation Fund (EDTF)

The Economic Development Transportation Fund (EDTF) program is an incentive tool designed to alleviate transportation problems that adversely impact a specific company's location or expansion decision. The elimination of the problem must serve as inducement for a prospective business location, an existing business retention, or expansion project in Florida, and create or retain job opportunities. Up to \$3 million may be provided to a local government to implement improvements with the actual amount based on specific job creation or retention.

Intermodal Development Program

This program was created to provide for major capital investments in public rail and fixed-guideway transportation systems, road, intercity rail, or bus service to/from or between seaports, airports, and other transportation terminals, and to provide for the construction of intermodal or multimodal terminals or otherwise facilitate the intermodal or multimodal movement of people and goods.²⁰

Rail-Highway Crossing Program

The Railway-Highway Crossings (Section 130) Program is a need-based program that provides funds for the elimination of hazards at railway-highway crossings. Eligible grade crossing improvement projects are identified by District Rail Offices based on a grade crossing safety index ranking determined by a crash prediction algorithm. Crossing candidates are evaluated by several factors, including the grade crossing safety index, incident history, corridor emphasis, diagnostic observations, upgrading crossings from passive to active devices, and input from local governments and railroad partners. The Infrastructure Investment and Jobs Act continues the annual set-aside for railway-highway crossing improvements under 23 USC 130(e). The funds are set aside from the Highway Safety Improvement Program (HSIP) apportionment. The annual set-aside will be \$245 million from FY2022 through FY 2026. The current state funding allotment is approximately \$10 million annually, which allows for approximately 20 full crossing upgrades. Section 130 projects programmed for funding between 2023 and 2026 are identified in Table 5-03, the Short-Range Studies, and Projects list. Funding is from the federal Highway Safety Improvement Program discussed below and may include railroad sources.

Rail-Highway Grade Crossing Construction and Maintenance Coordination Program

This highway-rail grade crossing program is dedicated to the coordination of new construction, reconstruction, widening, and/or resurfacing of a road at or near the right-of-way of a grade crossing. Close coordination with District Railroad Offices is required to ensure use of railroad property and their resources are available for warning device relocation and flagging services.

Rural Economic Development Initiative

This program is administered through the Florida Department of Economic Opportunity (DEO). Rural Economic Development Initiative (REDI) is a multiagency endeavor that coordinates the

¹⁹ [SIB - Introduction \(fdot.gov\)](https://www.fdot.gov/sib-introduction)

²⁰ [Chapter 341 Section 053 - 2012 Florida Statutes - The Florida Senate \(flsenate.gov\)](https://www.flsenate.gov/chapter-341-section-053-2012-florida-statutes)

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efforts of regional, state, and federal agencies to address the problems that affect the fiscal, economic, and community viability of Florida's distressed rural communities. Pursuant to [Section 288.0656, FS](#), a county or community seeking funding through the REDI must meet two qualifications. First, the county or community must meet the statutory definition of "rural" noted in Section 288.0656 (2)(e), FS, to be eligible for a waiver or reduction of match requirements. Second, the eligible county or community must also have three or more of the "economic distress" conditions identified in Section 288.0656 (2)(c), FS.

Rural Infrastructure Fund

The Rural Infrastructure Fund (RIF) grant program, administered by DEO, provides reimbursement grants to facilitate the planning, preparing, and financing of infrastructure projects in rural communities, which will encourage job creation, capital investment, and the strengthening and diversification of rural economies. This program is also intended to facilitate access to other state and federal infrastructure funding programs, such as those offered by the Small Cities Community Development Block Grant, United States Department of Agriculture - Rural Development, and the United States Department of Commerce - Economic Development Administration.²¹

Florida Job Growth Grant Fund

Pursuant to Section 288.101, the Florida Job Growth Grant Fund, administered by the Florida Department of Economic Opportunity, is an economic development program designed to promote public infrastructure and workforce training across the state. Proposals are reviewed by the DEO and Enterprise Florida, Inc. (EFI) and chosen by the Governor to meet the demand for workforce or infrastructure needs in the community to which they are awarded. Eligible projects include state or local public infrastructure projects to promote economic recovery in specific regions of the state, economic diversification, or economic enhancement in a targeted industry. The Florida Job Growth Grant Fund may not be used for the exclusive benefit of any single company, corporation, or business entity.²²

Federal Rail Related Programs and Funding

This section identifies and describes federal rail-related programs and funding.

Passenger Rail Investment and Improvement Act

With the passage of the Passenger Rail Investment and Improvement Act of 2008 (PRIIA), Congress voted to end federal support for Amtrak intercity passenger trains operating on routes of 750-miles or less effective October 2013. This legislation transferred the responsibility onto states to provide the funds needed to maintain shorter-distance, regional intercity Amtrak passenger services operating within their jurisdictions.

Because Brightline was established as a for-profit passenger service that had not been in operation at the time that the PRIIA legislation was enacted, nor had it previously relied on federal funding to support its operation, its service is not mentioned in PRIIA. In testimony before the U.S. House of Representatives Subcommittee on Railroads, Pipelines, and

²¹ [Rural Infrastructure Fund - FloridaJobs.org](http://RuralInfrastructureFund-FloridaJobs.org)

²² [Chapter 288 Section 101 - 2021 Florida Statutes - The Florida Senate \(flssenate.gov\)](http://Chapter288Section101-2021FloridaStatutes-TheFloridaSenate(flssenate.gov))

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Hazardous Materials on May 2, 2021, Brightline CEO Michael Reininger presented recommendations for ways that the federal government could help spur additional private sector development in intercity passenger rail service,²³ notably by:

- Increasing the volume cap of tax-exempt private activity bonds from the current \$15 billion to a minimum of \$30 billion to help finance projects through the savings on interest expenses and gains in tax-deferred revenue.
- Improving the federal Railroad Rehabilitation and Improvement Financing loan program to make it more attractive to private investors in passenger rail projects, notably by making credit risk premiums an eligible use of USDOT discretionary grant program funding for intercity passenger rail projects.
- Including private sector rail operators as eligible parties in both new and existing intercity passenger rail grant programs.
- Introducing greater certainty into the approval process by reducing or limiting the granting of deadline extensions for regulatory comment periods under existing laws and regulatory reviews, while still advancing projects within existing laws and regulatory frameworks.

Infrastructure Investment and Jobs Act

On November 15, 2021, the Infrastructure Investment and Jobs Act (IIJA) was signed, containing significantly increased levels of funding for transportation, including rail freight, intercity passenger, commuter, and transit services. This once in a generation bill will help strengthen supply chains by making improvements to the nation's rail systems.

Funding for freight and intercity passenger rail projects will be funneled through programs administered by the FRA. The FRA's funding falls into five major programs: (1) Amtrak, (2) the Federal-State Partnership for Intercity Passenger Rail Grant Program, (3) the Consolidated Rail Infrastructure and Safety Improvements Grant Program, (4) the Railroad Crossing Elimination Grant Program, and (5) the Restoration and Enhancements Grant Program. A summary is provided in Table 2-23.

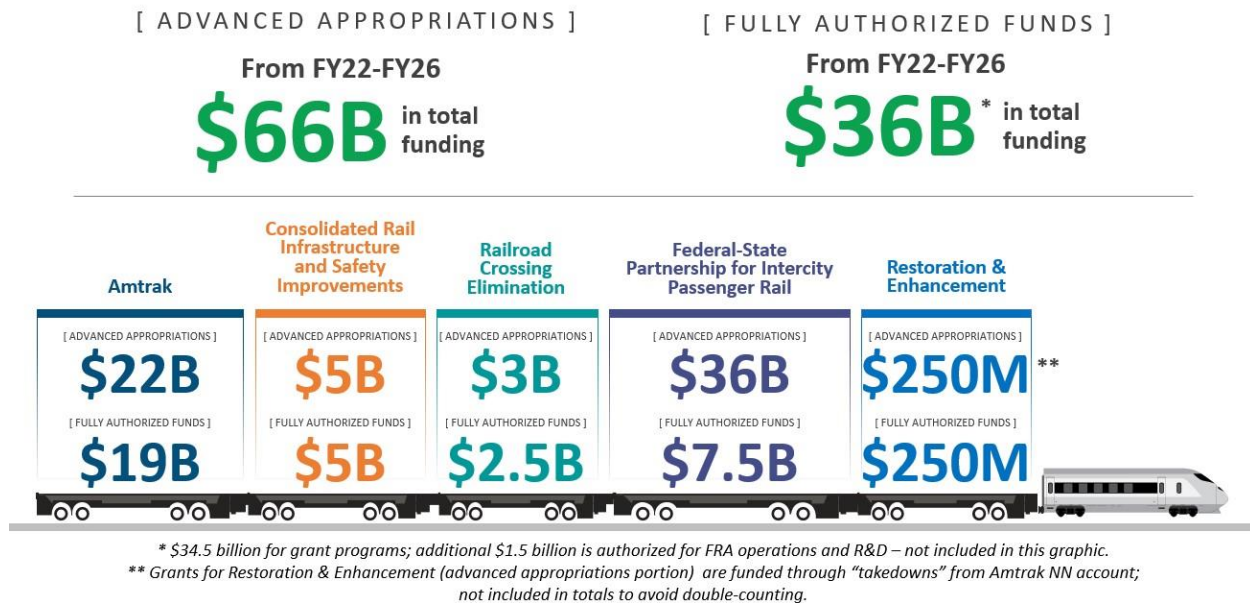
The IIJA contains \$102 billion in total rail funding, including \$66 billion from advanced appropriations, and \$36 billion in authorized funding for the Department of Transportation's rail programs (Figure 2-21). This includes funding to modernize the Northeast Corridor and bring new or expanded intercity passenger rail service to areas outside the northeast and mid-Atlantic; refurbish Amtrak's fleet and facilities; and upgrade freight rail service in rural communities and on shared freight-passenger routes. This legislation enables the FRA to lay the foundation for a sustainable rail investment program, on par with other modes of transportation, that advances safe, clean, equitable, and efficient "world-class" passenger and freight rail.²⁴

²³ <https://transportation.house.gov/imo/media/doc/Reininger%20Testimony.pdf>

²⁴ [Infrastructure Investment and Jobs Act Information from FRA | FRA \(dot.gov\)](#)

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Figure 2-21 | Infrastructure Investment and Jobs Act (IIJA) Funding for Existing Rail Programs



Source: Federal Rail Administration

Consolidated Rail Infrastructure and Safety Improvement Grant Program

The Consolidated Rail Infrastructure and Safety Improvements (CRISI) Grant Program will fund projects that improve the safety, efficiency, and reliability of intercity passenger and freight rail. This program leverages private, state, and local investments to support safety enhancements and general improvements to infrastructure.²⁵

MEGA Grant Program

The IIJA establishes a new MEGA Program (known statutorily as the National Infrastructure Project Assistance program) to support large, complex projects that are difficult to fund by other means and likely to generate national or regional economic, mobility, or safety benefits. Eligible rail projects under the MEGA program include freight intermodal (including public ports) or freight rail projects that provide a public benefit, railway-highway grade separation or elimination, and intercity passenger rail.²⁶

Infrastructure For Rebuilding America

The Infrastructure For Rebuilding America (INFRA) Grant Program awards competitive grants for multimodal freight and highway projects of national or regional significance to improve the safety, efficiency, and reliability of the movement of freight and people in and across rural and urban areas. The IIJA updated the program's language to include new eligibilities, set-asides, and other programming changing.²⁷

²⁵ [Consolidated Rail Infrastructure and Safety Improvements Program | FRA \(dot.gov\)](#)

²⁶ [The Mega Grant Program | US Department of Transportation](#)

²⁷ [The INFRA Grants Program | US Department of Transportation](#)

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Promoting Reliant Operations for Transformative, Efficient, and Cost-Saving Transportation Program

The new Promoting Reliant Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program provides grants for resilience improvements through formula and competitive grants.²⁸ It has an advance appropriation of \$7.3 billion for formula grants and \$1.4 billion over five years for discretionary grants to support the following:

- Planning Grants to develop resilience improvement plans, design, and development.
- Resilience Improvement Grants to withstand weather events, natural disasters, or adopt to climate change.
- Community Resilience & Evacuation Route Grants to protect emergency routes.
- At-Risk Coastal Infrastructure Grants to protect highways from climate impacts.

Commuter Authority Rail Safety Improvement Program

The Commuter Authority Rail Safety Improvement (CARSI) Program is awarded by FHWA in coordination with the Federal Railroad Administration (FRA) and Federal Transit Administration (FTA). CARSI Program funds are used to eliminate hazards at highway-railway crossings. The Transportation, Housing and Urban Development, and Related Agencies Appropriations Act, 2020 and 2022, appropriated \$50 million in Commuter Authority Rail Safety Improvement (CARSI) Grants Program funding to be awarded by FHWA for highway-railway crossing-related projects, including those that separate or protect grades at crossings; rebuild existing railroad grade crossing structures; relocate highways to eliminate grade crossings; and eliminate hazards posed by blocked grade crossings due to idling trains.^{29 30}

Port Infrastructure Development Program

The U.S. Maritime Administration (MARAD) administers the Port Infrastructure Development Program (PIDP), which awards grants to improve facilities within, outside of, or directly related to operations at coastal seaports, inland river ports, and Great Lakes ports. Rail elements at port facilities are eligible projects for PIDP funding.³¹

The Railroad Crossing Elimination Grant Program

The Railroad Crossing Elimination Grant Program provides funds for the mitigation or elimination of hazards at railway-highway crossings. This grant program is a new grant program enacted in Section 22305 of the IIJA. Its purpose is to promote highway rail or pathway-rail grade crossing improvement projects that focus on improving the safety and mobility of people and goods.³²

²⁸ [Infrastructure Investment and Jobs Act - Promoting Resilient Operations for Transformative, Efficient, and Cost-Saving Transportation \(PROTECT\) Formula Program Fact Sheet | Federal Highway Administration \(dot.gov\)](#)

²⁹ [U.S. Department of Transportation Awards \\$40 Million in Grants to Improve Safety at Highway-Railway Crossings in Five States | FHWA \(dot.gov\)](#)

³⁰ [USDOT Announces \\$59 Million in Grant Awards to Improve Safety at Highway-Railway Crossings in Four States | FHWA](#)

³¹ [About Port Infrastructure Development Grants | MARAD \(dot.gov\)](#)

³² [Railroad Crossing Elimination Grant Program Fact Sheet | FRA \(dot.gov\)](#)

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The Federal-State Partnership for Intercity Passenger Rail Grant Program

The Federal-State Partnership for Intercity Passenger Rail Grants program provides funding for intercity passenger transportation projects located on the Northeast Corridor as well as for projects not located on the Northeast Corridor and was significantly revised in Section 22307 of the IIJA. Changes involved broadening project eligibility to include projects to expand or establish new intercity passenger rail services and fund pre-construction project planning, expanding eligible project locations to include the entire intercity passenger rail network, and directing USDOT to publish a project inventory for Northeast Corridor projects to support long-term planning. While there is only a single grant program, the funding is broken into two categories: Northeast Corridor, and non-Northeast Corridor Projects.³³

FRA Restoration and Enhancements Grant Program

The Restoration and Enhancements Grant Program provides operating assistance to initiate, restore, or enhance intercity passenger rail service utilizing the following two initiatives:³⁴

- **The Corridor Identification and Development Program** - will identify new intercity passenger rail corridors, develop the necessary service planning elements, and create a non-Northeast Corridor Project Pipeline for associated capital projects.
- **The Interstate Rail Compacts Grant Program** - will provide funding for interstate rail compacts' administrative costs and to conduct railroad systems planning, promotion of intercity passenger rail operations, and the preparation of grant applications.

Highway Safety Improvement Program

The Highway Safety Improvement Program (HSIP) program is a core federal-aid funding program with the goal of achieving a significant reduction in traffic fatalities and serious injuries on all public roads. Funding from this program can be set aside for the purpose of reducing the number of incidents at public highway-rail crossings through the elimination of hazards and/or the installation/upgrade of protective devices at crossings. The federal funding share for this program is 90 percent. Florida receives approximately \$80 million annually through this program. Only a minor fraction of this amount is going toward the state Highway-Rail Grade Crossing Safety Improvement Program. In 2009, a federal law was passed by the FRA mandating that the top 10 states with the most at-grade crossing collisions on average, produce a Highway-Railroad Grade Crossing State Action Plan (SAP). Now, the FAST Act requires that every state complete an SAP. Florida's most recent SAP is being reviewed by the FRA; It evaluates existing safety practices used at highway-railroad grade crossings, provides data analysis, strategies, and suggested improvement projects, and also provides plans to implement safety improvements in the short and long term.³⁵

Rail Rehabilitation and Improvement Financing

The Rail Rehabilitation and Improvement Financing (RRIF) program provides loans and credit assistance to both public and private sponsors of rail and intermodal projects. Eligible projects

³³ [Federal-State Partnership for Intercity Passenger Rail Grant Program Fact Sheet | FRA \(dot.gov\)](#)

³⁴ [Restoration and Enhancement Grant Program | FRA \(dot.gov\)](#)

³⁵ [State Highway-Rail Grade Crossing Action Plans | FRA \(dot.gov\)](#)

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include acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities. Direct loans can fund up to 100 percent of a capital project with repayment terms of up to 25 years and interest rates equal to the cost of borrowing to the government. A total of \$35 billion was authorized under SAFETEA-LU, the previous transportation funding act, for this program, of which \$7 billion was directed to short line and regional railroads. No additional authorizations were included in MAP-21. Eligible borrowers include railroads, state and local governments, government sponsored authorities, corporations, and joint ventures that include at least one railroad.³⁶

FTA Section 5307 (Urbanized Area Transit) Formula Funds

The IIJA continues, without change, the Urbanized Area Formula Funding program that makes federal resources available to urbanized areas and governors for transit capital and operating assistance in urbanized areas and for transportation-related planning. Eligible activities include capital investments in new and existing fixed guideway systems, including rolling stock, overhaul, and rebuilding of vehicles, track, signals, communications, and computer hardware and software.³⁷

FTA Section 5309 Capital Investment Grant Program Funds

The IIJA continues the discretionary Fixed Guideway Capital Investment Grants (CIG) program, which funds fixed guideway investments including new and expanded rapid rail, commuter rail, light rail, streetcars, bus rapid transit, and ferries, as well as corridor-based bus rapid transit investments that emulate the features of rail. There are three categories of eligible projects under the CIG program: New Starts, Small Starts, and Core Capacity.³⁸ The IIJA revised eligibility parameters for:

- Small Starts - capital cost of < \$400 million and a CIG request of < \$150 million
- New Starts - capital cost of > \$400 million or that are seeking > \$150 million from CIG
- Core Capacity to projects at capacity today or that will be in 10 years

All Station Accessibility Program

The BIL establishes a new All Stations Accessibility Program (ASAP) to provide federal competitive grants to assist eligible entities in financing capital projects to upgrade the accessibility of legacy rail fixed guideway public transportation systems for people with disabilities, including those who use wheelchairs, by increasing the number of existing stations or facilities for passenger use that meet or exceed the new construction standards of Title II of the Americans with Disabilities Act of 1990 (42 U.S.C. 12131 et seq.).³⁹

Section 2005b Pilot Program for Transit Oriented Development Planning

The IIJA continues the competitive Transit Oriented Development (TOD) planning program that provides funding for efforts associated with an eligible transit project for which the project sponsor will seek funding through FTA's Capital Investment Grants Program. Grants are

³⁶ [Railroad Rehabilitation and Improvement Financing \(RRIF\) Program Fact Sheet | FRA \(dot.gov\)](#)

³⁷ [Fact Sheet: Urbanized Area Formula Grants Program | FTA \(dot.gov\)](#)

³⁸ [Fact Sheet: Capital Investment Grants Program | FTA \(dot.gov\)](#)

³⁹ [Fact Sheet: All Stations Accessibility Program | FTA \(dot.gov\)](#)

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available to assist in financing comprehensive or site-specific planning associated with eligible projects that seek to facilitate multimodal connectivity and accessibility.⁴⁰

FTA Section 5337 (State of Good Repair Grant Programs)

The State of Good Repair (SGR) Grant Program provides capital assistance for maintenance, replacement, and rehabilitation projects of high-intensity fixed guideway and bus systems to help transit agencies maintain assets in a state of good repair. Additionally, SGR grants are eligible for developing and implementing Transit Asset Management plans.

The new competitive grant program under the SGR Grants Program provides state and local government authorities an annual \$300 million for competitive rail vehicle replacement, specifically to replace rail rolling stock that is past its useful life.⁴¹

Amtrak Annual Grant Program

When Congress created Amtrak in 1971, it provided funds to Amtrak through a number of funding mechanisms. In 2003, Congress created the directed grant program as it exists today, including FRA involvement and oversight. From FY17 to FY19, Amtrak Annual Grant appropriations totaled about \$1.79 billion per year. The IIJA significantly increased Amtrak Annual Grant funding (see Section 22101). The IIJA also provides supplemental funding for the Northeast Corridor and National Network.

Amtrak IIJA Supplemental Authorizations

The supplemental authorized amounts for Amtrak in the IIJA for FY22-FY26, for specific project and program types on the Northeast Corridor and National Network (IIJA Division J, Title VIII). This is the first time Amtrak has received an advance appropriation that allows them to build a multi-year project schedule.

Table 2-23 | Review of Rail Related IIJA Programs

● Discretionary ○ Formula ● Tax Credit/Loan

| Program | Implementing Agency | Project Types | Non-Federal Share | Funding |
|--|--|--|-------------------|---|
| Consolidated Rail Infrastructure and Safety Improvement Grant Program (CRISI) | Federal Railroad Administration | Improve safety, efficiency, and reliability of intercity, passenger, and freight rail | 20% | \$5 billion for FY22-FY26 |
| National Infrastructure Project Assistance Program (MEGA) | Office of Multimodal Freight and Infrastructure Policy | Bridges, highway freight projects, port projects, freight rail projects, public transit, passenger rail, grade separations | 20% | \$5 billion for FY22-FY26, potential for up to \$15 billion through annual appropriations |

⁴⁰ Fact Sheet: Pilot Program for Transit-Oriented Development Planning | FTA ([dot.gov](https://www.fta.dot.gov))

⁴¹ Fact Sheet: State of Good Repair and Rail Vehicle Replacement Program | FTA ([dot.gov](https://www.fta.dot.gov))

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| Program | Implementing Agency | Project Types | Non-Federal Share | Funding |
|---|---|---|-------------------|--|
| Nationally Significant Multimodal Freight and Highway Projects Program (INFRA) | USDOT through relevant modal administration | Freight intermodal (including public ports) or freight rail projects that provide a public benefit, railway-highway grade separation or elimination, and intercity passenger rail | 20% | \$14 billion for FY22-FY26 |
| Promoting Reliant Operations for Transformative, Efficient, and Cost-Saving Transportation (PROTECT) Program | Federal Highway Administration | Grants for resilience improvements to protect surface transportation assets by making them more resilient and protecting communities through resilience strategies that allow for the continued operation or rapid recovery of Transportation systems | 20% | \$1.4 billion available over five years. The FY 2022 Consolidated Appropriations Act provided an additional \$250 million to this program. |
| Commuter Rail Authority Safety Improvement Program (CARSI) | Federal Highway Administration | Separate or protect grades at crossings; rebuild existing crossing structures; relocate highways; eliminate hazards | 10% | \$1.2 billion for FY22-FY26 |
| Rebuilding American Infrastructure with Sustainability and Equity (RAISE) Grants | USDOT through relevant modal administration | Modernize transportation; improve affordability; increase safety; strengthen supply chains | 20% | \$15 billion for FY22-FY26 |
| Port Infrastructure Development Program (PIDP) | U.S. Maritime Administration | Port and intermodal improvement projects to improve the safety, efficiency, or reliability of the movement of goods through ports and intermodal connections to ports | 20% | \$2.25 billion over five years — \$450 million per year |
| Railroad Crossing Elimination Program | Federal Railroad Administration | Grade separation or track closure; enhanced safety measures | 20% | \$2.5 billion for FY22-FY26 |
| Federal – State Partnership for Intercity Passenger Rail | Federal Railroad Administration | Improve service reliability; expand or create new service and stations | 20% | \$7.5 billion for FY22-FY26 |
| Restoration and Enhancement Grant Program | Federal Railroad Administration | Improve frequency; new on-board services; expand, create, or restore service | 20% - 60% | \$250 million for FY22-FY26 |
| Corridor Identification and Development (CID) Program | Federal Railroad Administration | Identify new intercity passenger rail corridors, develop the necessary service planning elements, and create a non-Northeast Corridor Project Pipeline for associated capital projects | 20% | Funding through Federal-State Partnership for Intercity Rail Grants |
| Interstate Rail Compacts Grant Program | Federal Railroad Administration | Conduct railroad systems planning, promotion of intercity passenger rail operations, and the preparation of grant applications | N/A | NOFO not yet announced |

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| Program | Implementing Agency | Project Types | Non-Federal Share | Funding |
|---|---------------------------------|---|-------------------|--|
| Highway Safety Improvement Program (HSIP) | Federal Highway Administration | Elimination of hazards and installation/upgrade of protective devices at crossings | 10% | Florida receives approximately \$80 million annually through this program |
| Rail Rehabilitation and Improvement Financing (RRIF) Program | Federal Railroad Administration | Acquisition, development, improvement, or rehabilitation of intermodal or rail equipment and facilities | 0% - 99% | Up to \$35.0 billion to finance development of railroad infrastructure. Not less than \$7.0 billion is reserved for projects benefiting freight railroads other than Class I |
| FTA Section 5307 | Federal Transit Administration | Capital investments in new and existing fixed guideway systems, including rolling stock, overhaul, and rebuilding of vehicles, track, signals, communications, and computer hardware and software | 20% | \$294.5 million for FY22-FY23 |
| FTA Section 5309 | Federal Transit Administration | Three categories of eligible projects under the CIG program: New Starts, Small Starts, and Core Capacity | 20% | \$3.82 billion in FY 22 |
| All Station Accessibility Program | Federal Transit Administration | Capital projects to upgrade the accessibility of legacy rail fixed guideway public transportation systems for persons with disabilities | N/A | \$1.75 billion over five years — \$350 million per year |
| Section 2005b Pilot Program | Federal Transit Administration | Assistance in financing comprehensive or site-specific planning associated with eligible projects that seek to facilitate multimodal connectivity and accessibility | N/A | \$5 million per year through 2026 |
| FTA Section 5337 | Federal Transit Administration | Capital assistance for maintenance, replacement, and rehabilitation projects of high-intensity fixed guideway and bus systems to help transit agencies maintain assets in a state of good repair | N/A | \$300 million annually |
| Competitive Grants for Rail Vehicle Replacement Program | Federal Transit Administration | Assist in the funding of capital projects to replace rail rolling stock | 20% | \$600 million for FY22-23 |
| Amtrak Annual Grant Program | Federal Railroad Administration | Capital improvement projects and annual maintenance activities; debt service payments; operating expenses on the National Network | N/A | \$19.22 billion/year for FY22-FY26 |
| Amtrak BIL Supplemental Authorization | Federal Railroad Administration | Projects on the Northeast Corridor (NEC) or National Network | N/A | \$22 billion/year for FY22-FY26 |

Federal Surface Transportation Programs with Selected Rail Applications

In addition to the above programs, a number of additional programs, although primarily intended for highway or maritime use, are eligible for rail projects at the discretion of states and with the approval of the administering federal agency. These programs are described in the following sections. A summary is provided in Table 2-24.

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National Highway System Program

This program can be utilized to improve designated highway intermodal connectors between the National Highway System (NHS) and intermodal facilities, such as truck-rail transfer facilities. The federal share of NHS funding is 80 percent.^{42 43}

National Highway Freight Program

The FAST Act places major emphasis on freight improvements to be supported by the Highway Trust Fund by creating a new National Highway Freight Program (NHFP) at an average of \$1.2 billion per year and distributed to the states by formula. NHFP funds are eligible to be used on certain non-highway projects, such as costs associated with rail and intermodal connectors and rail-highway separation projects. In addition, the new Nationally Significant Freight and Highway Projects discretionary program provides federal financial assistance for projects of national or regional significance. Eligible freight projects include rail and intermodal facilities, highway-rail separation projects, and highway-rail grade crossing projects. With the passage of the IIJA, the amount the state may use on freight intermodal or freight rail projects increased to 30 percent vs 10 percent under the FAST Act, subject to certain restrictions.⁴⁴

Congestion Mitigation and Air Quality Improvement Program

This program funds transportation projects and programs that improve air quality by reducing transportation-related emissions in non-attainment and maintenance areas for ozone, carbon monoxide, and particulate matter. Examples of Congestion Mitigation and Air Quality (CMAQ)-funded rail projects include the construction of intermodal facilities, rail track rehabilitation, diesel engine retrofits and idle-reduction projects in rail yards, and new rail sidings.⁴⁵

CMAQ funds are disbursed to and within a state based on levels of pollution within an area, with the state or the region utilizing the funds to implement projects that reduce congestion or improve air quality. Projects must be included in MPO transportation plans and transportation improvement programs (TIPs) or the current state transportation improvement program (STIP) in areas without an MPO. The federal matching share for these funds is 80 percent.⁴⁶

Surface Transportation Block Grant Program

The Fixing America's Surface Transportation Act of 2016 (the FAST Act) converts the long-standing Surface Transportation Program into the Surface Transportation Block Grant (STBG) Program acknowledging that this program has the most flexible eligibilities among all federal-aid highway programs and aligning the program's name with how it has been historically administered by FHWA. [FAST Act § 1109(a)]. The STBG promotes flexibility in state and local transportation decisions and provides flexible funding to best address state and local

⁴² [National Highway System - Planning - FHWA \(dot.gov\)](#)

⁴³ [Federal Share - FAST Act Fact Sheets - FHWA | Federal Highway Administration \(dot.gov\)](#)

⁴⁴ [Infrastructure Investment and Jobs Act - National Highway Freight Program \(NHFP\) Fact Sheet | Federal Highway Administration \(dot.gov\)](#)

⁴⁵ [Federal Programs Directory: Congestion Mitigation and Air Quality \(CMAQ\) Improvement Program | US Department of Transportation](#)

⁴⁶ [Federal Share - FAST Act Fact Sheets - FHWA | Federal Highway Administration \(dot.gov\)](#)

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transportation needs. The STBG Program is a general grant program available for improvements on any federal-aid highway, bridge, or transit capital project.

Eligible rail improvements include lengthening or increasing vertical clearance of bridges, highway-rail grade crossing closures, and improving intermodal connectors. Project funding decisions are made by states with approval from the FHWA. As under MAP-21, the FAST Act directs FHWA to apportion funding as a lump sum for each state then divide that total among apportioned programs. Each state's STBG apportionment is calculated based on a percentage specified by law.⁴⁷

Transportation Infrastructure Finance and Innovation Act

The Transportation Infrastructure Finance and Innovation Act (TIFIA) program provides credit assistance to large-scale projects (over \$50 million or one-third of a state's annual federal-aid funds) of regional or national significance that might otherwise be delayed or not constructed because of risk, complexity, or cost. A wide variety of intermodal and rail infrastructure projects are eligible and can include passenger rail vehicles and facilities, freight transfer facilities, transit-oriented development, and intermodal connectors. Eligible recipients for TIFIA funds include state and local governments, state infrastructure banks, transit agencies, railroad companies, special authorities or districts, and private entities. The interest rate for TIFIA loans is the U.S. Treasury rate, and the debt must be repaid within 35 years.⁴⁸

Table 2-24 | Review of Federal Surface Transportation Programs with Selected Rail Applications



Discretionary



Formula



Tax Credit/Loan

| Program | Implementing Agency | Project Types | Non-Federal Share | Funding |
|---|--------------------------------|--|-------------------|---------------------------|
| National Highway System Program | Federal Highway Administration | Improve designated highway intermodal connectors between the National Highway System (NHS) and intermodal facilities, such as truck-rail transfer facilities | 20% | \$28.439 billion in FY 22 |
| National Highway Freight Program | Federal Highway Administration | Rail and intermodal facilities, highway-rail separation projects, and highway-rail grade crossing projects | 70% | \$23 million in FY 22 |
| Congestion Mitigation and Air Quality (CMAQ) Improvement Program | Federal Highway Administration | Reduce congestion or improve air quality | 20% | \$2.536 Billion in FY 22 |
| Surface Transportation Block Grant (STBG) Program | Federal Highway Administration | Any Federal-Aid highway, bridge, or transit capital project | N/A | \$13.835 billion in FY 22 |

⁴⁷ STBG - Federal-aid Programs - Federal-aid Programs and Special Funding - Federal Highway Administration ([dot.gov](https://www.fhwa.dot.gov))

⁴⁸ TIFIA Credit Program Overview | Build America ([transportation.gov](https://www.transportation.gov))

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| | | | | |
|--|-----------------------------------|--|-----|---|
| Transportation Infrastructure Finance and Innovation Act (TIFIA) | U.S. Department of Transportation | Large-scale, surface transportation projects - highway, transit, railroad, intermodal freight, and port access | N/A | \$300 million in FY 2020 under the FAST Act |
|--|-----------------------------------|--|-----|---|

Other Federal Programs Available for Rail-Related Funding

In addition to transportation programs available under the Transportation Authorization bill, other programs are administered by federal agencies for which rail-related capital projects are eligible. These programs are described in the following sections. A summary is provided in Table 2-25.

U.S. Department of Commerce Economic Development Administration

The U.S. Department of Commerce provides Economic Development Administration (EDA) grants for projects in economically distressed industrial sites that promote job creation. Eligible projects must be located within EDA-designated redevelopment areas or economic development centers. Eligible rail projects include railroad spurs and sidings. EDA also provides disaster recovery grants. Grant assistance is available for up to 50 percent of the project, although EDA could provide up to 80 percent for projects in severely depressed areas.⁴⁹

U.S. Department of Agriculture Programs

The U.S. Department of Agriculture (USDA) Community Facility Program and Rural Development Program provide grant or loan funding mechanisms to fund construction, enlargement, extension, or improvement of community facilities providing essential services in rural areas and towns. Grant assistance is available for up to 80 percent of the project cost. Eligible rail-related community facilities include transportation infrastructure for industrial parks and municipal docks.⁵⁰

The 45G Short Line Railroad Tax Credit

Originally enacted in 2004, the Railroad Track Maintenance Tax Credit, also known as the Section 45G Tax Credit, was a federal income tax credit for track maintenance performed by short lines and regional railroads (Class II and III railroads) in the U.S. Tax Code Section 45G leveraged private sector investment in rail infrastructure by providing a tax credit of 50 cents for every dollar spent on qualified track maintenance expenditures or other qualifying railroad infrastructure projects. The credit was capped based on a mileage-based formula; the maximum amount allowable was \$3,500 per mile of track.

The credit created a strong incentive for short line and regional railroads to invest private sector dollars on freight railroad track rehabilitation before expiring at the end of 2016. Legislation pending before Congress as of early 2017, the Building Rail Access for Customers, and the Economy Act (H.R.721) was intended to make the tax credit permanent. The tax credit was made permanent in December of 2020 as part of the Consolidated Appropriations Act.⁵¹

⁴⁹ [U.S. Economic Development Administration \(eda.gov\)](https://www.eda.gov/)




⁵⁰ [Community Facilities Programs | Rural Development \(usda.gov\)](https://www.usda.gov/programs/community-facilities-programs-rural-development)

⁵¹ [45G Tax Credit - ASLRRRA](#)

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Per Section 45G, qualifying railroad structure improvements include: grading; other right-of-way expenditures; tunnels and subways; bridges, trestles, and culverts; elevated structures; ties; rails and other track material; ballast; fences, snowsheds, and signs; signals and interlockers; public improvements and construction. Qualified railroad track maintenance expenditures are expenditures for maintaining the aforementioned qualifying railroad structures owned by short line and regional railroads.⁵²

Table 2-25 | Review of Other Federal Programs Available for Rail-Related Funding

 Discretionary
  Formula
  Tax Credit/Loan

| Program | Implementing Agency | Project Types | Non-Federal Share | Funding |
|--|--|---|-------------------|--|
| U.S. Department of Commerce Economic Development Administration | Economic Development Administration (EDA) | Railroad spurs, sidings, and disaster-recovery | 50% | |
| U.S. Department of Agriculture Programs | USDA | Transportation infrastructure for industrial parks and municipal docks | 80% | |
| The 45G Short Line Railroad Tax Credit | Internal Revenue Service | Railroad structure improvements | N/A | Tax credit of 50 cents for every dollar spent, credit capped based on a mileage-based formula |
| Local and Regional Project Assistance | Office of Multimodal Freight and Infrastructure Policy | Public transit, bridges, highways and roads, culvert replacement, surface transportation at airports, ports, intercity passenger rail, freight rail | 20% | \$5 billion provided in advance appropriations with the potential for up to \$15 billion through annual appropriations. FY 2022 consolidated appropriations provided an additional \$775 million for the program |

2.1.8 Ongoing Program and Projects to Improve Safety and Security

Rail safety is a priority for railroads and state departments of transportation as it has an impact not only on the public, but also on the efficiency of railroad operations. Rail security has seen increased attention due to the potential for terrorists using the rail mode to disrupt transportation or to harm large numbers of citizens as well as the increased transportation of some hazardous materials by rail, such as the movement of crude oil. This section describes rail safety and security efforts in Florida.

Rail Safety Programs in Florida

Rail safety requirements are provided through a combination of federal and state laws. Most safety-related rules and regulations fall under the jurisdiction of the FRA, as outlined in the Rail Safety Act of 1970 and other legislation, such as the most recent Rail Safety Improvement Act of 2008. FRA's rail safety regulations can generally be found in Title 49 Code of Federal Regulations Parts 200-299.

⁵² 26 USC 45G: Railroad track maintenance credit ([house.gov](https://www.house.gov))

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FDOT has an extensive State Rail Safety Inspection Program. The Freight & Rail Office Inspection Program Manager is the primary liaison with FRA on safety inspection issues, coordinates with FRA inspectors who cover areas throughout the southeastern U.S., coordinates the training of new inspectors, prepares performance data on inspection activities, and oversees the inspection of citizen complaints on rail issues.

All state rail inspectors are certified by FRA and perform safety inspections on railroads within their respective disciplines to determine compliance with federal regulations, investigate complaints, respond to rail-related technical requests from districts and the central office, evaluate contract compliance, and assist in federal agencies in investigating rail incidents. Safety-related disciplines overseen by state inspectors include track; operating practices; signal and train control; hazardous materials; and motive power and equipment.

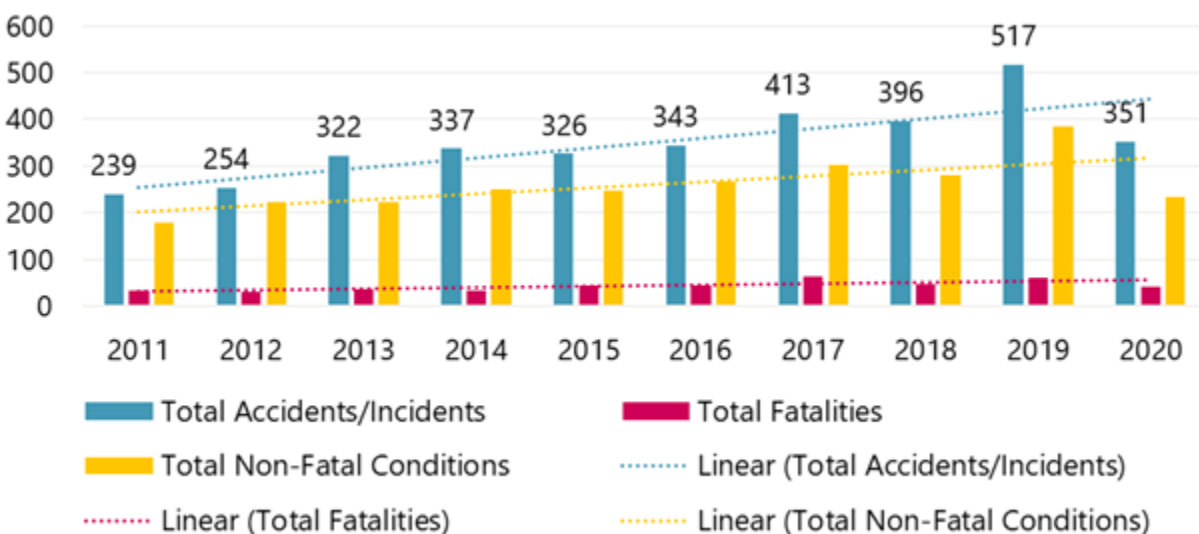
In addition, the Florida Highway-Railroad Grade Crossing State Action Plan provides an overview of the leading safety concerns in the state regarding highway-railroad grade crossings. This plan is a powerful tool used to comprehensively assess and address rail safety through data, analysis, and measurable goals.

Florida Rail Incident Statistics

The following is a statistical review of rail safety in Florida over the past decade. It addresses the rail incident trends and provides details as to the type of rail incidents, those affected, and the cause. More information discussing rail incident data can be found in Florida's Highway-Railroad Grade Crossing State Action Plan.

Figure 2-22 displays the total rail incidents in Florida over a 10-year timeframe. Florida experienced an upward trend of rail incidents totaling 3,498 occurrences between 2011 and 2020. This period saw a total of 2,592 injuries and 433 deaths.

Figure 2-22 | Total Rail Incidents in Florida, 2011-2020



Source: FRA Office of Safety Analysis, 2021

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Highway-Rail At-Grade Crossing Safety in Florida

As of December 2021, there was a total of 5,324 at-grade highway-rail crossings in Florida. Of these, 4,025 at-grade crossings are on public roads with the remaining considered private crossings. Some form of warning device should exist at every public at-grade crossing, and all crossings on state highways are designed to meet the Manual on Uniform Traffic Control Devices (MUTCD) criteria. According to Florida Administrative Code 14-57.013, all new public highway grade crossings shall have as a minimum roadside flashing lights and gates on all roadway approaches to the crossing. Other protection devices range from crossbucks with a stop or yield sign (considered a “passive” crossing) to full four quadrant gates with curbs, depending on the need. Need is based on type of cross street, traffic counts, and railroad type and speed. There are 2,952 at-grade crossings with active warning devices and 1,846 at-grade crossings with passive warning devices. Public at-grade crossings in the state have various levels of grade crossing warning devices. Table 2-26 shows the number of warning device types for the public at-grade crossings in the state. 82 percent of public at-grade crossings have active warning devices (flashing lights, flashing lights and gates, cantilever flashing lights, or cantilever flashing lights and gates), while less than 6 percent of private at-grade crossings have active warning devices. Most private at-grade crossings in the state have passive devices (crossbucks, stop signs, or yield signs).

Table 2-26 | Public At-Grade Crossing Warning Devices

| Warning Device Types | No. of Crossings |
|------------------------------------|------------------|
| Flashing Lights | 182 |
| Flashing Lights & Gates | 1,566 |
| Cantilever Flashing Lights | 86 |
| Cantilever Flashing Lights & Gates | 1,038 |
| Crossbucks | 421 |
| Stop Signs | 188 |
| None | 30 |

Source: FRA Office of Safety Analysis, 2021

Table 2-27 shows that this accounts for over 800 open crossings on state-owned and maintained roadways and over 3,200 on city or county roadways. Privately maintained crossings make up approximately 26 percent of open crossings in Florida.

Table 2-27 | Crossings by Maintaining Agency

| Maintained By | No. of Crossings |
|---------------|------------------|
| State | 805 |
| County | 1705 |
| City | 1558 |
| Private | 1409 |
| Unassigned | 17 |
| Total | 5,494 |

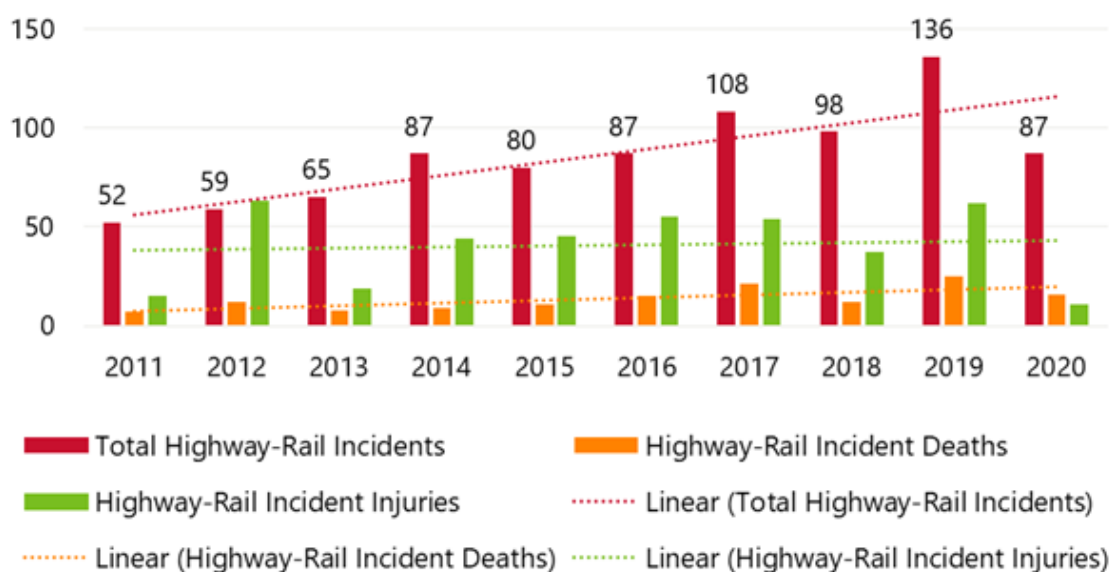
Source: FRA Office of Safety Analysis, 2021

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At-Grade Crossing Incidents in Florida

Figure 2-23 below shows the number of highway-rail grade crossing incidents, fatalities, and injuries which have occurred at all at-grade crossings over the past decade. During that decade, 859 of the 3,498 incidents occurred at a highway-railroad grade crossing. The figure shows that the number of incidents occurring at crossings has also been trending upward.

Figure 2-23 | Total Highway-Rail Grade Crossing Incidents in Florida, 2011-2020



Source: FRA Office of Safety Analysis, 2021

2.1.9 Socioeconomic and Livability Impacts

Rail services in Florida generate economic and various other impacts throughout the State.

Economic Impacts Summary

Economic impacts of rail activity in Florida stem from firms providing rail transportation services, industries that use such services to trade goods, and passenger users (visitors to Florida via rail). Of these activities, freight-users generate the most significant impacts.

Key statewide impacts calculated using the IMPLAN[®] model and other related (freight movement and visitors) data include employment (measured in terms of full-time-equivalent job-years), personal income (wages and salaries)⁵³, and economic value added (or net economic activity or Gross State Product). The combined (passenger and freight) rail economic impact by variable in Florida was estimated to be the following (also see Table 2-28, and Table 2-29):

⁵³ All the monetary measures are shown in 2018-dollar terms.

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- *Employment* – Economic impacts of rail extend beyond the 5,560 directly employed in the provision of rail transportation in 2018. When the user impact activities and multiplier effects⁵⁴ are included, rail-related employment impact in Florida totaled almost 1.1 million job-years, which represented about 9.0% of the statewide employment.
- *Income* – \$56.8 billion earned by the total of impacted employees in 2018 represented about 9.2% of Florida's total labor income.
- *Economic Value-Added* – The economic value-added impact, at \$83.8 billion, associated with the rail services and users represented about 8.1% of the state's 2018 Gross State Product.

The total rail impacts consisted of both freight and passenger rail impacts, as summarized below.

Key impacts of *freight* rail in 2018 include:

- *Employment* – Economic impact of freight rail (provision and users) were estimated at around 1,082,570 total (direct and multiplier effects) job-years.
- *Income* – A total of \$56.3 billion was earned by the total impacted employees.
- *Economic Value-Added* – A total economic value-added impact of \$83.0 billion statewide was linked to the freight rail provision and users.

Key impacts of *passenger* rail in 2018 include:

- *Employment* – Economic impact of passenger rail (provision and users) were estimated at around 8,570 total (direct and multiplier effects) job-years.
- *Income* – A total of \$484 million was earned by the total impacted employees.
- *Economic Value-Added* – A total economic value-added impact of \$755 million statewide was associated with the passenger rail services and users.

More detail on the economic impacts and how they were calculated appears in Appendix E and F.

⁵⁴ Multiplier effects include indirect and induced impacts.

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Table 2-28 | Freight and Passenger Rail Impacts, 2018

| Measure and Type | Freight | Passenger | Total |
|---|------------------|----------------|------------------|
| OUTPUT * | | | |
| Direct | \$111,976 | \$715 | \$112,691 |
| Indirect | \$51,667 | \$359 | \$52,026 |
| Induced | \$42,620 | \$366 | \$42,986 |
| Total | \$206,263 | \$1,440 | \$207,703 |
| EMPLOYMENT ** | | | |
| Direct | 505,820 | 3,970 | 509,790 |
| Indirect | 291,100 | 2,140 | 293,240 |
| Induced | 285,650 | 2,460 | 288,110 |
| Total | 1,082,570 | 8,570 | 1,091,140 |
| LABOR INCOME * | | | |
| Direct | \$26,550 | \$253 | \$26,803 |
| Indirect | \$16,647 | \$118 | \$16,766 |
| Induced | \$13,101 | \$112 | \$13,213 |
| Total | \$56,298 | \$484 | \$56,782 |
| TOTAL VALUE ADDED * | | | |
| Direct | \$32,442 | \$356 | \$32,798 |
| Indirect | \$26,455 | \$191 | \$26,646 |
| Induced | \$24,126 | \$207 | \$24,333 |
| Total | \$83,023 | \$755 | \$83,778 |
| TAX ON PRODUCTION AND IMPORTS * | | | |
| Direct | \$1,175 | \$29 | \$1,205 |
| Indirect | \$2,408 | \$23 | \$2,431 |
| Induced | \$2,422 | \$21 | \$2,443 |
| Total | \$6,005 | \$73 | \$6,079 |
| <i>* Monetary values are in millions of 2018 dollars.</i> <i>** Employment rounded to the nearest 10 job-years.</i> <i>Source: Based on IMPLAN® and WAYBILL data.</i> | | | |

Table 2-29 | Freight and Passenger Relativity of Impacts by Measure, 2018

| Economic Measure | State Value | Total Freight and Passenger Rail Impacts | |
|--|-------------|--|------------|
| | | Value | Percentage |
| Employment | 12,123,215 | 1,091,140 | 9.0% |
| Labor Income* | \$620,246 | \$56,782 | 9.2% |
| Total Value Added* | \$1,032,345 | \$83,778 | 8.1% |
| Output* | \$1,851,489 | \$207,703 | 11.2% |
| Tax on Production and Imports* | \$84,008 | \$6,079 | 7.2% |
| <i>* In millions of dollars.</i> <i>Source: IMPLAN® data.</i> | | | |

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Impacts associated with rail transportation extend beyond just the economy of Florida itself; also included are other social-environmental impacts related to rail effects on livability in Florida.

Energy Use and Costs

Railroad transportation, at 472 ton-miles per gallon, is over three times more energy efficient than trucking (151 ton-miles per gallon), as shown in Table 2-30. Barge/waterborne transport (at 675 ton-miles per gallon) is, however, about 30 percent more fuel efficient than rail. This translates to a fuel cost of \$0.0074 per ton-mile for rail transportation, which is substantially less than trucking (\$0.0232/ton-mile), given an average cost of diesel at \$3.50/gallon.

Table 2-30 | Freight Fuel Efficiency and Cost per Ton-Mile by Mode

| Mode | Ton-Miles per Gallon | Cost (\$/Ton-Mile)** |
|------------------------------|----------------------|----------------------|
| Railroads | 472 | \$0.0074 |
| Barge (Inland Towing) | 675 | \$0.0052 |
| Truck Freight | 151 | \$0.0232 |

Source: MarTREC, 2021*

* A Modal Comparison of Domestic Freight Transportation Effects on The General Public. December 2021. Ton-miles per Gallon as of 2019.

** Assumed average cost of \$3.50 per gallon of Diesel fuel.

Air Quality

Table 2-31 compares average emissions and related damages for greenhouse gases for rail, truck, and waterborne modes of transportation. Freight transport by rail and water vessels generate significantly less negative air quality impacts and costs than freight movements via truck. At \$3,426 per million ton-miles, NO_x emission costs from rail transportation are less than half as costly as truck (\$7,065). PM emissions from rail transportation (at \$3,865/million ton-miles, and 27 percent of trucking's \$14,586), and CO₂ emissions from rail (at \$1,079/million ton-miles, and only 15 percent of trucking's \$7,035) are even less costly to the environment.

Table 2-31 | Environmental Costs per Million Ton-Miles by Mode

| Mode | Rail | Truck | Waterborne |
|---------------------------------------|-----------|-----------|------------|
| Ton-Miles (Million per Annum)* | 1,615,000 | 2,033,921 | 244,100 |
| NO_x Emissions | | | |
| Tons per Million Ton-Miles** | 0.2182 | 0.4500 | 0.1526 |
| Damages per Ton*** | \$15,700 | \$15,700 | \$15,700 |
| Damages per Million Ton-Miles | \$3,426 | \$7,065 | \$2,396 |
| PM Emissions | | | |
| Tons per Million Ton-Miles** | 0.0053 | 0.0200 | 0.0037 |
| Damages per Ton*** | \$729,300 | \$729,300 | \$729,300 |
| Damages per Million Ton-Miles | \$3,865 | \$14,586 | \$2,698 |

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| Mode | Rail | Truck | Waterborne |
|--|---------|---------|------------|
| CO₂ Emissions | | | |
| Tons per Million Ton-Miles** | 21.57 | 140.70 | 15.08 |
| Damages per Ton*** | \$50 | \$50 | \$50 |
| Damages per Million Ton-Miles | \$1,079 | \$7,035 | \$754 |
| <i>Sources: Based on MarTREC, 2021; and U.S. DOT, 2021.</i> <i>* Ton-Miles are in 2019 railroad and water, and in 2018 for truck, nationwide.</i> <i>** In 2019.</i> <i>*** In 2019 constant dollars, based on unit costs in the US DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs, February 2021.</i> | | | |

Safety Impacts

Freight rail transportation is relatively safe. However, there can be external costs associated with freight transportation including accidents. Table 2-32 offers a summary comparison of fatalities and injuries per ton-mile, indicating the greater cost savings benefit associated with rail and waterborne transportation relative to trucking. Specifically, the cost of fatalities per ton-mile carried by rail is \$0.0052, which is only 22 percent that of trucking (at \$0.0242/ton-mile), while the cost of injuries per ton-mile by rail is only 8 percent compared to trucking (at \$0.0109/ton-mile).

Table 2-32 | Incidents and Costs per Ton-Mile by Mode

| Mode | Rail | Truck | Waterborne |
|---|----------|----------|------------|
| Fatalities (Annual average)* | 803 | 4,498 | 5 |
| Injuries (Annual Average)* | 7,741 | 111,722 | 13 |
| Ton-Miles (Billions per year)* | 1,675.3 | 2,025.0 | 269.7 |
| Fatalities per (Billion) Ton-Mile | 0.4793 | 2.2212 | 0.0185 |
| Injuries per (Billion) Ton-Mile | 4.6207 | 55.1714 | 0.0482 |
| Cost of Fatalities per Ton-Mile** | \$0.0052 | \$0.0242 | \$0.0002 |
| Cost of Injuries per Ton-Mile** | \$0.0009 | \$0.0109 | \$0.0000 |
| <i>Sources: Based on MarTREC, 2021; and U.S. DOT, 2021.</i> <i>* 19-year average for railroad and water (2001-2019), and 18-year average for highway (2001-2018), nationwide.</i> <i>** In 2019 constant dollars, based on unit costs in the US DOT Benefit-Cost Analysis Guidance for Discretionary Grant Programs, February 2021.</i> | | | |

Livable and Sustainable Communities

Livability is the combination of various attributes which define how attractive a given place is to live. The transportation system's ability to move people and goods safely and efficiently, without negatively impacting the environment in which it operates, plays a crucial role in how people view and rate the livability and sustainability of an area. The following is a summary discussion of the developments in passenger and freight rail that can have positive effects on local community livability and sustainability.

Air Pollution

Although more environmentally friendly than the truck mode (as shown in Table 2-31), train air pollution can impact the quality of life of in communities along rail lines. The rail industry has made significant progress in making diesel locomotives more efficient and burning cleaner

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diesel fuels. Railroads are also implementing “genset” locomotives primarily used for switching operations and assembling trains in rail yards. The genset locomotive has two or three smaller engine-generators that are programmed to start up only when needed. Other technology improvements in both the fuels and locomotive technology are also aimed at mitigating the worst effects of train-related air pollution.

Noise

Noise pollution can also be seen as a nuisance in some rail corridors. A leading means of combating train horn noise is the implementation of railroad quiet zones. These are zones involving one or more highway-rail crossing where the locomotive engineer is not obligated to blow their horn approaching the crossing(s).⁵⁵ The procedures whereby a community can implement a quiet zone are specified by the Federal Railroad Administration.⁵⁶ Typically, improvements need to be made at the crossings to enhance safety at the crossings. Improvements can include: four-quadrant gates, medians on approaches along with gates at the crossings, street closures, etc. Once the improvement designs are reviewed by the FRA and implemented, a quiet zone can be established.

Freight Rail and Sustainable Communities

Freight rail also plays a role in the livability and sustainability of a community. The ability to efficiently transport goods and create access to economic centers is critical to the overall success of a region's economy. The efficiency of freight rail is especially important in rural areas where agriculture, local industries, and communities all rely on freight shipping. A revitalized rail line can lower shipping costs, provide pricing power for local industries and agriculture, provide redundancy in the transportation network, and shield local industries and agriculture from potential increases in the cost of fossil fuel.

Roadway Congestion Benefits

Roadway congestion relief from fewer cars and trucks due to shifts onto rail means improved free-flow traffic and fewer congestion-related issues. Consequently, societal benefits transpire in terms of travel time, vehicle operation, accidents, and emissions-related cost savings. Additionally, rail can serve as a viable diversifier and relief valve for various integrated supply chains. Connections between rail and truck typically occur at ports or intermodal facilities, and the local roadway system must function as the link to first and last mile.

Roadway Maintenance Savings

Rail services provide an alternative surface transportation mode to roadway transportation, and in doing so, shifts both goods and people away from the pavement and onto the tracks. In shifting people and goods onto rail, the reduced demands on the roadway network result in reductions in necessary roadway maintenance to maintain pavement condition.

⁵⁵ Federal regulations specify that trains horns be sounded while trains approach and enter highway-rail crossings.

⁵⁶ <https://railroads.dot.gov/elibrary/how-create-quiet-zone>
<https://railroads.dot.gov/sites/fra.dot.gov/files/2020-05/QuietZoneBrochure.pdf>

2.2 Trends and Forecasts

The purpose of this section is to describe trends that could affect rail needs for the state of Florida in the future. Both passenger and freight rail can be impacted by trends in factors such as demographic and economic growth, transportation system congestion, and the future land use outlook, as presented in the subsections below.

2.2.1 Demographic and Economic Growth Factors

Population

Population is a key factor that drives traffic movements, including those on the state's passenger and freight rail system.

Historical

As presented in Table 2-33 below, based on the Census Bureau data, Florida's statewide total population increased by over 8.8 million during the 1990 to 2021 timeframe, reaching the estimated total of 21.8 million in 2021. This equated to a total percentage growth of 68 percent or a compound average annual growth rate (CAAGR) of 1.7 percent, which was almost double the U.S. national average pace of 0.9 percent per annum over the same period since 1990.

Table 2-33 | Historical Florida Population Growth

| Area | Population | | 1990-2021 | |
|---------------|-------------|-------------|-------------------|--------------------|
| | 1990 | 2021 | Absolute Increase | Annual Growth Rate |
| Florida | 12,938,071 | 21,781,128 | 8,843,057 | 1.7% |
| United States | 248,790,925 | 331,893,745 | 83,102,820 | 0.9% |

Source: Census, 2022

Based on the Census Bureau data, the median age for the state of Florida is 42.4 years, which is substantially above the national median age of 38.5 years (in 2019). Among the state's population over 25 years of age, 88.2 percent graduated from high school and 29.9 percent received a bachelor's degree or higher; with the former statistic higher than the national average of 88.0 percent, and the latter below the national average of 32.1 percent. Florida's working age population (aged 18 to 65 years) is 59.4 percent of the overall population, which is somewhat below the country's 61.2 percent of the population; this shows that the state skews older than the rest of the country (as of 2021). In fact, 20.9 percent of the population in Florida is older than the age of 65, whereas only 16.5 percent of the U.S. population is older than 65. The state is popular with many retirees, which is reflected in the Census data. Moreover, Florida's 2021 population density of 406 residents per square mile is more than four times greater than the country as a whole (at 94), which would be supportive of passenger rail development and ridership volumes in the state.

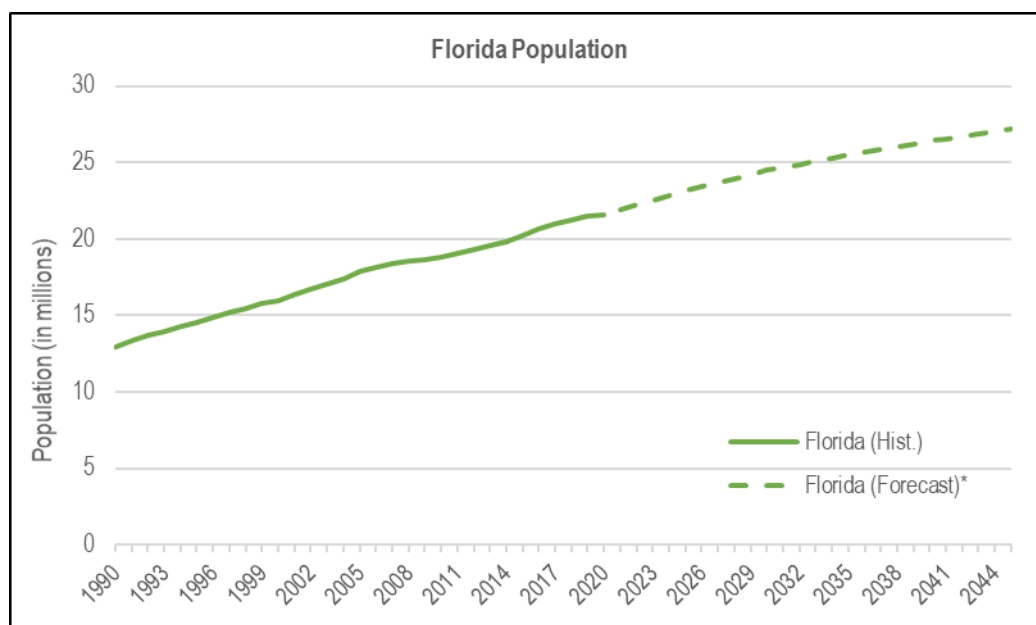
Forecasted

According to the Bureau of Economic and Business Research (2021) projection, Florida's population is expected to rise to 27.2 million in 2045 (see Figure 2-24). This is an increase of 5.3 million relative to the 2021 estimate, and equivalent to the CAAGR of 0.9 percent (or an

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absolute increase of 24 percent). Although a deceleration from the historical growth rate of 1.7 percent, this rate is still projected to exceed the corresponding national average of 0.6 percent (Census, 2021). The projected population net growth of millions of new residents indicates that the state will continue to attract more people and grow faster than the national average.

Figure 2-24 | Forecasted Florida Population Trend



Sources: Census, 2022, and BEBR, 2022. * Forecast annual values interpolated based on BEBR's five-year interval projections.

Employment

Employment trends are typically more volatile than population, and more closely resemble overall economic cycles. Employment is a key driver behind production and commuting flows, some of which end up on the state's passenger and freight rail system.

Historical

As presented in Table 2-34, the state's total employment expanded by 5.4 million (equivalent to 80 percent in total, or 2.0 percent CAAGR) between 1990 and 2020 (latest year of available data), reaching the level of 12.1 million in 2020, according to the BEA. Compared to the nationwide employment growth (38 percent in total, or 1.1 percent CAAGR), the state's employment grew robustly, at almost double the national pace over the past 30 years.

Table 2-34 | Historical Employment Growth

| Area | Employment | | 1990-2020 | |
|---------------|-------------|-------------|-------------------|--------------------|
| | 1990 | 2020 | Absolute Increase | Annual Growth Rate |
| Florida | 6,740,289 | 12,148,603 | 5,408,314 | 2.0% |
| United States | 138,330,900 | 190,776,800 | 52,445,900 | 1.1% |

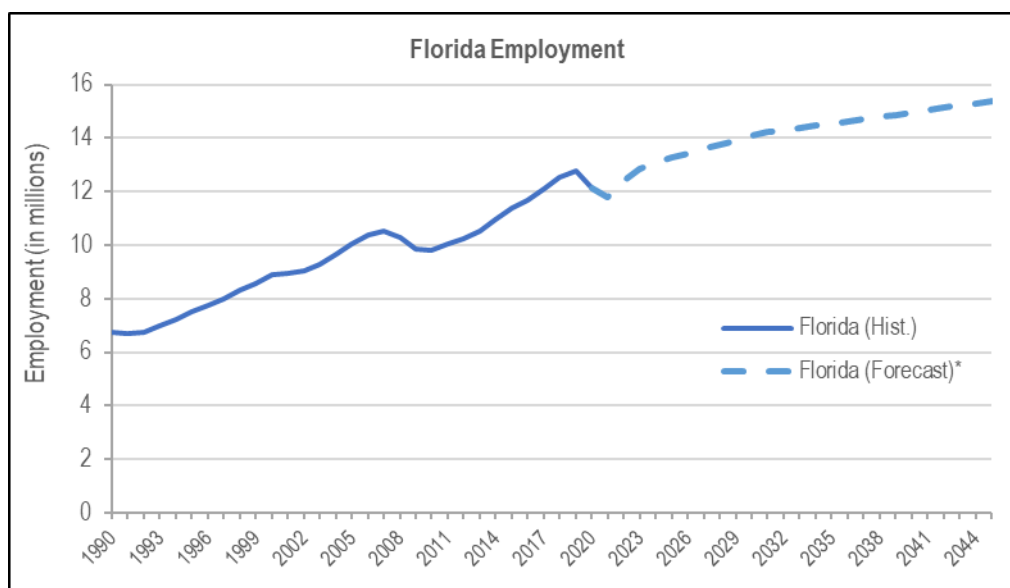
Source: BEA, 2021.

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Forecasted

The future statewide employment growth trend, based on growth rate projections by the EDR, is displayed in Figure 2-25. Growth in employment is forecast to decelerate to about 1.0 percent through 2045, when total employment in the state is expected to approach 15.4 million.

Figure 2-25 | Forecasted Employment Trend



Source: BEA, 2021; and EDR, 2021. * Past 2031, the projected volumes are based on half the average growth rate of the preceding five years forecasted by EDR.

Personal Income

Per capita income is an important indicator of the residents' average purchasing power, which influences travel choices, including affordability of using rail and purchasing goods shipped on the state's rail system.

Historical

Historical nominal (inflation-unadjusted) personal per-capita income is presented in Table 2-35. Statewide, annual per capita personal income stood at \$55,700 in 2020. This is a result of growth by almost \$40,000, which equated to average annual growth of 3.5 percent (or total percentage increase of 182 percent) during the 1990-2020 timeframe. The 30-year growth in nominal income in the state was somewhat below the corresponding average growth rate of 3.8 percent per annum (or doubling in total) experienced in the U.S.

Table 2-35 | Historical Per-Capita Personal Annual Income Growth

| Area | Per-Capita Personal Income | | 1990-2020 | |
|---------------|----------------------------|----------|-------------------|--------------------|
| | 1990 | 2020 | Absolute Increase | Annual Growth Rate |
| Florida | \$19,763 | \$55,675 | 35,912 | 3.5% |
| United States | \$19,621 | \$59,510 | 39,889 | 3.8% |

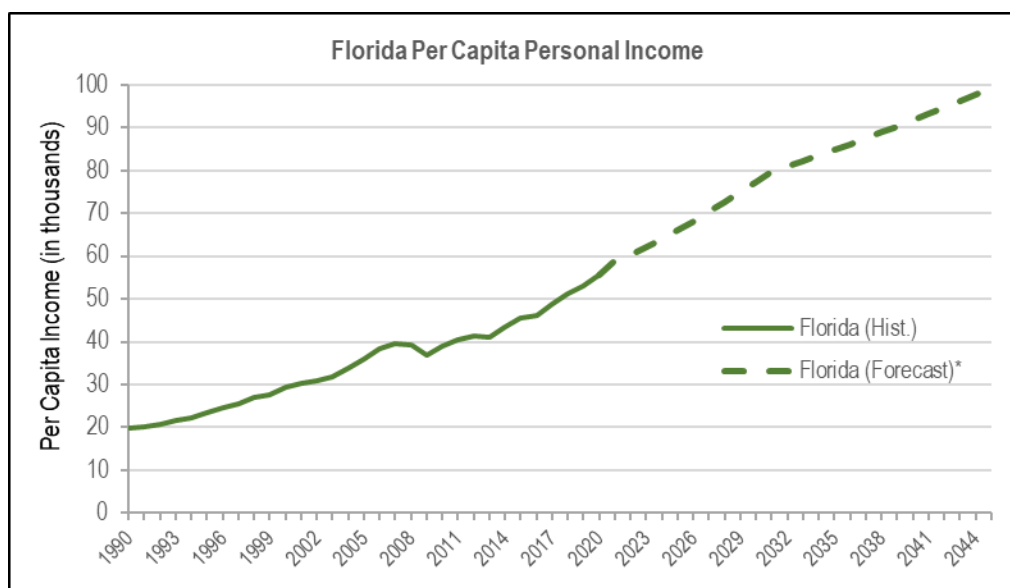
Source: BEA, 2021.

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Forecasted

Looking ahead, Florida's per capita personal income is projected to rise by 2.3 percent on average through 2045 and reach about \$99,300 (in nominal dollar terms) in that year (see Figure 2-26).

Figure 2-26 | Forecasted Per-Capital Personal Annual Income Trend



Sources: BEA, 2021; and EDR, 2021. * Past 2031, the projected volumes are based on half the average growth rate of the preceding five years forecasted by EDR.

Gross Domestic Product

Another fundamental economic indicator that has bearing on rail movements is gross state product (GSP, or gross domestic product – GDP – at a national level).

Historical

Historical real (inflation-adjusted) GSP is shown in Table 2-36. During the 1997 (earliest year of available data for this series) through 2020 period, Florida's total real GRP grew at a robust rate of 2.3 percent annually (or 69 percent in total), reaching the level of \$944 billion in 2020. This annual growth rate was 0.3 percentage points faster than the corresponding nationwide average. However, it should be noted that the GSP of the Rail Transportation industry actually declined by \$445 million, equivalent to a negative decrease of 2.3 percent annually (or 42 percent in total) between 1997 and 2020. The GSP of the Rail Transportation industry at the national level also fell, but by a smaller degree, i.e., -0.7 percent annually or -14 percent in total between 1997 and 2020.

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Table 2-36 | Historical Real Gross Domestic Product Growth

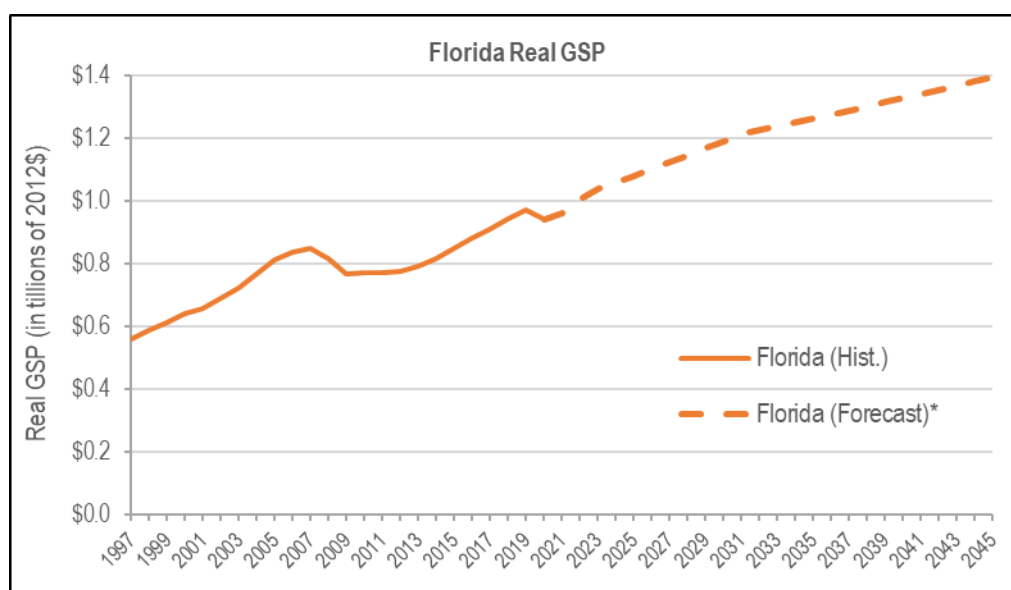
| Area/Metric | Real Gross Domestic Product (in millions of 2012\$) | | 1997-2020 | |
|--------------------------|--|------------------|-------------------|--------------------|
| | 1997 | 2020 | Absolute Increase | Annual Growth Rate |
| Florida (Total) | \$559,805 | \$944,001 | \$384,196 | 2.3% |
| FL Rail Transportation | \$1,058 | \$613 | -\$445 | -2.3% |
| United States (Total) | \$11,529,157 | \$18,384,687 | \$6,855,530 | 2.0% |
| U.S. Rail Transportation | \$35,371 | \$30,278 | -\$5,093 | -0.7% |

Source: BEA, 2021.

Forecasted

After decelerating to 1.6 percent annually on average over the last quarter century, the state's total real GSP is projected to increase to almost \$1.4 billion in year 2045 (see Figure 2-27).

Figure 2-27 | Forecasted Real Gross State Product Trend



Sources: BEA, 2021; and EDR, 2021. * Past 2031, the projected volumes are based on half the average growth rate of the preceding five years forecasted by EDR.

Tourism

Visitors are an important addition to the needs that the state's rail system can serve beyond the residential population, and Florida has been fortunate to thrive on visitors.

Historical

As presented in Table 2-37, visitors to Florida grew by over 50 million over the 1990 level of 41 million to reach 91.5 million in 2021. This is equivalent to an annual growth rate of 2.6 percent (or 123 percent in total) between 1990 and 2021. It should, however, be pointed out that Florida experienced the annual record of visitors to the state in year 2019 with 131.4 million, but then

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felt the negative impact of the COVID-19 pandemic on tourism, which is still showing in the lower than trendline 2021 registered volume.

Table 2-37 | Historical Florida Visitors Growth

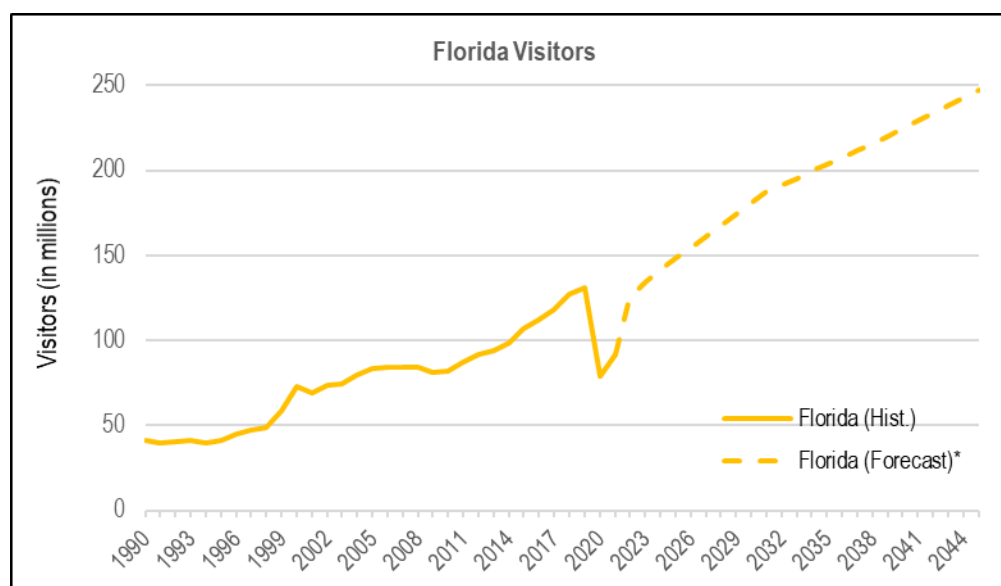
| Area | Visitors | | 1990-2021 | |
|---------|----------|------|-------------------|--------------------|
| | 1990 | 2021 | Absolute Increase | Annual Growth Rate |
| Florida | 41.0 | 91.5 | 50.5 | 2.6% |

Sources: BEBR, 2017; and Visit Florida, 2022.

Forecasted

Going forward, a rebound in visits to Florida is expected, with continuing average annual growth of 4.2 percent, yielding the forecasted total of almost 248 million in year 2045 (see Figure 2-28), which should bode very well for future rail demand.

Figure 2-28 | Forecasted Florida Visitors Trend



Sources: Visit Florida, 2022; BEBR, 2017, and EDR, 2022. * Past 2031, the projected volumes are based on half the average growth rate of the preceding five years forecasted by EDR.

Industrial Outlook by Sector

Rail movement of commodities totaled 80.1 million tons statewide across all the directions in 2018. This total is projected to rise by 15.6 million tons (or 19.44 percent in total, or 0.66% on average/year) to 95.6 million tons in 2045 (see Table 2-38). The industrial sector with the largest future volume is forecasted to be Manufacturing, followed by Mining, and Agriculture, Forestry, Fishing and Fishing. Directionally, the largest share is projected by Inbound (at 41 percent), followed by Intrastate (37 percent), then Outbound (at 17 percent), and Through movements at only 5 percent. More details are shown in the following section and Appendix E.

Table 2-38 | Forecasted Rail Tonnage by Industrial Sector, 2045

| Industrial Sector | Outbound | Inbound | Intrastate | Through | Total |
|-------------------|----------|---------|------------|---------|-------|
|-------------------|----------|---------|------------|---------|-------|

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| | | | | | |
|--|-------------------|-------------------|-------------------|------------------|-------------------|
| Agriculture, Forestry, Fishing and Hunting | 27,178 | 1,741,481 | 686,922 | 11,903 | 2,467,484 |
| Mining | 158,774 | 12,531,534 | 20,896,418 | 90,198 | 33,676,924 |
| Manufacturing | 12,479,537 | 19,376,255 | 7,384,884 | 4,393,386 | 43,634,062 |
| Other Miscellaneous Sectors | 3,400,579 | 5,704,049 | 6,342,631 | 389,276 | 15,836,535 |
| Total | 16,066,068 | 39,353,319 | 35,310,856 | 4,884,763 | 95,615,005 |

Source: TRANSEARCH® data, 2022

2.2.2 Freight Demand and Growth by Type of Service

Current Freight Rail

The following presents year 2018 movements by direction (outbound, inbound, intrastate, and through) and terms (tons, units [carloads and trailers/containers], and values), derived from the STB WAYBILL database (Table 2-39). Each subsection summarizes rail movements by direction and term and identifies the top commodity movements. Data is mostly presented graphically for ease of visually identifying important commodity movements and related observations, with the supporting tabulated comprehensive data located in the Appendices. Florida rail movements in 2018 totaled 80.1 million tons, valued at \$115.97 billion (equating to \$1,449/ton), and transported in 1.78 million units (i.e., rail cars). Inbound rail is the dominant movement: 45.88 percent of total tonnage, 47 percent of units, and 55.09 percent of value. Given that Florida is a peninsula, it is not surprising that through movements constitute a marginal proportion of the total Florida-related rail movements.

Table 2-39 | Rail Freight by Direction, 2018

| Direction | Tons | | Units | | Value (in millions) | | Value/Ton |
|---------------------|-------------------|-------------|------------------|-------------|---------------------|-------------|--------------|
| | Amount | Percent | Amount | Percent | Amount | Percent | |
| Outbound | 11,666,092 | 16.15% | 401,408 | 23.31% | 21,446 | 19.64% | 1,838 |
| Inbound | 36,731,369 | 45.88% | 838,281 | 47.00% | 63,889 | 55.09% | 1,739 |
| Through | 3,096,962 | 3.87% | 70,556 | 3.96% | 5,805 | 5.01% | 1874 |
| Intrastate | 20,761,564 | 25.93% | 411,676 | 23.08% | 18,068 | 15.58% | 870 |
| Intra-county | 7,796,858 | 9.74% | 61,584 | 3.45% | 6,759 | 5.83% | 867 |
| Totals | 80,052,845 | 100% | 1,783,506 | 100% | 115,968 | 100% | 1,449 |

The largest single commodity moved by rail in Florida is nonmetallic minerals, comprising 35.4 percent of total tonnage. The largest outbound movement is chemical and allied products being repositioned outside Florida, comprising 31.0 percent of total outbound tonnage. The largest inbound commodity is non-metallic minerals, comprising 24 percent of total inbound tonnage. Intrastate movements are dominated by nonmetallic minerals, comprising 67 percent of total intrastate tonnage. Through traffic consists mostly of chemicals and allied products, comprising 43 percent of total tonnage. This traffic moves on the CSX Transportation main line through the northern tier of the state.

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Freight Traffic Forecast

Freight rail tonnage forecasts for year 2045 were made using directional commodity growth estimates from the IHS Global Insight 2018 TRANSEARCH® database, applied to the 2018 STB CARLOAD WAYBILL tonnage movements. The TRANSEARCH® database provides year 2018 actual volumes and year 2045 forecast volumes by direction and Standard Transportation Commodity Code (STCC) commodity. Compound annual growth rates (CAGR) between 2018 and 2045 by two-digit STCC directional movements were applied to the more recent year 2018 movements from the WAYBILL. Table 2-40 provides the directional commodity forecasts for 2045 derived from the growth rates. Additional detail on the freight rail tonnage forecast is provided in Appendix E.

Summary Forecasts – In applying the TRANSEARCH®-derived growth rates to the STB WAYBILL tonnage movements, Florida freight rail movements would increase from 80.05 million tons in 2018 to 95.6 million, an average annual increase of 0.66 percent, as seen in Table 2-35. Both outbound and through movements are forecast to appreciate at a comparable rate to the total movements, at 1.19 percent and 1.7 percent, respectively. The directional composition would not change appreciably.

Table 2-40 | Rail Tonnage Forecast Summary, 2018-2045

| Direction | 2018 | | 2045 | | Change | |
|-----------------------|------------|---------|------------|---------|--------|-------|
| | Amount | Percent | Amount | Percent | Total | CAGR |
| Outbound | 11,666,092 | 16.15% | 16,066,068 | 18.36% | 37.72% | 1.19% |
| Inbound | 36,731,369 | 45.88% | 39,353,319 | 41.16% | 7.14% | 0.26% |
| Through | 3,096,962 | 3.87% | 4,884,763 | 5.11% | 57.73% | 1.70% |
| Intrastate | 20,761,564 | 25.93% | 27,195,213 | 28.44% | 30.99% | 1.00% |
| Intra-County | 7,796,858 | 9.74% | 8,115,643 | 8.49% | 4.09% | 0.15% |
| All Directions | 80,052,845 | 100% | 95,615,006 | 100% | 19.44% | 0.66% |

2.2.3 Passenger Demand and Growth

Vehicle Miles Traveled

Over the 15-year period between 1999 and 2014, daily vehicle miles traveled (DVMT) on all roads in the state grew at more than one and a half times the state's population growth. The growth in annual transit trips greatly exceeded VMT growth during the period between 2004 – 2014 but has declined since then, consistent with national trends and the COVID-19 pandemic (Table 2-41).

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Table 2-41 | Vehicle Miles Traveled, Population and Transit Ridership Trends

| Year | Period | '000 VMT (State Roads) | VMT (All Roads) | Population | Transit Riders (M) |
|------------------|----------|------------------------------|--------------------|------------|-----------------------|
| 2004 | | 292,398.0 | 537,494,319 | 17,516,500 | 227.0 |
| 2009 | | 286,888.0 | 538,088,986 | 18,750,200 | 248.8 |
| 2014 | | 296,263.1 | 550,795,629 | 19,507,500 | 277.5 |
| 2019 | | 343,628.1 | 618,417,504 | 21,208,589 | 217.6 |
| 2020 | | 312,780.2 | 568,782,402 | 21,538,187 | 156.0 |
| Growth 2004-2019 | 15 years | 17.52% | 15.06% | 21.08% | -4.14% |
| Growth 2009-2019 | 10 years | 19.78% | 14.93% | 13.11% | -12.54% |
| Growth 2014-2019 | 5 years | 15.99% | 12.28% | 8.72% | -21.59% |
| Growth 2019-2020 | 1 year | -8.98% | -8.03% | 1.55% | -28.31% |

Ridership Projections of Existing Systems

Amtrak

The basis for forecasting Amtrak riders at Florida stations was to project population growth in Florida within a 30-mile radius of stations (Table 2-42). Station ridership changes were calculated based upon the growth rate of each county served by the station.

It is important to note that actual future ridership performance will be based not only on population growth but also by changes in income growth, changes in the number of train frequencies and train schedule times at the station (day versus night), changes in Amtrak fares versus other modes, changes in tourism venues (e.g., expansion of theme parks), and changes in the quality of Amtrak service (i.e., on-time performance).

Population around Florida's Amtrak stations shows growth overall, with the strongest growth at stations in and around Orlando.

Table 2-42 | Amtrak Ridership Projections

| Stations | 2019 | 2045 | Change 2019- 2045 |
|-----------------|---------|---------|----------------------|
| Deerfield Beach | 21,066 | 25,738 | 32.90% |
| DeLand | 20,453 | 27,156 | 36.87% |
| Delray Beach | 14,752 | 17,787 | 29.53% |
| Fort Lauderdale | 41,220 | 50,362 | 33.60% |
| Hollywood | 21,652 | 26,454 | 22.05% |
| Jacksonville | 63,973 | 85,468 | 20.62% |
| Kissimmee | 35,726 | 50,867 | 22.18% |
| Lakeland | 19,188 | 27,145 | 42.38% |
| Sanford | 236,000 | 314,000 | 36.87% |
| Miami | 62,766 | 76,604 | 22.18% |
| Okeechobee | 4,109 | 5,379 | 22.18% |

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| Stations | 2019 | 2045 | Change 2019-2045 |
|-----------------|---------|---------|------------------|
| Orlando | 127,200 | 174,000 | 32.77% |
| Palatka | 12,313 | 16,429 | 41.01% |
| Sebring | 14,083 | 19,902 | 41.32% |
| Tampa | 110,300 | 143,000 | 41.47% |
| West Palm Beach | 53,717 | 64,795 | 20.57% |
| Winter Park | 27,047 | 27,859 | 33.43% |
| Winter Haven | 19,757 | 37,020 | 41.47% |

SunRail and Tri-Rail

An official forecast of ridership from Tri-Rail and SunRail was not available for this plan.

Passenger Demand by City Pairs

FRA's Southeast Rail Plan, a multi-state network planning study for high-performance intercity passenger rail in the Southeast United States that was released in 2020, identified the top city pairs for intercity travel by all modes in the Southeast.⁵⁷ Table 2-43 summarizes existing mode share in some of the key city pairs for travel in Florida (both interstate and intra-state) evaluated in the Southeast Rail Plan. As the table shows, auto and air are the primary modes of travel.

Table 2-43 | Existing Mode Share in Major City Pairs for Intercity Travel Serving Florida, 2015

| City Pair | Auto | Air | Bus | Rail |
|-------------------------------|-------|-----|------|------|
| Orlando – Tampa | 98% | | 1.5% | <1% |
| Miami – Orlando | 83.5% | 10% | 5.5% | 1% |
| Jacksonville – Orlando | 94% | | 6% | <1% |
| Atlanta - Jacksonville | 24% | 72% | 4% | |
| Naples – Tampa | 100% | | | |

Source: FRA Southeast Rail Plan

FRA's Southeast Rail Plan noted that, among the top 15 city pairs for auto travel in the Southeast, seven served Florida: Orlando-Tampa (ranked No. 1), Miami-Orlando (No. 2), Miami-Tampa (No. 4), Atlanta-Miami (No. 8), Atlanta-Orlando (No. 11), Atlanta-Tampa (No. 13), and Jacksonville-Orlando (No. 14). Among these seven city pairs, the three that link Florida with Atlanta do not have an intercity passenger rail option. Although the overall modal share of passenger rail is small in Florida travel markets, given the limited volume of passenger rail service in operation at the time the study was conducted, FRA's Southeast Rail Plan also identified the top 15 city pairs made by rail passengers in the Southeast, which included four serving Florida: Miami-Tampa (ranked No. 4), Miami-Orlando (ranked No. 6), Lakeland-Miami (ranked No. 13), and Orlando-Washington (ranked No. 15).

⁵⁷ https://www.southeastcorridor-commission.org/_files/ugd/f32a1d_6e2bd26333cc4562b9edd8cf6e42e7ac.pdf

2.2.4 Fuel Cost Trends

Fuel costs are an important factor in the total cost of moving passengers and freight on rail.

Historical

As presented in Table 2-44 and Figure 2-29, retail gasoline prices have fluctuated and gone up substantially since 2004 (earliest year of available data) in Florida, increasing by over a dollar per gallon, or 2.6 percent per annum, or 55 percent in total. This increase is below those experienced nationwide (in nominal and percentage terms) for both gasoline and Diesel fuel. U.S. crude oil, on which retail prices depend, also increased substantially – by 3.0 percent annually on average or 64 percent in total over the 2004-2021 period.⁵⁸

Table 2-44 | Historical Fuel Cost Change

| Area/Metric | Fuel Price (\$/gallon)* | | 2004-2021 | |
|-------------------------|-------------------------|---------------|-------------------|--------------------|
| | 2004 | 2021 | Absolute Increase | Annual Growth Rate |
| Florida Gasoline | \$1.91 | \$2.96 | \$1.04 | 2.6% |
| U.S. Gasoline | \$1.90 | \$3.10 | \$1.21 | 2.9% |
| U.S. Diesel | \$1.81 | \$3.29 | \$1.48 | 3.6% |
| U.S. Crude Oil | \$41.51 | \$68.13 | \$26.62 | 3.0% |

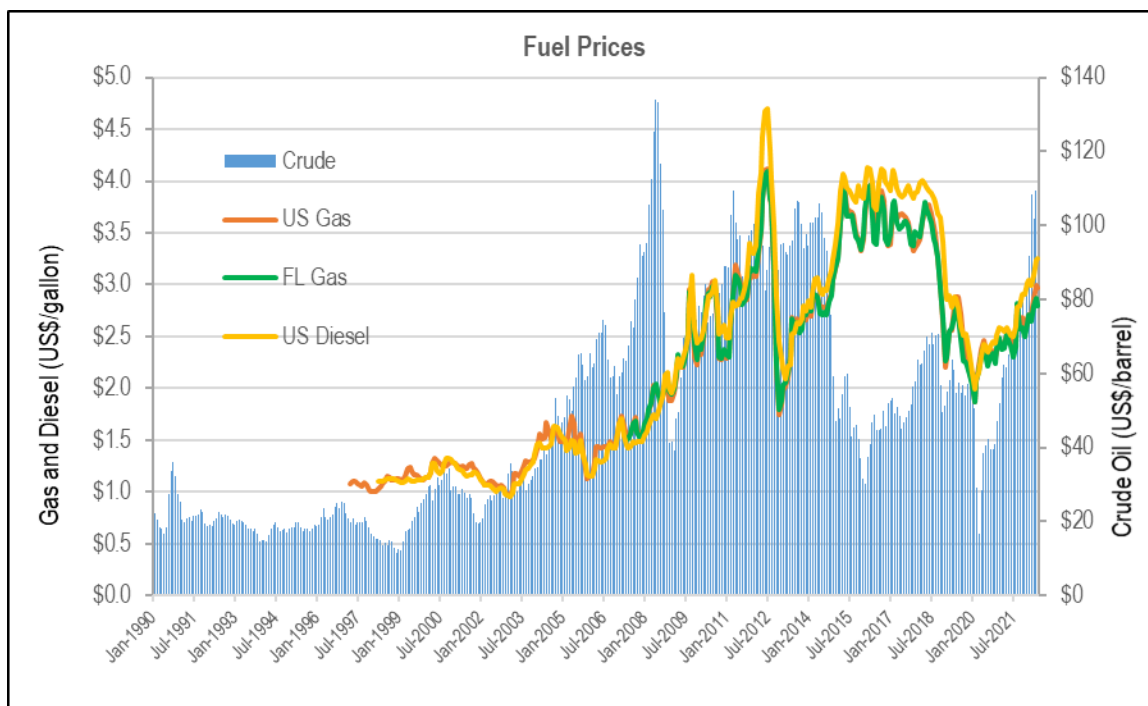
Source: EIA, 2022

* The prices are average annual in dollars per gallon, except for Crude Oil, which is in dollars per barrel. Gasoline prices are for all grades. Crude oil is for Cushing, West Texas Intermediate (WTI). 2004 is the earliest year (lowest common denominator) of available pricing data for all the four fuel categories.

⁵⁸ Note that fuel prices can be highly volatile in the short-term in response to various shocks, such as wars and pandemics. For instance, the Russian invasion of Ukraine, and the subsequent sanctions on Russian fuel exports have led to temporary spikes in prices, e.g., \$101.62 /barrel for crude oil, \$4.34/gallon for Florida gasoline, and \$4.67/gallon for U.S. gasoline in terms of average monthly levels in the first half of 2022. As the related shocks dissipate, fuel prices are expected to return closer to their historical trends.

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Figure 2-29 | Historical Fuel Price Trend



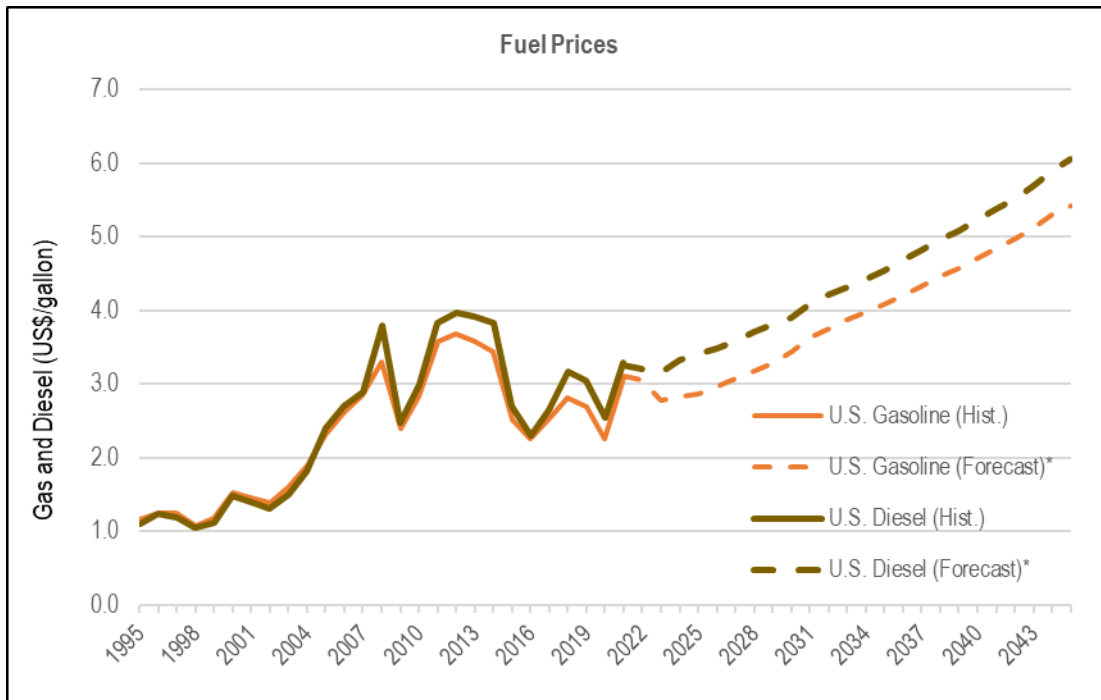
Source: EIA, 2022.

Forecasted

Fuel prices are expected to continue to increase through 2045. According to the latest projections by the EIA, U.S. gasoline (all grades) retail prices are forecast to reach \$5.4/gallon in 2045, which equates to a CAAGR of 2.3 percent in nominal/inflation-unadjusted terms. U.S. Diesel retail prices are projected to go up by 2.6 percent annually, on average, reaching \$6.1/gallon in 2045 (see Figure 2-30).⁵⁹

⁵⁹ It should be noted that the annual EIA projections were issued in early March, 2022, and do not account for full effects of the ongoing conflict in Ukraine, and sanctions on Russian commodity exports that have added to the fuel prices uncertainty at least in the short term. Fuel prices are challenging to accurately predict in any given month or year.

Figure 2-30 | Forecasted Fuel Prices Trend



Source: EIA, 2022

2.2.5 Rail Congestion Trends

Rail congestion can negatively impact rail service and hurt rail shippers. To assess the level of congestion on major Class I and II main lines, or main lines having the higher rail traffic volumes, a planning level evaluation would need to be conducted. No major capacity constraints are evident. A more detailed analysis of corridor impacts can be found in the Rail Corridor Identification and Assessment section.

2.2.6 Highway Congestion Trends

Highway congestion may be a factor diverting truck traffic to rail. Congestion on Florida highways is discussed through three metrics. These are:

- Vehicle hours of delay – the number of hours (thousands) per year occurring on Florida freeways during the peak period.
- Person hours of delay – the number of hours (in thousands) per year occurring on Florida freeways during the peak period; including delays experienced by drivers and passengers.
- Average travel speed – the average speed on Florida freeways during the peak hour and the peak period.

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Table 2-45 shows these metrics for the 11-year period from 2009 through 2019. While FDOT collects these metrics for the State Highway System (SHS), the Strategic Intermodal System Corridors, the SIS Connectors, and non-freeways, the focus here is on SHS freeways in the seven largest MPOs in the state, the assumption being these are the freeways that most commuters in the state commonly use for their commute trips.

The statistics for vehicle hours of delay saw an increase between 2012 and 2018. There has been a visible decrease in vehicle hours of delay from 2018 to 2019. This pattern is repeated in person hours of delay. The relationship of person hours of delay to vehicle hours of delay is constant, averaging 1.65 over the period.

Table 2-45 | Highway Congestion Trends

| Year | Vehicle Hours of Delay (000s) for Peak Period | Person Hours of Delay (000s) for Peak Period | Average Travel Speed Peak Hour/Period |
|------|---|--|---------------------------------------|
| 2009 | 40.7 | 68.1 | 56.0 |
| 2010 | 37.8 | 62.8 | 56.2 |
| 2011 | 38.5 | 64.5 | 55.7 |
| 2012 | 37.5 | 62.8 | 56.1 |
| 2013 | 39.5 | 65.7 | 55.7 |
| 2014 | 39.7 | 66.2 | 55.8 |
| 2015 | 42.6 | 71.1 | 54.7 |
| 2016 | 48.7 | 81.0 | 55.0 |
| 2017 | 52.0 | 86.6 | 54.8 |
| 2018 | 59.5 | 99.6 | 54.2 |
| 2019 | 52.7 | 88.0 | 52.8 |

*Source: The FDOT Source Book, 2020 and 2019

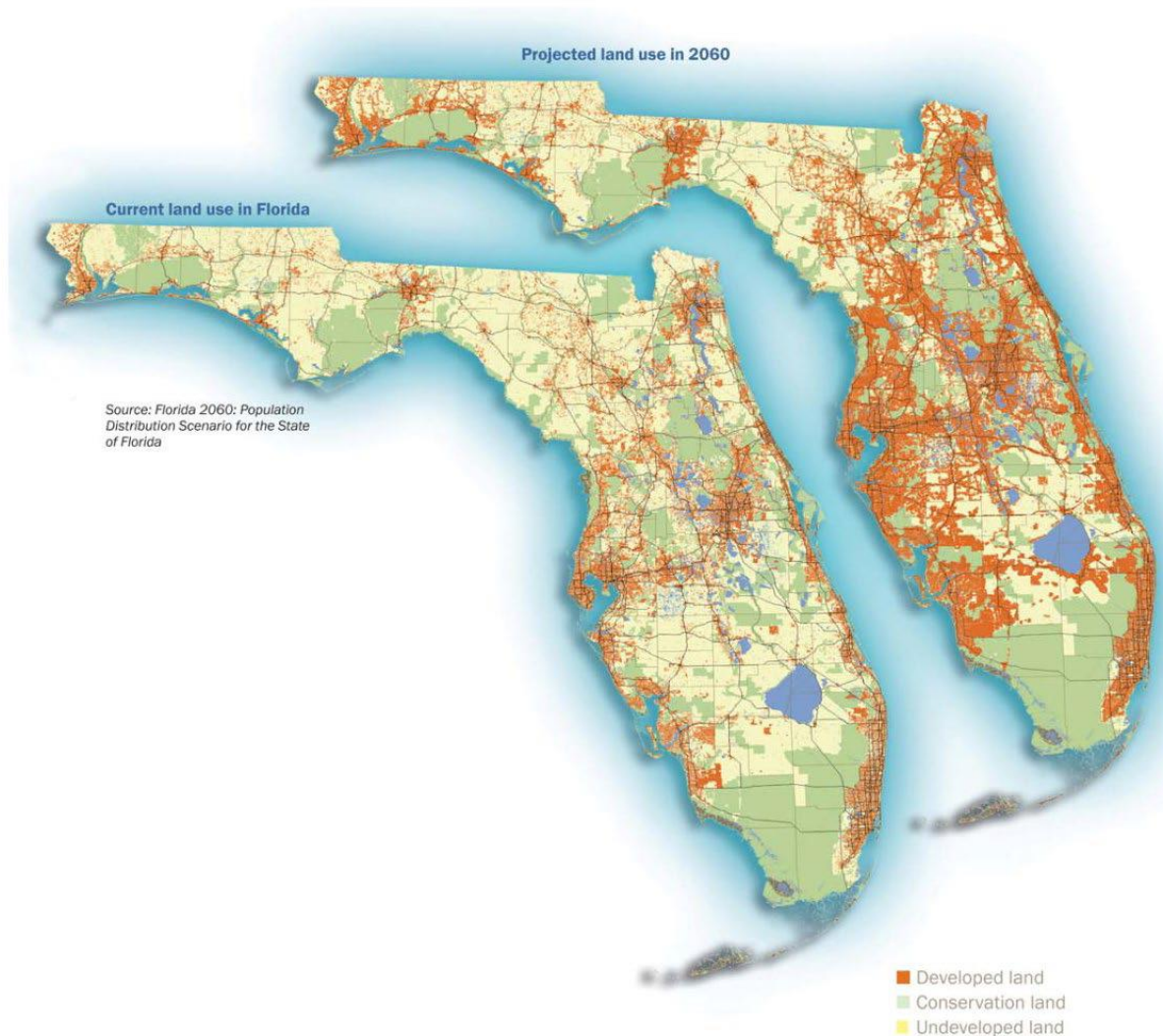
2.2.7 Land Use Trends

Land use patterns, particularly with respect to densely populated urban areas, can influence the strength of a passenger rail network, especially high-speed rail. Urbanization in Florida is concentrated along the east and west coasts, as well as along the I-4 corridor connecting the coasts in Central Florida. According to a recent FDOT report on the relationship between transportation and land use,⁶⁰ Florida and national trends point to a continuing expansion of the state's urbanized areas, and the nature of that expansion in turn points to growing future transportation needs. Figure 2-31 illustrates current land use in Florida as well as projected land use in 2060, based on a continuation of recent trends.

⁶⁰ Florida Transportation Trends and Conditions, Impact of Transportation, Transportation and Land Use, Florida Department of Transportation, June 2014.

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Figure 2-31 | Florida's Recent and Future Urbanization Patterns



Source: Florida Department of Transportation

2.3 Rail Service Opportunities, Needs, and Investments

Florida's population is growing, its land is rising in value, and industrial development is surging. As commercial and passenger vehicle traffic increase, more rail transportation is needed to move goods and people efficiently. Ultimately, rail transport decreases fuel use, air pollutants, highway congestion, infrastructure costs, and crashes. It also improves quality of life.

This section summarizes the key issues, gaps, improvement needs, and financial deficits facing Florida's rail system. It also identifies the opportunities to address those issues, gaps, needs, and deficits for freight, intercity passenger, and commuter rail.

2.3.1 Freight Rail Needs & Opportunities

Below are summarized needs and opportunities for the growth of freight rail in Florida.

Investments in Corridors

Florida's two Class I freight railroads have networks that span the entire eastern half of the United States, from the Atlantic Ocean to the Mississippi River. For marketing, investment, and business planning purposes, railroads have begun to brand their primary transportation lanes between key markets and regions as corridors. Class I freight railroads typically provide the capital required for investments in capacity and facilities that will improve service within these corridors and accommodate anticipated traffic growth. However, both CSX and NS have made additional investments in corridor improvements using public financial assistance, typically justified based on the public benefits generated by these investments. Public benefits can be derived from projects that reduce traffic congestion, greenhouse gas emissions, and highway repair costs by diverting truck shipments onto parallel rail lines, or by replacing long-haul, over-the-road truck moves with long-distance rail shipments and local truck trips for pickup and delivery.

CSX Corridors

Florida is the southern anchor for two of the four major corridors in the CSX network.

Interstate 95 (I-95) Corridor – The CSX I-95 Corridor connects Jacksonville, Savannah, Charleston, and many other cities throughout the Southeast with the heavily populated mid-Atlantic and northeastern cities of Baltimore, Philadelphia, and New York. CSX primarily transports food and consumer products, as well as metals and chemicals along this line. It is the leading rail corridor along the eastern seaboard south of the District of Columbia and provides access to major eastern ports.

Southeastern Corridor – The CSX Southeastern Corridor funnels traffic between CSX's western gateways at Chicago, St. Louis, and Memphis through the cities of Nashville, Birmingham, and Atlanta and markets in the Southeast along the eastern seaboard, including Jacksonville and Tampa. The Southeastern Corridor positions CSX to efficiently handle intermodal, automotive, and general merchandise traffic. The corridor also provides direct rail service between the coal reserves of the southern Illinois basin and the demand for coal in the Southeast.

Florida East Coast Railway Corridor

The FEC is a major regional railroad with a 351-mile network running north and south along Florida's East Coast (see Figure 2-32). It connects the ports and businesses in South Florida, through interchange at Jacksonville, with rail service via CSX and NS to reach other North American markets. In addition, FEC operates truck drayage services connecting the Atlanta market to its corridor in Jacksonville. Intermodal rail service is the primary business of the FEC, which has been investing in improvements to its intermodal terminal network in pursuit of diverting additional truck traffic to rail. The FEC has invested in intermodal container terminal facilities and supporting South Florida container ports, such as the Port of Miami, that are competing with other Atlantic Coast ports. The FEC corridor is also used by shippers with

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containers handled at the Port of Savannah via the FEC's "Savannah Relay" service connecting at Jacksonville.

Figure 2-32 | Florida East Coast Railway Corridor and Connections



Source: FEC Railway

Growth of Domestic Intermodal Shipments

The movement of freight by rail in truck trailers and containers and the development of new and expanded intermodal transfer facilities continues to grow and, in turn, influence how freight transportation is delivered. Intermodal shipments involve the use of two or modes to move from origin to destination, allowing for flexibility through the most-efficient/lowest-cost mode.

Rail intermodal shipments may be made with a truck trailer on a flatcar (TOFC) or a shipping container on a flatcar (COFC) stacked one or two high. Domestic intermodal transportation uses larger-sized containers than those used in ocean shipping, matched to standard U.S. highway trailers sized 53 feet long with dimensions that are taller and wider than the standard 40-foot-long international marine container. Both CSX and NS have domestic intermodal terminals in Jacksonville and partner with FEC to reach domestic intermodal markets in South Florida.

The Class I railroads continue to invest in projects to expand their intermodal transportation capabilities. The CSX Intermodal Logistics Center (ILC) in Winter Haven (Figure 2-33) began

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operations in 2014 and provides a centralized hub for transportation, logistics and distribution serving Orlando, Tampa, and other regional Florida markets. The 318-acre intermodal terminal has capacity to process up to 300,000 containers a year and is designed for scalable expansion as freight volumes continue to grow.⁶¹ Construction of additional intermodal facilities could help meet demand for multimodal transportation and address numerous transportation challenges in the state.

Figure 2-33 | CSX – Winter Haven ILC aerial view



Source: Winter Haven ILC

Port-Rail Improvements

With 15 seaports in Florida, investments in the construction/rehabilitation of rail connections between principal railroad lines and port properties are critical to maintaining multimodal connectivity and ensuring that ports are capable of handling increased freight traffic. The June 2016 expansion of the Panama Canal has enabled larger vessels from Asia to reach ports on the U.S. East Coast and Gulf Coast, increasing port competition, trade, cargo volumes, and shipping activities. Florida ports now capture additional ocean container trade from Asia and South America that previously bypassed Atlantic ports and traveled between U.S. West Coast ports and the Southeast by truck or rail. JAXPORT, Port Everglades, and PortMiami all

⁶¹ [CSX Celebrates Future of Intermodal Transportation at Central Florida ILC Grand Opening - CSX.com](https://www.csx.com/press-releases/central-florida-ilc-grand-opening)

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conducted projects to be better positioned to handle the increased capacity. The most common types of port-rail investments, which ensure efficient access and throughput, are:

- On-dock rail improvements to facilitate rail-ship intermodal container transfers at marine terminals
- Track capacity and rail access improvements to better connect port terminals with major Class I rail lines
- New or expanded intermodal container transfer facilities near port terminals to enable rail-truck transfers, including off-dock drays to and from ports

An opportunity for increasing capacity and efficiency is with intermodal hubs that serve as “inland” ports. With increasing congestion at ports due to supply chain disruptions, larger vessel sizes, and trucking labor issues, allowing intermodal containers to be shuttled between the ports and an area of the state with less highway congestion and lower land/operating costs is important. Inland ports increase flexibility with storage off port property in congested areas like PortMiami and diminish the need for truckers to drive long-haul distances.

Upgrades of Short Line Track and Structures

Railcars with a maximum gross weight of 286,000 pounds (the combined weight of the railcar plus the freight it carries) are the industry standard in freight rail transportation. Rail lines with the capability of handling 286,000-pound cars allow short lines to achieve operational efficiency, by hauling equal or greater amounts of freight with less equipment and fewer train moves. This, in turn, lowers transportation costs for rail shippers, maximizing the cost advantage of freight rail transportation and allowing shippers to competitively price their goods and products and sell to a wider range of distant markets. To safely and efficiently handle larger and heavier freight cars and provide timely truck competitive service, short lines may need to perform tie, rail, and bridge improvements or modernize aging infrastructure.

For Florida's shippers to remain competitive in the regional, domestic, and global marketplaces, they must have enhanced access to the Florida railroad network. Enhanced railroad access could be provided through the rehabilitation of existing railroad branch lines, development of improved or new industrial spurs, and optimization of existing access to transload facilities.

Alternative Fuels for Locomotive Propulsion

Railroads are already the most environmentally friendly mode of surface transportation for moving freight. On average, railroads are three to four times more fuel efficient than trucks on a ton-mile basis. Freight railroads account for just 0.5 percent of total U.S. greenhouse gas emissions, according to data from the U.S. Environmental Protection Agency, and just 1.9 percent of transportation-related greenhouse gas emissions.⁶² Even today primarily running on diesel, U.S. freight railroads move one ton of freight more than 480 miles per gallon of fuel.⁶³

Within the past two years, North American freight railroads have developed a wide variety of pilot programs to analyze the viability of replacing locomotives powered by fossil fuels with an alternative fuel source that would lower greenhouse gas emissions. Among the sources being

⁶² <https://www.aar.org/wp-content/uploads/2020/06/AAR-Sustainability-Fact-Sheet.pdf>

⁶³ [AAR-Sustainability-Fact-Sheet.pdf](#)

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explored are hydrogen power, battery power, natural gas, and even combinations of fuel sources to maintain sufficient horsepower while reducing emissions.

FEC has been a pioneer in the use of liquefied natural gas (LNG) as an alternative to diesel fuel as part of its sustainability strategy. In 2017, FEC became the first U.S. railroad to convert its entire mainline locomotive fleet to LNG, using “kits” that allow for consumption of both diesel fuel and LNG. FEC’s LNG fleet consists of 24 locomotives arranged into 12 pairs of engines spliced with an LNG fuel tender in between them (Figure 2-34). FEC’s LNG diesel engine technology burns 80 percent less diesel fuel, resulting in an 80 percent reduction in Nitrogen Oxides (NOx) emissions.⁶⁴ Norfolk Southern also launched pioneering tests of alternative fuels in the previous decade. In 2015, NS began testing a prototype locomotive powered by compressed natural gas as well as a prototype battery-powered locomotive (its second, following an earlier experimental battery locomotive developed in 2009).⁶⁵

Figure 2-34 | Florida East Coast Railway LNG Fuel Tender and Locomotive



Source: FEC Railway

Changes in Energy Production and Usage

Florida is the third-most populated state and is the fourth-largest energy-consuming state, so changes in the sources of fuel used to generate electricity, such as coal, have big impacts on freight rail. Florida does not have any coal reserves or production and relies on several other states – primarily Kentucky, Indiana, Louisiana, Alabama, and Illinois - to meet its coal demand.

⁶⁴ <https://fecrwy.com/news/blog-lng-operations/>

⁶⁵

http://nssustainability.com/2015_sustainability_report/conservation/alternative.php#:~:text=While%20working%20to%20reduce%20the,runs%20on%20compressed%20natural%20gas

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Almost all coal consumed in Florida is used for electricity generation. However, combined with the cost of complying with emissions regulations, coal-fired electric generating plants are increasingly becoming uncompetitive with natural gas fired plants. Coal-fired electricity generation in Florida has decreased as older coal units have been replaced with natural gas-fired power plants. Coal consumption in the electric power sector has fallen from 29 million tons in 2008 to approximately 10 million tons in 2018. Coal imports to Florida are forecasted to decline from 10.1 million tons in 2018 to 3.2 million tons in 2045. Because 67.5 percent of the coal consumed in Florida is carried by rail, this trend will have a big impact on Florida's freight rail system.⁶⁶

Grade Crossing Improvement and Elimination

Daily vehicle miles traveled on Florida roadways has jumped 39 percent from 2000 to 2020.⁶⁷ As road traffic has continued to increase so has the potential for traffic delays and vehicle-train collisions at Florida's 4,800-plus highway-rail grade crossings. Certain areas of the state have also experienced large increases in train traffic during this period, notably with the introduction of frequently scheduled intercity passenger and commuter rail trains operated by Brightline and SunRail in South Florida and Central Florida, respectively. Although a short passenger train will block a grade crossing for a significantly shorter period of time than a long freight train, the more frequent operations of the state's passenger and commuter rail services generate more opportunities for grade crossings to be occupied by trains, thus delaying vehicle traffic. At the same time, Class I freight railroads are increasingly focused on growing their intermodal container business and facilities, as well as increasing the capacity and velocity of their trains. Class Is are running longer trains to reduce fuel consumption, improve asset utilization, and accommodate intermodal growth, which may lengthen the amount of time that crossing gates stay down while a freight train passes.

The continued growth of roadway traffic and rail traffic in Florida will continue to increase the amount of time that motorists are delayed by trains at highway-rail grade crossings and also increase the risk of grade crossing collisions that could result in accidents and fatalities. The need for projects that reduce highway delay and improve safety by eliminating highway-rail grade crossings or installing enhanced safety features will continue to grow in Florida. The FMTF identified sustained investment in grade crossings to reduce safety and improve quality of life as a top need for the freight rail industry in Florida. Grade-crossing elimination and improvement projects will receive a big boost from the federal infrastructure bill through CRISI and other programs.

Precision Scheduled Railroading

In the latter half of the last decade, Class I railroads in the U.S. began implementing a new service model governing train operations called Precision Scheduled Railroading (PSR) in an effort to improve efficiency. Although specific implementation practices vary with each railroad, PSR operations are centered around five core principles: asset utilization, cost control, service,

⁶⁶ FDOT Statewide Commodity Flow Analysis, 2021

⁶⁷ https://ftp.fdot.gov/public/folder/elwpbH0EWUeu9hW0iljDhA/Mileage_Reports

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safety, and people. Some of the most common ways that railroads modify their operations to align with these principles include: shifting the focus of operations from moving trains to moving cars; minimizing the time that rail cars sit in yards while traveling from origin to destination; replacing single-commodity trains with trains carrying multiple types of commodities over all or part of a train's journey, in order to help relay cars to shippers more efficiently and improve railcar velocity; and balancing train movements by direction to improve locomotive, car, and crew utilization. For the general public, the most tangible effect of PSR has been a shift toward running fewer but longer trains. As the FMTP notes, while PSR creates efficiencies and improved revenues for railroads, freight rail shippers may have to add equipment, personnel, or other resources to adapt their operations to the modified service windows and delivery schedules of their freight rail service provider.

Pandemic Changes

The COVID-19 pandemic has exacerbated the truck driver shortage, created restrictions on sea and air transport, and generally disrupted global supply chains in an unprecedented way. As a result, the cost of transporting freight via other modes has risen compared to freight rail costs, benefiting a shift to freight rail in the supply chain. A focus on domestic manufacturing, concurrently sharpened during the pandemic, provides further potential for more domestic freight rail shipments. At the same time, e-commerce has become a standard and quick delivery is expected, reinforcing the need for seamless transitions for cargo between modes – from plane to ship to rail to truck.

2.3.2 Passenger Rail Needs and Opportunities

Passenger rail systems move large numbers of people while reducing roadway congestion, providing safer travel options, improving air quality, and promoting economic development. They can play an important role in creating a robust multimodal transportation system and addressing the mobility needs of our growing state. Florida's geographic profile and proximity between major urban areas are ideally suited for providing efficient and effective intercity passenger and commuter rail service in multimodal corridors shared with other rail or surface transportation modes. The Department's policy initiatives, new federal funding sources, and opportunities for partnership with public and private interests have aligned to create perfect synergies and opportunities to advance passenger rail in Florida. As Florida's population, jobs, visitors, and economy continue to grow, the state is seeking to move people faster, safer, and cleaner than today.

The sections below summarize needs and opportunities for the growth of passenger rail in Florida.

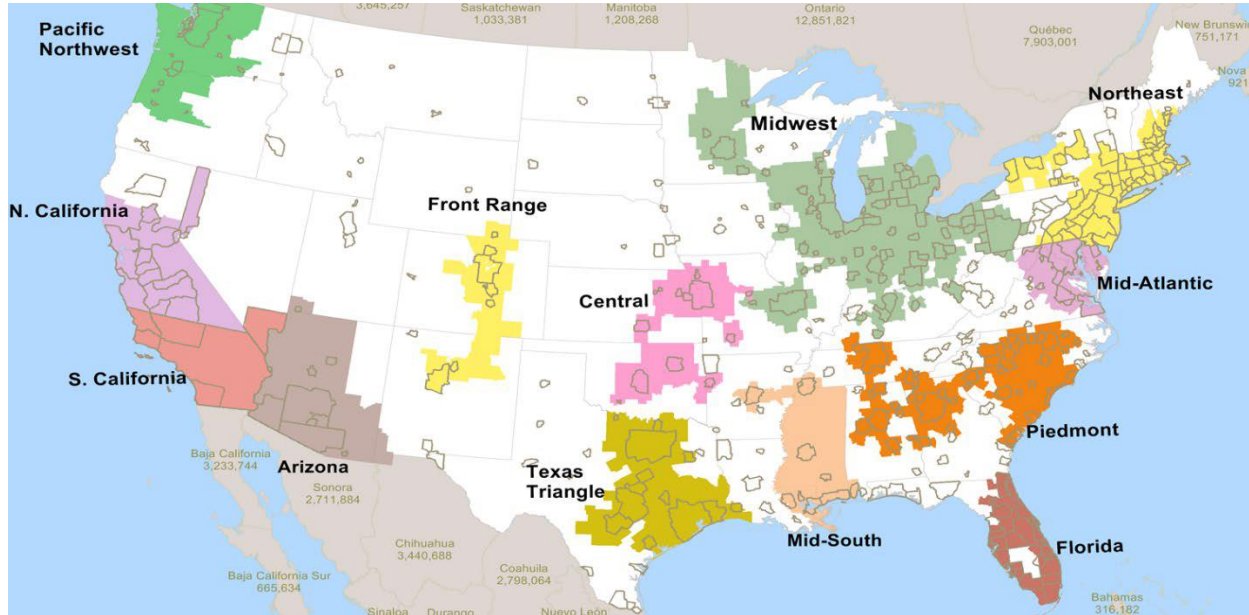
Population and Economic Growth Support the Demand for Passenger Rail Travel

As described in the preceding sections, Florida's population and economy are expected to expand in the coming decades. As shown in Figure 2-35, most of Florida (except for the Panhandle) is within its own Florida megaregion. A megaregion is defined as a place with large markets, significant economic capacity, substantial innovation, and highly skilled talent. It

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includes transportation and communication networks that comprise metropolitan centers and their surrounding areas that often cross county and state boundaries.⁶⁸

Figure 2-35 | U.S. Megaregions



Source: U.S. Department of Transportation, Federal Highway Administration.⁶⁹

The Florida Megaregion (as mapped in Figure 2-36) comprises four major metropolitan centers.⁷⁰ The megaregion spans from Jacksonville in the north, to Miami in the south, and Tampa and Orlando in Central Florida (the I-4 Corridor). These metros offer a substantial mass of intra-state demand for trips, as well as a large and growing magnitude of tourism-related trips from external markets, both domestically and internationally.

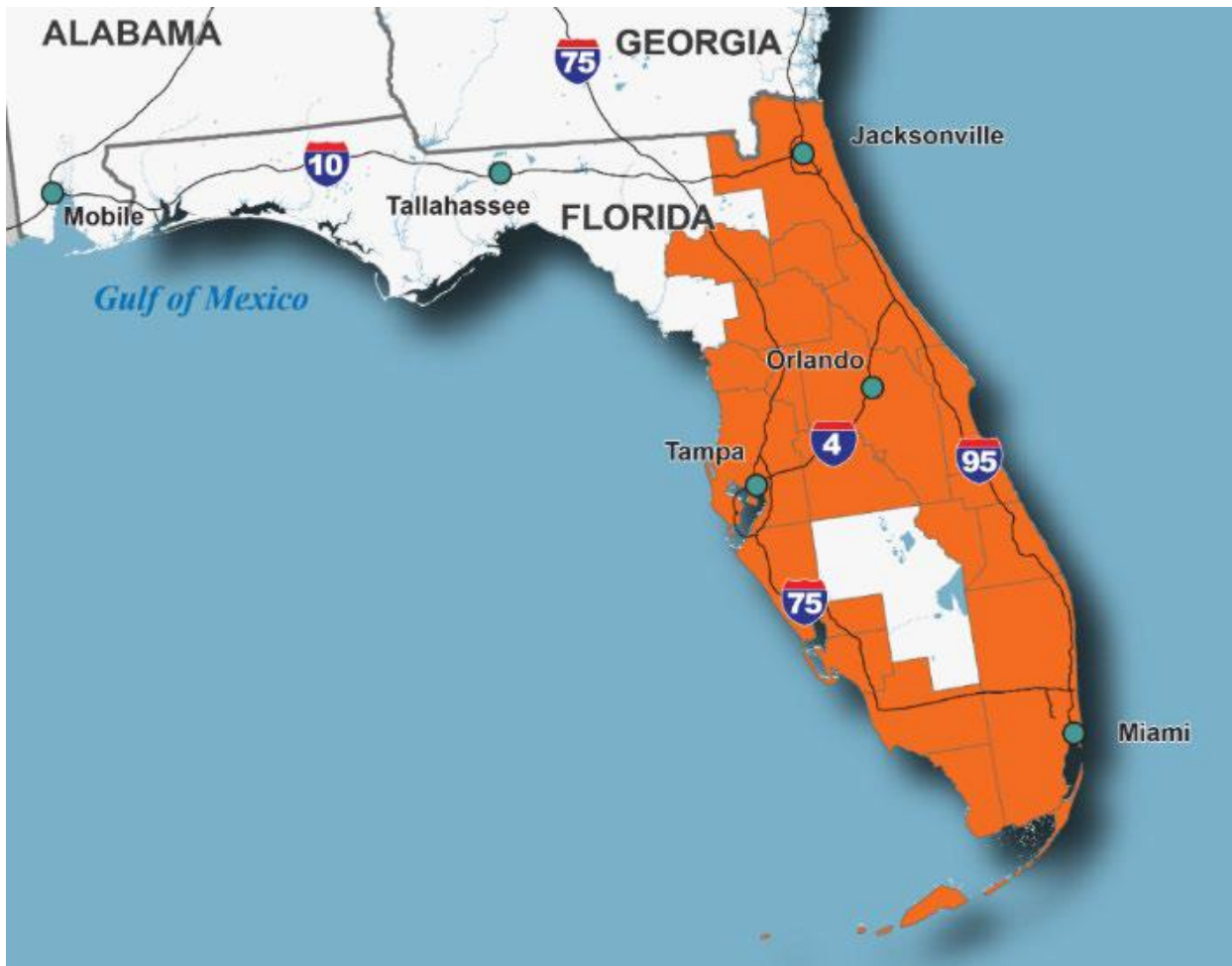
⁶⁸ Source: Federal Highway Administration (2016).

⁶⁹ As in the Southeast Rail Plan, 2020.

⁷⁰ Ross, Catherine. Megaregions: Literature Review of Organizational Structures and Finance of Multi-jurisdictional Initiatives and the Implications for Megaregion Transportation Planning in the U.S., 2011.

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Figure 2-36 | The Florida Megaregion



Source: U.S. Census Bureau (2010), Cartographic Boundary Shapefiles; Regional Plan Association (2016). Our Maps: U.S. Megaregions. America 2050. <http://www.america2050.org/maps/>⁷¹

According to the 2006 America 2050 report, most of the nation's population and economic expansion is expected to occur in the megaregions. Despite a growing population and an important role in the national economy, Florida is generally served by geographically limited and infrequent intercity passenger rail service. The resulting increase in traffic will put a strain on the existing infrastructure beyond its capacity, and will require additional investments in travel options, including rail, to avoid congestion and improve safety. New intercity services or expansion of Brightline, as well as the Tri-Rail and SunRail commuter services, could help enhance mobility in corridors that already experience chronic congestion.

As the third most populous state in the country with a \$1 trillion economy, Florida has experienced tremendous growth in people and goods over the last few decades and is expected to grow more than 30 percent by 2040. More than half of Florida's population growth is expected

⁷¹ As in the Southeast Rail Plan, 2020.

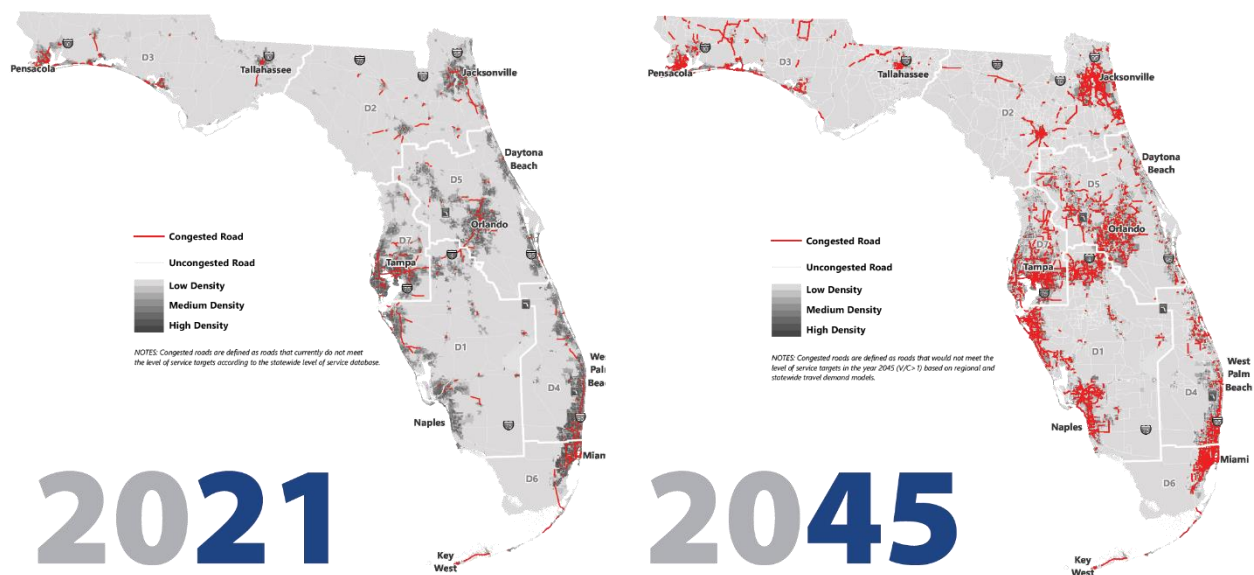
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to occur in 10 counties, including the three South Florida counties between Miami and Palm Beach and the five Central Florida counties between Orlando and Tampa.

Approximately 76 percent of Florida's population growth is expected to occur in counties primarily along existing Interstate Highway corridors. This growth is driving the need for high-capacity transportation that connects centers of employment, residential development, health care, shopping, and tourism. This type of travel demand, linking centers of economic activity situated along a corridor, is ideally suited for intercity passenger and commuter rail transportation.

As Florida welcomes more residents and visitors, highway traffic is forecasted to worsen (as mapped in Figure 2-37). Short-haul airline flights could replace congested auto trips, but would consume airport capacity, preventing new long-distance and international flights from being added. Private intercity bus services can help attain more efficient use of limited roadway capacity, but rail is able to move higher volumes of travelers while reducing highway use. Changing demographics project that more Florida residents will live in zero-car households or depend on alternate modes of travel other than personal autos.

Figure 2-37 | Florida Road Congestion, 2021 vs 2045



Source: FDOT Red Map Book, 2022

Modal Challenges and Opportunities

FDOT has identified specific challenges and opportunities associated with the development and expansion of systems to move people by rail in Florida.

Intercity Passenger

Intercity passenger trains can be a key transportation component in multimodal corridors connecting major populations centers and regions.

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Challenges

- Florida's existing Amtrak service is focused on long-distance travel, and as such does not adequately serve travel needs within Florida. Service levels are too infrequent, on-time performance suffers, and travel times are not competitive with auto travel.
- The Brightline private service model provides a high level of intercity passenger rail service. FDOT does not currently provide financial support for capital development, nor does it subsidize Brightline's operations. As a result, Brightline's service is structured to attain profitability. When ridership fell in March 2020 due to the COVID-19 pandemic, Brightline suspended all service for 20 months, causing potential travelers to find alternate means of transportation.
- Development of an independent state-run intercity passenger rail program as an alternative to Amtrak and Brightline would involve significant risk and require extensive resources and staffing.

Opportunities

- FDOT sees a strong demand for travel within Florida and seeks to prioritize the development of passenger rail corridors that serve intrastate markets before interstate markets.
- Amtrak's focus is shifting away from long-distance trains to state-supported trains on shorter distance routes. The Amtrak Connects US 15-year service vision, released in 2021, calls for expanding and adding services in areas of the country that are expected to see significant population growth in the coming decades, including regions currently underserved by existing passenger rail services. The vision calls for expanding service and adding 160 new stations to double the number of passengers that state-supported trains carried in 2019. Amtrak's plan includes new routes in Florida for the Jacksonville-Orlando-Tampa market, Orlando-Miami, and Tampa-Miami corridors. Because they are less than 750 miles in length, these corridors are anticipated to be operated as state-supported services, which means that Florida would be responsible for providing the annual funding to pay for the operation of the service.
- On September 22, 2023, Brightline expanded its network of privately operated intercity passenger trains to Orlando International Airport and is planning a further extension along I-4 to the Tampa Bay area.
- The federal IIJA enacted in 2022 includes new investments totaling \$66 billion for passenger and freight rail and \$39.2 billion for transit over the following five years.

Commuter Rail

Commuter trains play an important role in providing regional mobility within high-density travel corridors that span multiple counties and jurisdictions.

Challenges

- The lack of local funding sources for the existing Tri-Rail and SunRail commuter systems results in a significant commitment of state funds that could otherwise be used to expand the network of passenger rail services across the state.

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Opportunities

- FDOT's leadership in the development of commuter rail systems is a critical resource and catalyst, given the complexities associated with multiple geo-political jurisdictions and the need to enhance and supplement local technical capacity. This includes leading planning efforts, project development, capital, investment, and providing operating support. The state of Florida purchased the 72-mile South Florida Rail Corridor from CSX for Tri-Rail service in 1988 and purchased the 61.5-mile Central Florida Rail Corridor for SunRail service in 2011. FDOT continues to provide significant capital, operations, and maintenance funding for both Tri-Rail and SunRail and continues to manage and operate the SunRail commuter rail service.
- Future acquisition of corridors by FDOT for intercity passenger rail service may provide access for commuter rail services as well.
- FDOT has the technical and managerial capacity and resources to manage a commuter rail program, but views partnerships with local jurisdictions as an import component of future system development. Options for consideration might include local governments providing funding to support FDOT-managed contracts for operations and maintenance, or for FDOT to own and maintain infrastructure while providing corridor access to local governments for rail operations.
- While operating and maintenance costs are likely to remain the primary responsibilities of state and local government, significant increases in federal funding for capital project development have recently been enacted for commuter and urban passenger rail projects through the Federal Transit Administration's Capital Investment Grant Program. In addition, the FDOT New Starts Transit Program is available to project sponsors to provide matching funds to leverage these federal programs.⁷²

Urban Rail Transit

Urban rail transit systems play an important role in moving people within heavily populated metropolitan centers and can provide important first-mile/last-mile mobility options when connected with intercity and commuter systems at multimodal transfer centers.

Challenges

- The effectiveness of urban rail transit in enhancing mobility correlates with the degree to which efficient throughput can be maintained when roadways are over capacity. The development of high-capacity passenger rail systems requires semi or fully dedicated rights-of-way, separate from other vehicular traffic and traffic control systems. However, corridors in urban cores are often constrained, which can pose challenges to effectively integrating passenger rail systems within existing right-of-way.

Opportunities

- Mobility options that allow residents and visitors to use urban rail transit and avoid state highway and local roadway congestion contribute measurably to the economic and environmental well-being of a city center and outlying areas.

⁷² [Supplement-2-FY23-27.pdf \(state.fl.us\)](#)

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- As Florida's urbanized areas continue to densify, opportunities to create transit corridors may include the repurposing of existing roadway rights-of-way, including state highway facilities, for dedicated rail transit.

Transit-Oriented Development Opportunities

The historic development of all forms of passenger rail in the U.S. is linked to land development. Adding commuter rail passenger services to otherwise primary freight rail corridors spurs billions of dollars' worth of commercial and residential real estate development. A recent study conducted by FDOT analyzing the changes in property values resulting from Transit-Oriented Development around SunRail commuter rail stations in Central Florida confirms this outcome.⁷³ Twelve SunRail station areas analyzed in the study experienced \$2.4 billion (62.8%) in cumulative property value growth, outpacing their control areas by 22.9 percent. The report estimates that SunRail contributed to as much as \$1.19 billion in property value growth. These increased property values along the corridors and station areas generates significant property tax windfalls which can help support operating, capital match and other costs associated with the provision of the passenger rail services.

Multimodal Integration

Critical to the success of both intercity and commuter rail systems in Florida is the ease of access and transfer between the passenger rail services and other modes of transportation. Intermodal facilities and terminals provide the opportunity to house multiple transportation systems and provide connectivity to support the longer distance services provided by intercity and commuter rail. At the Miami Intermodal Center, Tri-Rail commuter rail service connects with the Miami-Dade Metromover heavy rail system and MetroBus systems; Greyhound and Megabus intercity bus systems; and potentially the reintroduction of Amtrak services to access the airport.

The Orlando International Airport's new intermodal terminal design includes platform accommodations for Brightline, SunRail, the Orlando International Airport peoplemover, and a potential light rail service between Orlando International Airport and the International Drive area of Orange County. In addition, the planned extension of Brightline to Tampa, along with discussions of SunRail to Polk County have the City of Lakeland recognizing an opportunity to develop a new intermodal center to accommodate these and other transportation services.

Capacity

Given current rail freight and rail passenger growth trends and proposals to add new intercity passenger and commuter rail service, additional rail line capacity may eventually need to be constructed to enable both existing and projected new services to operate reliably. Freight railroads' traffic and capacity needs must be a key element in developing any passenger rail development or expansion plans.

⁷³ https://fdotsitefinitypreprod.blob.core.windows.net/sitefinity/docs/default-source/transit/documents/assessingtheimpactsofsunraolstations.pdf?sfvrsn=f6ab2f5e_2

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Partnerships Opportunities

Partnerships are critical for the expansion of rail passenger service in Florida. In most cases, additional intercity rail passenger service will be in partnership with other states. With any proposed Atlanta – Jacksonville service, the partner would be the state of Georgia. Often contentious is the need to construct the core segments first, even if investment in another member state is delayed many years. For commuter rail service, the counties and municipalities served are critical partners.

Tourist Railroads and Other Venues

Continued population growth and economic growth will help build leisure market growth. So, while the tourist railroads' visitor share of the leisure market will remain small, the market base will increase substantially. One key opportunity is additional international visitors. While interest from Europe will remain important, the tourist railroads can also look at Latin America and Asia. Economies in these areas are expanding, and the regions have young growing populations.



FREIGHT & RAIL

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