
final report

2006 Florida Freight & Passenger Rail Plan



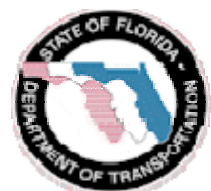
prepared for

Florida Department of Transportation

prepared by

Cambridge Systematics, Inc.
Bethesda, MD

February 2007



final report

2006 Florida Freight & Passenger Rail Plan

prepared for

Florida Department of Transportation

prepared by

Cambridge Systematics, Inc.
4800 Hampden Lane, Suite 800
Bethesda, Maryland 20814

February 2007

Table of Contents

1.0 Introduction.....	1-1
1.1 Introduction and Purpose.....	1-1
1.2 Authority.....	1-2
1.3 Contents.....	1-3
2.0 Policy Issues, Roles, and Responsibilities.....	2-1
2.1 Overview.....	2-1
2.2 Public Sector Involvement in Florida Railroads.....	2-2
2.3 Hurricane Response.....	2-11
3.0 The Demand for Rail Services in Florida.....	3-1
3.1 Demographic and Socioeconomic Trends Impacting Florida Railroads.....	3-2
3.2 Nationwide Rail Trends Impacting Florida Railroads.....	3-8
3.3 Outlook for Florida Rail-Intensive Industries.....	3-13
3.4 Summary.....	3-44
4.0 Current Freight Rail System and Services in Florida.....	4-1
4.1 Overview.....	4-1
4.2 Railroad Profiles.....	4-2
4.3 Traffic Description.....	4-19
4.4 Safety Record.....	4-29
4.5 Abandonment History.....	4-33
5.0 The Florida Passenger Rail System.....	5-1
5.1 Current Passenger Rail Systems.....	5-2
5.2 Status of Proposed Passenger Rail Systems.....	5-21
6.0 Florida Freight Rail Needs Assessment.....	6-1
6.1 Purpose.....	6-1
6.2 Methodology.....	6-2
6.3 Needs by Type and by Railroad.....	6-3
6.4 Summary by Port.....	6-10
6.5 Summary by FDOT District.....	6-13
6.6 Detailed Needs Table.....	6-22
7.0 Rationale For Investment of Public Funds in the Freight Railroads.....	7-1
7.1 The Florida Freight Rail Investment Calculator.....	7-1
7.2 Case Study 1: CSX Transportation Integrated Logistics Center in Winter Haven, Florida.....	7-4
7.3 Case Study 2: South Central Florida Express Track Upgrade.....	7-12

Table of Contents

(continued)

8.0	Financing Florida’s Rail System.....	8-1
8.1	Introduction	8-1
8.2	Federal Rail Programs	8-1
8.3	Florida Rail Programs.....	8-13
8.4	Other Funding Sources.....	8-19
9.0	Vision and Recommendations	9-1
9.1	Vision	9-2
9.2	Recommendations.....	9-6

List of Tables

2.1	Strategic Intermodal System and Emerging SIS Definitions for Rail Facilities	2-9
3.1	Contribution to Florida Gross State Product and Employment for Rail-Intensive Industries	3-13
3.2	Florida Industry Profile <i>Phosphates and Fertilizers</i>	3-17
3.3	Atlantic and Gulf Ports Ranked by TEUs Handled 2005	3-22
3.4	Atlantic and Gulf Coast Ports Ranked by Growth in TEUs Handled 1995-2005.....	3-23
3.5	Florida Industry Profile <i>Distribution and Retail</i>	3-24
3.6	Market Value of Agricultural Products Sold (Crops and Livestock) <i>States Ranked by Total Sales, 2005</i>	3-25
3.7	Market Value of Crops Sold <i>States Ranked by Total Sales, 2005</i>	3-26
3.8	Food Industry Output by State, 1997-2004 (<i>in Billions of 2000 Dollars</i>).....	3-28
3.9	Florida Industry Profile <i>Agriculture and Food</i>	3-29
3.10	Florida Industry Profile <i>Paper and Fiber</i>	3-32
3.11	Florida Ranks Second in Sales of New Motor Vehicles	3-33
3.12	Vehicles in Operation, Top States 1993-2002.....	3-34
3.13	United States Ports Ranked by Total Number of Vehicles Handled 2003	3-35
3.14	Florida Industry Profile <i>Automotive Distribution</i>	3-37
3.15	Proposed New Coal-Fired Power Plants in Florida.....	3-40
3.16	Florida Industry Profile <i>Energy</i>	3-41
3.17	Value of Construction Contracts Put in Place 1994-2004.....	3-42
3.18	New Housing Units Authorized by State 1992-2003	3-43
3.19	Florida Industry Profile <i>Construction</i>	3-44

List of Tables (continued)

4.1	Freight Railroads Operating in Florida 2006.....	4-2
4.2	Summary of Railroad Miles in Florida 2006.....	4-3
4.3	Florida Railroad Safety Incidents 2001 to 2005	4-30
4.4	Florida Train Accidents by Cause 2001 to 2005	4-31
4.5	Florida Highway-Rail Incidents by Highway User Type 2001 to 2005	4-33
4.6	Railroad Abandonments Since 2004.....	4-34
5.1	Summary of Pending Amtrak Legislation.....	5-4
5.2	Summary of Florida Amtrak Passenger Rail Service.....	5-7
5.3	Top Amtrak Ridership States <i>Millions of Passengers</i>	5-9
5.4	Florida Amtrak Ridership by Station <i>Fiscal Years 2004 and 2005</i>	5-10
5.5	Comparison of Modal Travel Time for Select Florida Cities	5-12
5.6	Tri-Rail Timeline of Major Events	5-15
5.7	Rail Line Characteristics for Selected Commuter Operations	5-17
5.8	Rail Performance Measures for Selected Commuter Operations.....	5-17
5.9	Potential Travel Markets for Intercity Passenger Rail Service.....	5-22
5.10	Projected Service, Ridership, Costs, and Revenues <i>Year 2006 Dollars</i>	5-26
6.1	Procedure for Identifying Freight Rail Needs.....	6-3
6.2	Freight Railroad Needs by Category.....	6-4
6.3	Summary of Needs by Railroad and Type <i>Costs in Thousands of 2006 Dollars</i>	6-5
6.4	Summary of Needs by District and Type <i>Thousands of 2006 Dollars</i>	6-13
6.5	Detailed Projects and Needs by Railroad <i>Thousands of 2006 Dollars</i>	6-23
7.1	Decision Analysis Input Values for Winter Haven Integrated Logistics Center .	7-7

List of Tables (continued)

7.2	Benefit/Cost Analysis for Winter Haven Integrated Logistics Center	7-8
7.3	Decision Analysis Matrix for Winter Haven Integrated Logistics Center	7-9
7.4	Summary of Decision Analysis by User Group for the Winter Haven Integrated Logistics Center.....	7-11
7.5	Decision Analysis Input Values for the South Central Florida Express Track Upgrade.....	7-14
7.6	Benefit/Cost Analysis for the South Central Florida Express Track Upgrade	7-15
7.7	Decision Analysis Matrix for the South Central Florida Express Track Upgrade.....	7-16
7.8	Summary of Decision Analysis by User Group for the South Central Florida Express Track Upgrade.....	7-18
8.1	Federal Grant Sources Summary	8-2
8.2	Federal Loans and Tax Credits Summary	8-9
8.3	Rail State Revenues <i>Millions of 2000 Dollars</i>	8-14
8.4	Summary of Potential Growth Management Funds dedicated to Freight and Passenger-Related Rail Transportation Projects in Florida.....	8-16
9.1	Benefits of Public Rail Investments to Florida	9-5

List of Figures

1.1	Organization of the 2006 Florida Rail Plan	1-3
2.1	The Florida Freight Rail Network.....	2-2
2.2	Position of the Rail Office within the Florida Department of Transportation	2-3
2.3	Responsibilities of the Florida Department of Transportation Rail Office Freight Function	2-4
2.4	Strategic Intermodal System Freight Rail Corridors and Connectors	2-10
2.5	Strategic Intermodal System Intermodal Freight Terminals	2-11
3.1	Contribution to Gross State Product by Industry <i>Florida versus United States</i>	3-3
3.2	Projected Population Growth <i>Florida versus United States</i>	3-4
3.3	Projected Population Growth by Region 2005 to 2030.....	3-5
3.4	Florida Has Become One of the Most Densely Populated States in the Country	3-6
3.5	Job Growth <i>Florida versus United States – 1990 to 2005</i>	3-7
3.6	Historical and Projected Florida Income Growth 1996 Dollars.....	3-8
3.7	Forecasts of Freight Tonnage Through 2035	3-9
3.8	World Production of Marketable Phosphate Rock 1992 to 2000	3-15
3.9	World Consumption of Phosphate Fertilizers 1975 to 2005	3-15
3.10	Global Demand for Phosphate Fertilizer by Country 2001.....	3-16
3.11	Phosphate Mining in Bone Valley, Florida.....	3-16
3.12	Retail Sales in Florida 1996 Dollars, 1990 to 2005	3-19
3.13	Value of Florida Trade 1995 to 2005	3-20
3.14	Value of Total Florida Trade (Exports and Imports) As A Share of Gross State Product 1990 to 2005	3-20

List of Figures (continued)

3.15 Citrus Production <i>Florida Compared to the Rest of the United States, 1983-2004</i>	3-27
3.16 Forest Area Coverage in Florida 1995	3-30
3.17 Dollar Value of Automobile Sales in Florida 1996 Dollars, 1990-2003	3-33
3.18 Multilevel Auto Carrier.....	3-36
3.19 Energy Consumption and Population Growth in Florida 1960 to 2000	3-38
3.20 Florida Coal Consumption 1960 to 2002	3-39
3.21 Energy Consumption by Source in Florida 1980-2000.....	3-40
3.22 Growth in Construction <i>Florida Compared to the Rest of the United States</i>	3-43
4.1 Florida Freight Rail Tonnage by Direction 2004.....	4-19
4.2 Florida Rail Carload and Intermodal Movements by Direction 2004	4-20
4.3 Florida Rail Traffic Origins by District 2004	4-22
4.4 Florida Rail Traffic Origins by District 1991 to 2004	4-23
4.5 Florida Rail Traffic Terminations by District 2004	4-24
4.6 Florida Rail Terminations by District 1991 to 2004.....	4-25
4.7 Florida Rail Originations by Commodity 1991 to 2004.....	4-26
4.8 Florida Rail Terminations by Commodity 1991 to 2004	4-27
4.9 Inbound Florida Rail Tonnage by Origin State 2004.....	4-28
4.10 Outbound Florida Rail Tonnage by Termination State 2004	4-29
4.11 Florida Train Accidents and Damage Costs in Florida 2001 to 2005	4-32
5.1 Amtrak Routes and Stations in Florida.....	5-8
5.2 Tri-Rail Commuter Rail System Map.....	5-14
5.3 Annual Tri-Rail Ridership <i>Unlinked Trips (in Millions)</i>	5-16

List of Figures (continued)

5.4	Metrorail System Map	5-19
5.5	Metromover System Map	5-20
5.6	Florida Intercity Passenger Rail Service Vision Plan <i>Coastal Route</i>	5-23
5.7	Florida Intercity Passenger Rail Service Vision Plan <i>Inland Route</i>	5-24
5.8	Conceptual Track Configuration for Access to the Proposed Jacksonville Transportation Center	5-28
5.9	South Florida Rail Corridor Double-Track Improvement Program.....	5-30
5.10	South Florida East Coast Corridor Study Area	5-33
5.11	Central Florida Commuter Rail Transit.....	5-36
5.12	Metrorail’s MIC-Earlington Heights Connector.....	5-39
5.13	Metrorail’s North Corridor	5-40
5.14	Metrorail’s East-West Corridor.....	5-41
5.15	Florida High-Speed Rail Authority Long-Term Vision Plan.....	5-45
6.1	District 1 Rail Projects.....	6-15
6.2	District 2 Rail Projects.....	6-16
6.3	District 3 Rail Projects.....	6-17
6.4	District 4 Rail Projects.....	6-18
6.5	District 5 Rail Projects.....	6-19
6.6	District 6 Rail Projects.....	6-20
6.7	District 7 Rail Projects.....	6-21
7.1	Framework for Evaluating Transportation Investments.....	7-2
7.2	Freight Rail Investment Calculator: Project Detail Entry Screen and Final Report Screen <i>Projects are illustrative and not based on real data</i>	7-4

List of Figures (continued)

7.3	Location of CSXT Winter Haven Integrated Logistics Center.....	7-5
7.4	South Central Florida Express.....	7-13

1.0 Introduction

■ 1.1 Introduction and Purpose

Florida's population reached 17.8 million in 2005, making Florida the fourth most populous state in the nation. By 2025, Florida is forecast to have 25.0 million people and is projected to surpass New York to become the third most populous state (trailing only California and Texas).¹ To reach these levels, Florida is expected to add population at a rate that almost doubles the national average.

This rapid and sustained growth creates tremendous demand for both freight and passenger transportation, and railroads play a key role. In 2005, Florida railroads hauled over 2 million carloads and more than 115 million tons of freight. This includes delivery of consumer products for retail outlets, construction material for road and home building, coal for electric power plants, automobiles, and food products. Railroads also allow Florida's ports, farmers, manufacturers, and other industries to extend the markets for their goods. On the passenger rail side, Southeastern Florida's Tri-Rail system ranked among the top 15 commuter rail services in the country in 2004 based on ridership levels of 2.8 million annual trips and 84.8 million annual passenger miles.

Recognizing the increasing demand for rail services and the importance of rail in the State's overall mobility, Florida has been one of the nationwide leaders in promoting public-private partnerships and supporting the rail system. Some of the recent key investments and commitments that will strengthen both the freight and passenger rail service include:

- Pending investments in the CSXT "S" Line from Jacksonville to Central Florida, road-rail grade separations, and roadway improvements supporting the proposed integrated logistics center in Winter Haven, which will serve both the Orlando and Tampa markets;
- Double-tracking portions of the FEC, expanding north-south capacity between Jacksonville and Miami;

¹ The source of the 2005 population figure was the Bureau of Economic and Business Research, University of Florida. The source of the 2025 projection was the Florida Legislature's Office of Economic and Demographic Research, found at <http://edr.state.fl.us/population.htm>.

- Pending capacity improvements on CSXT along the I-10 corridor between Jacksonville and Pensacola, improving east-west access;
- Pending acquisition of rail lines from CSXT in the Orlando area for commuter rail operations;
- Additional pending investment in commuter rail service in South Florida, including taking over control of dispatching on the South Florida Rail Corridor; and
- Continued investments in Florida’s short-line railroads allowing them to remain competitive and to expand their services.

The purpose of this *Florida Rail Plan* is to provide the necessary information in a policy framework through which strategic actions can be taken to achieve the best rail system for Florida’s future. More specifically, the *Florida Rail Plan* is intended to:

- Provide a historical snapshot of the current freight and passenger rail system;
- Examine the critical drivers of future rail demand;
- Place information about freight rail issues, needs, choices, costs, and benefits within a larger public policy context;
- Effectively communicate these messages to a wide range of potential audiences; and
- Develop policy options and recommendations for creating a strong rail system in Florida.

■ 1.2 Authority

This biannual *Florida Rail Plan* is the rail component of the *Florida Transportation Plan*, which is, in turn, the transportation component of the *State Comprehensive Plan*.

The Florida Rail System Plan is mandated by Section 341.302 of the Florida Statutes and requires that “the Florida Department of Transportation, in conjunction with other governmental units and the private sector, shall develop and implement a rail program of statewide application designed to ensure the proper maintenance, safety, revitalization, and expansion of the rail system to assure its continued and increased availability to respond to statewide mobility needs.”

Section 341.302(3) of the Florida Statutes further requires that the FDOT “Develop and periodically update the rail system plan, on the basis of an analysis of statewide transportation needs. The rail system plan shall include an identification of priorities, programs, and funding levels required to meet statewide needs. The rail system plan shall be developed in a manner that will assure the maximum use of existing facilities and the optimum integration and coordination of the various modes of transportation, public and

private, in the most cost-effective manner possible. The rail system plan shall be updated at least every two years and include plans for both passenger rail service and freight rail service.”

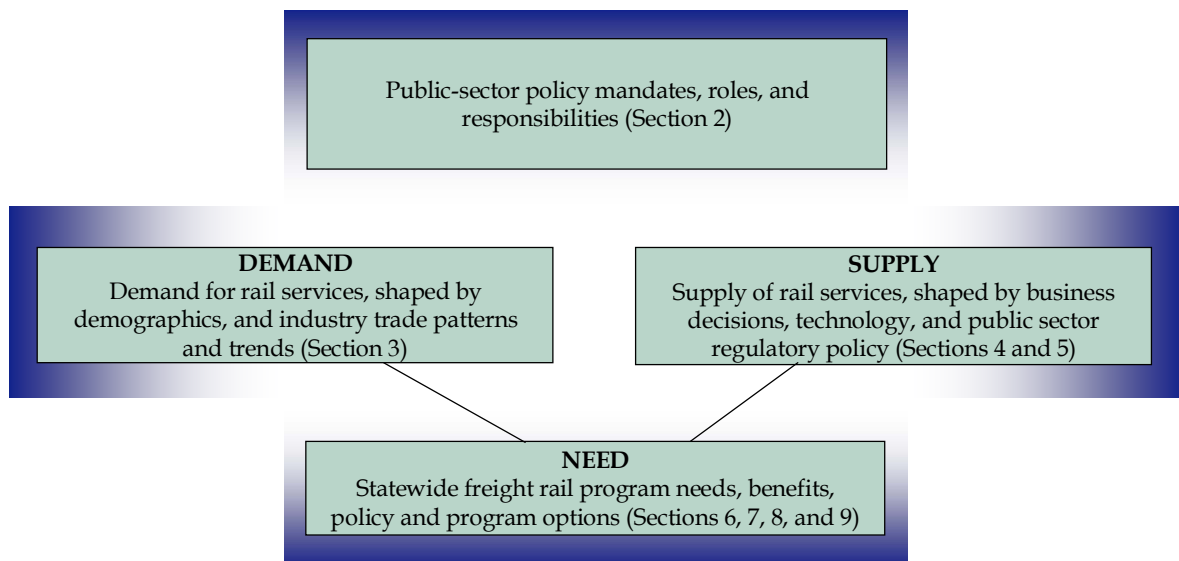
Sections 341.302(4) through (16) of the Florida Statutes require the FDOT to formulate work programs and provide technical assistance to local governments to address identified needs; secure and administer Federal grants when needed to further the statewide program; develop and administer state standards concerning the safety and performance of rail systems; conduct inspections of such rail-related matters to assure adherence to standards; and to assess penalties for failure to adhere to the State standards.

Finally, Section 341.302(17) mandates that the FDOT “Exercise such other functions, powers, and duties in connection with the rail system plan as are necessary to develop a safe, efficient, and effective statewide transportation system.”

■ 1.3 Contents

The 2006 *Florida Rail Plan* is organized around four broad areas, illustrated in the accompanying figure.

Figure 1.1 Organization of the 2006 *Florida Rail Plan*



This plan identifies the public interest in freight and passenger rail, examines the demand and supply for rail service, and develops policy and program options for Florida that will

support the public interest in rail's contribution to transportation, economic, social, and environmental goals. It is organized into the following sections.

- **Section 2.0: Policy Issues, Roles, and Responsibilities** – This section examines the role that the FDOT plays in shaping Florida's rail system.
- **Section 3.0: The Demand for Rail Services in Florida** – This section begins by taking a macroeconomic view of population, employment, and income trends in Florida. It then moves into a description of Florida industries that are most dependent on freight rail services. Each industry is profiled and the role of rail is discussed.
- **Section 4.0: The Florida Freight Rail System** – This section provides descriptions and maps of each freight railroad operating in Florida. Also included are traffic patterns and trends developed from the Surface Transportation Board Carload Waybill Sample. This section concludes with information on abandonments and safety records.
- **Section 5.0: The Florida Passenger Rail System** – This section provides descriptions and maps of passenger rail service in Florida. This includes Amtrak service, current and planned commuter operations, and a summary of the intercity passenger rail vision plan.
- **Section 6.0: Needs Assessment** – This section presents the results of a comprehensive needs assessment for Florida's freight railroads. The section also discusses the CSXT integrated logistics center (ILC) proposed for Winter Haven. Listing a need in this section in no way obligates the FDOT or the State of Florida to provide funding.
- **Section 7.0: Benefits of Freight Rail Investment** – This section examines the public benefits of investments in the private freight rail system, and describes the methodology used by the FDOT to evaluate benefits.
- **Section 8.0: Funding Florida's Rail Program** – This section presents potential Federal and state funding sources. This includes funding of eligible projects through the Strategic Intermodal System (SIS).
- **Section 9.0: Freight Rail Vision, Strategies, and Implementation Plan** – This section explores possible visions for the Florida freight rail system, and strategies for implementing this vision.

2.0 Policy Issues, Roles, and Responsibilities

■ 2.1 Overview

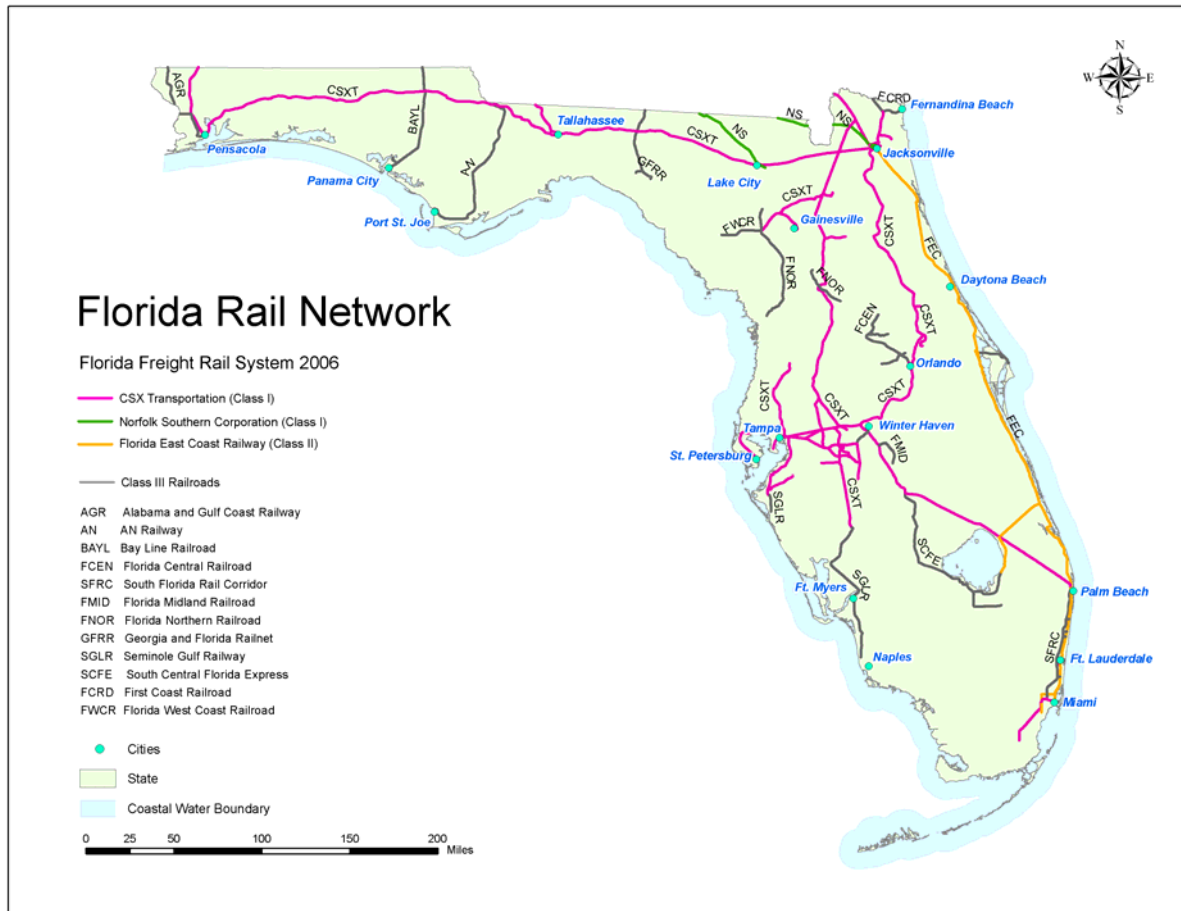
Of the 2,908 miles of rail lines in Florida, all but 81 miles are owned by the State's 15 freight railroads and the entire track is controlled by the freight railroads.^{1,2} The network stretches across the State and serves nearly every major population center, as shown in Figure 2.1. It is used for intercity passenger service, including the successful Amtrak Auto Train service connecting the Northeast and Florida. Florida's rail network provides service to the ports, citrus and sugar plants, auto facilities, power plants, and other vital industries. By tonnage, the largest commodity which is carried by the rail network is phosphate. Unlike other transportation networks, the rail network is almost entirely owned and maintained by private interests.

Florida, like most other states, has provided public support to these privately held railroads only when deemed in the best interest of the State. The State also monitors safety issues, especially at road-rail grade crossings. This section describes the role of the Florida Department of Transportation (FDOT) Rail Office and provides some historical perspective on public funding mechanisms. The section then discusses the Florida Strategic Intermodal System and the implications this program has on public support for rail projects. This section complements later sections, which will address rail system needs, funding issues, and public benefits.

¹ The only exception is the South Florida Rail Corridor, which the Florida Department of Transportation (FDOT) purchased in 1988 from CSX Transportation (CSXT).

² This is changing. FDOT, or another public agency, will be dispatching trains on the South Florida Rail Corridor instead of CSXT. Also, the State is purchasing additional track for passenger rail operations in Orlando.

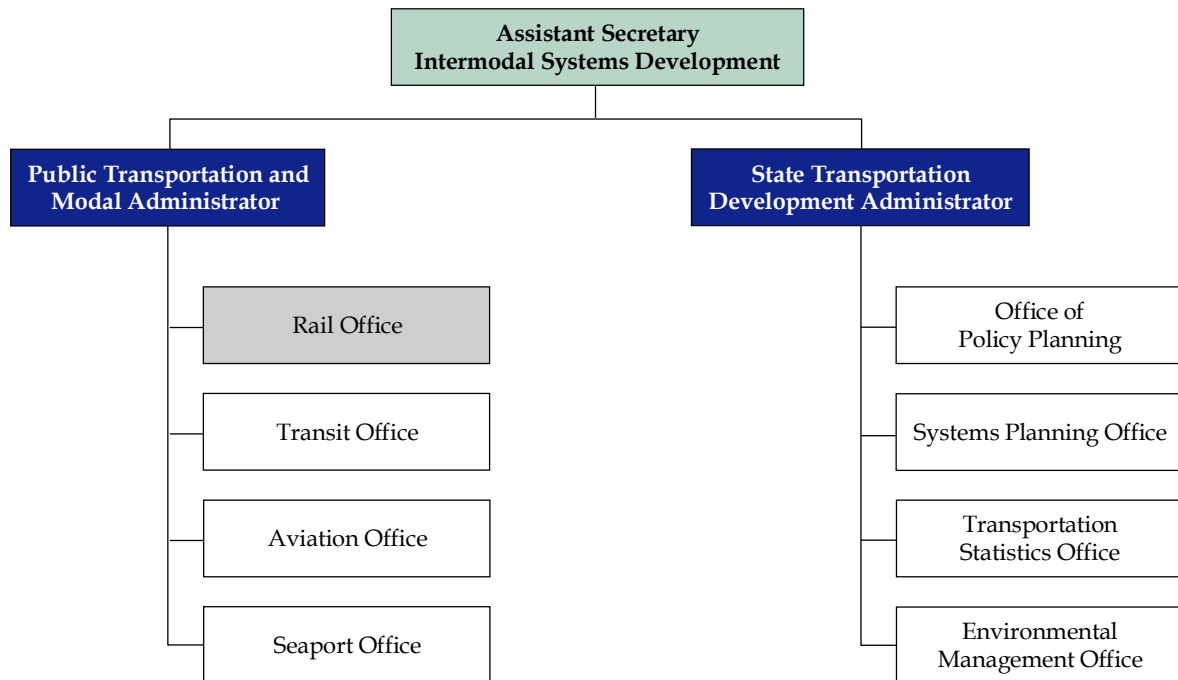
Figure 2.1 The Florida Freight Rail Network



■ 2.2 Public Sector Involvement in Florida Railroads

The Rail Office within the FDOT is the designated state entity for freight and passenger railroad planning and programming. The Rail Office is one of four modal offices that report to the Public Transportation and Modal Administrator who, in turn, reports to the Assistant Secretary of Intermodal Systems Development (Figure 2.2). The Assistant Secretary of Intermodal Systems Development reports directly to the FDOT Secretary.

Figure 2.2 Position of the Rail Office within the Florida Department of Transportation



The Rail Office has both freight and passenger functions. The passenger function deals with intercity passenger service (Amtrak), high-speed rail, and commuter rail services. The freight function covers four primary areas: policy, planning, and procedures; rail safety inspections; rail-highway crossing safety; and project development assistance. Specific freight responsibilities are further delineated in Figure 2.3.

In addition to the functions performed by the Rail Office, Florida has had a long history of supporting the freight program. From 1978 through 1995, the State had actively participated in the Local Rail Freight Assistance Program (LRFA) by financing nearly \$12 million in rail rehabilitation projects and by maintaining the Florida Rail Plan, which was necessary for obtaining Federal funding. Additionally, the State supported the Fast Track Economic Growth Transportation Initiative of 1999 and its replacement program – the Transportation Outreach Program (TOP) – which dedicated a minimum of \$60 million annually for transportation projects of high priority. During the first five years of Fast Track and TOP, freight rail received about eight percent of the total available funding.

Figure 2.3 Responsibilities of the Florida Department of Transportation Rail Office Freight Function



The TOP program has been replaced with the more comprehensive Strategic Intermodal System (SIS), which is discussed in Section 2.2.3.

Highway-Rail Grade Crossing Program

The Highway-Rail Grade Crossing Program is a Federally-funded program aimed at developing and implementing safety-improvement projects that reduce the number and severity of rail-highway grade crossing accidents. Commonly known as the Section 130

Program (due to a citation in a 1970s Federal highway bill), this was originally the Rail-Highway Crossing Program from the 1973 Highway Safety Act.

Under previous Federal transportation funding authorizations covering roughly the past 15 years, the total dollar amounts have remained between \$140 and \$155 million per year nationally. The Section 130 Program provides 90 percent project funding, with the other 10 percent coming from state, local, or private sources. The Federal share may reach 100 percent in some cases. The previous Section 130, Railway Highway Crossings, was carried forward essentially intact. Under the current Safe, Accountable, Flexible, Efficient Transportation Equity Act (SAFETEA-LU) authorization, the primary changes are that the funding source is now a “set aside” from the Highway Safety Improvement Program of \$220 million per year for FY 2006 to FY 2009 (a significant increase of approximately \$65 million annually beyond TEA-21 levels). A new provision also has been added allowing states to use up to two of the funds apportioned to their state under this program for compilation and analysis of data in meeting their reporting requirements.

Annually, FDOT receives its 100 percent Federal share of Section 130 funds in the amount of \$4.6 million. There are no contributions of state, local, or private funds in the 130 Program budget. This contribution amount has remained stagnant since the inception of the Section 130 Program in 1973.

At least half of the Section 130 funds must be used for installation of protective devices at grade crossings. These include: standard signs and pavement markings, active warning devices, track circuit improvements and interconnections with highway traffic signals, crossing illumination, crossing surface improvements, and general site improvement. The remainder of the funding can be used for construction projects, such as grade separations, sight-distance improvements, geometric improvements, and closing of grade crossings.

There are 5,166 at-grade crossings in Florida, which present both safety and mobility challenges.³ The FDOT determines the relative hazard of crossings statewide using a Safety Index, which is based on a combination of specific conditions that occur at each crossing. Those crossings with the lowest Safety Index values are ranked highest in priority for installation of warning devices such as flashing lights or gates. Grade separated structures may be recommended for extremely hazardous crossings with low index values and high accident rates and high train/vehicular volumes, or other engineering considerations. Each grade crossing is assigned a statewide priority number based on the Safety Index and project prioritization occurs on that basis. Key rail personnel representing each FDOT District are consulted for their expertise and input on crossings in their respective Districts.

More broadly, the Central Rail Office within FDOT is involved in the following related activities:

³ <http://safetydata.fra.dot.gov/>.

- Developing signal safety programs and guidelines;
- Maintaining Rail-Highway Crossing Inventory (RHCI);
- Maintaining a grade crossing hazard elimination program (including median barriers, four-quadrant gates, and event recorders);
- Maintaining a grade crossing opening and closing program;
- Providing quiet zone information for the FRA Train Horn Rule;⁴
- Providing cutting-edge and advanced technology to signal safety systems;
- Providing grade crossing technical information (including a highway-railroad grade crossing material selection handbook, high-profile surveys of rail-highway at-grade crossings, and four-quadrant gate timing); and
- Coordinating crossing safety management and facilitating statewide issues with FDOT Districts.

Operation Lifesaver

Operation Lifesaver, Inc. continues to function as a nationwide, nonprofit public awareness program dedicated to ending collisions, fatalities, and injuries at highway-railroad grade crossings and on railroad property. The most recent Federal legislation – SAFETEA-LU – set aside \$560,000 for fiscal year 2005. For fiscal years 2006 through 2009, the Operation Lifesaver Program will be funded by a separate authorization of \$560,000 annually. There are more than 200 trainers and 3,000 volunteers providing educational programs in 49 states (there currently are no railroads operating in Hawaii), the District of Columbia, and Canada. Operation Lifesaver promotes “the three Es”:

- **Education** – Through increased public awareness of the dangers of grade crossings to vehicles and pedestrians;
- **Enforcement** – Of traffic laws related to crossing signs and signals; and
- **Engineering** – Through encouragement of continued engineering research and innovation to improve safety.

⁴ <http://www.fra.dot.gov/us/content/1318>. The Final Horn Rule was promulgated by the FRA and published in the Federal Register on April 27, 2005. The rule required trains to sound a horn or whistle when approaching a highway railroad grade crossing. The intent was to develop a mechanism for a public authority to authorize a whistle/horn ban at a crossing(s) with the authority jurisdiction under the context of an existing state law or modified state law.

FDOT administers and staffs a very active Florida Operation Lifesaver program. They publish a newsletter, travel around the State making presentations to groups of all ages, and organize and participate in special events. They also maintain statistics about fatalities and injuries occurring at grade crossings. In 2005, there were:

- Seventeen highway-rail grade crossing fatalities;
- Twenty-one highway-rail grade crossing injuries;
- Thirty-four pedestrian-trespassing fatalities; and
- Twenty-two pedestrian-trespassing injuries.

Strategic Intermodal System

Florida's Strategic Intermodal System (SIS) was established in 2003 by the Florida Legislature to enhance economic competitiveness by focusing limited state resources on the transportation facilities critical to Florida's economy and quality of life. The SIS is a statewide network of high-priority transportation corridors and facilities, including the State's largest and most significant commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, and highways. Facilities on the SIS carry more than 99 percent of commercial air passengers, almost all waterborne and rail freight tonnage, and more than 68 percent of truck traffic and 54 percent of total traffic on the highway system.⁵

A SIS Strategic Plan, which provides policy direction for implementing the SIS, was adopted in January 2005. The plan was developed by the FDOT in cooperation with nearly 40 statewide transportation partners and numerous regional and local partners. The plan outlines a fundamental shift in Florida's transportation policy by focusing on international, interstate, and interregional travel of passengers and goods; by advancing a multimodal approach to planning to increase mobility for people and freight on complete end-to-end trips; by linking the State's transportation planning and investment decisions to statewide economic policies, with an emphasis on Florida's Strategic Plan for Economic Development; and by shifting from reactive to proactive planning of future transportation investments.

As mandated by law, the SIS Strategic Plan includes the following key elements:

- *System designation*, including objective criteria and thresholds for designating three different types of facilities that make up the SIS: hubs, corridors, and intermodal connectors.

⁵ Statistics in this section were obtained from "Florida's Strategic Intermodal System Plan," FDOT, January 2005.

- *Needs assessment*, including an initial compilation of needs that will be refined into a long-term SIS Needs Plan beginning in 2005. As part of this process, FDOT will work with partners to develop multimodal corridor plans for groups of SIS facilities that serve key economic regions, in addition to the three Rural Areas of Critical Economic Concern.
- *Prioritization process*, including project eligibility guidelines and selection factors for determining which projects will be funded as part of FDOT's Work Program. FDOT also will work with partners to develop a phased Cost Feasible Plan with 10- and 20-year components that recommend future SIS investments and reflect anticipated project impacts, the availability of state and partner funding and the degree of partner consensus.
- *Finance Strategy* to incorporate the current investment policy and forecasts of anticipated revenues, innovative financing, and joint funding by public and private partners. The investment policy allocates 75 percent of state discretionary transportation capacity funding to the SIS by 2015 (up from 62 percent today). The policy is expected to dedicate about \$2 billion per year for SIS and emerging SIS improvement projects, including \$100 million per year targeted specifically for the SIS.

Implementation of the SIS began in 2004 with the identification and funding of 36 projects on SIS connectors, which totaled \$100 million. Then, in June 2005, the Florida Legislature passed Senate Bill 360 in an effort to update the State's growth management framework. As a result of this legislation, FDOT has identified about \$2.8 billion in state money and \$351 million in public and private partner funding to enhance the SIS over the Department's work program timeframe (Fiscal Years 2005/06 through 2010/11).⁶ Of the \$2.8 billion total, about \$302 million has been proposed for a total of 21 rail projects.

Over the next several years, FDOT will cooperate with its partners to fully implement the SIS Strategic Plan by:

- Developing the SIS Needs Plan and the SIS Cost-Feasible Plan;
- Developing a detailed finance strategy that focuses on a better definition of opportunities for joint public/private projects;
- Strengthening the linkages between the SIS Strategic Plan and Florida's Strategic Plan for Economic Development;
- Supporting changes to the State's growth management framework; and
- Strengthening coordination with all partners, particularly the private sector.

The SIS also has direct implications for rail by providing an opportunity to fund large-scale rail projects. However, the multimodal nature of the SIS implies that freight rail

⁶ The funding amounts represent Year-of-Expenditure Dollars; the \$2.8 billion amount includes a \$370 million contingency.

must now compete with highways, airports, deep seaports, passenger rail, and transit for these funds. This challenge prompts an even greater need to promote the public benefits of investments in freight rail projects.

The SIS benefits rail by:

- Providing state recognition of rail's importance;
- Incorporating rail into statewide, regional, and local plans;
- Considering rail as an alternative to highway expansion;
- Facilitating establishment of more efficient and effective rail facilities and services;
- Enabling state funding for projects on designated SIS rail terminals, corridors, and connectors;
- Facilitating public-private partnerships for improving rail service; and
- Establishing a process for proactive planning for the future.

The SIS is comprised of SIS Components and Emerging SIS Components. Table 2.1 defines SIS and Emerging SIS criteria for rail facilities.

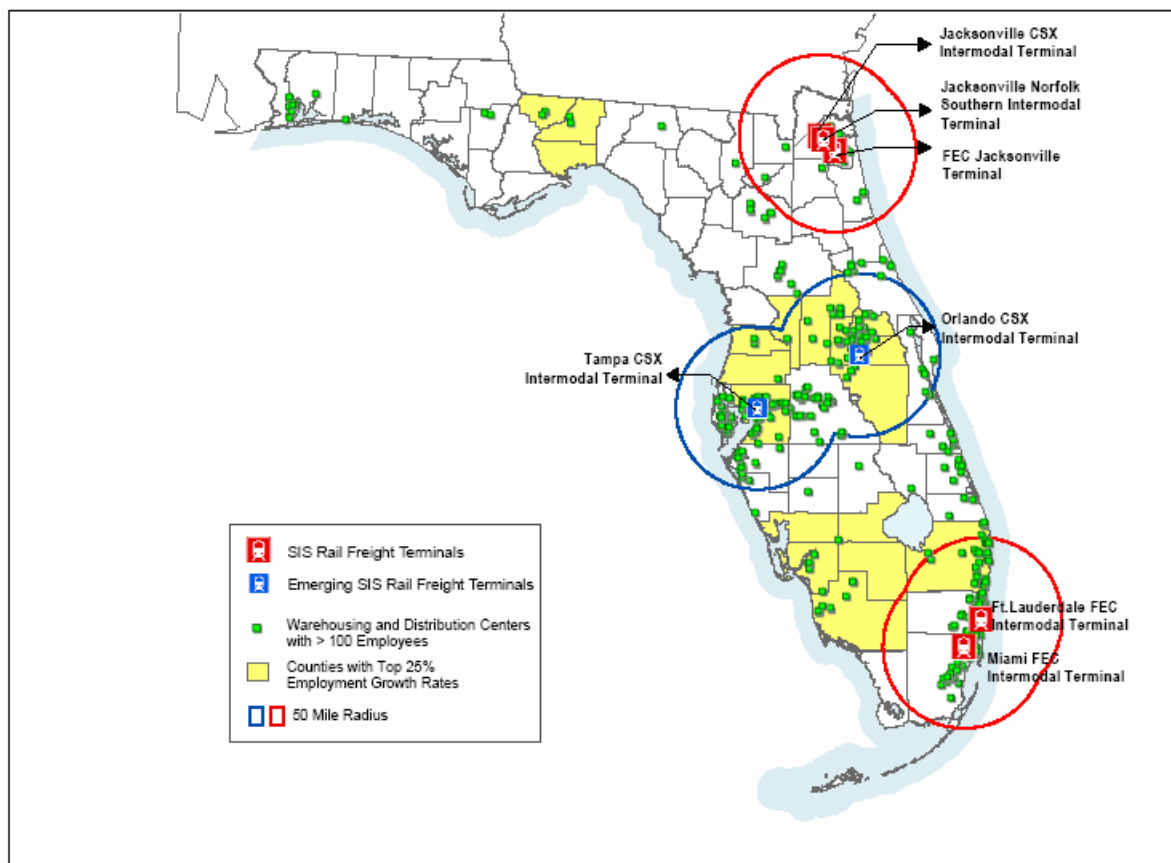
Table 2.1 Strategic Intermodal System and Emerging SIS Definitions for Rail Facilities

Facility Type	SIS Component	Emerging SIS Component
Passenger Terminals (not specific to rail)	100,000 interregional passengers	50,000 interregional passengers, OR serves clusters of population and tourist activity AND more than 50 miles from SIS terminal.
Freight Terminals (not specific to rail)	0.25 percent of U.S. activity	0.05 percent of U.S. activity, OR serves clusters of rail-dependent industries AND more than 50 miles from SIS terminal.
Passenger Rail Corridors	Existing service	Not applicable.
Freight Rail Corridors	Ten-million gross ton-miles per track-mile	Five-million gross ton-miles per track-mile, OR serves clusters of rail-dependent industries.

Figures 2.4 and 2.5 show the current SIS freight rail corridors and the intermodal terminals, respectively. There are five rail freight terminals on the SIS and another two on the emerging SIS. Freight Rail route miles on the SIS total 1,700, with another 400 on the emerging SIS.

Section 8, which discusses funding sources, contains more detailed information on rail projects funding through the SIS.

Figure 2.5 Strategic Intermodal System Intermodal Freight Terminals



■ 2.3 Hurricane Response

More recently, public policy dialogue regarding Florida's freight rail has focused on the need to provide emergency response in the event of natural disasters. An unprecedented landing of four major hurricanes on the State in August and September 2004 created statewide devastation and prompted a greater focus on readiness for future disasters. The repair of rail crossings and safety signalization gained much significance in the challenge to meet the needs for providing rail transportation of emergency goods and services. This was further demonstrated in 2005 with the devastation of gulf rail lines in Louisiana, Mississippi, and Alabama from Hurricane Katrina.

Experiences and lessons learned were translated into several policy recommendations and outlined during the May 11, 2005 Governors Hurricane Conference. Among the recommendations were the following:

- ***Revisions to Florida Statute to grant FDOT the authority to close any public or private highway-rail crossings during periods of disaster.*** This change would enable law enforcement and other resources to be used more effectively; it also would prompt the development of a proactive plan of closures and specific crossings that would be flagged manually.
- ***Development of a Master temporary highway-rail grade crossing closure list in the event of emergencies.*** This list would alleviate considerations for flagging during losses of electricity; it also would increase safety by reducing the possibility of vehicular crashes for motorists who intended to use any affected crossing. This list would be shared with vital personnel, including: state/county/city staff; law enforcement; emergency services; emergency medical centers and hospitals; railroads; etc.
- ***Development of the framework and mechanics for FDOT Damage Review Teams by the Central Rail Office.*** Initially, the 2004 strategic plan called for the pairing up of an FDOT Rail Inspector with the District Rail Coordinator for a team-based review of all damaged rail crossings in that District. However, when railroads teamed up with the Districts on an experimental basis, this approach proved more successful at expediting their efforts to get payments approved for the damaged crossings by the Federal Highway Administration (FHWA). FHWA also was able to help by streamlining the Detailed Damage Inspection Report (DDIR) process for evaluation of damaged rail crossings.
- ***Development of alternative methods for loss of electricity at signalized rail grade crossings.*** The high cost of flagging services and the need to guard back-up generators led to some promising experimentation with generator “bunkers,” which would prove as more secure mechanisms for housing back-up generators at strategic locations. Potential sharing of backup generator power source with adjacent traffic signal systems has been discussed with FDOT Traffic Engineers.
- ***The use of a single point-of-contact by railroads for reporting to FDOT in a timely and consistent manner.*** The use of a single FRA contact to participate in communications was deemed to be most effective. Most recently, information collected by the FRA and supplemented by Central Rail Office contacts with rail companies, enabled FDOT to prepare maps of system for the twice-daily emergency management meetings. Future disaster/hurricanes point of contact for reporting with FRA would most likely follow this format.
- ***The Federal Emergency Management Agency (FEMA) reimbursement procedures for damage and devastation reflected new rules and interpretations that diverged from the 1992 experience.*** A major problem for railroad officials was a policy to not reimburse damages for crossings under a \$1,000 damage threshold, as well as for costs to provide flagging while repairs were underway. There also was confusion regarding the eligibility of damaged rail crossings in counties that were not declared as “disaster areas” by FEMA. Dialogue has been entered into with FEMA with the hope that revisions will be made to bring their rulings more in line with FHWA to reimburse for expenses incurred to parties while making repairs, designation of disaster areas and allowance for delivering commerce in times of disaster.

As Florida's rail network was affected by the four disasters, the Central Rail Office continued to assist the Districts as necessary to accommodate the streamlining of manpower, repairs, and allocation of time. Each storm began a new 180-day clock for repairs to be completed and payment forms submitted and approved by the FHWA. The Central Rail Office conveyed the lessons learned by one District with another and focused on the optimum use of the 180-day clock and processing of payment invoices.

Experiences and lessons learned during the 2004 hurricane season have been shared with FDOT District Rail Coordinators and Rail Inspectors during the Statewide Annual Rail Workshops. Interagency transfer of information and technology also has been of immense help in preparing for upcoming seasons. The FEMA and FHWA discussions that each District has been involved with will also provide concepts for suggested revisions to policy regarding natural disasters.

3.0 The Demand for Rail Services in Florida

This section discusses the factors that drive the demand for rail services in Florida. It begins with some macroeconomic trends (population, population density, employment, and income) that create additional pressure on all transportation modes in the State. Growth in population and income leads to more congested highways and airports, and a greater demand for goods. Florida highways cannot be expected to handle all of this growth.

Next, attention is focused on nationwide trends in the growth of rail traffic. The nation's freight network is in the early stages of a capacity crisis, and both the private and the public sectors must make difficult investment choices to expand capacity. Florida is one state that has proactively been addressing this capacity crisis with multimodal investments through Florida's Strategic Intermodal System program. The response of the railroads in handling this traffic growth, how this drives investments, and the implications for Florida are also discussed.

Finally, this section examines the users of Florida's freight rail services. These are the shippers that depend on rail to transport their goods in the global marketplace, to stock their shelves with the latest products for Florida residents and visitors, and to haul construction materials to keep pace with the rapid population growth. A detailed look at seven Florida industries which depend on a strong freight rail system is provided. These industries are:

- Phosphates and Fertilizers;
- Distribution and Retail;
- Food and Agriculture;
- Paper and Fiber;
- Automotive Distribution;
- Energy; and
- Construction.

■ 3.1 Demographic and Socioeconomic Trends Impacting Florida Railroads

Rail is a key mode in a state transportation system that underpins the \$674 billion Florida economy (an economy about the size of Australia's) and its 7.8 million jobs.¹ One-way rail supports the economy is through hauling stone, cement, structural steel, and other items used in the State's large construction industry. Another way is by lowering logistics costs, thus making Florida's food and agricultural sectors competitive throughout the country. Florida's fast-growing population also has created proportional increases in energy demand, and rail is the preferred transportation mode for existing and new coal-fired electric generating plants. Florida's phosphate industry, a historically important component of the State's economy, has relied on rail service for decades and remains today the top commodity (by weight) transported on the State's rail network.

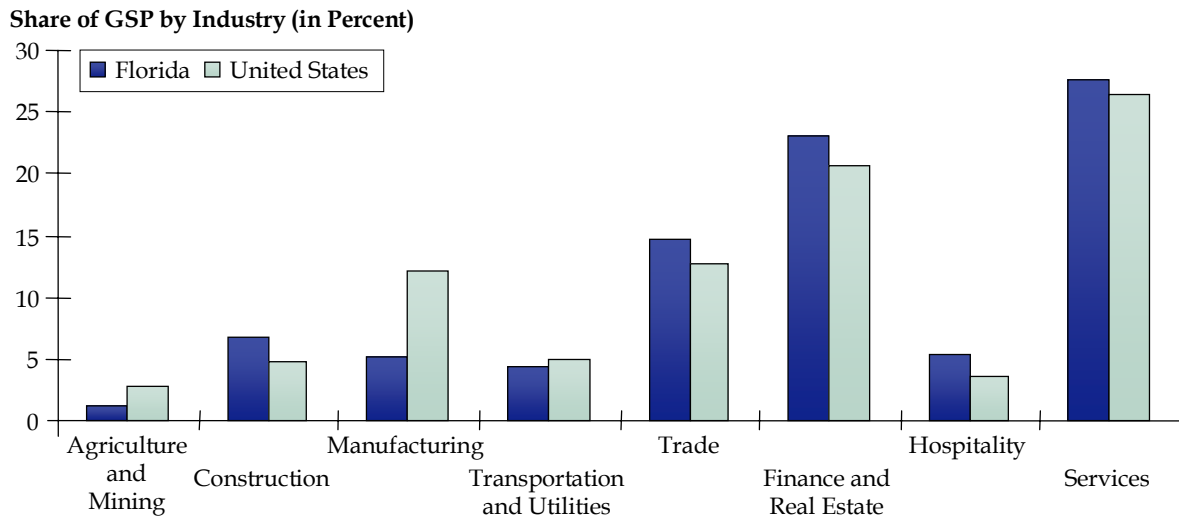
Florida's economy is more dependent than the United States' economy on services-related industries, including retail trade, finance, real estate, business, professional, and hospitality services. Figure 3.1 shows the contribution of each major sector to Florida's gross state product (GSP). The relatively low percent of manufacturing and high percent of trade and services means that a greater than average amount of goods need to be imported from other states and countries. This places even more demands on the transportation system.

Service industries tend to move higher values, more time-sensitive goods. They often keep inventories low to reduce costs, but this requires a dependable supply chain. The trucking industry has historically dominated these types of shipments, but railroads have responded by offering scheduled services and improved reliability. Containers and trailers filled with goods supporting service industries has exhibited, and continues to exhibit, the greatest growth rate in the rail industry.

Fueling the growth of these service sectors is the continued growth in Florida population, employment, and income. Each of these topics is discussed below.

¹ Economic and employment data from the U.S. Bureau of Economic Analysis, 2005.

Figure 3.1 Contribution to Gross State Product by Industry
Florida versus United States



Source: Bureau of Economic Analysis; data are for 2004.

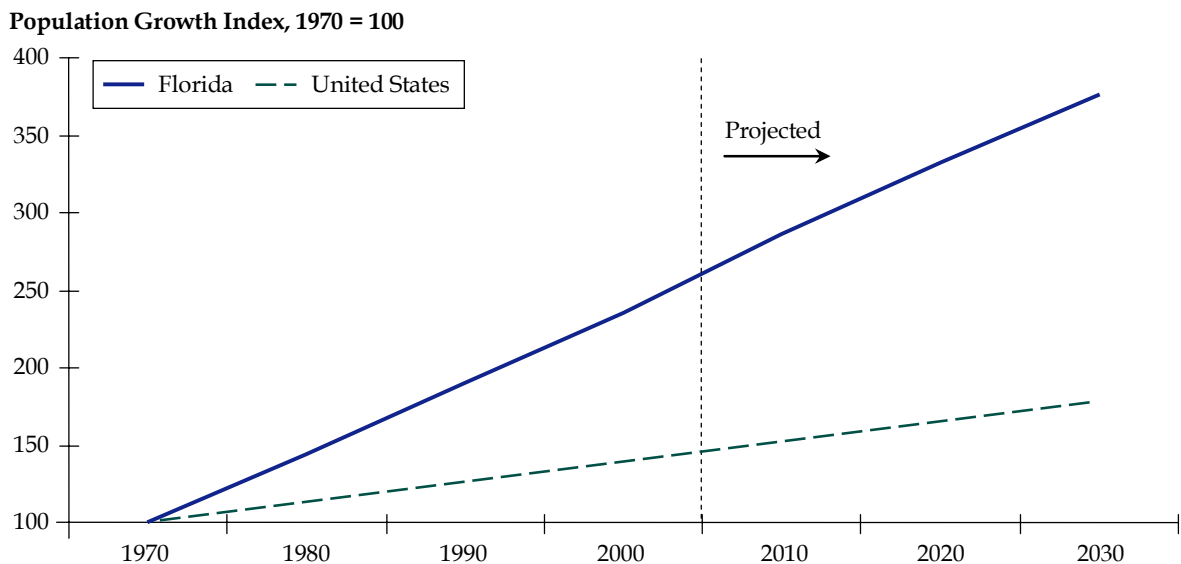
Population and Population Density

Florida ranks among the fastest growing states in the nation, whether measured by its population, overall income gains, or economic growth. The pace of this growth puts pressure on all aspects of Florida's infrastructure: its water systems, schools, healthcare facilities, etc. In particular, the State's transportation system, including rail, must accommodate the mobility, consumer, and logistics needs of an increasing number of visitors, retirees, residents, workers, and businesses, and do so reliably, safely, and efficiently. For these reasons, the decision-making process regarding the future of Florida's rail infrastructure and services needs to incorporate and respond to a set of high-growth conditions experienced by few other states. Florida trends on population, density, employment, and income are briefly described to provide context for the rail plan.

Population - Population growth has a direct impact on transportation demand. More people take more trips, require more services, and need more goods to sustain themselves, and Florida is adding population at a faster pace (net) than all states except California and Texas. Florida's population reached 17.8 million in 2005, and is the fourth largest state in the country. By 2025, Florida is forecast to have 25.0 million people and will surpass New

York to become the third most populous state (trailing only California and Texas).² To reach these levels, Florida is expected to add population at a rate almost double the national average (see Figure 3.2).

Figure 3.2 Projected Population Growth
Florida versus United States

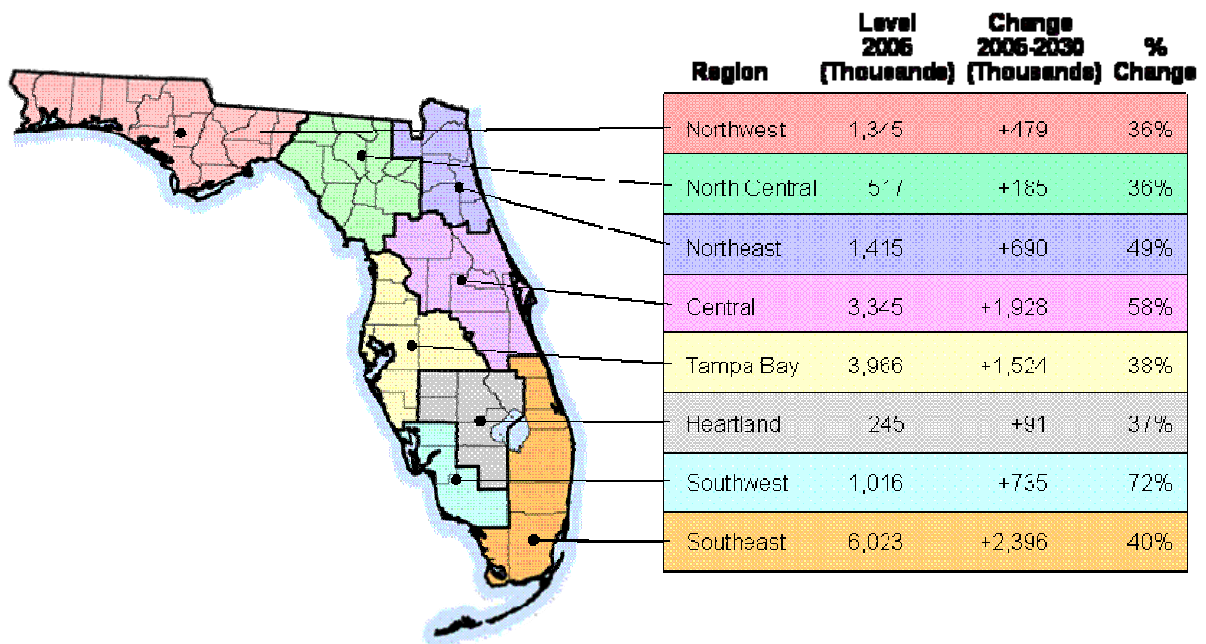


Source: U.S. Census Bureau and Florida Office of Economic and Demographic Research.

This growth is not limited to a few isolated areas, but is occurring in all regions of the State. The southwest region is expected to grow at the fastest pace (72 percent through 2030) and the southeast region is expected to gain the most population (2.4 million through 2030). The central region is second both in projections for net change and percent change (see Figure 3.3).

² Source of Population Forecast: Bureau of Economic and Business Research, University of Florida. Retrieved the forecast of 24,998,016 for the year 2025 from the Florida Legislature’s Office of Economic and Demographic Research web site on December 7, 2006.

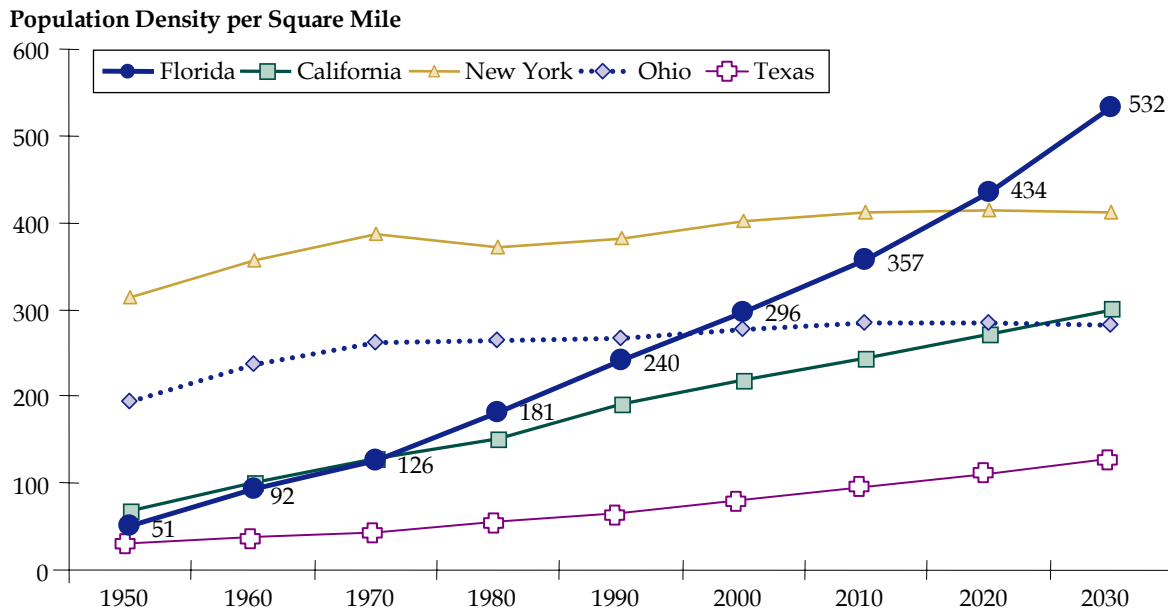
Figure 3.3 Projected Population Growth by Region
2005 to 2030



Source: Florida Office of Economic and Demographic Research.

Population Density - Combined, California, Texas, and Florida account for over 40 percent of United States population growth, each having added more than 1.5 million people since 2000. However, unlike California and Texas, Florida has a much smaller land area (one-third the size of California's), potentially adding greater complexities in absorbing such large population increases. Since 1950, the very nature of Florida has changed as a result of significant increases in population density. In 1950, Florida was largely rural and had a population density (51 people per square mile) similar to that of other agricultural and rural states and lower than the much more vast State of California (68 people per square mile). In the last 50 years, Florida's population density has catapulted ahead of most other states. By 2000, Florida's growing population density (296 people per square mile compared to 217 in California and only 81 in Texas) had made it much more akin to the populous states in the industrial Midwest and Northeast (see Figure 3.4). The ramifications of the State's emergence as one of the most densely populated states in the country include a heightened interest in land use issues, congestion, higher land acquisition costs, and limited available alignments for building new or expanded guideways (i.e., rail lines and roadways). By 2020, Florida is projected to surpass New York in population density and will become the sixth most densely populated state in the country.

Figure 3.4 Florida Has Become One of the Most Densely Populated States in the Country

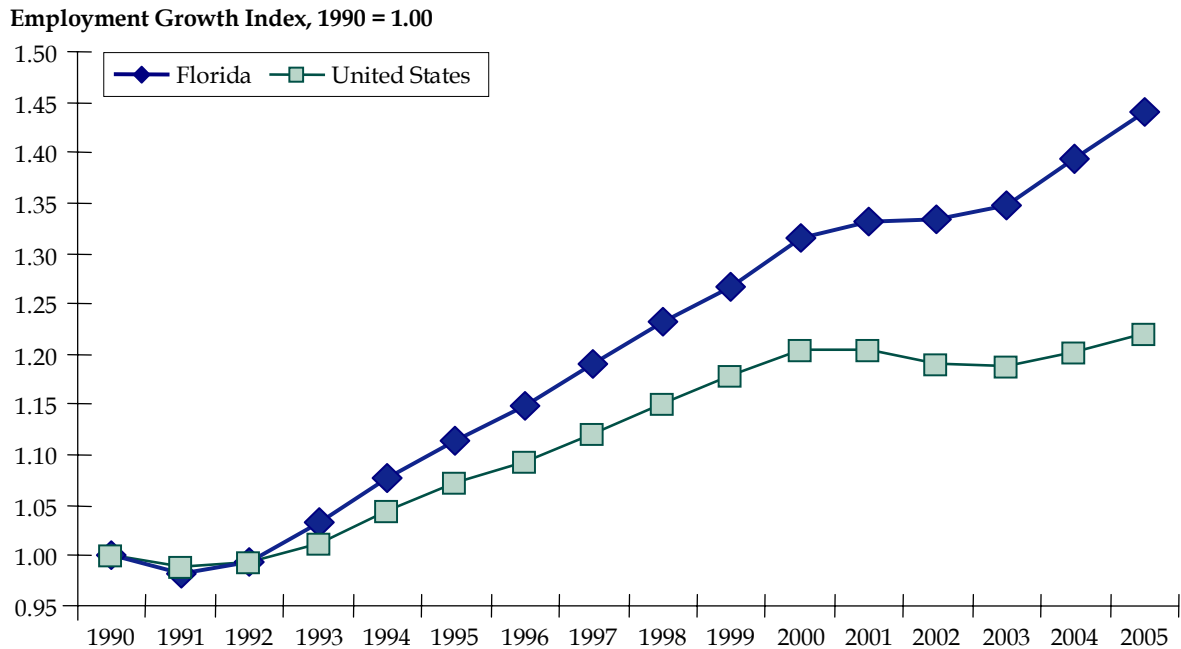


Source: U.S. Census Bureau.

Employment

Florida’s expanding economy draws people from throughout the United States and the world. Since 1989, Florida has added jobs at a much faster rate than the United States average (see Figure 3.5). In fact, only Texas added more jobs than Florida between 1989 and 2005, with each state seeing an increase of over 2.5 million jobs. In recent years, however, Florida has weathered the recession better than most states and has seen the rate of job growth return to the fast pace experienced in the 1990s, while many states have experienced slower growth. Florida’s growing economy and job numbers, like population, translate to higher demand for a full range of goods - all possessing transportation requirements. Florida’s decades-long role as a leader in United States job growth is not forecast to change in the future.

Figure 3.5 Job Growth
Florida versus United States – 1990 to 2005

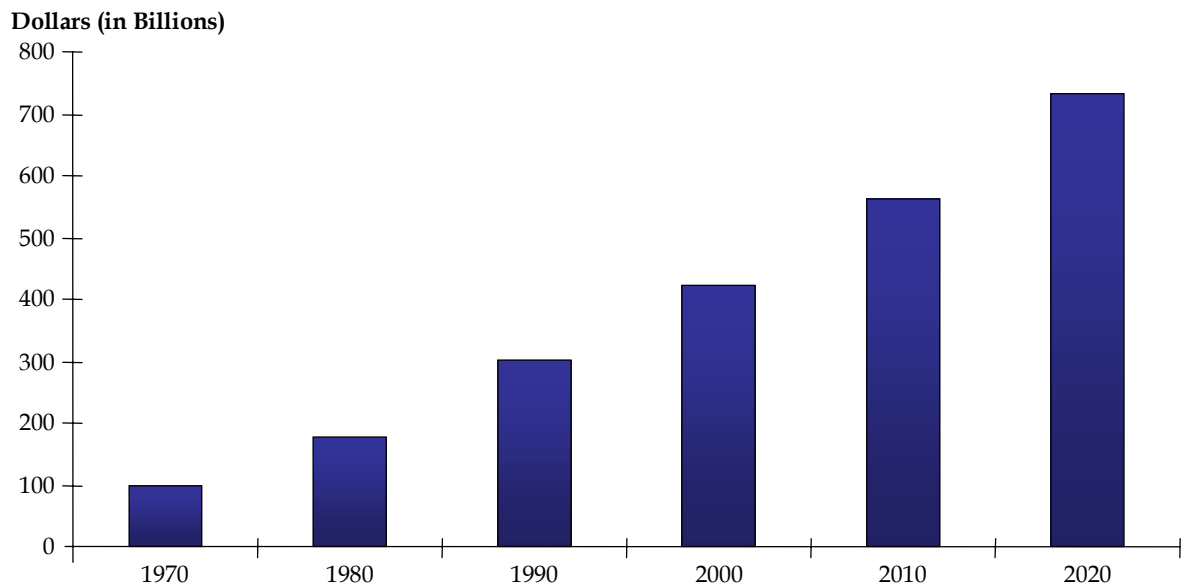


Source: Bureau of Labor Statistics.

Income

While the expansion of jobs is a valid proxy of overall economic growth, people ultimately need higher-income levels to justify increased consumption. In real terms, total income levels in Florida have historically grown quickly and are forecast to continue increasing at a fast pace (see Figure 3.6). Between 2000 and 2020, Florida's total income is expected to increase by about \$310 billion. These dollars, in combination with the expected rise in the State's population, will contribute to much higher consumer demand (for products ranging from groceries and autos to the lumber and concrete required in the construction of homes) in Florida in coming years, increasing the need for efficient goods movement by both rail and truck to satisfy this demand. The use of rail, as part of the State's strategy to meet the transportation needs associated with growth, will be crucial for accommodating the expected expansion of economic activity and income levels in Florida.

Figure 3.6 Historical and Projected Florida Income Growth
1996 Dollars



Source: Woods & Poole, 2004.

■ 3.2 Nationwide Rail Trends Impacting Florida Railroads

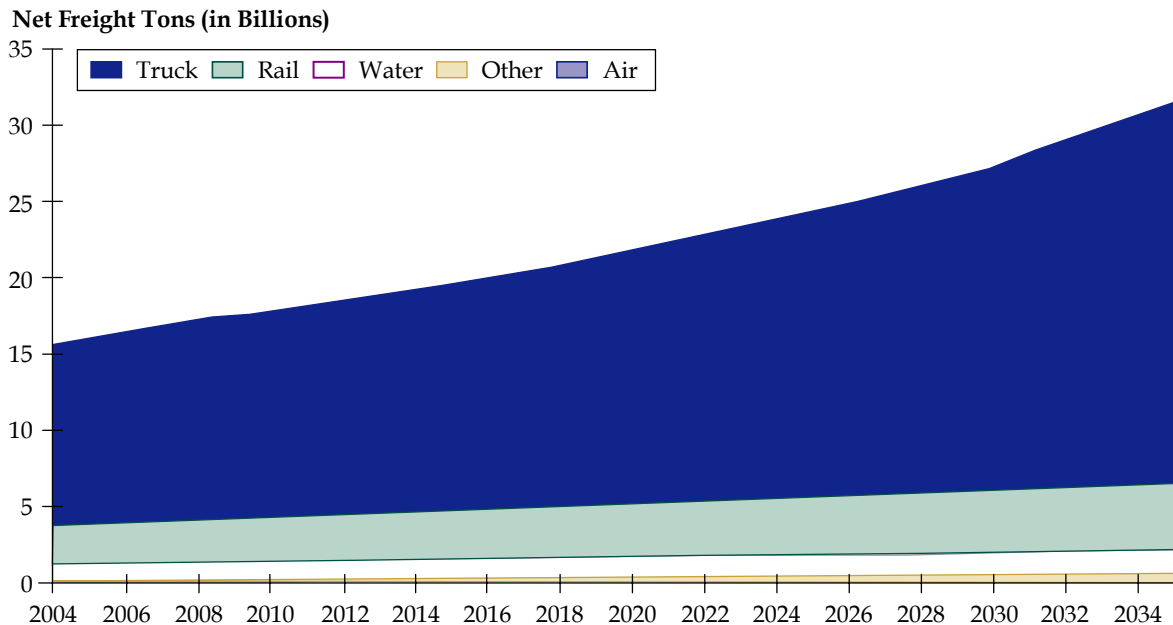
The demand for freight rail services will grow because the nationwide demand for goods movement is growing. Assuming moderate rates of economic growth – between 2.5 to 3 percent a year – the tonnage of freight moved in the United States will double by 2035 (Figure 3.7). This rate of growth is about the same as the last 20 years and roughly tracks growth in the U.S. Gross Domestic Product. The problem is that no provisions have been made to accommodate this growth, and the nation is in the early stages of a freight transportation capacity crisis. This section first looks at the projected growth in the demand for freight traffic (both total and for rail) and then discusses the rail industry response to this demand growth.

Demand for Goods Movement

The growth in freight tonnage is expected to continue at 2.5 percent to 3 percent per year at least through 2035. The demand for freight rail services is projected to increase by a total of 69 percent based on tons and by 84 percent based on ton-miles through 2035 (see Figure 3.7), assuming continued investment in the rail system to handle growth. Despite this, the rail share of national freight shipments is shrinking. By 2035, rail's share of total

freight tonnage could decline from 14 percent to 13 percent and rail's share of ton-miles could decline from 29 percent to 28 percent.³

Figure 3.7 Forecasts of Freight Tonnage Through 2035



Source: Global Insight, Inc., TRANSEARCH, 2004.

Rail market share is shrinking in part because of structural changes in the economy. The United States is producing and shipping more value-added products and less heavy manufactured goods. Freight shipments are lighter, less bulky, and higher in value, making them better suited to truck than rail. This trend is expected to continue, with the value per ton going up over the next decade, suggesting more growth in high-value commodities than low-value commodities and more demand for trucking services.

Rail market share also is shrinking because of its pace of investment. The industry is purposefully operating near capacity because of its capital intensity, and it is using demand management as well as investment to respond to traffic volumes. This means low to moderately profitable business is being turned away to make room for more profitable business. Railroads like all private industry will continue to make capital decisions based on private financial returns, and public benefits will be just an incidental part of the decision unless public capital plays a role.

³ All forecasts in this section were developed by Global Insight and were obtained from the AASHTO *Freight Bottom Line Report*, advanced draft copy, 2006.

Demand for rail transportation is driven by the commodity markets it serves, as well as by carrier performance. Almost three-quarters of the current rail tonnage and revenue come from four market groups: coal, farm and food products, chemicals and petroleum, and the intermodal business (listing them in order of tonnage size). Some 40 percent of the physical volume is in coal alone, but the revenue picture is different and more balanced: intermodal and coal each are about 20 percent of the traffic (with intermodal somewhat the larger), while the farm and food group and the chemicals and petroleum group are about 15 percent each. Roughly 60 percent of all new rail tons is attributable to coal and intermodal, and although the top four markets remain the same, by 2035 intermodal should be second only to coal in terms of physical volume, and will be substantially the most important source of rail revenue. The intermodal business is projected to maintain a 3.8 percent compound annual growth rate over the next three decades, causing it to more than triple in size, primarily because of its role in carrying containerized imports for the globalizing economy. Traffic in transportation equipment also grows at an above-average pace, expanding by 2.6 percent per year and more than doubling in volume by 2035. This business is chiefly automotive products, for which rail offers a very successful service that should be able to keep abreast of an evolving market in the years ahead.

Rail services fall into three distinct categories: bulk, general merchandise, and intermodal. Bulk services are dedicated unit trains hauling a single bulk commodity, such as coal or grain. Intermodal services, as defined by the rail industry, are trains hauling international and domestic containers and trailers. All other rail traffic, such as chemicals, forest products, and automobiles, moves as general merchandise. The long-term prospects for selected rail commodities through the year 2035 are:⁴

- **Coal** – Rail should remain its primary mode of transport, with a 62 percent cumulative growth in rail tonnage by 2035;
- **Farm and Food Products** – Modest growth of slightly less than 1 percent per year, with cumulative growth in 2035 projected to be 51 percent larger than today;
- **Chemical and Petroleum** – Slow growth of less than 1 percent per year and accumulating to a 27 percent increase by 2035;
- **Lumber and Forest Products** – Slow growth around or just above 1 percent per year, and a total increase in rail shipments of 40 percent to 49 percent by 2035;
- **Transportation Equipment** – Solid growth of 123 percent in tonnage through 2035; and
- **Intermodal** – Prospects for rail intermodal business are very robust, with tonnage volumes rising 213 percent by 2035.

⁴ Forecasts developed by Global Insight and obtained from the *AASHTO Freight Bottom Line Report*, advanced draft copy, 2006.

Rail Industry Response

All transportation modes are straining to meet the growing freight demand. Increased congestion along highways and rail lines, delays at marine ports and airports, and labor and equipment shortages contribute to deteriorating service performance and higher logistics costs. To manage this surge in demand, carriers are employing a combination of three strategies:

- Increase capacity through capital investments;
- Improve operating efficiency; and
- Control demand through price increases.

While this is bad news for shippers and consumers, it is not necessarily bad news for the rail industry. Additional traffic, price increases, and reductions in lower margin shipments have led to higher rail industry profits. That is, the rail industry has profited by running a leaner operation that does not attempt to serve all demand.

The public sector would like to see the rail industry invest capital to expand network capacity. The advantage that trucking, water, and air transport have over rail is that they essentially rent their pathways through fuel taxes, take-off and landing fees, and dock fees, thus turning these expenditures into variable costs related to usage. Railroads must construct their own pathways, incurring fixed costs that are not a function of usage. The rail industry spends three to five times as much on infrastructure as other major industries, much of this going to maintenance of existing track and facilities. As a consequence, both lenders and railroads tend to be very cautious about over-investing in infrastructure. It is very difficult to shut down a rail line or bridge during economic downturns and even more difficult to liquidate a rail line. If capacity is expanded, then the railroads must incur the subsequent maintenance costs.

The railroads are investing record amounts of capital to expand capacity, but it is not keeping pace with demand and public expectations. The U.S. Class I freight railroads spent more than \$8.3 billion in 2006 laying new track, buying new equipment and improving infrastructure.⁵ Much of these expenditures are consumed by maintaining existing capacity, and funding for actual network expansion is limited. The AASHTO Freight Rail Bottom Line Report estimated an additional \$2.65 billion annually, beyond what the railroads could fund, would be need to handle existing traffic plus the railroads “fair share” of forecasted growth.⁶

⁵ Association of American Railroad, *Major Freight Railroads to Invest \$8.3 Billion in Infrastructure in 2006*, retrieved from <http://www.aar.org/Index.asp?NCID=3582>.

⁶ American Association of State Highway and Transportation Officials, *Freight-Rail Bottom Line Report*, 2002.

The Class I railroads are responding to choke points and congested corridors by selectively adding track and expanding facilities, when it makes good business sense to do so. The locations and pace of this expansion, though, are determined by economic principles and not by the public's desire for railroads to contribute to mitigation of highway congestion or spur economic growth in a region.

Operationally, the railroads are utilizing "hook-and-haul" strategies, moving connections off of main lines, and running longer and heavier trains. Under "hook-and-haul," the railroads pick-up and drop-off large blocks of railcars, leaving the assembly and disassembly of these blocks to the industries or to short line railroads. This increases train velocity by reducing the number of stops the Class I railroads make for individual railcars. This "hook-and-haul" strategy is generally done off of the main lines, on track owned by industries or short lines, thus freeing the main lines for through trains.

Similarly, the railroads are using longer and heavier trains. For example, the BNSF has mandated that all their international intermodal shipments be handled in 40-foot well cars and all their intermodal trains be 8,000 feet in length. These changes will allow the BNSF to increase the amount of freight that can be handled over its mainlines without increasing the number of trains. However, the longer trains cannot be handled without lengthening sidings to permit trains to meet and pass; and without providing the corresponding yard capacity to assemble and hold the longer trains. Adding sidings and expanding terminals is a major challenge in densely developed urban areas. Railcar weights are also increasing, with many Class I main lines now capable of handling 315,000-pound railcars. This is occurring while many short lines are still struggling to achieve 286,000-pound standards.

Finally, the railroads are moving toward development of integrated logistics centers (ILC). One such facility is planned in Winter Haven, Florida. By operating a large ILC, the railroad can effectively exit the collector/distributor business, leaving this to trucks or short line rail operators. The loss in revenue from exiting this business is more than offset by the operational savings of not running these lower volume collector/distributor trains.

The railroads are also responding to the capacity crisis by using pricing to control demand. Railroads are using pricing to turn aside lower-profit carload and short-haul freight in favor of longer distance intermodal and bulk traffic, which can be handled cost-effectively and profitably in unit trains. In some markets and corridors, the strong growth in international intermodal traffic is squeezing out industrial-carload traffic, and even domestic-intermodal traffic. This is a painful change for shippers, especially captive shippers, who are being forced to rethink their supply chains and markets. It is also a painful change for many short line operators, whose business is dependent upon interchanges with the Class I carriers.

■ 3.3 Outlook for Florida Rail-Intensive Industries

Within the Florida economy, seven specific industries were selected as being especially sensitive to the performance of the State's rail system. These industries are:

- Phosphates and Fertilizers;
- Distribution and Retail;
- Food and Agriculture;
- Paper and Fiber;
- Automotive Distribution;
- Energy; and
- Construction.

These industries account for 29 percent of Florida's GSP and 30 percent of the State's employment.⁷ Table 3.1 provides a breakout of contribution of these industries to the GSP and employment. Each of these industries requires dependable, efficient rail service for inbound supplies and/or outbound products.

Table 3.1 Contribution to Florida Gross State Product and Employment for Rail-Intensive Industries

Industry	GSP (in 2000 Dollars)	Employment (in Thousands)
Paper and Fiber	3.2	13.4
Distribution and Retail ^a	105.2	1,532.2
Food and Agriculture	7.2	135.2
Energy	9.1	24.2
Phosphates and Fertilizers ^b	2.1	6.1
Construction	32.3	579.5
Total	159.1	2,290.6
Total as a Percentage of Florida GSP and Employment	29%	30%

^a Includes automotive distribution.

^b GSP figure is for 2002.

⁷ Employment is from the U.S. Bureau of Labor Statistics and is based on 2005 data. GSP is from the U.S. Bureau of Economic Analysis and is based on 2004 data.

Phosphates and Fertilizers

Phosphate and Fertilizer Industry Profile

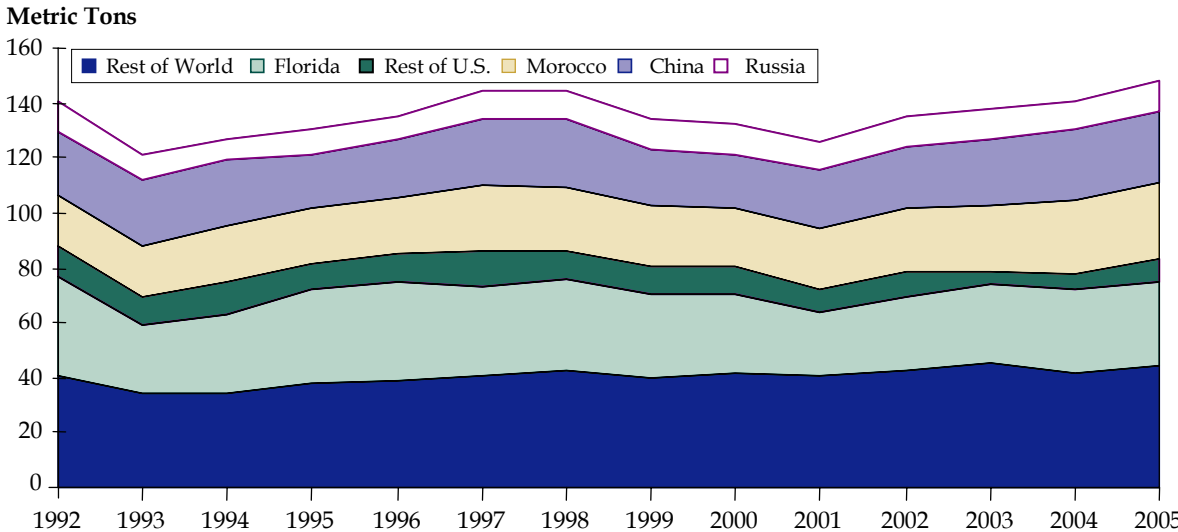
Mineral deposits in West Central Florida make the State a world leader in the production of phosphate rock. In 2005, Florida mined 30.0 million tons of phosphate rock, accounting for slightly more than one-fifth of world production (see Figure 3.8). With the exception of Hamilton County in northern Florida, the State's phosphates production is concentrated in Polk, Hillsborough, and Hardee counties. Phosphate is one of three primary nutrients in fertilizer and does not have a synthetic replacement. Florida accounts for just over half of the nation's production of phosphatic fertilizers. The phosphates and fertilizers produced in Florida are shipped nationwide and to markets throughout the world, with China, India, Australia, and Brazil ranking among the leading foreign destinations (see Figure 3.9). Demand from China, in particular, has spurred production worldwide. Long-term demand for phosphate fertilizers is expected to increase as the world's population and the production of grain continue to grow (see Figure 3.10).

Phosphate production in Florida should continue for decades as technological advances have allowed the mining of rock that would not have been exploitable in previous years. Nonetheless, the reserves in the traditional center of the industry, Polk and Hillsborough Counties are gradually depleting. There are substantial untapped phosphate reserves to the south in Hardee, DeSoto, and Manatee counties, but new mines must go through a strict permitting process before production can begin. The present regulatory framework makes it particularly difficult to mine in areas that are not within or contiguous to current mining operations. While the production of phosphate rock may shift to the south (if permits for new mines are granted), the manufacturing of fertilizers would likely remain in Polk County. The fertilizer facilities are very capital intensive and it is not viewed as economically feasible to build new manufacturing plants closer to the new sources for phosphate rock.

Given the above-mentioned trends, Florida's phosphate industry, including rock and fertilizer is expected to remain static in the near term. In the long term, barring the opening of significant new mines south of Polk County, the industry is likely to decline slowly in the State. According to the U.S. Geological Survey, the Bone Valley area will start experiencing more serious production problems due to depletion in the 2015-2020 timeframe.⁸ On the other hand, worldwide phosphate mining is expected to increase as it is indispensable for increasing the production of crops worldwide.

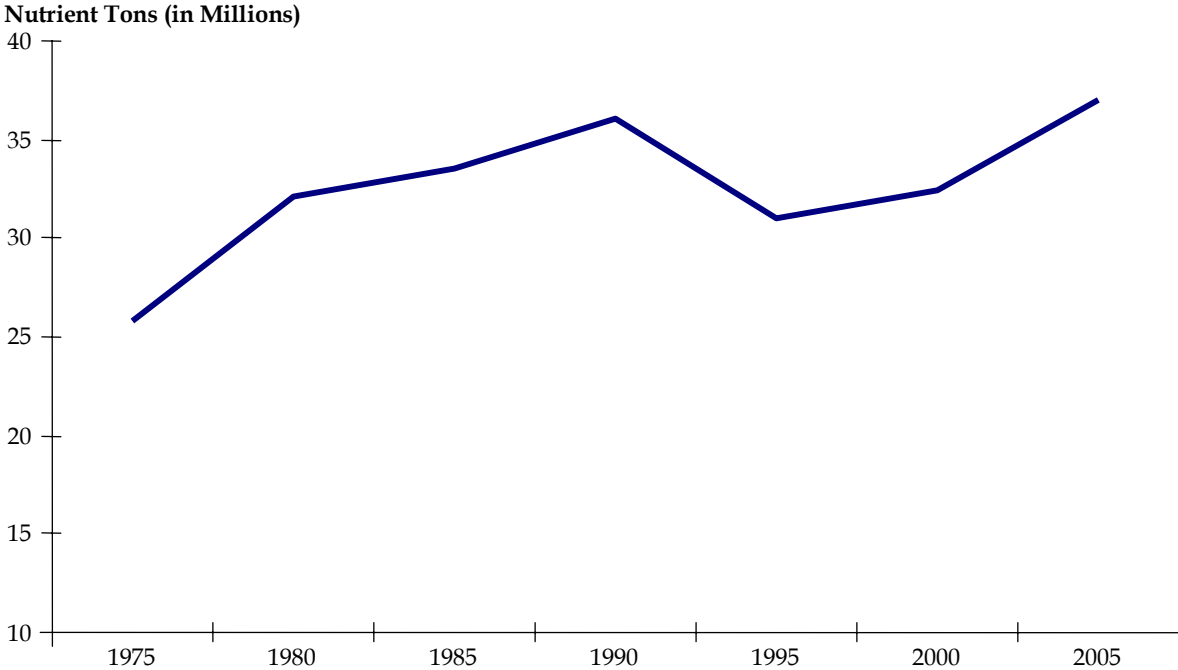
⁸ U.S. Geological Survey, Mineral Commodity Summaries, January 2005.

Figure 3.8 World Production of Marketable Phosphate Rock
1992 to 2000



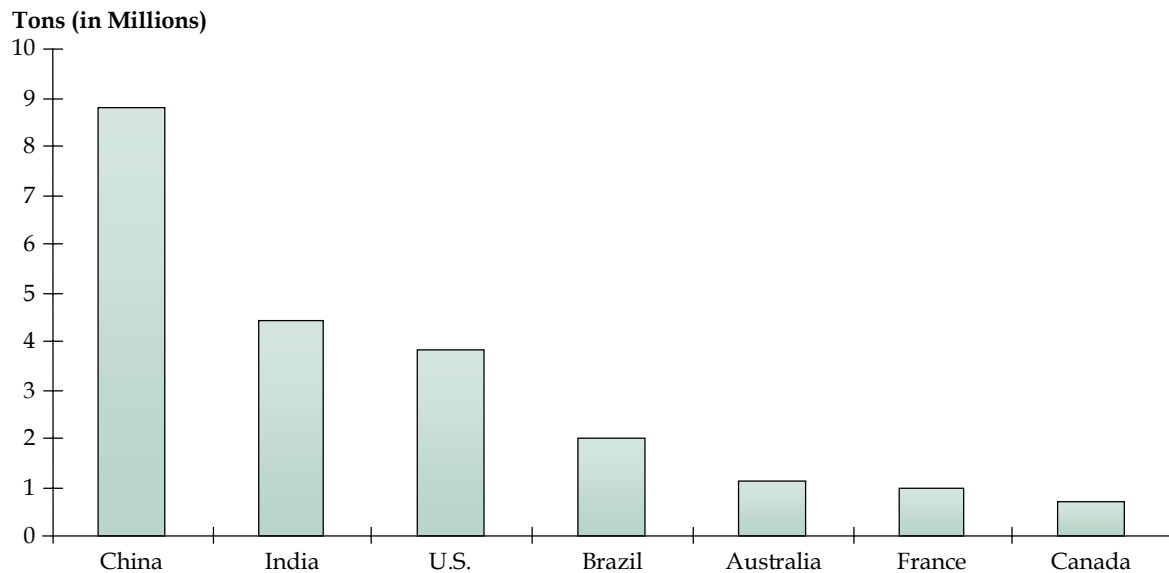
Source: U.S. Geological Service; Florida figures for 2004 and 2005 are estimates.

Figure 3.9 World Consumption of Phosphate Fertilizers
1975 to 2005



Source: International Fertilizer Association, FERTECON.

Figure 3.10 Global Demand for Phosphate Fertilizer by Country
2001



Source: International Fertilizer Association, FERTECON.

Figure 3.11 Phosphate Mining in Bone Valley, Florida



Rail's Role in the Florida Phosphate and Fertilizer Industry

The production of phosphate and fertilizer puts unique demands on the Central Florida transportation system. Thousands of railcars use the rail lines between the Port of Tampa and the mining areas in Hillsborough, Polk, and Hardee Counties on a daily basis. About 16.5 million tons of phosphate-related materials are shipped through the Port of Tampa on an annual basis (accounting for approximately one-third of the port's volume). The size of Florida's phosphate industry and its effects on rail are reflected in the State's distinction as originating nearly 30 percent of the United States total for "nonmetallic minerals" (the commodity classification that includes phosphate rock as well as the crushed stone and sand used in construction) transported by rail. In fact, although nonmetallic minerals account for only 0.5 percent of Florida GSP, they account for 63 percent of all freight rail tonnage originated in Florida and 51 percent of all freight tonnage terminated in the State.⁹

Table 3.2 Florida Industry Profile
Phosphates and Fertilizers

Item	Description
NAICS Codes	212392: Phosphate Rock Mining 325312: Phosphatic Fertilizer Manufacturing
Employment	Phosphate Rock Mining: Year 2005 = 1,938 Phosphatic Fertilizer Manufacturing: Year 2005 = 4,169
Contribution to GSP	\$2.1 billion (2002); \$4.0 billion in 1997. Note that commodity prices started declining in 1999 so the decline indicated here does not indicate a decline in demand.
Trend	Short-term (through 2010) - Steady Long-term (beyond 2020) - Decline (due to depletion)
Suppliers	Fertilizers/Chemicals: Chemicals, wholesale trade, rubber, professional and business services, trucking, mining, public utilities, petroleum Mining: Real estate, mining, machinery, public utilities, professional services, petroleum, chemicals, wholesale trade, fabricated metals, trucking
Markets	Fertilizers and Phosphates: Farming, agriculture
Rail Impacts	Rail is the primary mode of transportation for Florida's phosphates and fertilizers. Rail helps reduce logistics costs, making Florida's products competitive with foreign sources.

⁹ Percentages of non-metallic minerals calculated from the Association of American Railroads 2005 *Railroad Service In...* reports for Florida and the United States.

Florida, historically, supplied a large portion of world demand for phosphate rock and fertilizer, the question is, given current reserves and limitations on the development of new mines, whether the State will see its role diminished in the future. The resolution of these questions will have an impact on the use of rail, particularly in Central Florida. Should phosphate rock production shift to the south, the fertilizer manufacturers would likely use trucks to transport rock to the fertilizer plants in Polk County. A mixture of rail and trucks would continue to link the industry to the Port of Tampa. If the production of phosphate rock in Central Florida falls and is not replaced by newer mines, phosphate rock is likely to be imported through the Port of Tampa and then transported by rail and truck to the inland fertilizer plants.

Distribution and Retail, Including International Trade

Distribution and Retail Industry Profile

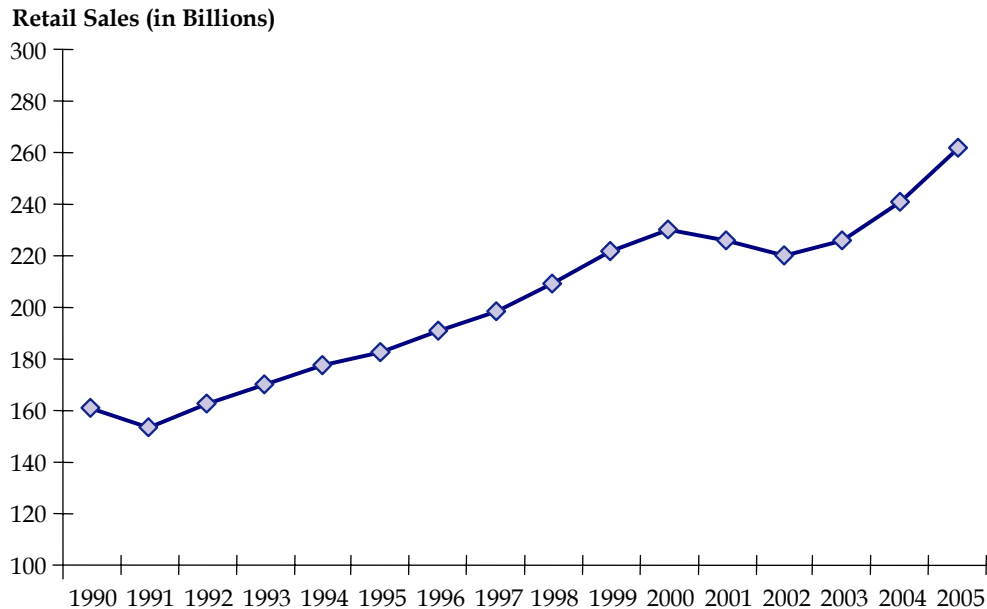
The distribution and retail trade industry is comprised of several key economic sectors – wholesale trade, retail trade, and transportation and warehousing. Together, these sectors employ over 1.5 million people in Florida, accounting for about one-fifth of the State’s jobs. These sectors also are major contributors to the State’s overall economic growth, adding about 75,000 jobs between 2000 and 2005. Primarily due to the very high productivity (value-added per employee) of the wholesale trade and transportation/warehousing industries, the distribution and retail industry accounts for one-fifth of Florida’s GSP or about \$105 billion in 2005.¹⁰

Growth in retail trade responds to the expansion of the economy, income, and population. Florida’s long-term trend in these three indices suggests that retail sales in the State are likely to continue growing at a moderate to fast pace. Between 1990 and 2005, the value of total retail sales in Florida increased, in real terms, from \$160 billion to over \$262 billion (see Figure 3.12). This type of trend is expected to be maintained in coming years.

Like retail trade, wholesale trade (maintaining inventory, sorting, and selling merchandise to retailers and manufacturing, construction, and professional contractors), also will expand in tandem with the overall growth of the State’s population and economy. The growth of wholesale trade was particularly strong during the 1990s as companies increased the use of outsourcing to perform wholesale trade functions that had previously been conducted in-house.

¹⁰In inflation-adjusted 2000 dollars.

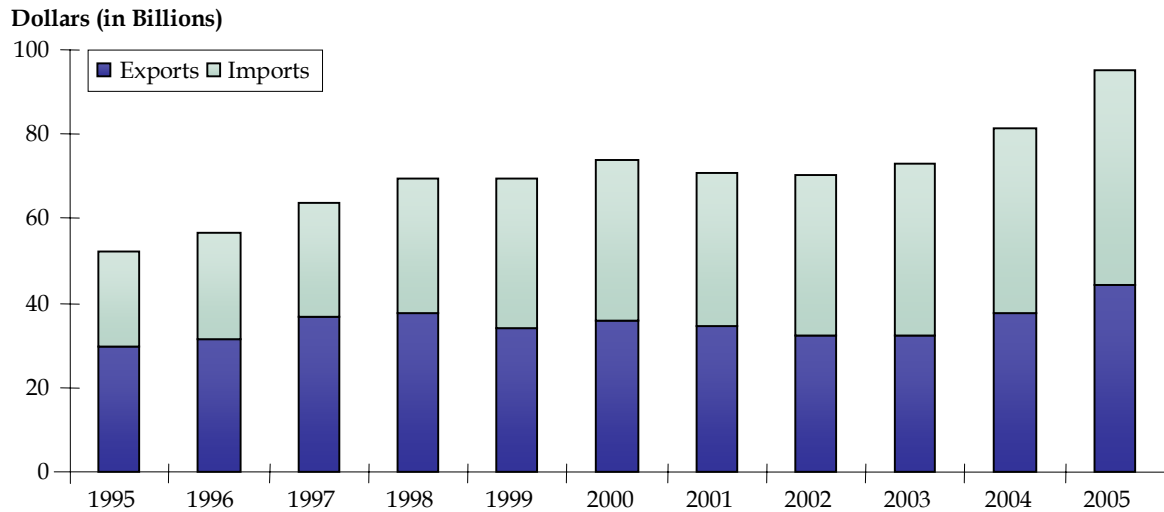
Figure 3.12 Retail Sales in Florida
 1996 Dollars, 1990 to 2005



Source: Florida Office of Economic and Demographic Research.

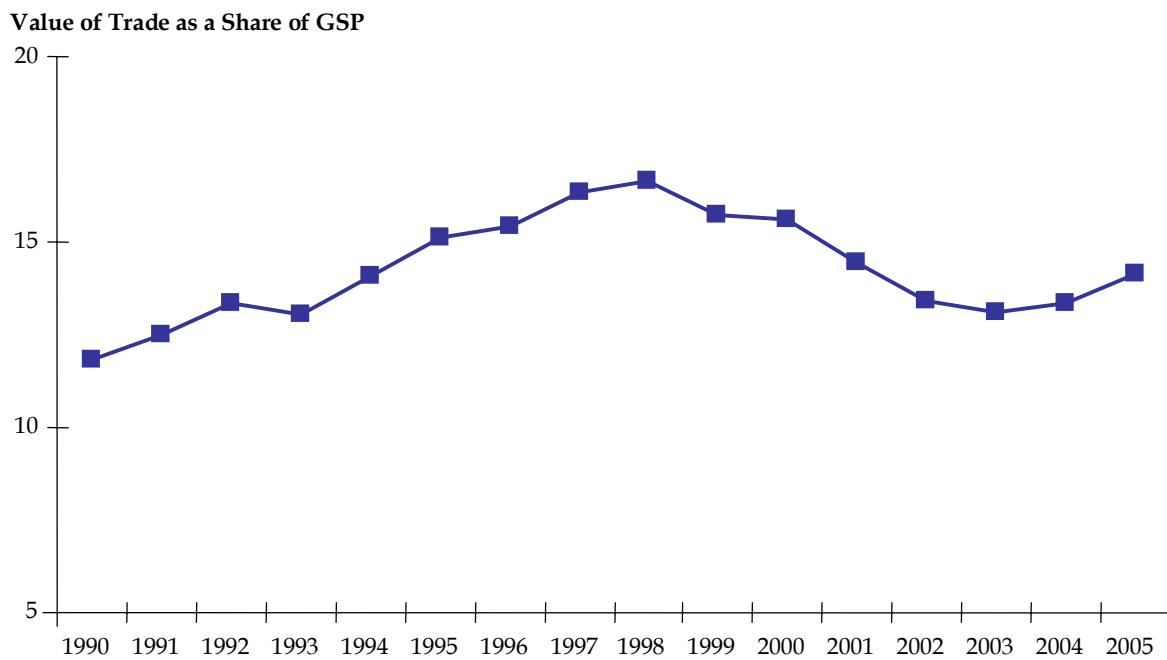
A large part of the distribution industry in Florida relates to the operation of the State's international airports and port gateways. These gateways receive goods from throughout the country for export to foreign markets and process goods imported from overseas for distribution to destinations both within Florida and nationwide. The total value of Florida imports and exports experienced a sharp rise since the early 1990s, growing from about \$40 billion in 1992 to over \$70 billion in 2000. The period from 2000 through 2003 was relatively flat due to economic stagnation in Europe and Latin American and the strength of the dollar. However, international trade has since resumed strong growth and hit a record \$95 billion in 2005 (see Figure 3.13). The value of international trade today is equivalent to 14 percent of Florida's GSP (see Figure 3.14).

Figure 3.13 Value of Florida Trade
1995 to 2005



Source: U.S. Census Bureau.

Figure 3.14 Value of Total Florida Trade (Exports and Imports)
As A Share of Gross State Product
1990 to 2005



Sources: U.S. Census Bureau and Bureau of Economic Analysis.

Rail's Role in the Florida Distribution and Retail Industry

Florida's distribution and retail trade industry depends on the efficient movement of goods to keep costs down and to remain competitive. While trucking is the leading mode supporting the movement of merchandise to and from wholesalers and retailers (especially to sales outlets), rail is crucial for the long hauls that bring goods into the State from distribution hubs such as Chicago, Atlanta, and Dallas-Fort Worth, as well as from more distant gateways, including the west coast ports which are the leading point of entry for consumer items entering the United States from Asia.

Rail service and infrastructure is crucial for maintaining or improving the competitiveness of Florida's ports. Florida's container ports handled over 3.0 million 20-foot equivalent units (TEU) in 2005, accounting for almost 16 percent of all the containers processed by the nation's Atlantic and Gulf ports (see Table 3.3). Despite substantial increases in volume at the ports of Miami, Jacksonville, and Palm Beach, Florida's ports, overall, did not keep up with the increase posted by Atlantic and Gulf coast ports as a whole between 1995 and 2005 (see Table 3.4). Several very large ports, including Savannah, Houston, and New York/New Jersey saw their TEU numbers more than double during the period as containerized trade with Asia exploded. On-dock or near-dock rail access is a prerequisite for container ports to compete and expand market share. The efficiency of the ship-to-rail intermodal connections (as measured by quality of service and infrastructure capacity) at Florida's ports will help determine how successfully they compete against aggressively expanding ports in Houston, Mobile, Savannah, Charleston, and Hampton Roads (Port of Virginia). The Port of Mobile, alone, is expected to increase its capacity tenfold from 60,000 to 600,000 TEUs annually following a significant expansion (the first phase of the port's Choctaw Point Terminal is expected to be completed in 2007). This will include an intermodal terminal on 57 acres of land that will be able to accommodate 8,000-foot trains without interrupting mainline traffic according to plans. The adequacy of the rail service can make the difference between a competitive container port and one that is relegated to niche status.

Table 3.3 Atlantic and Gulf Ports Ranked by TEUs Handled
2005

Port	TEUs Handled	Share
New York/New Jersey	4,792,222	25.3%
Charleston	1,986,586	10.5%
Hampton Roads	1,981,955	10.5%
Savannah	1,901,520	10.0%
San Juan	1,727,389	9.1%
Houston	1,582,081	8.3%
Miami	1,054,462	5.6%
Port Everglades	797,238	4.2%
Jacksonville	777,318	4.1%
Baltimore	602,486	3.2%
Wilmington, Delaware	250,507	1.3%
Palm Beach	248,206	1.3%
Philadelphia	204,912	1.1%
New Orleans	200,766	1.1%
Gulfport	187,384	1.0%
Other Florida Ports	80,132	0.4%
ALL Florida Ports	2,957,356	15.6%
Atlantic and Gulf - TOTAL	18,952,929	-

Source: American Association of Port Authorities. "Other Florida Ports" includes Fernandina, Manatee, Panama City, and Tampa.

Table 3.4 Atlantic and Gulf Coast Ports Ranked by Growth in TEUs Handled
1995-2005

Port	TEUs Handled		Percent Change
	1995	2005	
Savannah	626,151	1,901,520	203.7%
Houston	704,010	1,582,081	124.7%
New York/New Jersey	2,262,792	4,792,922	111.8%
Charleston	1,023,903	1,986,586	94.0%
Philadelphia	107,094	204,912	91.3%
Hampton Roads	1,077,846	1,981,955	83.9%
Gulfport	108,096	187,384	73.3%
Miami	656,175	1,054,462	60.7%
Wilmington, DE	156,940	250,507	59.6%
Palm Beach	162,045	248,206	53.2%
Jacksonville	529,547	777,318	46.8%
Port Everglades	632,789	797,238	26.0%
Baltimore	534,556	602,486	12.7%
San Juan	1,539,000	1,727,389	12.2%
New Orleans	194,424	200,766	1.2%
Other Florida Ports	53,615	80,132	49.5%
ALL Florida Ports	2,034,171	2,957,356	45.4%
Atlantic and Gulf - TOTAL	10,915,356	18,952,929	73.6%

Source: American Association of Port Authorities. "Other Florida Ports" includes Fernandina, Manatee, Panama City, and Tampa.

Potential Opening of the Cuban Market

Florida's ports today are crucial distribution platforms for goods being shipped to and from Latin America and the Caribbean, including Puerto Rico. This includes groceries, consumer goods and furnishings, construction materials, machinery, and transportation equipment. Many of these goods are transported to and from the State's ports by rail. The type of logistics or "supply line" relationship that developed between Florida and Puerto Rico is likely to be replicated, in some manner, with the opening of trade with Cuba. The Cuban market and related trade volumes are potentially huge. Cuba is a much bigger market than Puerto Rico (11.4 million versus 3.9 million people), although its economic size is smaller (gross products of \$39.2 billion and \$72.7 billion, respectively, in 2005). It is anticipated that Cuba will have a significant demand for American products, likely similar to those being shipped to Puerto Rico, and Florida should position itself as the critical link in the Cuban logistics supply chain. Inevitably, the State will assume this

role at least to some degree because of its geographical proximity and historic connections to Cuba. However, ports in other states, including Mobile, also plan to capture a significant share of Cuban trade once the market opens. The potential for large-scale trade between the United States and Cuba is an economic opportunity for the State, but will put pressure on Florida's rail, highway, port, and air system to accommodate significantly larger freight volumes.

Table 3.5 Florida Industry Profile
Distribution and Retail

Item	Description
NAICS Codes	Retail Trade (super sector) Wholesale Trade (super sector) Transportation and Warehousing (super sector)
Employment	Retail trade: 1995 = 806,963; 2005 = 985,020 Wholesale trade: 1995 = 267,813; 2005 = 337,560 Transportation and Warehousing: 1995 = 177,718; 2005 = 209,604
Contribution to GSP (2000 Dollars)	Retail Trade: 1997 = \$33.2 billion; 2004 = \$49.6 billion Wholesale Trade: 1997 = \$26.5 billion; 2004 = \$39.7 billion Transportation and Warehousing: 1997 = \$13.1 billion; 2004 = \$15.9 billion
Trend	Moderate to fast paced growth, driven by economic and population growth
Suppliers	Retail Trade: Real estate, communications, public utilities, banking, paper, food, wholesale trade Wholesale Trade: Business and professional services, real estate, communications, wholesale trade, printing, electrical equipment, auto repair, public utilities
Markets	Wholesale Trade: Gas and oil, primary metals, fuel oil and coal, retail trade, autos and parts, exports, clothing, food and beverages
Rail Impacts	Rail helps lower costs of retail goods entering Florida, especially long-haul international products through west coast ports. Rail also helps Florida's ports remain competitive for imports and exports of intermodal, automotive, and bulk goods.

Agriculture and Food

Agriculture and Food Industry Profile

Agriculture and food are two interrelated industries. "Agriculture" represents the growing of crops (e.g., sugarcane, oranges, corn) and the raising of livestock, while "food" represents the manufacture of the items commonly found on grocery store shelves (e.g.,

bread, juice, cheese, meat, soda, beer, etc.) other than fresh produce. Both agriculture and food use rail for inbound materials as well as to transport goods to more distant markets.

Agriculture - Florida's agriculture industry is the 9th largest in the country, producing crops and livestock valued at \$7.5 billion in 2005 (see Table 3.6). While the State ranks 17th in the country in terms of the number of cattle, Florida's agriculture industry, based on value, is led by crop production (e.g., citrus, vegetables, sugarcane, and nursery products). In 2005, the value of crops grown in Florida reached \$6 billion, trailing only three states - California, Illinois, and Iowa (see Table 3.7).

**Table 3.6 Market Value of Agricultural Products Sold
(Crops and Livestock)**
States Ranked by Total Sales, 2005

	Value (in Billions Dollars)	Share of United States
California	31.9	13.5%
Texas	16.9	7.2%
Iowa	14.2	6.0%
Nebraska	11.2	4.8%
Kansas	9.8	4.1%
Minnesota	9.1	3.8%
Illinois	8.7	3.7%
North Carolina	7.7	3.3%
Florida	7.5	3.2%
Wisconsin	6.6	2.8%
United States	235.8	-

Source: U.S. Department of Agriculture.

Table 3.7 Market Value of Crops Sold
States Ranked by Total Sales, 2005

	Value (in Billions Dollars)	Share of United States
California	23.7	20.8%
Illinois	6.9	6.0%
Iowa	6.7	5.9%
Florida	6.0	5.3%
Minnesota	4.3	3.8%
Texas	5.6	4.9%
Washington	4.0	3.5%
Nebraska	3.9	3.4%
Indiana	3.5	3.1%
Ohio	3.1	2.8%
United States	113.6	-

Source: U.S. Department of Agriculture.

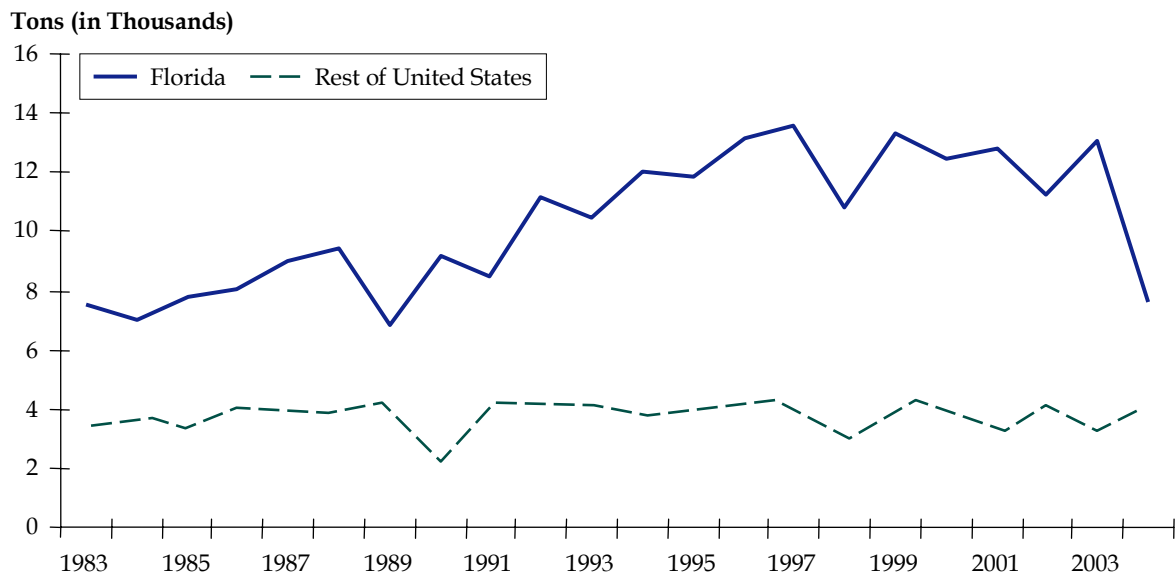
Florida dominates the nation's citrus production with a high of over 13 million tons of oranges, grapefruit, limes, and other fruits grown in 2003. However, damage from the 2004 hurricanes resulted in a sharp drop to only 7.6 million tons, and it may be several years before Florida's citrus production returns to previous levels. Prior to 2004, Florida's share of national citrus production had been trending upwards since the late 1980s, although, as recent history demonstrates, it can be variable from year to year (see Figure 3.15).¹¹ The increase in citrus production through 2003 has corresponded with a geographical shift for the industry in Florida. Traditionally, orchards have been concentrated in the center of Florida – in Polk, Hillsborough, Manatee, and Pasco counties. However, due to the incidence of frost to the north, production has shifted to the southwest, and Florida's growth in the citrus industry is now led by Hendry, Collier, Charlotte, Lee, and Glades counties. Until 2003, Florida's growers had accounted for a gradually growing share of the nation's citrus production, reaching 80 percent of the United States total in 2003. The State's share dropped to 67 percent in 2004. The freezes that destroyed much of California's citrus crop in January 2006 are not expected to have a dramatic impact on Florida's long-term market share, as Florida's oranges are more suitable for juice production while California's are used as table fruit. In the shorter-term,

¹¹For example, the hurricanes in the fall of 2004 are expected to reduce Florida's citrus and fresh vegetable production by 25 to 30 percent in 2002-2005. The damage caused by the hurricanes may continue to have repercussions on future production, especially during the next five years.

Florida growers are expected to sell more of their fruit to the fresh fruit market to compensate for the decline in California production.

Figure 3.15 Citrus Production

Florida Compared to the Rest of the United States, 1983-2004



Source: U.S. Department of Agriculture.

While Florida has a strong domestic advantage over other states in citrus production, competition is increasing from overseas, particularly from Brazil, the world's largest producer of orange juice. High duties protect the Florida citrus industry and are an impediment to United States imports from Brazil, which are now mostly destined to European markets. A lowering of these duties may result in a flood of cheaper Brazilian orange juice and present a challenge to Florida's citrus and orange juice industries.

Beyond citrus, Florida is the leading state in the production of a number of other agricultural commodities. Concentrated in Palm Beach, Hendry, and Glades counties, Florida grows 49 percent of the nation's sugarcane. Florida also is the top producer of greenhouse and nursery plants (includes sod). In general, the State's nursery and greenhouse products are most intensively cultivated in urban counties located in the central and southern parts of Florida, including Volusia, Dade, Orange, Lake, and Palm Beach, among others.

The growing public health emphasis being placed on eating fresh fruits and vegetables bodes well for Florida's agriculture. Increases in per capita fruit and vegetable consumption, further enhanced by rising personal income levels, will stimulate demand for products commonly grown in Florida.

Food Products – The value of Florida’s food products output reached \$15.3 billion in 2004, ranking 12th among the states (see Table 3.8). In real terms, Florida’s food production stayed relatively constant during the 1997 to 2004 period. Food production is an important part of the Florida economy, accounting for 12 percent of the State’s manufacturing output. Within the food industry, Florida leads the nation in juice production. The State’s juice production is valued at over \$1 billion per year, 40 percent of the national total. After California, Florida is the 2nd ranking state in fruit and vegetable canning, accounting for one-eighth of United States output.

Table 3.8 Food Industry Output by State, 1997-2004
(in Billions of 2000 Dollars)

State	1997	2004	Percent Change
California	50.5	52.9	4.8%
Texas	30.3	35.3	16.5%
Georgia	31.8	30.2	-5.1%
Illinois	30.4	29.9	-1.6%
Virginia	30.1	29.5	-2.0%
Ohio	27.1	25.0	-7.8%
Pennsylvania	23.2	23.9	3.4%
New York	25.4	18.5	-27.1%
Missouri	19.3	17.3	-10.5%
Iowa	16.4	17.1	4.0%
Tennessee	12.8	16.5	28.7%
Florida	14.4	15.3	6.2%
United States	556.3	553.5	-0.5%

Source: Bureau of Economic Analysis.

Rail’s Role in the Florida Agriculture and Food Industry

Rail plays a crucial role in Florida’s food and agriculture industries. Perhaps the most famous freight rail shipments are the Tropicana “Orange Juice Trains,” originating in Bradenton and Fort Pierce. The Tropicana plants receive up to 300 to 400 inbound trucks of oranges per day to feed production. The juice is processed and packaged in Florida and then sent by rail to markets in the Northeast, Midwest, and California. Service to the Northeast is on 60 car unit trains moving five days per week in expedited service. The railcars are specially designed refrigerated boxcars, each capable of carrying four truckloads’ worth of product. Upon arriving at the distribution hubs, including Jersey City, New Jersey to serve the Northeast and Cincinnati, Ohio to serve the Midwest, the orange juice is trucked to retail outlets for delivery to stores within 48 hours of leaving the

Tropicana plants. This timing is critical since chilled fresh juice has a shelf life of about two months.

Rail also plays a critical role in allowing Florida sugar to compete against foreign imports. U.S. Sugar uses rail to haul sugar cane from the fields into the processing plants. In one specific movement, the bulk refined sugar is moved from the plant to the chocolate factory in Hershey, Pennsylvania. The South Central Florida Express originates 10 covered hoppers of refined sugar each week, which they haul over the FEC to Jacksonville for interchange NS for delivery to Hershey. Without rail, Florida sugar would not be competitive in this market.

Table 3.9 Florida Industry Profile
Agriculture and Food

Item	Description
NAICS Codes	311: Food Manufacturing 312: Beverage and Tobacco Manufacturing 11: Agriculture
Employment	Food: 1995 = 37,329; 2005 = 31,704 Beverage and Tobacco: 1995 = 8,655; 2005 = 10,695 Agriculture: 1995 = 110,777; 2005 = 92,832
Contribution to GSP (2000 Dollars)	Food: 1997 = \$4.1 billion; 2004 = \$4.3 billion Beverage and Tobacco: N/A Agriculture: 1997 = \$2.7 billion; 2004 = \$2.9 billion
Trend	Food: Strong growth tied to population growth Agriculture: Steady; products market value was \$5.26 billion in 1992 and \$6.2 billion in 2002
Suppliers	Food: Farms, food products, wholesale trade, paper, fabricated metals, rubber, business services, trucking, printing, glass, public utilities Agriculture: Farms, food, real estate, agricultural services, chemicals, wholesale trade, trucking, petroleum products, public utilities, auto repair
Markets	Food: Eating and drinking establishments, retail trade, food products, farms, hotels, exports, amusement and recreation Agriculture: Food products, farms, tobacco manufacturing, textiles, exports, wholesale and retail trade, eating and drinking establishments
Other	Agriculture: Florida ranks 28 th among the states in the value of livestock and poultry production, and has the 18 th largest cattle herd (1.7 million head in 2002) in the country
Rail Impacts	Offers lower cost transportation service making Florida products (such as citrus and sugar) competitive against foreign imports, especially in United States Northeast and Midwest markets

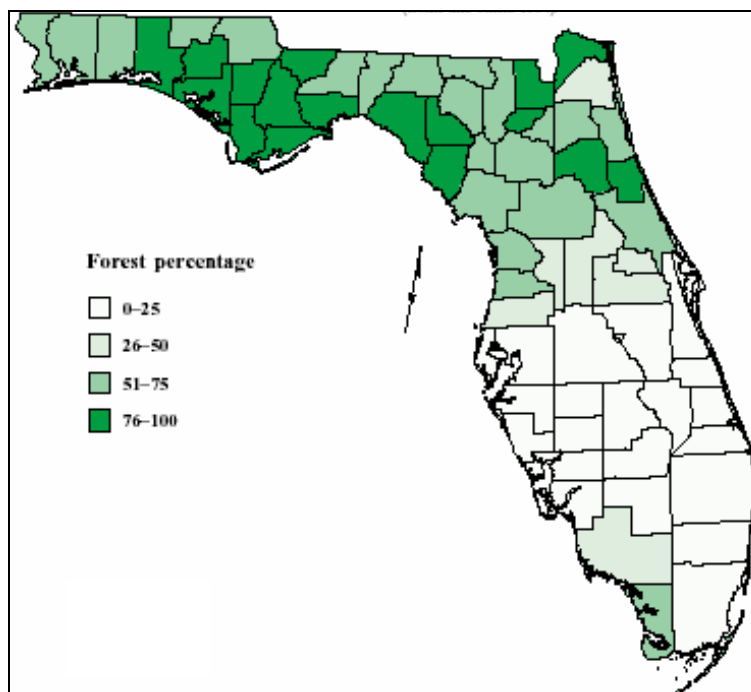
One final example of rail use in the food industry is the Winn Dixie supermarket chain. Winn Dixie has increased the use of rail because it is difficult to get truck service into Florida due to the lack of backhaul opportunities, i.e., the trucks have to leave Florida empty. There are over 350 boxcars per year of canned goods moving from Midwest suppliers to Winn Dixie stores, 75 percent of which are going into Florida. Truck rates from the Midwest to Florida are more than 25 percent higher than rail rates. Winn Dixie operates regional distribution centers in Miami, Pompano, Jacksonville, and Orlando. All of these Florida distribution centers have been equipped to accept boxcars from the railroads.

Paper and Fiber

Paper and Fiber Industry Profile

Much of Florida's Panhandle is forested (see Figure 3.16), lying within the yellow pine growing region that stretches from East Texas to Georgia, one of the country's most prodigious areas for forestry. As such, Florida has a substantial paper and fiber industry that has been one of the pillars of the northern Florida economy for decades. In 2003, the Panhandle accounted for half of Florida's paper- and fiber-related jobs. Among the states, Florida's nonnewsprint paper shipments, valued at \$900 million in 2002, are the 7th highest in the country. Overall, Florida's total paper industry (including pulp mills, newsprint, cardboard, stationery, etc.) is the 21st largest in the United States.

Figure 3.16 Forest Area Coverage in Florida
1995



Source: Florida Forestry Association.

About 47 percent of Florida's land area, 16.3 million acres, was forested in 2002, when the State had about 2.2 percent of all forested land in the United States. A total of 4.0 million acres was owned by the forest industry. Florida's logging industry is concentrated in the northern part of the State. The most important forestry product is pulpwood for paper manufacturing. Lumber production in 2002 was 888 million board feet, mostly softwoods.

Although Florida's employment and output in the paper and fiber industry has stayed relatively flat in recent years, the overall outlook for the industry is favorable. Paper and fiber market demand is primarily based on population, so long-term demand is expected to be strong as population growth continues to increase. Although international conditions are generally positive and bode well for the industry in Florida, competition from surplus Canadian pulp can dampen the United States market at times. The poor management of forests in Southeast Asia, however, is likely to push China and Japan to source their wood and paper supplies from Latin America and South Africa, as well as Canada. This shift will reduce the competition for domestic suppliers.

Technological advancements in forestry and paper production have reduced supply variability, making it possible to ascertain harvest schedules, forecast supply, and anticipate market prices. These management practices are helping to sustain the industry in North America, and are now being exported worldwide so that in 20 years perhaps the entire global market will be much more stable and predictable.

Regulation also plays a role in the paper and fiber industry. Because there are many chemicals (e.g., ammonia) required to break down pulp fiber, there are numerous regulatory requirements around the usage, disposal, and storage of chemicals related to the paper industry. These regulations will continue to become more and more stringent and will contribute to limiting the creation of new mills. Instead, existing mills in Florida (and elsewhere in the United States) are likely to be upgraded and modernized. The regulations in the long term, should contribute to keeping the industry stable in Florida.

Rail's Role in the Florida Paper and Fiber Industry

There is a limited amount of railroad infrastructure to support the forestry industry, resulting in much of the log production being hauled by truck. Railroads tend to connect population centers while forests are in rural areas. Because timber is such a bulky, low-value product, relative to its weight, the most efficient way to handle its transportation is through short hauls to processing plants. As a result, pulp and paper mills are built close to timber sources, including those in the Panhandle. While this pattern is unlikely to change drastically, rail remains popular for long hauls following the processing of timber into paper and wood products and also as the best option for hauling lumber long distances. In 2005, pulp and paper products (STCC 26)¹² accounted for 2 percent of the

¹²STCC - Standard Transportation Commodity Codes are seven-digit, hierarchical commodity designations contained in the STB Carload Waybill Sample. The first two digits describe major commodity classes, for example STCC 26 is pulp and paper products.

originations of rail traffic in Florida. However, several of the major inputs that are required for paper and fiber production, including chemicals, are transported in large quantities into Florida by rail.

Table 3.10 Florida Industry Profile
Paper and Fiber

Item	Description
NAICS Codes	113: Forestry and Logging 322: Paper Manufacturing
Employment	Forestry and Logging: 1995 = 3,092; 2005 = 2,885 Paper Manufacturing: 1995 = 14,327; 2005 = 10,474
Contribution to GSP (2000 Dollars)	Forestry and Logging: 1997 = \$1.9 billion; 2004 = \$2.1 billion Paper Manufacturing: 1997 = \$1.4 billion; 2004 = \$1.1 billion
Trend	Strong growth tied to population growth
Suppliers	Paper, wholesale trade, chemicals, trucking, lumber, rubber, public utilities, machinery, petroleum, textiles, railroads
Markets	Paper, printing, food, rubber, clothing, tobacco manufacturing, exports, furniture, chemicals
Rail Impacts	Useful in all aspects of paper and fiber manufacturing, from inbound movement of raw lumber and processing chemicals to outbound movement of finished product.

Automotive Distribution

Automotive Distribution Industry Profile

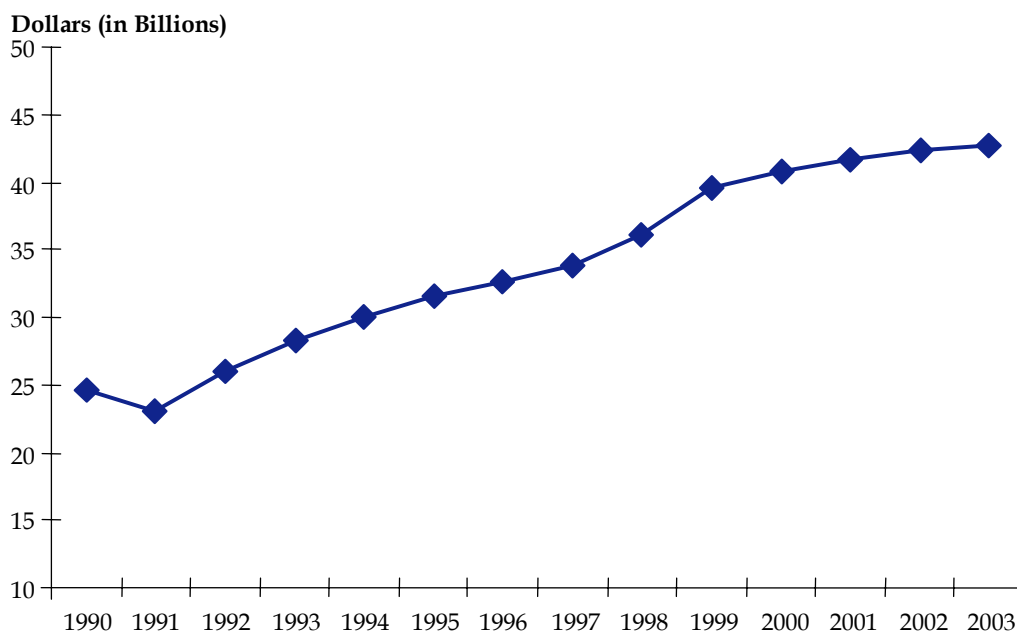
Florida is the fourth most populous state in the country and attracts the second largest number of visitors, after California. The expanding population stimulates demand for retail sales of automobiles while the millions of tourists visiting the State on an annual basis depend on rental cars for mobility. The combination of retail sales and rental cars makes Florida the second largest market for new vehicles in the country, only surpassed by the much more populous State of California (see Table 3.11). In 2003, 1.4 million new cars were registered in Florida and the State accounted for 8.5 percent of all United States vehicle sales, far greater than its 5.9 percent share of the United States population. In fact, Florida's new car market is larger than Spain's and about the same size as Canada's. Vehicle sales (new and used), valued at about \$45 billion in 2003, were responsible for about one-fifth of all Florida retail sales (see Figure 3.17). The movement of vehicles to markets in Florida plays a key supporting role to these retail sales and affects the State's railroads, highways, and ports.

Table 3.11 Florida Ranks Second in Sales of New Motor Vehicles

	Vehicle Sales			Share of United States Market
	1993	2003	Percent Change	
California	1,410,114	1,953,243	38.5%	11.8%
Florida	1,217,855	1,405,665	15.4%	8.5%
Texas	961,752	1,284,893	33.6%	7.7%
New York	704,301	918,022	30.3%	5.5%
Michigan	644,440	779,217	20.9%	4.7%
Pennsylvania	605,775	741,523	22.4%	4.5%
Illinois	719,289	716,797	-0.3%	4.3%
New Jersey	498,716	655,034	31.3%	3.9%
Ohio	612,449	639,761	4.5%	3.9%
Georgia	404,911	494,127	22.0%	3.0%
United States	13,940,626	16,611,630	19.2%	-

Source: National Automobile Dealers Association.

Figure 3.17 Dollar Value of Automobile Sales in Florida
1996 Dollars, 1990-2003



Source: Florida Office of Economic and Demographic Research.

As Florida's population increases, the total number of vehicles operating in the State also will continue to rise. Between 1993 and 2002, Florida added about 450,000 vehicles per year (net) to its roadways (see Table 3.12). While this rate is not likely to be sustainable, as the annual increase in vehicles has recently exceeded the increase in the number of people, it nevertheless indicates (excluding a huge shift in the way people travel) that the forecast rises in population will lead to a greater number of motor vehicles in operation in the State. More motor vehicles will translate to increased pressure on how to efficiently distribute them to, from, and within the very large Florida market.

Table 3.12 Vehicles in Operation, Top States
1993-2002

	Vehicles in Operation			Share of United States Market
	1993	2002	Percent Change	
California	21,841,046	29,618,605	35.6%	12.9%
Texas	12,360,667	14,664,328	18.6%	6.4%
Florida	9,985,383	13,963,596	39.8%	6.1%
Ohio	8,328,741	10,469,719	25.7%	4.6%
New York	10,251,705	10,455,697	2.0%	4.6%
Illinois	7,927,505	9,577,222	20.8%	4.2%
Pennsylvania	8,232,618	9,524,997	15.7%	4.1%
Michigan	7,018,282	8,533,635	21.6%	3.7%
Georgia	4,764,381	7,647,523	60.5%	3.3%
New Jersey	5,313,776	6,687,918	25.9%	2.9%
United States	186,315,464	229,619,979	23.2%	-

Source: National Automobile Dealers Association.

Rail's Role in the Florida Automotive Distribution Industry

Whether new or used, meeting Floridians' demand for vehicles requires thousands of truck and rail trips annually as part of a system to transport vehicles to dealers and wholesalers. New cars sold in Florida (1.4 million in 2003) are generally transported to the State from assembly plants predominantly located in the Southeast and Midwest by rail. In 2004, Florida received 32,200 carloads of automobiles from Kentucky, 25,500 from Michigan, 12,600 from Illinois, and 10,600 from Ohio.¹³ While this flow pattern supports

¹³From the 2004 Surface Transportation Board Carload Waybill Sample. Values are for STCC 3711, which includes assembled autos and trucks, generally moving in multilevel cars.

significant inbound rail traffic into Florida, rail congestion and reliability issues may push some auto manufacturers to increase their use of trucks, especially as more and more vehicles are being made in states that neighbor Florida. Also, due to both the costs of maintaining inventories and the need to load autos onto trucks to reach their final destination (retail dealers), it is expected that autos will soon be drayed from as far away as 600 miles into major urban centers.

Imported vehicles enter the United States through deep sea ports located nationwide, including two in Florida (Jacksonville and Tampa), and are subsequently transported to destinations throughout the State by rail or by truck. Floridians purchase approximately 450,000 imported vehicles per year, based on national import trends. Florida's Jacksonville Port Authority (Jaxport) ranks among the leading ports in the nation for the transport of motor vehicles, handling nearly a half million in 2003, up 36 percent over 2003 (see Table 3.13). Tampa has an emerging vehicle operation, processing 26,000 vehicles imported from Mexico in 2003, mostly Chrysler PT Cruisers. Growth in vehicle business at the Port of Tampa is limited by the lack of direct rail access at its Hooker's Point facility. On-dock rail access to Jaxport's auto import/export facilities is essential to the port's success in attracting and retaining the large-scale business of such auto companies as Nissan and Toyota.

**Table 3.13 United States Ports Ranked by Total Number of Vehicles Handled
2003**

	Number of Vehicles Handled		Percent Change
	1993	2003	
New York/New Jersey	386,490	625,798	61.9%
Baltimore	297,766	543,597	82.6%
Jacksonville	353,471	481,111	36.1%
Portland, Oregon	245,067	366,383	49.5%
Long Beach	-	303,647	-
Brunswick	94,266	296,748	214.8%
Los Angeles	301,379	284,682	-5.5%
San Diego	36,178	242,834	571.2%
Hueneme, California	-	211,241	-
San Juan	-	196,162	-
Tacoma	117,141	158,347	35.2%
Charleston	1,714	144,000	-
Wilmington, Delaware	122,312	103,977	-15.0%
Houston	58,685	86,883	48.0%
Vancouver, Washington	24,465	45,644	86.6%
Total - United States	2,230,393	4,190,732	87.9%

Source: American Association of Port Authorities.

Note: The Port of Tampa handles approximately 26,000 vehicles per year.

Figure 3.18 Multilevel Auto Carrier



The CSXT Automotive Service Group (ASG) hauls in excess of five million vehicles representing over \$140 billion in finished product across the nation. Revenues from the ASG contributes 12 percent to CSXT's overall total. The traffic mix includes 29 percent new passenger cars, 55 percent new trucks, 12 percent auto parts, and only 4 percent remarketed vehicles. The ASG manages 37 strategically located Vehicle Distribution Centers, including six in Florida (Blount Island, Jacksonville, Tallyrand, Orlando, Tampa, and Palm Center).¹⁴

¹⁴CSX Transportation Automotive Service Group Overview, provided by CSXT.

Table 3.14 Florida Industry Profile
Automotive Distribution

Item	Description
NAICS Code:	4231 – Wholesale trade of motor vehicles, motor vehicle parts and supplies
Industry Definition	Distribution of new and used vehicles for export; distribution of imported vehicles to markets; distribution of North American manufactured vehicles to markets; distribution of used cars to markets (e.g., from auto auctions to dealers)
Employment, Contribution	19,548 (2005; wholesale trade of motor vehicles, motor vehicle parts and supplies)
Contribution to GSP (2000 Dollars)	\$2.4 billion (2004 estimate)
Trend	Increasing – Driven by economic, population, and tourism growth
Suppliers	Domestic and international auto manufacturers, rental car companies
Markets	Florida and other United States auto dealers, rental car companies
Rail Impacts	Allows Florida ports, especially Jaxport, to remain competitive with other eastern seaboard ports for import/export of assembled automobiles. Transports new and used vehicles into Florida to support the demand from population growth, and the rental car demand from the tourism industry.

Energy

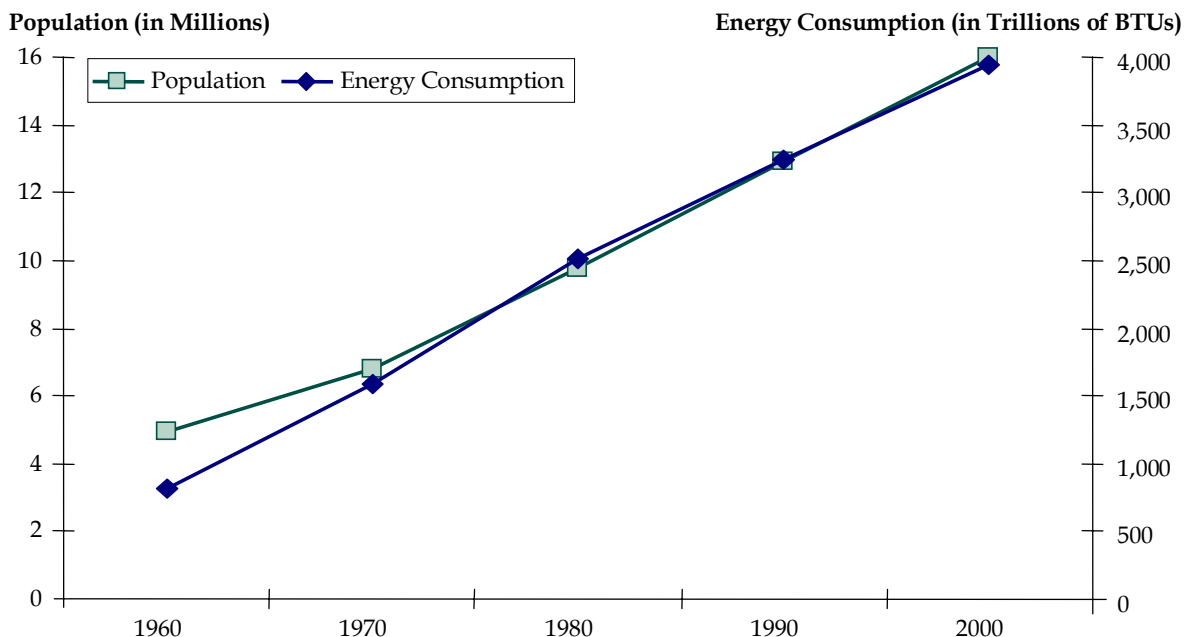
Energy Industry Profile

Electricity costs are a key business climate consideration that affect the site location decisions of prospective companies and also influence the willingness of local companies to expand. Businesses expect a reliable flow of competitively priced electricity (not only do blackouts or brownouts bring work to a halt, but they also can destroy production runs in some industries). Electricity expenses also are a factor affecting the overall cost of living in Florida and the State's attractiveness to residents and retirees. Efforts to lower the costs of electricity, including the costs of transporting energy to markets, have a positive impact on Florida businesses and residents alike.

Florida's total energy consumption (includes fuels used for all uses) in recent decades has grown proportionately with the State's population (see Figure 3.19). If this relationship holds into the future, Florida's energy supplies will need to grow substantially to meet the projected increases in population. To satisfy its energy needs, Florida will either need to add generating capacity within the State or import more electricity from other states. Limited transmission capacity, however, constrains Florida's ability to meet its needs by

importing electricity. Even if transmission capacity is added, Florida’s generators will need to increase production and more power plants will need to be built.

Figure 3.19 Energy Consumption and Population Growth in Florida
1960 to 2000



Sources: U.S. Department of Energy and U.S. Census Bureau.

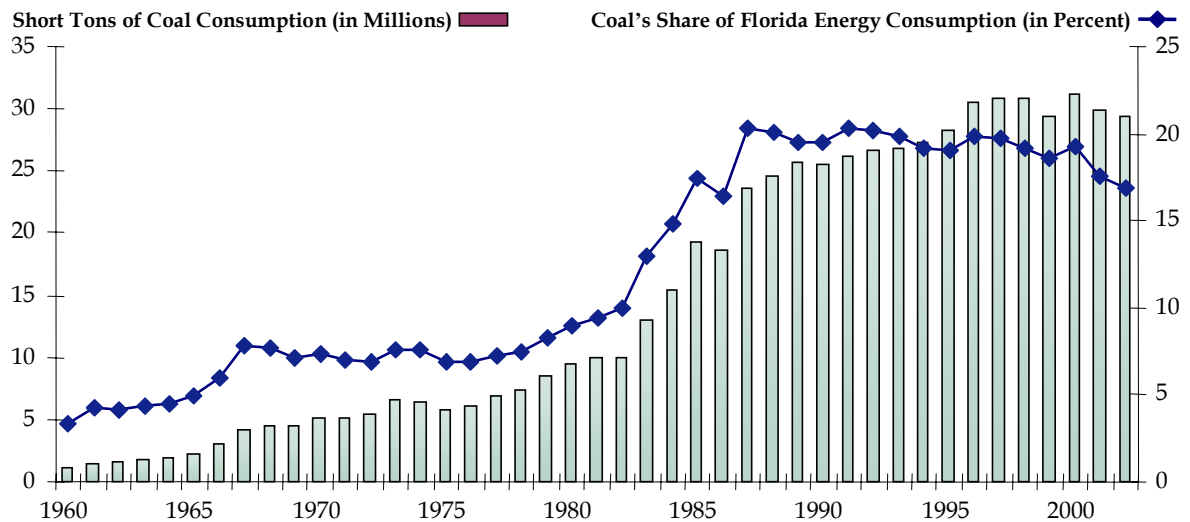
Rail’s Role in the Florida Energy Industry

The transport of fuels (i.e., coal and petroleum) by rail is one of the leading inputs in the energy industry. Rail, joined by coal and petroleum commodity purchases, construction, and business services (e.g., architectural, engineering, and environmental services) is a principal cost factor in electricity production that affects the overall price of energy. By keeping rail costs competitive, in combination with the other cost factors, Florida can continue to offer electricity rates that are not onerous to the State’s businesses or residents. While electricity costs are the 12th highest in the nation, they remain a neutral factor in business development. Any significant rise in Florida’s electricity costs (e.g., one driven by much higher rail costs for transporting coal) compared to other states, however, could put the State at a disadvantage.

Rail is the primary mode of transportation to bring coal into Florida. This is underscored by coal’s ranking among all commodities carried by rail that have a destination in Florida. In 2005, coal accounted for 10 percent (10 million tons) of all goods transported by rail with a Florida destination, which is down from 2002 totals of 17 percent (16 million tons). Because of its weight and the volumes required to sustain electricity production at power plants, rail, barge, and deep sea vessels are the preferred modes for transporting coal.

Coal supplies in the United States are plentiful (particularly in the Rocky Mountain States) and coal-fired power plants can generally offer lower rates than plants using oil or natural gas. Limitations on the development of nuclear and hydroelectric power plants, both low-cost sources of electricity, combined with new technologies that allow coal to be burned more cleanly, have made coal a popular fuel choice for expanding electricity production. If oil and gas prices continue rising as they did in 2004 and 2005, coal will come into greater use. In Florida, the annual consumption of coal has increased from one million tons in 1960 to over 29 million tons in 2002, dropping from a peak of over 31 million tons in 2000. In 1960, coal accounted for 3.4 percent of the energy consumed in Florida. According to 2002 figures, it now accounts for 17 percent (see Figure 3.20), and is essential for fueling Florida's 12 coal-fired power plants.

Figure 3.20 Florida Coal Consumption
1960 to 2002



Source: Energy Information Administration.

In the future, Florida will need more fuel(s) to meet its demands for electricity generation as its population and economy continue to grow. With at least seven coal-fired power plants (includes two units in Glades County) either planned or currently under construction (see Table 3.15), it is anticipated that much of these fuel needs (at least through the short- to medium-term) will be met by increasing the use of coal. Coal trails only petroleum as the leading energy source in Florida (see Figure 3.21). Higher coal consumption in Florida will depend, in part, on the railroads' ability to transport coal, particularly the low-sulfur variety from Wyoming's Powder River Basin, into the State. The planned Taylor Energy Center (opening in 2012) near Perry will require five to six trains per week, carrying a mixture of Powder Basin as well as eastern bituminous coal. Current coal shipments into Florida, today, are dominated by moves from Kentucky (8.3 million tons in 2004) and West Virginia (2.0 million tons in 2004) mines, but more and more eastern states are beginning to use western coal. This presents both an opportunity

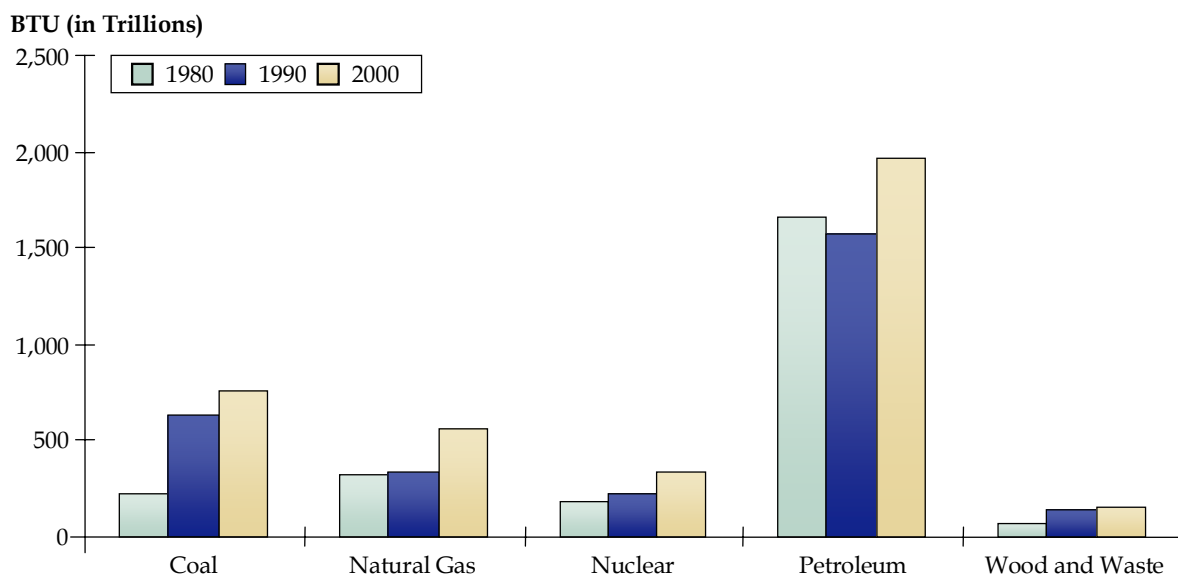
and threat to the railroads, as western coal can alternatively move to the Mississippi River for transshipment to barges and delivery to Gulf side power plants in Florida. Good access will be critical to maintaining rail as a preferred mode of transportation for any new coal-fired power plants.

Table 3.15 Proposed New Coal-Fired Power Plants in Florida

Company	Location	Capacity (Megawatts)	Estimated On-Line Date
Southern Company	Stanton, Orange Co.	285	2010
Seminole Electric	Palatka, Putnam Co.	750	2012
JEA and Florida Municipal Power Agency	Perry, Taylor Co.	800	2012
Gainesville Regional Utilities	Alachua, Alachua Co.	220	2010
JEA	Location Not Shown	250	2013
Florida Power and Light	Glades Co.	2 units, 980 MW each	2012 and 2013

Sources: Florida Department of Environmental Protection, Florida’s Energy Plan, January 17, 2006; Florida Power and Light.

Figure 3.21 Energy Consumption by Source in Florida 1980-2000



Source: U.S. Department of Energy.

Ultimately, the decisions made in the next several years concerning how to meet Florida's energy needs will have a bearing on the utilization of the State's rail system. If clean-burning natural gas becomes the preferred option, the use of rail to transport coal is likely to go into gradual decline as older power plants become antiquated. Even if more coal plants are constructed in Florida in the future, there also is the possibility that they may be located close to the shore (although major new coal plants currently planned for Taylor and Glades Counties are inland and will rely on rail) so coal could be brought in by barge, a transportation alternative that is less costly than rail. Lastly, because the permitting process for new power plants in Florida can be slow, the State may meet a growing portion of its energy needs by importing electricity as new capacity is built in neighboring states. The decisions made by Florida's energy providers to address the State's future electricity requirements need to be monitored by the rail industry and policy-makers as they will have an effect on how the State's rail system is utilized.

Table 3.16 Florida Industry Profile
Energy

Item	Description
NAICS Code	22: Utilities
Employment	1995 = 29,320; 2005 = 24,215
Contribution to GSP (2000 Dollars)	1997 = \$8.9 billion; 2004 = \$9.1 billion
Trend	Strong growth tied to population growth
Suppliers	Mining (includes coal), public utilities, professional and business services, construction, petroleum products, railroad, banking and finance, real estate
Markets	Petroleum products, public utilities, primary metals, hotels, mining, paper, eating and drinking establishments, chemicals, retail, amusement and recreation
Rail Impacts	Rail is the preferred mode of transportation for supplying Florida's power generation plants with both eastern and western coal, thereby helping reduce electricity costs.

Construction

Construction Industry Profile

There are two main drivers for growth in the construction industry: 1) economic expansion; and 2) population growth. For decades, Florida has been a national leader in both of these factors, far outpacing United States averages. Economic growth stimulates new investment in commercial structures such as office buildings, industrial facilities,

warehouses, laboratories, etc., while a fast growing population translates to strong demand for housing, retail centers, schools, and other public infrastructure. In Florida, the long-term expansion of the tourism industry, a key component of the State's economic growth, also has been a boon for the State's construction sector. Higher numbers of visitors has stimulated investments to build or expand hotels, recreational facilities and attractions, airports, ports, roadways, retail establishments, restaurants, and vacation homes.

The importance of construction to the Florida economy has increased markedly in the past five years as the State has experienced a dramatic construction boom. Between 2000 and 2005, the industry added nearly 150,000 jobs, representing about 20 percent of the total number of jobs added to the State economy during the period. In 2004, construction contracts totaled \$58.2 billion, second in the nation only to California (see Table 3.17), and in 2004 Florida led the nation in new housing units authorized by the State (see Table 3.18). The growth in construction spending in Florida since 2000, fueled by low interest rates, population growth, and the State's popularity as a retiree destination and second home location, has far exceeded the increase posted by the rest of the United States (see Figure 3.22). Although construction is sensitive to economic cycles, its overall future growth trend in Florida is likely to remain positive as the State's population and economy continue to grow.

Table 3.17 Value of Construction Contracts Put in Place
1994-2004

State	Construction Contracts (in Billions of Dollars)		Percent Change
	1994	2004	
California	30.4	66.0	117.0%
Florida	21.9	58.2	165.3%
Texas	20.7	48.5	134.3%
Georgia	10.6	23.6	122.4%
New York	13.2	23.1	75.0%
North Carolina	10.0	23.1	129.7%
Illinois	11.9	21.3	78.3%
Arizona	8.0	21.2	165.5%
Ohio	11.9	18.4	54.1%
Pennsylvania	9.6	15.9	65.1%
United States	293.8	587.0	99.1%

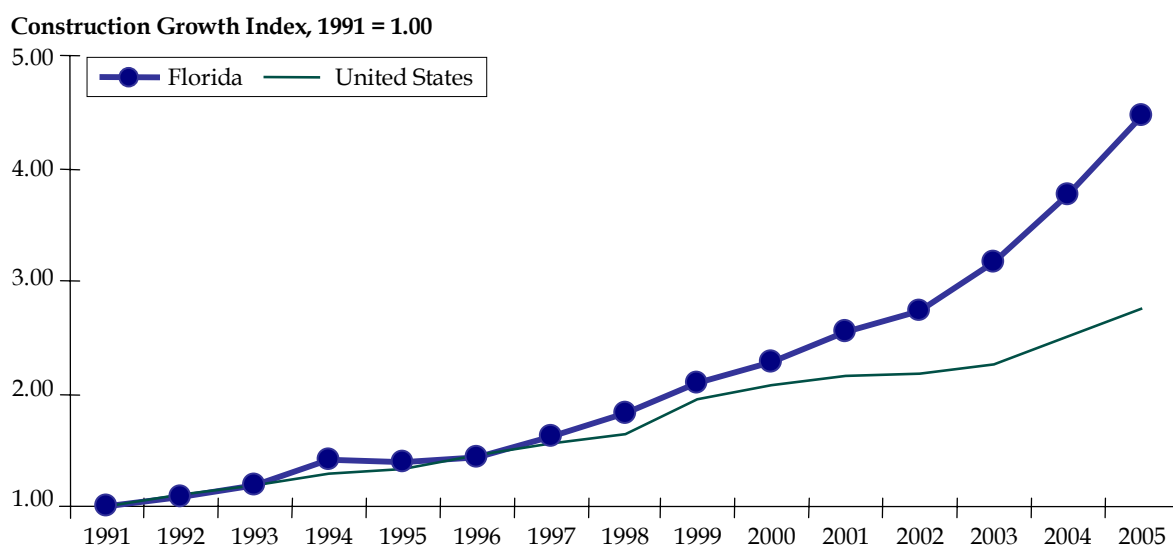
Source: McGraw-Hill Construction Dodge® as presented in Statistical Abstract of the United States.

Table 3.18 New Housing Units Authorized by State
1992-2003

State	Housing Units (in Thousands)		Percent Change
	1994	2004	
Florida	128.6	255.9	99.0%
California	97.0	207.4	113.8%
Texas	102.6	188.8	84.0%
Georgia	64.9	108.4	67.0%
North Carolina	62.9	93.1	48.0%
Arizona	51.8	90.6	74.9%
Virginia	46.8	63.2	35.0%
Illinois	49.3	59.8	21.3%
Michigan	46.5	54.7	17.6%
New York	31.1	53.5	72.0%
United States	1,371.6	2,070.1	50.9%

Source: U.S. Census Bureau.

Figure 3.22 Growth in Construction
Florida Compared to the Rest of the United States



Source: McGraw-Hill Construction Dodge® as presented in Statistical Abstract of the United States. "Rest of United States" represents the remainder of the nation exclusive of Florida.

Rail's Role in the Florida Construction Industry

Rail is involved in the movement of many of the materials essential to the Florida construction industry, including metals (e.g., structural steel and architectural pieces), lumber, and cement. The largest tonnages, though, are for movement of aggregate rock. Crushed limestone from the Miami-Dade area to construction markets in Orlando, Jacksonville, and out-of-state markets. More than 16 million tons of crushed stone moved from Dade County to Duval County in 2004.

One of the primary threats to growth in construction rock in Florida is a legal challenge on the impacts of rock mining to drinking water in Miami-Dade County. In the short term this has nearly quadrupled the cost of mining the rock (from \$8 per cubic foot to \$30), and in the long term it could completely stop expansion if new Federal environmental permits are required. Without this source of rock for construction, the material would likely be imported through the Florida ports and trucked to the construction sites. It would also halt export of Florida rock to other states.

Table 3.19 Florida Industry Profile
Construction

Item	Description
NAICS Code	Construction (major sector)
Employment	1995 = 314,741; 2005 = 579,536
Contribution to GSP (2000 Dollars)	1997 = \$23.0 billion; 2004 = \$32.3 billion
Trend	Increasing - Driven by economic and population growth
Suppliers	Professional services (architecture and engineering), fabricated metals, lumber, cement and glass, electrical equipment, retail and wholesale trade, trucking, rubber, primary metals
Markets	Residential and commercial structures; nonbuilding infrastructure
Rail Impacts	Hauls construction rock, lumber, steel, and other construction material to support Florida's growing population. Replaces hundreds of daily truck trips.

■ 3.4 Summary

Florida's economy is largely driven by population growth, and not industrial output. This economic growth is expected to continue above the national average for the foreseeable future. The greatest increases in the demand for goods will result from consumer-driven areas, such as construction, power generation, and especially retail and trade.

Tremendous burdens will be placed on Florida's already congested roadways. The railroads can invest sufficient capital to remain competitive in certain areas, but they do not have the resources to provide the large-scale highway congestion relief often desired by the public. For the railroads to keep pace with this population-driven economy, it will require Florida to continue their public policy-driven solution to expand capacity, eliminate chokepoints, and improve train speeds.

Some of the key trends impacting the use of rail in Florida are:

- Florida population was 17.8 million in 2005, the fourth largest state in the country. By 2025, Florida is forecast to have 25.0 million residents and be the third largest state. Between 2000 and 2020, Florida's total income is expected to increase by about \$310 billion. These factors create additional congestion on the roadways and also fuel the demand for additional consumer goods, both of which create additional demand for rail services.
- Phosphate and fertilizer growth should remain steady and then start to decline beyond 2020. Demand for rail services will be high for the foreseeable future.
- Distribution and retail growth should remain high, driven by population and income growth. This will create additional demand for rail intermodal and premium rail services.
- Food and agriculture growth will remain strong due to population and income growth. This will create additional opportunities for rail service. Rail will continue to support exporting Florida citrus, sugar, and other agricultural products to other states.
- Paper and fiber industry should exhibit steady growth. Rail will continue to support these industries, but it will be a small percentage of rail shipments to and from Florida.
- Automotive industry growth will increase, fueled by population, income, and tourism growth. Potential threat from new auto plants in the southeast that would use trucks rather than rail to serve Florida.
- Energy growth will remain strong for petroleum for additional auto traffic, and for coal for new coal fired electric plants. Rail service should contribute to both the petroleum and coal shipments.
- Construction is increasing, again driven by population and income growth. Potential threat to crush rock industries due to litigation in the Miami-Dade area.

4.0 Current Freight Rail System and Services in Florida

■ 4.1 Overview

There are 15 freight railroads operating in the State of Florida. These railroads carried about 1.2 million carloads and 805,260 intermodal units (trailers and containers) and 119 million tons of freight, effectively removing almost six million heavy trucks from the roadways.¹ By offering lower rates than trucks, the railroads support thousands of additional jobs by allowing Florida's industries to be competitive with international and domestic markets such as fertilizer, construction rock, consumer goods, paper products, sugar, processed food, and orange juice. Florida's railroads paid \$515.3 million in wages to more than 8,182 workers in the year 2005. Considering only freight railroads, the figures are \$366.0 million and 5,904 workers for the same year.²

This section describes the 15 Florida freight railroads, first by profiling each of the railroads and then by examining traffic movements and trends.

■ 4.2 Railroad Profiles

This section provides a one-page profile of each of the freight railroads operating in the State (Table 4.1). Each profile briefly describes the history, ownership, infrastructure, connections, and primary commodities for each railroad. A map is provided in each profile showing line ownership (bold lines) and trackage rights (bold dashed lines) in relation to other railroads, urbanized areas, and principal highways.

¹ All 2004 freight rail values are based on the 2004 Surface Transportation Board Carload Waybill Sample. Truck estimates assume an average net truck weight of approximately 20 tons and do not consider empty truck movements.

² Wage and job statistics are from "Railroad Service in Florida," Association of American Railroads, 2005.

**Table 4.1 Freight Railroads Operating in Florida
2006**

Railroad Name	Abbreviation	Class I	Class II	Class III	Terminal/ Switching
Alabama and Gulf Coast	AGR			X	
AN Railway	AN			X	
Bay Line	BAYL			X	
CSX Transportation	CSXT	X			
First Coast Railroad	FCRD			X	
Florida Central	FCEN			X	
Florida East Coast	FEC		X		
Florida Midland	FMID			X	
Florida Northern	FNOR			X	
Florida West Coast	FWCR			X	
Georgia and Florida Railway	GFRR			X	
Norfolk Southern	NS	X			
Seminole Gulf	SGLR			X	
South Central Florida Express	SCFE			X	
Talleyrand Terminal	TTR				X

Note: Railroad classification is determined by the Surface Transportation Board. In 2005: Class I = \$319.3 million or more in operating revenues; Class II = a non-Class I line-haul railroad operating 350 miles or more with operating revenues of at least \$40 million; Class III = a non-Class I or II line-haul railroad; and Switching & Terminal Railroad = a non-Class I railroad engaged primarily in switching and/or terminal services for other railroads. Class II and Class III railroads are generally referred to as “regional” and “short-line” railroads, respectively. (Source: American Association of Railroads, “Railroad Service in Florida Fact Sheet, 2005”.)

Two Class I railroads operate in Florida: CSX Transportation (CSXT) and the Norfolk Southern Railroad (NS). These two railroads serve the eastern United States and connect Florida to the national rail network. CSXT is the single largest operating railroad in Florida, with an extensive network covering the Florida Panhandle, Northern and Central Florida, and the Greater Miami area in South Florida. NS lacks an extensive Florida network and primarily serves as a conduit to the national rail system via lines in northern Florida and the Greater Jacksonville area. Both the Class I carriers, CSXT and NS, interchange with the Florida East Coast Railway (FEC), a Class II regional railroad that provides service to the heavily populated Atlantic Coast Corridor from Jacksonville to Miami.

Class III short-line railroads serve much of the rest of the State and provide local service to several important ports and manufacturing clusters. Finally, the Talleyrand Terminal Railroad (TTR) is a switching railroad providing service at the Jacksonville Port Authority (JaxPort). Table 4.2 shows the total miles operated and owned in Florida by railroad.

Table 4.2 Summary of Railroad Miles in Florida
2006

Railroad Name	Miles Operated in Florida	Percent of Total Miles Operated	Miles Owned in Florida
Alabama and Gulf Coast	45	15	45
AN Railway	96	100	96
Bay Line	63	57	63
CSX Transportation ^a	1,638	8	1,508
First Coast Railroad ^b	32	100	32
Florida Central	76	100	66
Florida East Coast	371	100	371
Florida Midland	33	100	27
Florida Northern	103	100	103
Florida West Coast	13	100	13
Georgia and Florida Railway	50	20	50
Norfolk Southern	149	< 1	96
Seminole Gulf	115	100	115
South Central Florida Express	171	100	120
South Florida Rail Corridor	81	100	81
Talleyrand Terminal Railroad	10	100	10
Total			2,796

Note: Miles are calculated as route miles and do not necessarily reflect total track mileage.

- ^a Includes 130 miles of trackage rights, 81 miles of which are on the South Florida Rail Corridor owned by the Florida Department of Transportation.
- ^b Although the First Coast Railroad leases 32 miles from CSXT, the mileage is included with the First Coast and subtracted from CSXT.

The total for miles operated for 2006 are 201 miles more than reported in the 2004 Florida Rail Plan. The additional mileage is largely due to the inclusion of four railroads in 2006; namely, First Coast Railroad, South Florida Rail Corridor, Talleyrand Terminal Railroad, and Florida West Coast. The Florida West Coast Railroad, which was absent from the list in the 2004 Plan, had previously filed for abandonment proceedings, but has not yet exercised its authority to consummate the abandonment. Therefore, it is included in Table 4.2 as an active railroad. Lastly, there was a notable increase in mileage for Florida Northern since the 2004 Florida Rail Plan, due to the acquisition of 76 additional miles by its West Coast Subsidiary.

Alabama and Gulf Coast Railway

The Alabama and Gulf Coast Railway (AGR) is a Class III railroad operating between Pensacola, Florida, and Columbus, Mississippi. AGR also serves Mobile, Alabama.

Ownership and History

AGR is a wholly owned subsidiary of Boca Raton-based RailAmerica Corporation, a holding company with 44 short-line railroads in the United States and Canada. AGR, based in Monroeville, Alabama, officially became part of RailAmerica in 2002. The railroad was formerly operated by States Rail, which acquired it from Burlington Northern Santa Fe (BNSF) in 1997.



Source: RailAmerica Corporation.

AGR operates 44.6 miles in Florida, representing approximately 15 percent of 288 total route miles. AGR's Florida route traverses Escambia County from the State border at Atmore, Alabama, to Pensacola. A small portion of the Atmore-Pensacola route passes back into Baldwin County, Alabama, between Barrineau Park and Muscogee, Florida.

Infrastructure and Connections

In Florida, AGR connects with CSXT at Cantonment. The railroad's other primary connections include: BNSF at Amory, Mississippi; CAGY at Columbus, Mississippi; CN at Mobile, Alabama; CSXT at Mobile, Alabama; NS at Boilgee, Demopolis, Kimbrough, and Mobile, Alabama (over NS); MNBR at Linden, Alabama; and TASD at Mobile, Alabama.

In Florida, AGR connects with CSXT at Cantonment. The railroad's other primary connections include: BNSF at Amory, Mississippi; CAGY at Columbus, Mississippi; CN at Mobile, Alabama; CSXT at Mobile, Alabama; NS at Boilgee, Demopolis, Kimbrough, and Mobile, Alabama (over NS); MNBR at Linden, Alabama; and TASD at Mobile, Alabama.

Commodities and Markets

Annually, AGR handles approximately 16,000 carloads of freight in Florida. AGR primarily serves the paper production industry with service to four paper mills and a large paper consolidator, Oren International, in Pensacola. The principal commodities associated with the paper industry (both outbound and inbound) include woodchips, logs, chlorine, sodium chlorate, hydrogen peroxide, rolled and boxed paper, and kaolin clay. AGR also hauls aggregate rock for use by Escambia County for highway projects. AGR also serves the Pensacola Marine Shipyard Complex.

AN Railway, L.L.C.

The AN Railway, L.L.C. (AN) is a Class III railroad operating between Port St. Joe and Chattahoochee, Florida.

Ownership and History

Since June 2005, AN has been one of 14 railroads operated by Rail Link. It is owned by Genesee & Wyoming following its acquisition of the Rail Management Corporation. AN was originally chartered by the State of Florida in 1903 and was known at that time as the Apalachicola Northern Railroad. The first 30 miles of railroad commenced operation in 1907 after two years of construction through swampland between Apalachicola and Chattahoochee. Through a subsequent acquisition by DuPont in 1933, and the construction of a paper mill at Port St. Joe in 1937, the railroad's operations focused on paper shipment until the mill's closure in 1999.



Source: Rail Management Corporation.

Infrastructure and Connections

AN operates approximately 96 total route miles, all in Florida. Port St. Joe is the primary base of operations for the railroad and the location of its principal offices and locomotive shop.

AN's only connection is with CSXT at Chattahoochee, Florida.

Commodities and Markets

AN serves various customers in the Florida Panhandle. AN's primary customers include three chemical companies, a scrap metal shipper, three forest products companies, and a barge-rail transload facility at Port St. Joe.

Bay Line Railroad, L.L.C.

The Bay Line Railroad, L.L.C. (BAYL) is a Class III railroad operating between Panama City and Dothan, Alabama.

Ownership and History

BAYL currently is owned by Genesee & Wyoming. Previously, it was owned by the Rail Management Corporation after its purchase of the railroad in January 1994 from the Stone Container Corporation. The railroad was formerly the Atlanta and St. Andrew's Bay Railway.



Source: Rail Management Corporation.

Infrastructure and Connections

BAYL operates approximately 63 miles in Florida, representing 57 percent of the railroad's 110 route miles. Panama City is the primary base of operations for the railroad and the location of its principal offices, yard, and locomotive shop. BAYL also owns approximately 1,000 acres of land adjacent to the railroad. BAYL's other primary yard is at Dothan, Alabama.

BAYL's only Florida connection is with CSXT at Cottondale. The railroad's other primary connection is at Dothan, Alabama, where it interchanges with two Class I railroads (CSXT and NS) and two Class III railroads (CHAT and HS). BAYL also serves Port Panama City.

Commodities and Markets

Annually, BAYL handles approximately 28,000 carloads of freight. The principal commodities carried by the railroad include paper products, lumber, chemicals, coal, stone, steel, and fertilizer. BAYL's largest customer is Smurfit-Stone Container in Panama City. BAYL's other principal customers include: Port Panama City, Berg Steel Pipe, Cargill Steel, Arizona Chemical, Whitaker Oil, and Conrad Yelvington Distributors.

CSX Transportation

CSXT is a Class I railroad operating the most extensive rail network in Florida. CSXT provides the peninsula with its principal national rail connections and maintains its national headquarters at Jacksonville.

Ownership and History

CSXT is a division of CSX Corporation. CSXT acquired most of its current Florida assets through the merger of the Chessie System Railway and Seaboard Coast Line Industries in 1982. CSXT currently operates in 23 states, the District of Columbia, and 2 Canadian provinces.



Source: CSX Transportation, Wikipedia.org.

Infrastructure and Connections

CSXT owns 1,508 route miles in Florida and operates over an additional 130 miles owned by the FDOT (South Florida Rail Corridor). CSXT's Florida route miles represent approximately eight percent of the railroad's 23,000 national route miles. CSXT serves most of the State's major urban areas and provides national Class I network connections for many of Florida's short-line railroads. CSXT's primary base of operations in Florida is Jacksonville with important yards throughout the State. Both of CSXT's major north-south lines, the "A Line" and the "S Line," terminate in central Florida. The names derive from former Atlantic Coast Line and Seaboard Air Line Railroad routes. CSXT provides vital connections to Florida's short-line railroads and in many cases are the only connection for the short-line.

Commodities and Markets

CSXT's principal Florida commodities include nonmetallic minerals, chemicals and allied products, coal, and miscellaneous mixed shipments (intermodal). Nonmetallic minerals include phosphates from Central Florida's Bone Valley and crushed construction rock. CSXT moves hundreds of thousands of imported and domestic autos annually to and from Florida. Its largest auto facilities are located at Jacksonville (three facilities), Tampa, and Palm Center (Miami). CSXT also operates an expedited service that delivers fresh Tropicana Orange Juice from Bradenton and Fort Pierce (received at Jacksonville from FEC) to distribution centers in New Jersey, Ohio, and California.

Florida Central Railroad

The Florida Central Railroad (FCEN) is a Class III railroad serving industries in Lake and Orange Counties northwest of Orlando.

Ownership and History

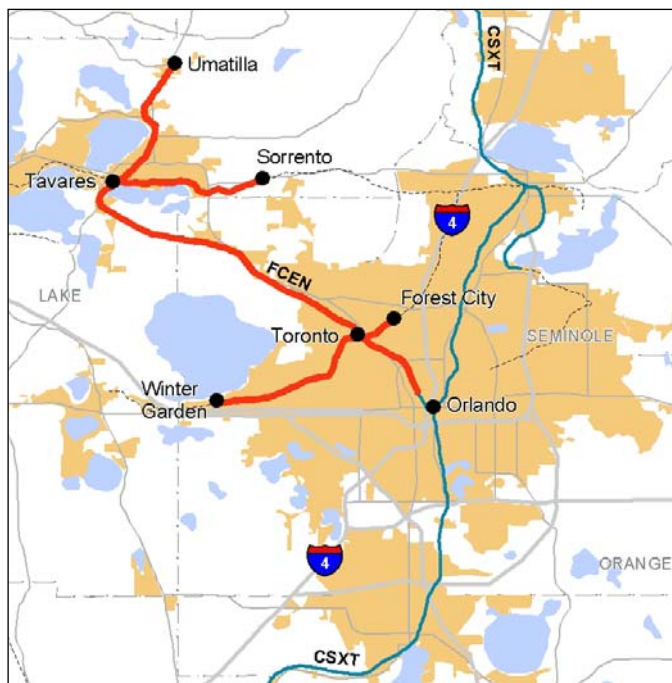
FCEN was formed in 1986 from several CSXT branch lines. It is one of three Florida short-line railroads owned by Pinsly Railroad Company, a holding group with five short-lines in Florida, Massachusetts, and Arkansas. The other Pinsly short-lines in Florida are FMID and FNOR. All are based in Plymouth, Florida.

Infrastructure and Connections

FCEN operates 66 miles of track in Florida, including 41 miles of main track between Orlando and Umatilla; 11 miles of branch line from Tavares to Sorrento; and 14 miles of branch line from Forest City to Winter Garden. FCEN's principal Class I connection is at CSXT's Taft Yard. FCEN has trackage rights over 10 miles of CSXT through Orlando to access that connection at Taft Yard. In December 2004, FCEN the Surface Transportation Board (STB) granted permission for FCEN to abandon the Forest City Spur between Toronto and Forest City.

Commodities and Markets

Annually, FCEN serves more than 65 customers in Orlando, Toronto, Plymouth, Zellwood, Tavares, Eustis, Umatilla, Mount Dora, Ocoee, and Winter Garden. The principal commodities carried by FCEN (and the other two Pinsly short-lines in Florida) include food-related products, chemicals, lumber, stone, scrap metal, fly ash, fertilizer, citrus juices, pumice, and limestone. In 2003, Pinsly partnered with CSXT, with funding from FDOT, to construct a new rail spur to serve the Florida Auto Auction in Winter Garden. FCEN's rail service to the auction facility makes possible rail shipment of automobiles via CSXT's Taft Yard in Orlando to CSXT's national network.



Source: Florida Central Railroad, Pinsly Railroad Company, Surface Transportation Board.

Florida East Coast Railway

The Florida East Coast Railway (FEC) is a Class II regional railroad operating between Jacksonville and Miami. FEC maintains the second largest railroad network in the State after CSXT and provides the only north-south mainline along the Atlantic Coast between West Palm Beach and Jacksonville.

Ownership and History

FEC is headquartered at St. Augustine and is owned by Florida East Coast Industries. Founded in 1895 by Henry Flagler to serve rapid residential, agricultural, and tourism growth in South Florida, FEC's history is inextricably linked to the development of West Palm Beach, Miami, and Key West - the railroad's terminus from 1912 to 1935.

Infrastructure and Connections

FEC operates 371 route miles, including 351 miles of mainline track between Jacksonville and Miami; 276 miles of branch, switching, and other secondary track; and 159 miles of yard track. FEC provides exclusive rail service to the Ports of Palm Beach, Everglades (Fort Lauderdale), Miami, and the Kennedy Space Center. The FEC's principal carload transfer yards are located at Fort Pierce, Cocoa, Pompano, Fort Lauderdale, and Miami and its intermodal facilities are located at Jacksonville, Fort Lauderdale, and Miami. FEC's chief connection with CSXT and NS occurs at Bowden Yard in Jacksonville. FEC also connects with CSXT at West Palm Beach and Miami (to FDOT's South Florida Rail Corridor) and with SCFE at Fort Pierce.



Source: Florida East Coast Railway.

Commodities and Markets

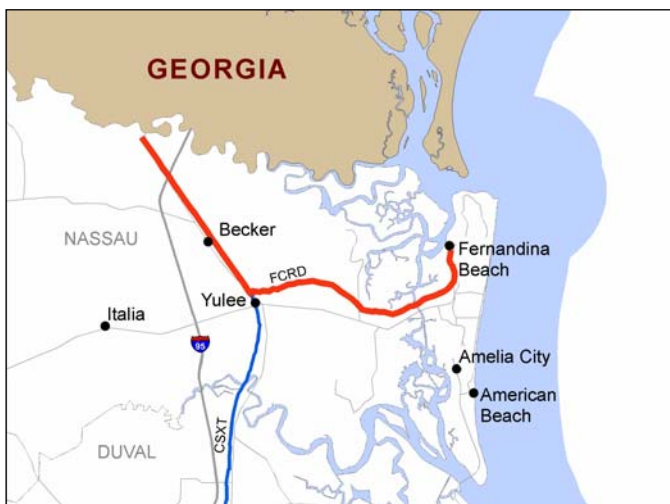
Annually, FEC moves approximately 30 million tons of freight, including 100,000 carloads of aggregate and 170,000 new autos from its rock distribution centers in Miami, Fort Pierce, Cocoa, Daytona, St. Augustine, and Jacksonville, and from its Miami auto facility. Other important commodities moved by the FEC include: lumber, cement, chemicals, paper products, food products (including orange juice and pulp), primary metal products, machinery, bulk freight, and farm products.

First Coast Railroad

The First Coast Railroad (FCRD) is a Class III railroad in Florida and Georgia, owned by Rail Link, a division of the Genesee and Wyoming. The Genesee and Wyoming, based in Greenwich, CT operates over 40 short-lines and terminal railroads.

Ownership and History

FCRD began operations in April 2005, when it leased 32 miles of railroad from CSXT. The north-south line was formerly Seaboard Air Line's main line.



Source: Federal Railroad Administration.

Infrastructure and Connections

FCRD's lines stretch east from Yulee to Fernandina Beach and north from Yulee to Seals, GA with a connection at Yulee to CSX to Jacksonville.

Commodities and Markets

The rail lines will handle approximately 15,000 carloads annually, including pulp and paper, chemicals and agricultural products. Most of the traffic is generated by three paper product customers. The railroad also serves the Port at Fernandina Beach. Freight cars will be interchanged with CSXT.

Florida Midland Railroad

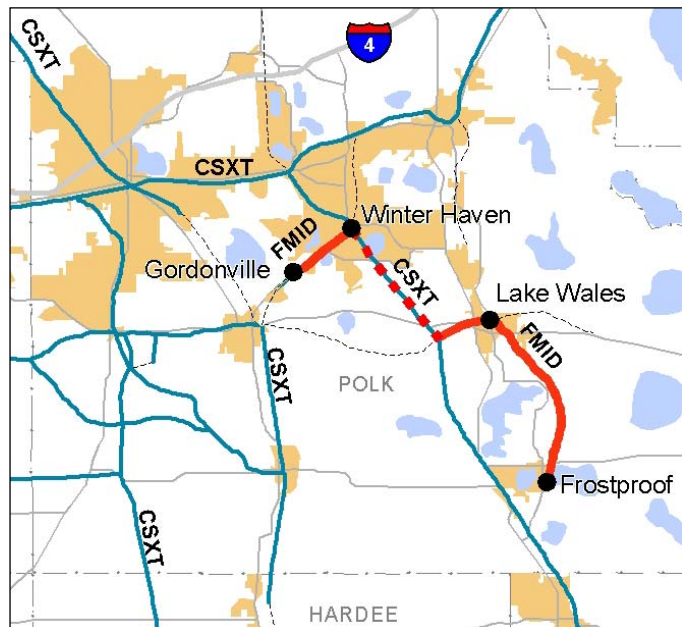
The Florida Midland Railroad (FMID) is a Class III railroad serving customers in Polk County in Central Florida.

Ownership and History

FMID was formed in 1987 from former CSXT branch lines. It is one of three Florida short-line railroads owned by Pinsly Railroad Company, a holding company with five short-lines in Florida, Massachusetts, and Arkansas. The other Pinsly short-lines in Florida are FCEN and FNOR.

Infrastructure and Connections

FMID operates over 27 route miles consisting of two disconnected branch lines. The first line runs between Gordonville and Winter Haven and the second runs between Frostproof and Lake Wales, both in Polk County. FMID's principal Class I connections, both with CSXT, are at Winter Haven and West Lake Wales. FMID has trackage rights over approximately 10 miles of CSXT that connect the two branch lines. FMID is based in Plymouth, Florida.



Source: Florida Midland Railroad, Surface Transportation Board.

Commodities and Markets

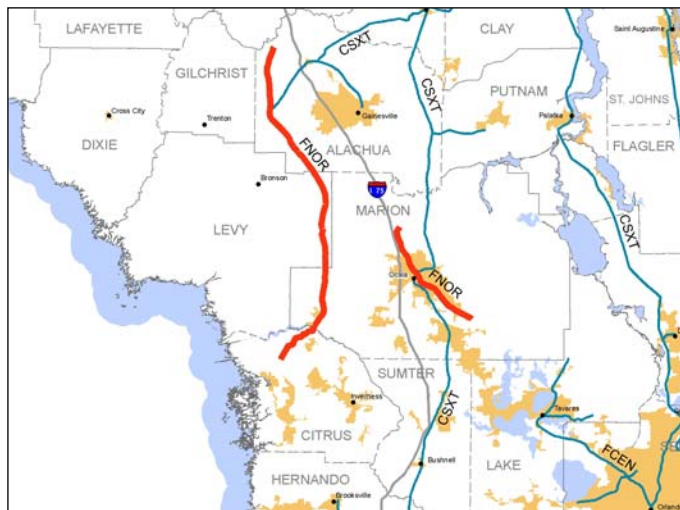
FMID serves more than 25 customers in Winter Haven, Gordonville, Lake Wales, and Frostproof. The principal commodities carried by FMID (and the other two Pinsly short-lines in Florida) include food-related products, chemicals, lumber, stone, building products, fertilizer, citrus juices, pumice, and limestone.

Florida Northern Railroad

The Florida Northern Railroad (FNOR) is a Class III railroad serving customers in Alachua, Citrus, Levy, Ocala, and Marion counties of North Central Florida.

Ownership and History

FNOR was formed in 1988 from CSXT's Ocala Subdivision. It is one of three Florida short-line railroads owned by Pinsky Railroad Company, a holding group with five short-lines in Florida, Massachusetts, and Arkansas. The other Pinsky short-lines in Florida are FMID and FCEN.



Source: Florida Northern Railroad, Pinsky Railroad Company.

Infrastructure and Connections

Until 2005, FNOR operated 24.3 route miles between Lowell and Candler in Marion County. The railroad's only interchange was with CSXT at Ocala. In May of 2005, the West Coast Subsidiary of FNOR acquired 76 miles of track from CSX between High Springs and Red Level, Florida. This acquisition included an interchange at Newberry, Florida. From Ocala, FNOR also operates a 2.7-mile industrial track.

Commodities and Markets

FNOR serves more than 20 customers in Ocala, Kendrick, Lowell, Maricamp, Kimbrough, and Candler. The principal commodities carried by FNOR (and the other two Pinsky short-lines in Florida) include food-related products, chemicals, lumber, stone, scrap metal, fertilizer, coal, and limestone.

Florida West Coast Railroad Company, Inc.

The Florida West Coast Railroad Company, Inc. (FWCR) is a Class III railroad operating between Newberry and Trenton west of Gainesville.



Source: Wikipedia.org.

Ownership and History

FWCR was formed in 1987 from 44 miles of former CSXT branch lines. The railroad originally consisted of two lines running between Newberry and Cross City via Trenton and south from Fanning Springs to Chiefland. Before CSXT ownership, the lines were part of the Atlantic Coast Line Railroad. In June 2004, the STB granted the railroad's request to abandon service of the final 13 miles of its rail line between Trenton and Newberry, Florida. However, the railroad has since filed several requests and was granted permission to extend the deadline for filing its notice of consummation to abandon the line, with the most recent deadline being January 10, 2008³. Meanwhile, FWCR and CSXT are continuing discussions with the Florida Department of Environmental Protection, Office of Greenways and Trails, in an effort to transform all or a substantial portion of the line into a trail.

Infrastructure and Connections

FWCR still maintains a 13-mile stretch of rail line between Trenton and Newberry.

Commodities and Markets

In its abandonment petitions to the STB, FWCR indicated that it only served two businesses in 2003, generating 33 carloads of freight, consisting mostly of fertilizer.

³ A railroad that receives authority from the Surface Transportation Board to abandon a line must file a "notice of consummation" with the Board within one year of an abandonment decision to signify that it has exercised the authority granted and has fully abandoned the line (e.g., discontinued operations, salvaged the track, canceled tariffs, and intends that the property be removed from the interstate rail network).

Georgia and Florida Railway

The Georgia and Florida Railway (GFRR) is a Class III railroad operating between Adel, Georgia, and Perry and Foley, Florida.

Ownership and History

The railroad began operations in 1995 after acquiring the lines from Norfolk Southern in Georgia and Florida. In December 1995, the Georgia & Florida Railroad entered into a contract with the Live Oak, Perry and Georgia Railroad to handle all of its railroad operations. The railroad later operated as Georgia & Florida Railnet. In 2004,



Source: OmniTrax web site at <http://www.omnitrax.com/gfrr.shtml>.

it was purchased by OmniTRAX and now operates as Georgia & Florida Railway (GFRR).

Infrastructure and Connections

GFRR operates 50 miles in Florida, representing approximately 20 percent of 300 total system miles. Albany, Georgia, is the primary base of operations for the railroad. GFRR's only Florida connection is with CSXT at Greenville. The railroad also connects with Norfolk Southern with two other short-line railroads in Georgia (Georgia Southwestern Railroad and Valdosta Railway). CSXT has trackage rights over the railroad.

Commodities and Markets

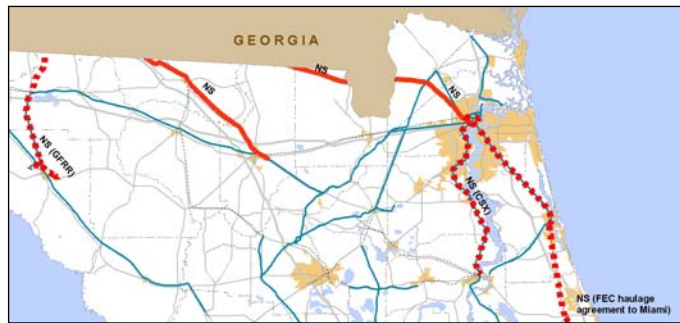
Annually, GFRR handles approximately 31,000 carloads of freight in Georgia and Florida. The principal commodities carried by the railroad include aggregates, barley, beer, chicken, chemicals, coal, fiberboard, frozen vegetables, grain, industrial oil, lumber, malt, paper, rubber, scrap metal, soy beans, soy meal, steel, sugar, tires, vegetable oil, wood chips, wood pulp, fertilizer, agricultural lime, and processed clay.

Norfolk Southern

The Norfolk Southern (NS) is a Class I railroad providing service to the Eastern United States through its connections in Northeast Florida.

Ownership and History

NS is a publicly traded corporation based in Norfolk, Virginia. NS provides service to 22 eastern states, the District of Columbia, and the province of Ontario in Canada. The railroad was formed in 1982 through the union of the Norfolk and Western Railway and the Southern Railway Company.



Source: Norfolk Southern Corporation.

Through this merger, the new corporation acquired Southern Railway's Florida assets.

Infrastructure and Connections

NS operates over 96 route miles in Florida, representing less than one percent of the railroads' 21,500 total U.S. and Canadian route miles. NS owns two main lines in Florida, terminating at Jacksonville and Navair (near Lake City), respectively. The two lines join at Valdosta, Georgia, and interchange with the NS' interstate network at Macon, Georgia. Trackage rights agreements allow NS to operate over the approximately 53 miles of CSXT's "A Line" between Jacksonville and Palatka (where NS serves Georgia Pacific paper mill) and NS maintains a haulage agreement with FEC from Jacksonville to Miami. NS connects with the following railroads in Florida: CSXT near Lake City and at Jacksonville; FEC at Jacksonville; SCFE at Fort Pierce; TTR at Jacksonville; and GFRR near Adel, Georgia.

Commodities and Markets

Nationally, NS's top commodity by tonnage is coal. In Florida, NS moves bulk commodities, food products, lumber, paper products, steel, and other products. Most of NS's major customers are located in the Jacksonville area and along the Atlantic Coast to Miami. NS also serves major customers in the vicinity of Lake City. NS operates three automobile distribution centers located at Jacksonville, Titusville, and Miami, and an intermodal container/trailer transload facility in Jacksonville that receives port traffic via TTR.

Seminole Gulf Railway

The Seminole Gulf Railway (SGLR) is a Class III railroad with two lines in Southwestern Florida: The Fort Myers Line between Arcadia and Vanderbilt Beach and the Sarasota Line between Oneco and Venice.

Ownership and History

SGLR was formed in 1987 on two former CSXT branch lines. Before CSXT ownership, the Sarasota Line (Oneco-Venice) was operated by the Seaboard Air Line Railroad and the Fort Myers Line (Arcadia to North Naples, now terminating at Vanderbilt Beach) was operated by the Atlantic Coast Line Railroad. The first section of the railroad was constructed by the Florida Southern Railroad in 1886 between Arcadia and Punta Gorda.

SGLR's headquarters are at Fort Myers and its management is associated with the Bay Colony Railroad based in Massachusetts.



Source: Seminole Gulf Railway, Wikipedia.org.

Infrastructure and Connections

SGLR operates on 115 route miles in Southwest Florida. The Fort Meyer Line serves customers in De Soto, Charlotte, and Lee Counties and interchanges with CSXT at Arcadia. The Sarasota Line (currently inactive) runs between Oneco and Venice and interchanges with CSXT at Oneco. The Sarasota Line serves customers in Manatee and Sarasota Counties. SGLR's primary yard and shop is located at Colonial Station in Fort Myers.

Commodities and Markets

The railroad's primary commodities include building materials, newsprint, beer, LP gas, pulpwood, logs, and stone. In addition to its freight services, SGLR has operated excursion trains from Fort Myers since 1991.

South Central Florida Express

The South Central Florida Express (SCFE) is a Class III railroad serving the agricultural industries of South Central Florida. It is the largest private agricultural railroad in the United States.

Ownership and History

SCFE is a “company railroad” owned and operated by the U.S. Sugar Corporation since 1994. Between 1990 and 1994, the railroad was operated by the Brandywine Valley Railroad, a subsidiary of Lukens Steel. The railroad currently owns a 98-mile section between Sebring and Lake Harbor. Much of that section was owned previously by CSXT (before Brandywine) and was originally part of the Atlantic Coast Line Railroad. The railroad also owns a branch line running south of Lake Harbor and then turning east into the cane fields south of Belle Glade. The railroad’s headquarters are at Clewiston, Florida.



Source: www.railwayage.com.

Infrastructure and Connections

SCFE operates on 171 route miles on both sides of Lake Okeechobee in South Florida. The line on the west side of Lake Okeechobee interchanges with CSXT at Sebring; the line on the east side connects with CSXT at Marcy and, through a lease agreement, operates over 51 miles of FEC to the Atlantic Coast where it connects to the FEC main line at Fort Pierce. SCFE has haulage rights on the FEC to its Jacksonville interchanges with CSXT and NS. The railroad owns 14 locomotives and approximately 1,000 special-purpose cane cars.

Commodities and Markets

As its ownership implies, SCFE’s principal purpose is to transport sugarcane. Since its purchase by its largest customer (U.S. Sugar) in 1994, traffic on the railroad has increased from 41,000 to more than 71,000 annual carloads between 1994 and 2000. The railroad serves 26 customers and hauls cut cane, bulk raw sugar, packages and bulk-refined sugar, fertilizer, molasses, pulpwood logs, rolled paper, and farm equipment.

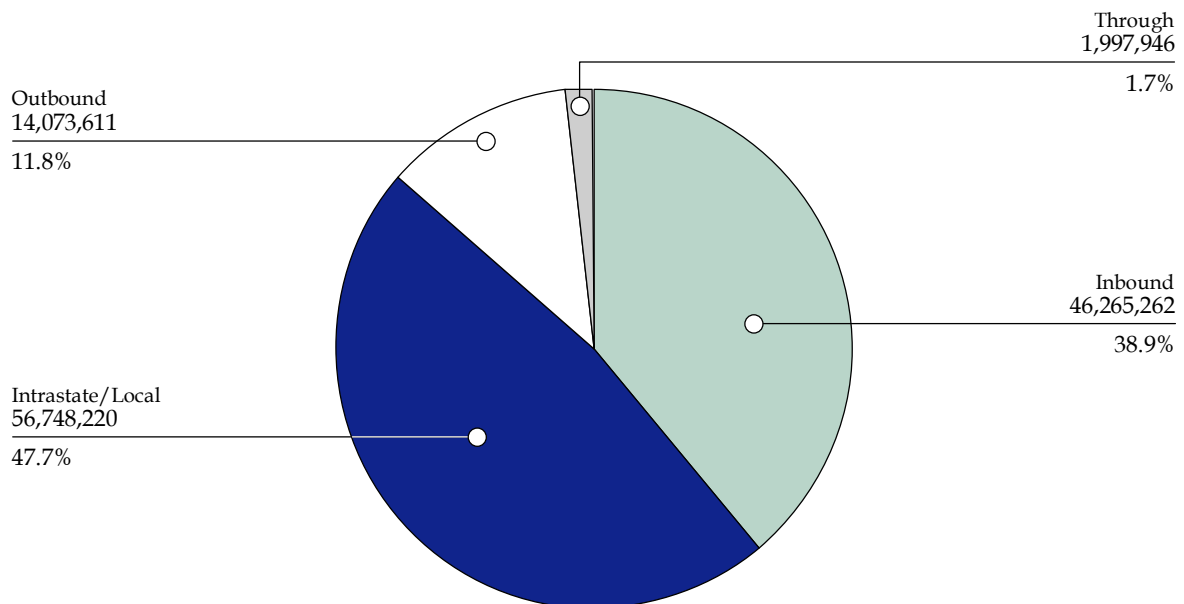
Talleyrand Terminal Railroad

The Talleyrand Terminal Railroad is a short-line railroad run by Rail Link, Inc., a subsidiary of Genesee and Wyoming, Inc. It serves the Jacksonville Port Authority and tenants with over ten miles of track. It has only one main line, running west from the port to an interchange with CSX and Norfolk Southern northeast of downtown Jacksonville, Florida. Operations began on July 28, 1996. Rail Link service expanded to include operation of the rubber tire gantry cranes, transferring more than 23,000 ocean going containers between truck and rail.

■ 4.3 Traffic Description⁴

In 2004, Florida's freight railroads moved more than 119 million tons of freight, an almost two percent increase from 117 million tons reported in 2003. As shown in Figure 4.1, the 2004 freight rail tonnage by direction includes more than 46 million inbound tons, 14 million outbound tons, 57 million local tons, and nearly two million through tons.⁵ In percentage terms, inbound traffic accounted for a 38.9 percent share (up from 36.8 percent in 2003) of the total rail tonnage, outbound traffic comprised 11.8 percent (down from 12.9 percent in 2003), local traffic contributed 47.7 percent (down from 48.6 percent in 2003), and through traffic accounted for 1.7 percent (consistent with 2003).

Figure 4.1 Florida Freight Rail Tonnage by Direction
2004



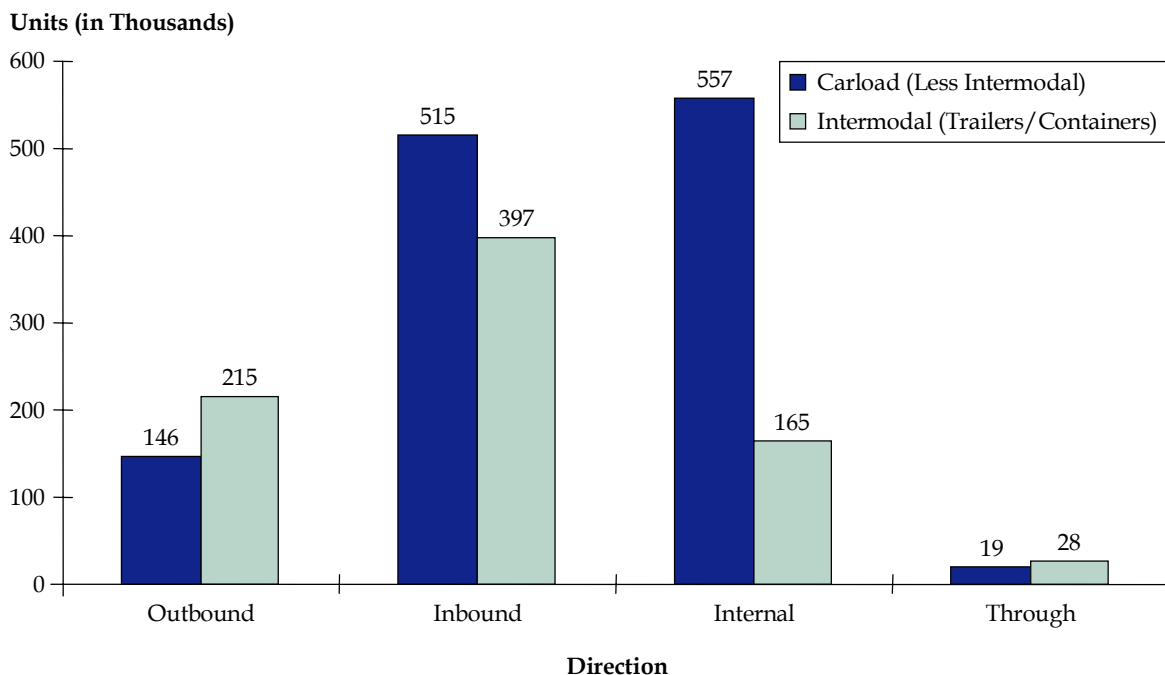
⁴ Summaries by weight, unit type, and direction that are found in this section are based upon the 2004 Surface Transportation Board Carload Waybill Sample.

⁵ The terminology used in this report refers to “inbound” as interstate traffic terminating in Florida; “outbound” as interstate traffic originating in Florida; “local” as Florida intrastate traffic; and “through” as traffic neither originating nor terminating in Florida, but passing through the State. “Origins” include both *outbound and local* flows, while “terminations” include both *inbound and local* flows.

Florida’s 2004 rail freight traffic was carried by approximately 1,237,238 carloads and 805,260 intermodal units (trailers and containers).⁶ Figure 4.2 illustrates the share of carload versus intermodal freight rail movements by direction, including outbound, inbound, internal, and through movements.

In 2004, the greatest share of carload movements were internal movements, accounting for 45 percent of all carloads. Inbound carload moves comprised a slightly lesser share of 42 percent. Outbound and through moves accounted for 12 percent and less than two percent of total carload movements, respectively. In contrast, the greatest share of intermodal movements were inbound movements, representing about 49 percent of the total. Outbound movements comprised another 27 percent; internal movements comprised a lesser 21 percent; and through movements comprised the remaining 3 percent.

Figure 4.2 Florida Rail Carload and Intermodal Movements by Direction 2004



⁶ The carload total figures exclude cars that haul intermodal units.

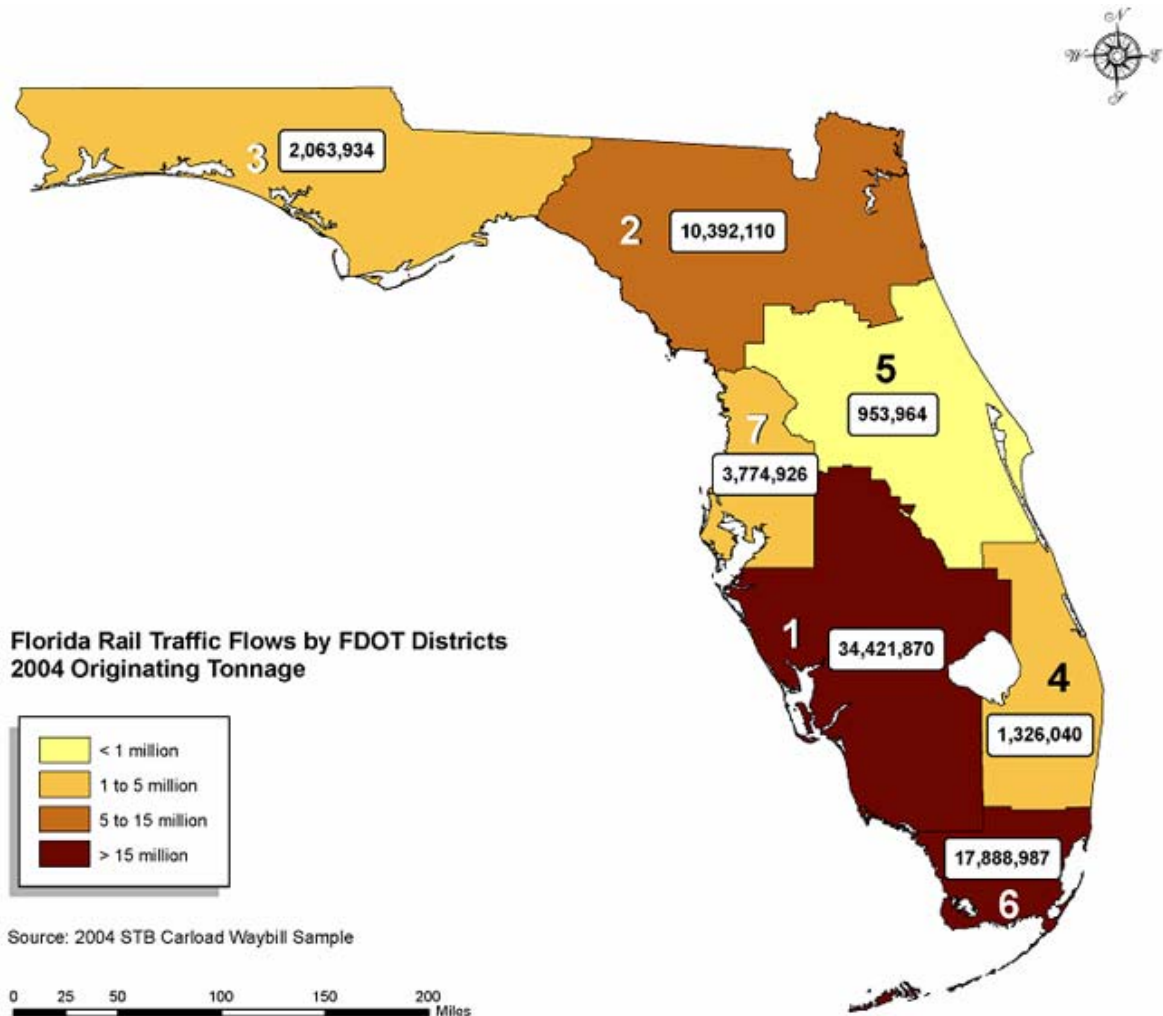
Rail Traffic by Florida District

Traffic Originations

Figure 4.3 depicts the 2004 geographic distribution of originating tonnage by each Florida District, while Figure 4.4 presents historical trends for these moves for the previous 13 years (between 1991 and 2004). Consistent with each year of reported data, Southwest Florida (District 1), which includes Sarasota and Fort Myers, had the highest originating tonnage of all districts in 2004, with more than 34 million tons. Much of District 1's originating tonnage was attributable to the phosphate mining industry in Central Florida's Bone Valley. Meanwhile, the second-highest originating district was South Florida (District 6), which carried nearly 18 million tons, or more than one-half the share carried by District 1. District 6 rail traffic includes large quantities of rock used in construction. The third-ranked originating district was Northeast Florida (District 2), which carried about 10 million tons, including traffic originating at JaxPort. The remaining originating districts were West Central Florida (District 7) with 3.7 million tons; Northwest Florida (District 3) with 2 million tons; Southeast Florida (District 4) with 1.3 million tons; and, finally, Central Florida (District 5) with 0.9 million tons.

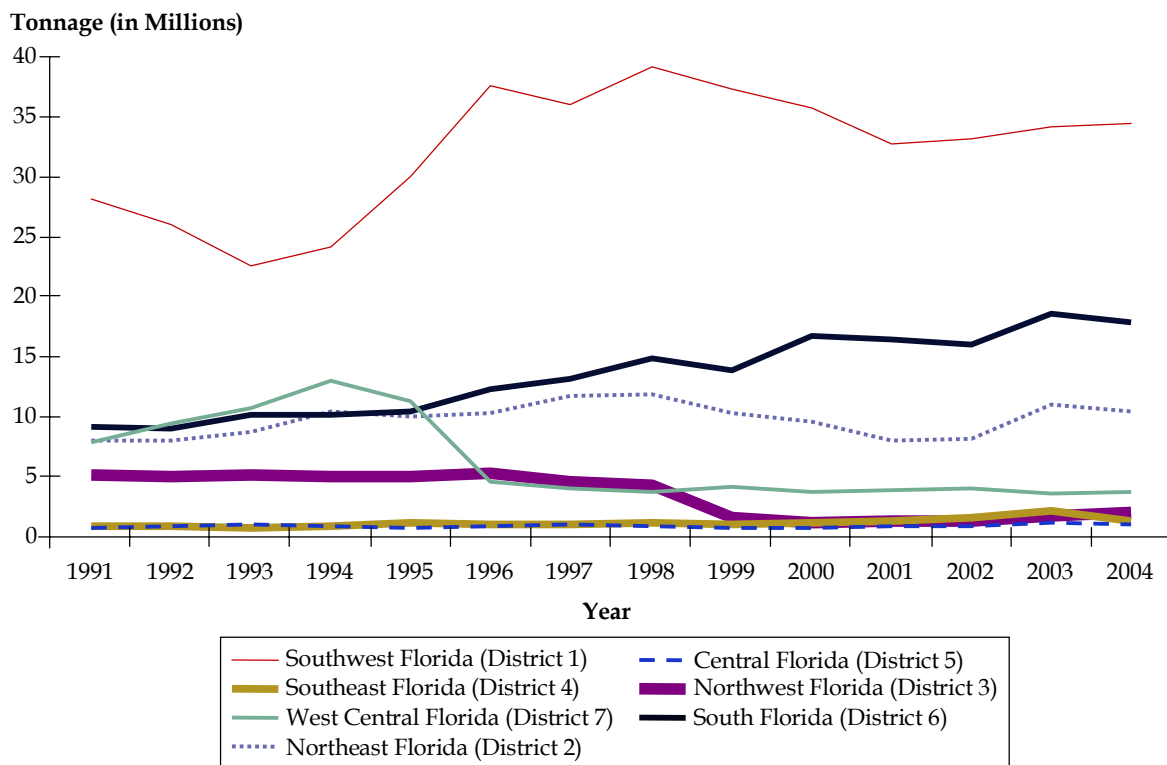
In the most recent period (2003 to 2004), Northwest Florida (District 3), West Central Florida (District 7), and Southwest Florida reported growth in originating tonnage of 17 percent, 6 percent, and 1 percent, respectively. In contrast, other districts showed decreases in freight movements. The largest decrease of 39 percent (from 1.3 million tons in 2003 to 0.8 million tons in 2004) was attributable to Southeast Florida (District 4), and was associated with reduced tonnage in all of its top originating commodities, with the exception of food products. Central Florida (District 5) showed a decrease of 14 percent, followed by Northeast Florida (District 2), with 5 percent; and South Florida (District 6), with 4 percent.

Figure 4.3 Florida Rail Traffic Origins by District
2004



The historical trends in Figure 4.4 show that Southwest Florida (District 1) and South Florida (District 6) have gained the greatest net increases in tonnage since 1991. Northeast Florida (District 2) shows a varying tendency, with ups and downs, between 1991 and 2004. Historically, West Central Florida presents the largest net decrease in tonnage, followed by Northwest Florida (District 3). Meanwhile, Central Florida (District 5) and Southeast Florida (District 4) have made substantially smaller contributions to the total originating tonnage; they present a relatively stable behavior from 1991 to 2004.

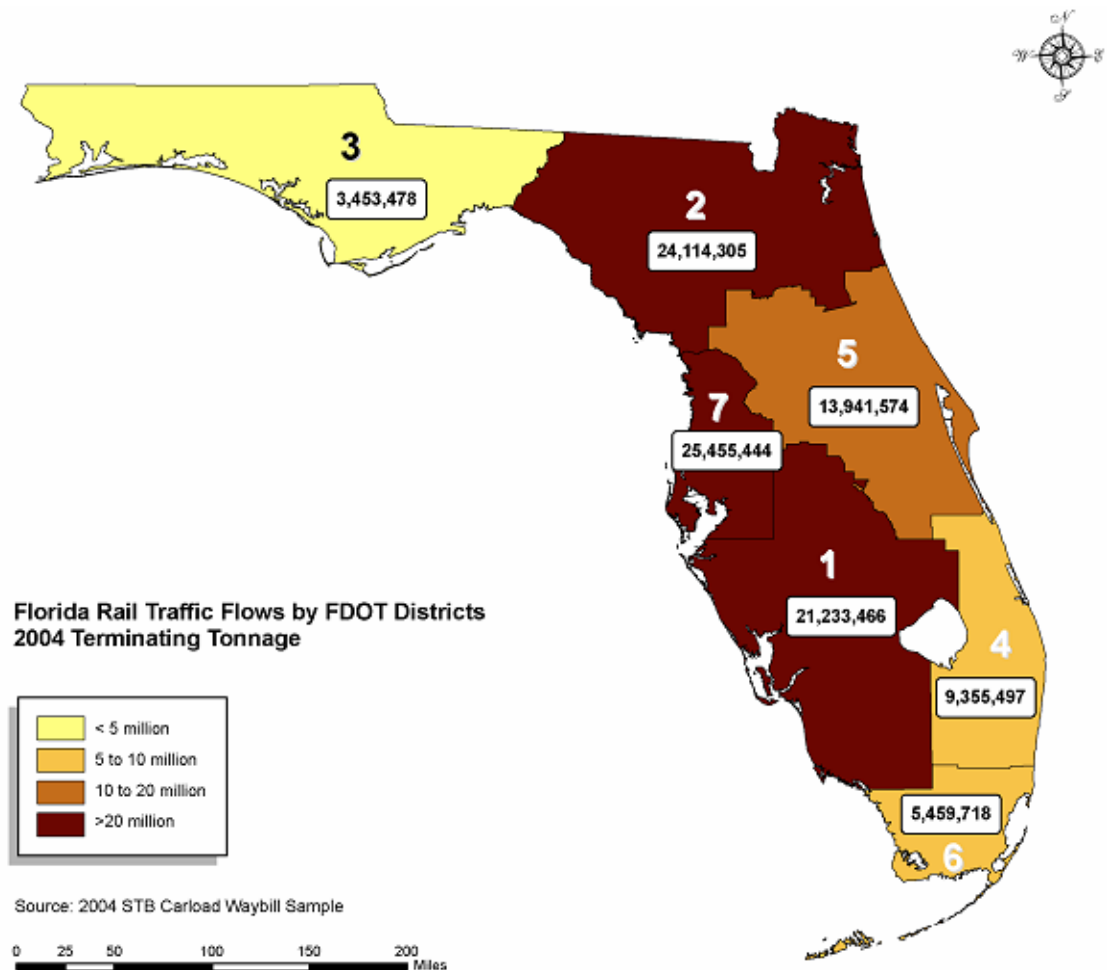
Figure 4.4 Florida Rail Traffic Origins by District
1991 to 2004



Traffic Terminations

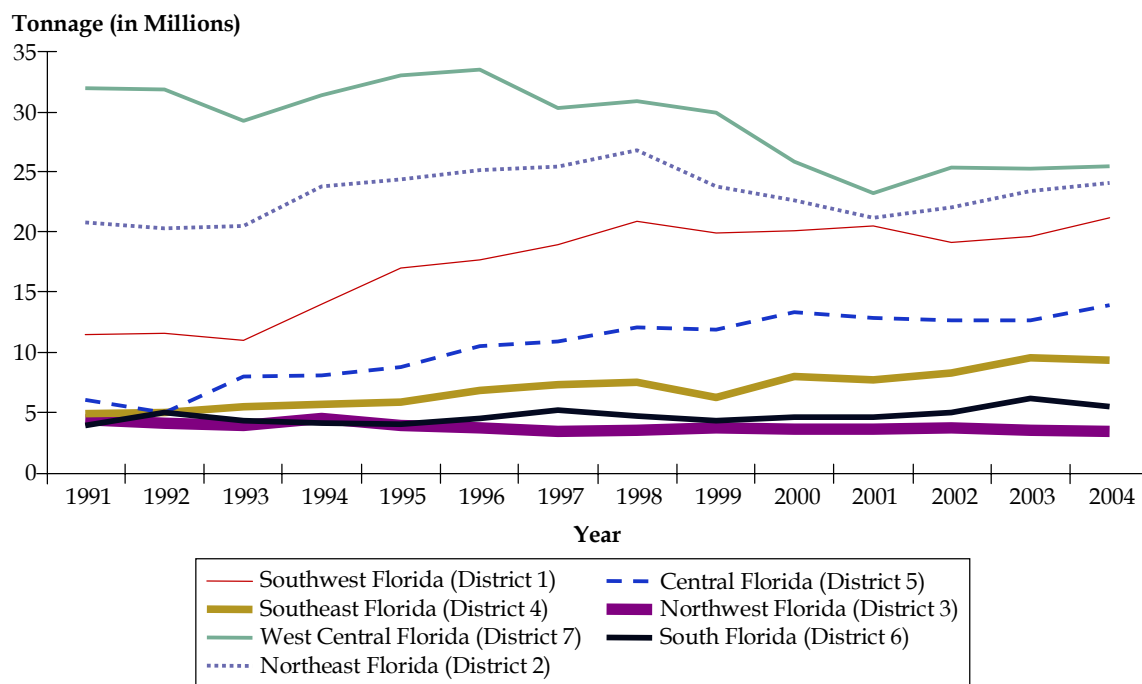
Figure 4.5 depicts the 2004 geographic distribution of terminating tonnage by each Florida District. West Central Florida (District 7), which includes Tampa and St. Petersburg, was the highest receiving District, with more than 25 million terminating tonnage in 2004, again mostly attributable to the phosphate industry. Northeast Florida (District 2) had the second highest terminating tonnage, largely attributable to Jacksonville’s extensive rail yards where many national rail trips terminate, and where cargo is transferred to trucks for local consumption, drayed to Florida peninsula destinations, or exported through JaxPort.

**Figure 4.5 Florida Rail Traffic Terminations by District
2004**



As shown in Figure 4.6, increases in tonnage in the most recent reported period (from 2003 to 2004) were most pronounced for District 5 (12.6 million to 13.9 million, a 10 percent increase), followed by District 1 (19.7 million to 21.2 million, an 8 percent increase), then much smaller increases of three percent for District 2 and 1 percent for District 7. The largest decrease in terminating tonnage was present in District 6 (from 6.2 million to 5.5 million, or 12 percent). District 3 and District 4 experienced much smaller decreases of 2 percent to 3 percent, respectively.

Figure 4.6 Florida Rail Terminations by District
1991 to 2004



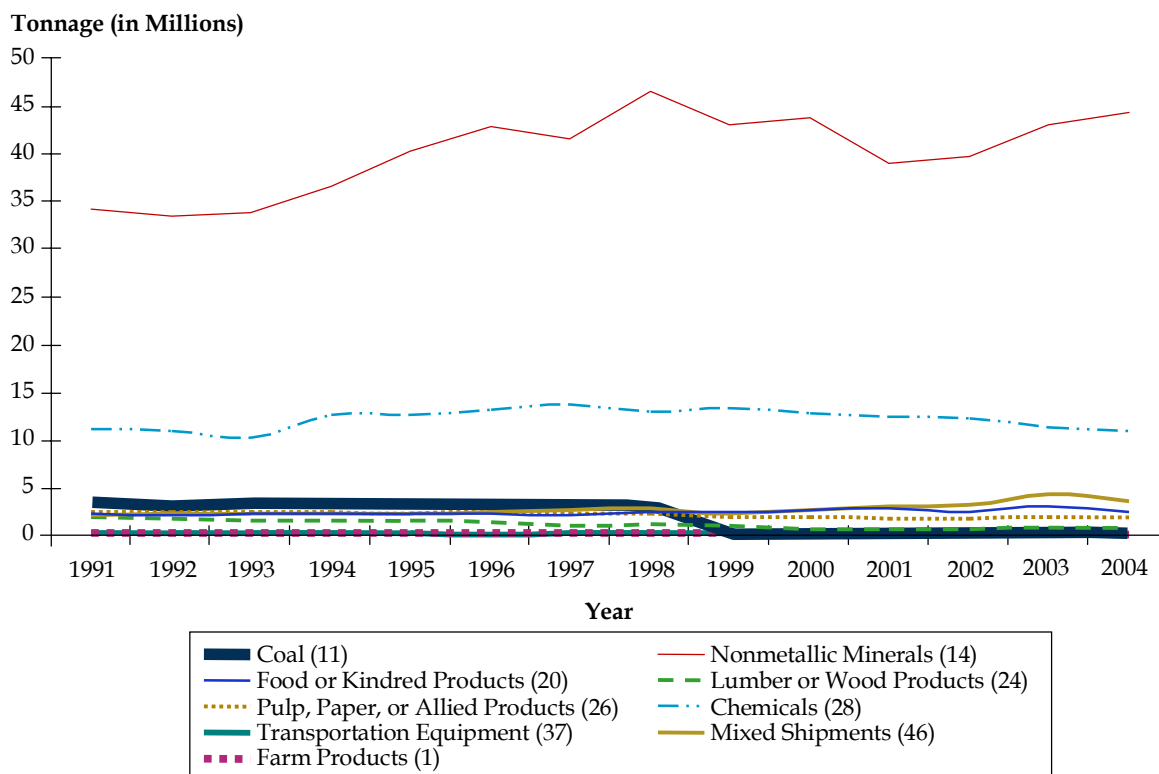
Rail Traffic by Commodity

Traffic Originations

Figure 4.7 and Figure 4.8 illustrate historical trends for Florida rail originations and terminations by commodity from 1991 to 2004. In the latest reporting period (2003 to 2004), seven of the nine most important Florida industry groups presented decreases in originating (outbound and local) tonnage. Measured by absolute tonnage, the largest decreases correspond to Mixed Shipments (decrease of 741 thousand tons), Food, or Kindred Products (decrease of 430 thousand tons) and Chemicals (decrease of 367 thousand tons). In percentage terms, the largest reductions correspond to Coal (100 percent decrease), Farm Products (56 percent decrease) and Transportation Equipment (30 percent decrease). Only the categories of Nonmetallic Minerals, and Pulp, Paper, or Allied Products reported increases. For the first group, the increase was 1.3 million tons (or 3 percent); for the second group, the increase was 78 thousand tons (or 4 percent).

Historically, the Nonmetallic Mineral tonnage reported the largest net increase since 1991, with a marked increase in the mid to late 1990s, followed by a downward trend through 2001, and then a progressive recovery until 2004. The next-highest tonnage group was Chemicals, which reported a net increase from 1991 to 1997 and a net decrease thereafter. Coal reported a stable trend between 1991 and 1998, with significant drops following that period. The remaining commodities were relatively stable throughout the 1991 to 2004 period.

Figure 4.7 Florida Rail Originations by Commodity
1991 to 2004



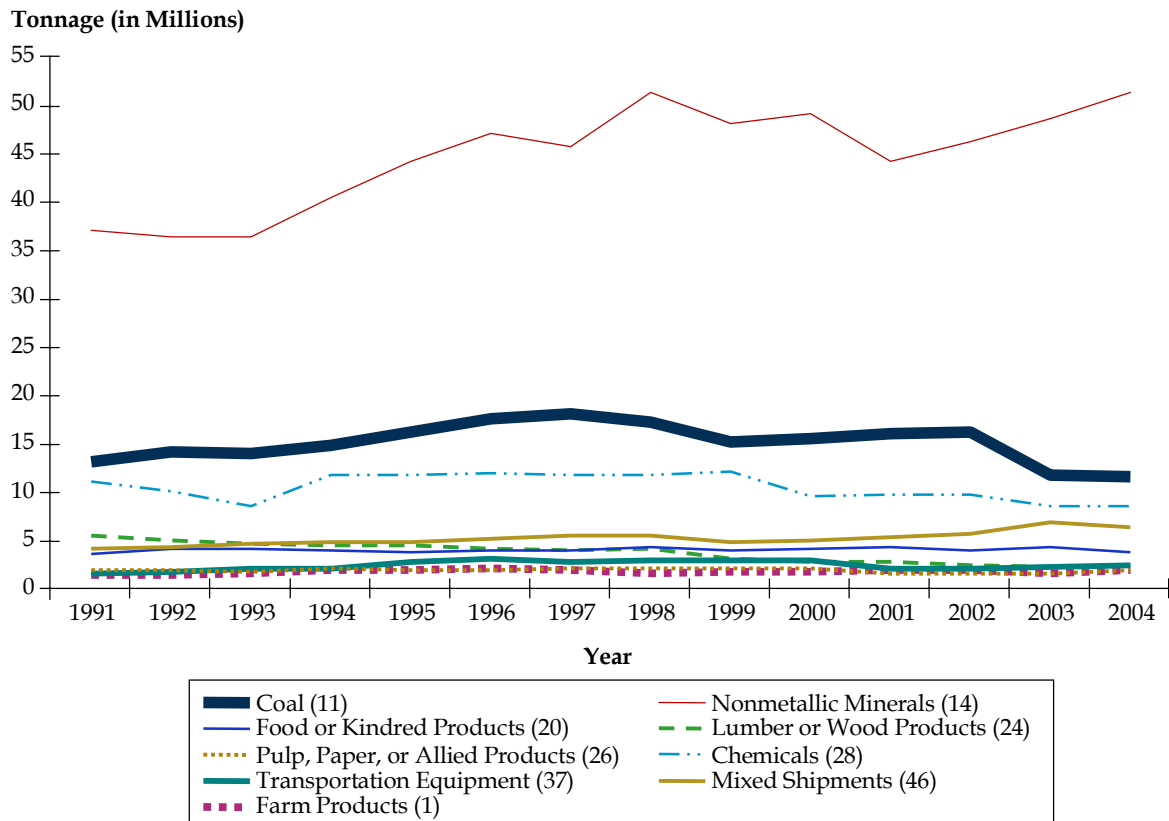
Traffic Terminations

The terminations (outbound and local) of rail traffic, in contrast to the originations, continues to grow. In the latest reporting period (2003 to 2004), six of the nine most important Florida industry groups presented increases in terminating tonnage. In absolute terms, the three largest upward trends occurred in Nonmetallic Minerals (2.8 million tons); Pulp, Paper or Allied Products (375 thousand tons); and Farm Products (241 thousand tons). In percent terms, the top three increases correspond to Pulp, Paper, or Allied Products (26 percent); Farm Products (16 percent); and Nonmetallic Minerals (6 percent). Mixed Shipments, Food and Kindred Products, and Cola all presented decreases exceeding 250,000 tons. The percentage decreases were 9 percent, 11 percent, and 2 percent, respectively.

From a historical perspective (Figure 4.8), the highest tonnage commodity group is Nonmetallic Minerals, which includes phosphates. The Nonmetallic Minerals tonnage presents a net growth since 1991, with a marked increase in the mid to late 1990s followed by a downward trend through 2001. Since then, it has kept a growing trend. This pattern is nearly identical to that seen in Figure 4.7 because most of the phosphate movements are local to Florida. The next highest tonnage group corresponds to Coal shipments, which, however, has presented declines since 2002 after a stable trend before then. Chemical Products’ tonnage, the third in the ranking, has declined since 1999 after a steady trend,

with a slight recent recovery. Mixed Shipments remained steady throughout the nineties; an increase between 1999 and 2003; and a decrease until 2004. The remaining commodities show a relatively steady pattern.

Figure 4.8 Florida Rail Terminations by Commodity
1991 to 2004



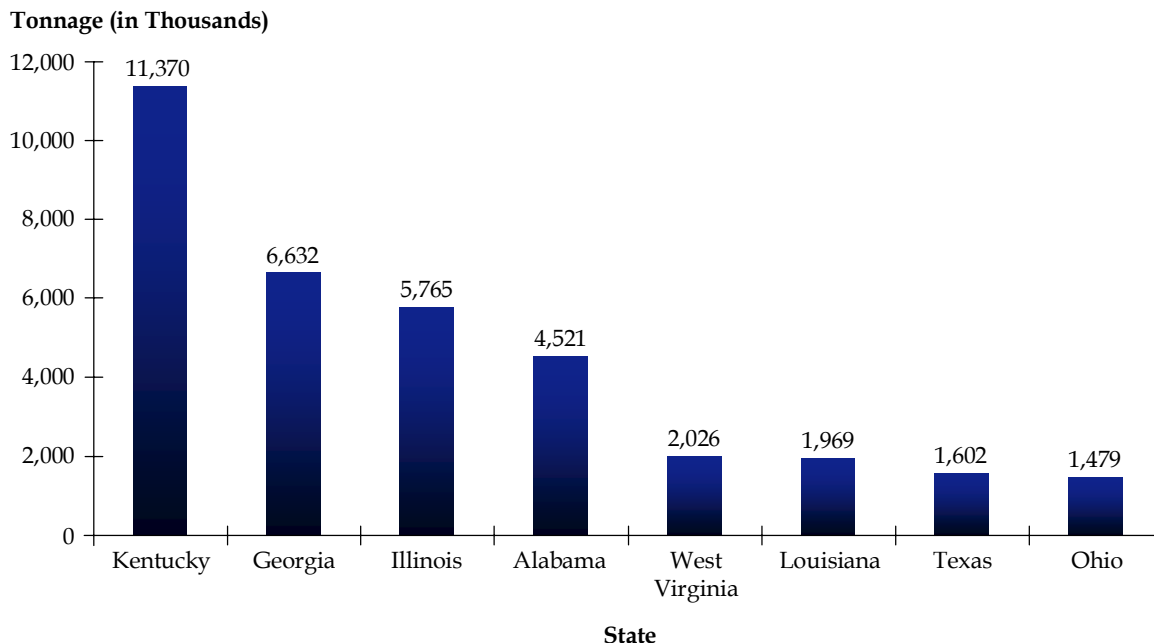
Rail Traffic by Trading Partner

Inbound Traffic

Figure 4.9 shows the top origin states whose freight shipments to Florida by rail exceeded one million tons in 2004. These states accounted for 80 percent of the total inbound tonnage that Florida received in that year. Kentucky ranked first with 11.3 million tons destined for Florida, with Coal (8.3 million tons), Petroleum or Coal Products (2.2 million tons), and Transportation Equipment (614 thousand tons) as its top three commodities. Georgia ranked second with a total of 6.6 million tons shipped to Florida. The top three commodities from Georgia were Nonmetallic Minerals (3.6 million tons), Mixed Shipments (677 thousand tons), and Lumber or Wood Products (558 thousand tons). Next was Illinois with 5.8 million tons, comprised largely of Food or Kindred Products (916

thousand tons), Mixed Shipments (780 thousand tons), and Farm Products (779 tons). The remaining five States - Alabama, West Virginia, Louisiana, Texas, and Ohio - shipped between 1.4 million to 4.5 million tons to Florida.

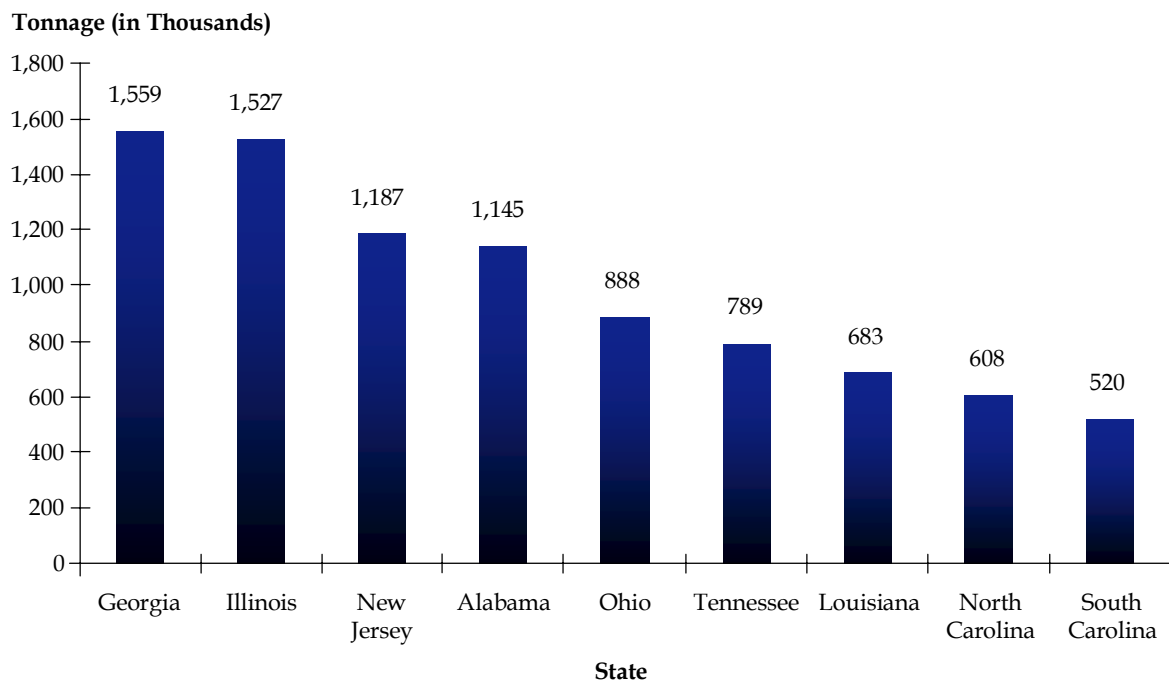
Figure 4.9 Inbound Florida Rail Tonnage by Origin State 2004



Outbound Traffic

Figure 4.10 shows the top receiving states for Florida’s outbound rail traffic which exceeded 500 thousand tons in 2004. As the top trading partner, Georgia received 1.6 million tons from Florida, with the top three moves involving Pulp, Paper or Allied Products (303 thousand tons), Waste or Scrap Materials (197 thousand tons), and Food or Kindred Products (186 thousand tons). Illinois and New Jersey received 1.5 million and 1.2 million tons, respectively. The top three shipments to Illinois involved Chemical Products (465 thousand tons), Mixed Shipments (257 thousand tons), and Pulp, Paper, or Allied Products (303 thousand tons). Meanwhile, Food or Kindred Products (953 thousand tons), Mixed Shipments (128 thousand tons), and Farm Products (36 thousand tons) were the top three shipments to New Jersey. The remaining five States - Alabama, Ohio, Tennessee, Louisiana, North Carolina, and South Carolina - each received between 520 thousand and 1.1 million tons from Florida.

**Figure 4.10 Outbound Florida Rail Tonnage by Termination State
2004**



■ 4.4 Safety Record

The Federal Railroad Administration (FRA) collects data on three major types of safety incidents: train accidents, highway-rail grade crossing incidents, and other incidents.⁷ Between 2001 and 2005, these three types of safety incidents accounted for 1,991 total railroad safety incidents in Florida, resulting in 224 fatalities and 1,288 nonfatal conditions. The following paragraphs and tables summarize the safety record of Florida's railroads (freight and passenger) for this period.

⁷ Incident is a generic term referring to an entire list of reportable events including: fatalities, injuries, and illnesses; collisions, derailments, and similar accidents involving the operation of on-track equipment causing reportable damage above an established threshold; and impacts between railroad on-track equipment and highway users at crossings.

Table 4.3 Florida Railroad Safety Incidents
2001 to 2005

Year	Train Accidents	Highway-Rail Accidents	Other Incidents	Total Safety Incidents	Casualties	
					Fatalities	Nonfatal Injuries
2001	43	114	282	439	43	299
2002	52	99	234	385	54	377
2003	49	99	253	401	47	259
2004	58	108	221	387	41	239
2005	60	103	216	379	51	214
Total	262	523	1,206	1,991	236	1,388

Source: Federal Railroad Administration Office of Safety Analysis.

Between 2001 and 2005, the FRA reported 262 train accidents in Florida, as shown in Table 4.3. The FRA defines a “train accident” as “a safety-related event involving on-track rail equipment (both standing and moving), causing monetary damage to the rail equipment and track above \$6,600.”⁸ Train accidents typically include derailments and major rail collisions, but do not account for all highway-rail grade crossing incidents. However, some highway-rail crossing accidents may be classified under the “train accident” category when they inflict damages to train equipment and track in excess of \$6,600. Table 4.4 summarizes train accidents by major cause, type of accident, by cost of damages to rail equipment and track, and by the resulting casualties. In addition, Table 4.4 reports 30 highway-rail accidents exceeding the damage cost threshold for train accidents. In total, 292 train accidents (262 typical train accidents in addition to 30 highway-rail crossing accidents exceeding the cost threshold) were reported for the period 2001 to 2005.

The leading cause of train accidents between 2001 and 2005 was human error, accounting for 108 accidents (37 percent of the total). The second leading factor was defective track, accounting for 102 accidents (35 percent of the total). Other less prominent causation factors were highway-rail crossings, miscellaneous causes,⁹ equipment (mobile component), and signals, each accounting for approximately 10 percent or less of total train accidents.

⁸ Federal Railroad Administration Office of Safety Analysis.

⁹ According to FRA’s Accident Reporting Guide, “miscellaneous causes” refer to those that not fit in the pre-established cause categories.

Table 4.4 Florida Train Accidents by Cause
2001 to 2005^a

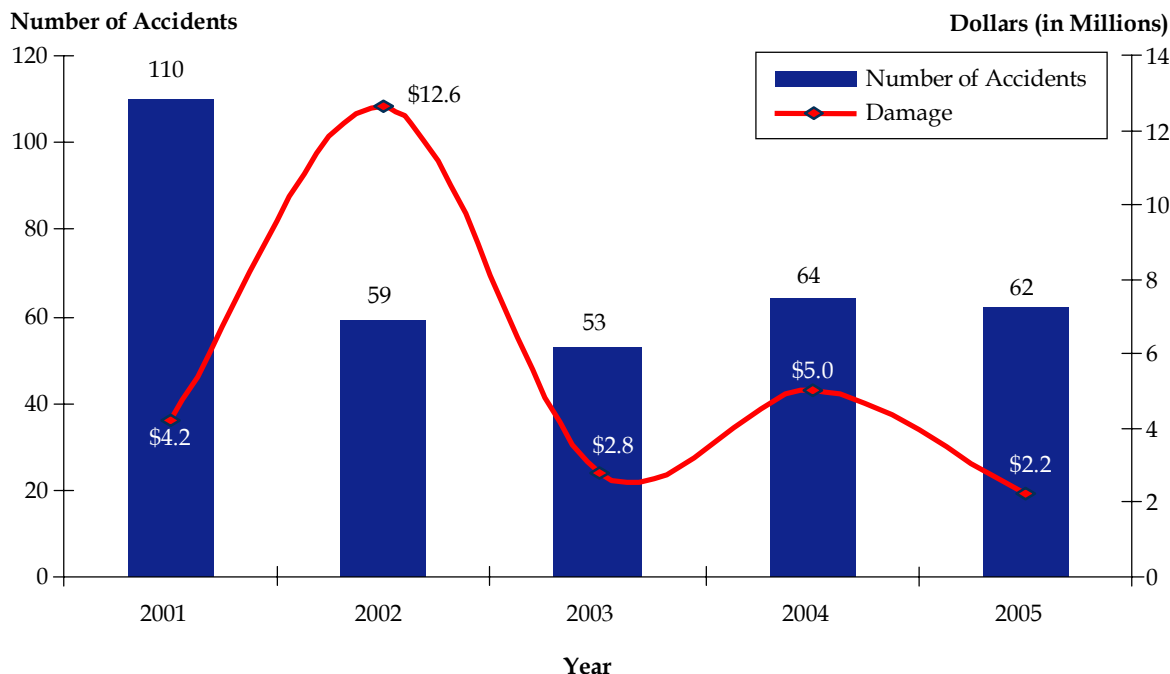
Major Cause	Type of Accident				Total Accidents and Share by Type		Damage to Rail Equipment and Track		Casualties	
	Collision	All Derailments ^c	Highway-Rail Crossing	Other	Total by Major Cause	Percent of Total Accidents	\$2005 Dollars (Thousands)	Percent of Total Damage	Fatal	Nonfatal
Equipment	2	20	0	0	22	7.5	3,033	11.3	0	1
Highway-Rail ^b	0	0	30	0	30	10.3	1,243	4.6	11	20
Human Error	12	61	0	35	108	37.0	3,930	14.6	1	10
Miscellaneous	1	21	0	7	29	9.9	1,714	6.4	0	2
Signal	0	1	0	0	1	0.3	8	0.0	0	0
Track	1	101	0	0	102	34.9	16,900	63.0	4	133
Total	16	204	30	42	292	100.0	26,829	100.0	16	166

Source: Federal Railroad Administration Office of Safety Analysis.

- ^a Period covers January 2001 to December 2005 and includes passenger and freight train accidents exceeding the \$6,600 reporting threshold for damages.
- ^b Highway-Rail accidents matching the operational definition of “train accident” are reported in this table by FRA.
- ^c Most derailments occur at low speeds. There were only 29 derailments with speeds greater than 20-miles per hour during the 2001 to 2005 period.

In 2005 dollars, damage to train equipment and tracks totaled \$26.8 million between 2001 and 2005. Track-related accidents were the most costly, estimated at \$16.9 million 2005 dollars (or 63 percent of the damage costs to train equipment and tracks). A single derailment in April 2002 was responsible for a majority of that total cost, accounting for \$7.9 million in damages alone. Without this derailment, track-related accidents would account for a considerably smaller share of 46 percent. Figure 4.11 presents the number of train accidents and their damage costs for each year.

**Figure 4.11 Florida Train Accidents and Damage Costs in Florida
2001 to 2005**



In terms of casualties, track-related accidents also ranked first across train accidents, primarily due to the single Florida derailment that accounted for the 4 fatalities and 132 of the 146 nonfatal injuries within the 2001 to 2005 period. Aside from this derailment, casualties were mostly caused by highway-rail crossing accidents, followed by human error occurrences.

In terms of types of accidents, derailments accounted for 70 percent of accidents, followed by other types of accidents (14 percent), highway-rail crossings (10 percent), and collisions (5 percent). Interestingly, 82 percent of derailments occurred at speeds of 30 mph or less, based on a random sample. During the 2001 to 2005 period, only 29 derailments occurred with speeds exceeding 20-miles per hour. The data suggests that efforts to address human error, jointly with track improvements, could have a positive effect in increasing overall safety. Moreover, track improvements could significantly offset damage costs in high-cost accidents such as the 2002 derailment.

Table 4.5 shows statistics on the second category of safety incidents, highway-rail incidents, between 2001 and 2005. The FRA defines highway-rail incidents as “any impact between a rail and highway user (both motor vehicles and other users) of the crossing as a designated crossing site, including walkways, sidewalks, etc., associated with the crossing.” The data show that 417 (or 80 percent) of the 523 highway-rail incidents in Florida involved a train striking a highway user – either a motor vehicle or a pedestrian. In 20 percent of the incidents, the train was struck by a motor vehicle. Fifty-two of the 81

fatalities were occupants of motor vehicles. There were 29 fatalities out of 47 total train-pedestrian incidents, reflecting the highest ratio of fatalities per incident among highway users.

Table 4.5 Florida Highway-Rail Incidents by Highway User Type
2001 to 2005^a

Type and Highway User	Total Accidents	Casualties	
		Fatal	Nonfatal
Train Struck Highway User	417	79	121
<i>Motor Vehicle</i>	370	50	112
<i>Pedestrian or Other</i>	47	29	9
Train Struck by Highway User (Consists Totally of Motor Vehicles)	106	2	39
Total Figures	523	81	160

Source: Federal Railroad Administration Office of Safety Analysis.

^a Period covers January 2001 through December 2005.

Finally, during the last two years the FRA reported 1,206 “other” safety incidents in Florida. “Other” incidents are defined as “any death, injury, or occupational illness of a railroad employee that is not the result of a ‘train accident’ or ‘highway-rail incident.’” The 1,206 “other” incidents reported comprised 1,232 casualties encompassing 150 fatalities, and 1,082 injuries. All but one of the fatalities was attributable to trespassing on railroad property. The greatest share of injuries was incurred by railroad workers, including employees and contractors.

■ 4.5 Abandonment History

Since 2004, four railroads – CSXT, Florida West Coast, Florida Central, Florida East Coast, and Seminole Gulf – have petitioned the Surface Transportation Board (STB) for permission to abandon portions or all of their railroad track in Florida. As of 2004, two sections of the CSXT and Seminole Gulf rail lines were pending an environmental assessment.

Two noteworthy abandonment petitions that are not captured in Table 4.6 concern segments of the Seminole Gulf Railway (SGLR) and the Florida West Coast Railroad (FWCR). On June 2004, the SGLR was the subject of an adverse application filed by Lee County,

Florida to a request that the STB authorize the abandonment by SGLR of a portion of the Baker Spur where it crosses Alico Road¹⁰. The County had intended to install a new grade crossing at that location, and wanted to avoid the expenditure of public funds to construct and remove the crossing if the line were later abandoned.

The Florida West Coast Railroad had sought an abandonment exemption in 2004, but failed to consummate the abandonment of a 13-mile stretch of railroad extending from Trenton to Newberry, in Alachua and Gilchrist Counties.¹¹ Since the exemption of the abandonment of the line, FWCR and CSXT have engaged in discussions with the Florida Department of Environmental Protection to transform all or a substantial portion of the line into a trail. Those discussions continue and FWCR request for an extension of time to exercise the abandonment authority was granted, to be exercised before January 10, 2008.

Table 4.6 Railroad Abandonments Since 2004

Railroad Name	Section	Status
CSX Transportation	Branch line in Pinellas County (1.85 miles)	Pending Environmental Assessment (STB Docket AB_55_646x)
Florida Central	Forest City Spur (3.4 miles) between Toronto and Forest City in Seminole and Orange Counties)	Abandonment exemption granted by the STB in December 2004 (STB Docket AB_319_4_x)
Florida East Coast	Portion of South Little River Branch Line (5.0 miles) to the Miami-Dade County line)	Abandonment granted in May 2005 (STB Docket AB-70_4_x)
	Titusville Branch (9.8 miles) from Titusville to Aurantia, in Brevard County)	Abandonment granted in June 2005 (STB Docket AB-70_5_x)
Seminole Gulf	Portion of the Venice Branch (12.43 miles) between Sarasota and Venice	Pending Environmental Assessment (STB Docket AB_400_3x)
<i>Abandonments in Process</i>		<i>18.2 miles</i>
<i>Abandonments Awaiting Environmental Assessment</i>		<i>14.3 miles</i>
Total Potential Abandonments		32.5 miles

¹⁰STB Docket No. AB-400 (Sub-No.4).

¹¹STB Docket No. AB-347 (Sub-No. 3X).

5.0 The Florida Passenger Rail System

Florida has long been one of the nation's fastest-growing states. With 17.8 million residents in 2005, the State's population is anticipated to grow to 25.0 million residents by 2025, an increase of 40 percent over 2005 levels or over 900 new residents per day.¹ The State's population growth will remain focused in its urbanized areas, which accounted for nearly 90 percent of all residents in 2000, up from 85 percent in 1990. Many of these urban areas will continue to grow across county lines as Florida's economy increasingly competes at a regional level.

As the population grows, the demand for moving people to, from, and within Florida will continue to increase. Existing trends indicate that urban and interregional highway corridors are expected to be heavily congested during peak periods by 2025, even after planned transportation improvements are made. More than 30 of the State's airports are projected to be operating at more than 80 percent of capacity, the point at which expanded capacity should be under construction. Florida's seaports must improve waterside, terminal, and landside infrastructure to handle rapid growth in cruise passenger activity. The solution in the past, in Florida and throughout the United States, has been to add new roadways and more lanes on existing roads. This becomes much more difficult as increasing population density increases property values and decreases available land. Right-of-way and construction costs for transportation capacity expansion rapidly escalate, especially in urban areas where congestion is most severe.

The northeastern states, with similar population densities and congestion problems as Florida, have recognized the importance of strong intercity and commuter rail services to help alleviate the need for additional roadway construction. Floridians also have recognized this need, and responded with proposals for new and expanded intercity rail, high-speed rail, and commuter rail services. Section 5.0 of the Florida Rail Plan presents the status and future plans for passenger rail in Florida.

¹ Source: Bureau of Economic and Business Research, University of Florida. Retrieved the forecast of 24,998,016 for the year 2025 from the Florida Legislature's Office of Economic and Demographic Research web site on December 7, 2006.

■ 5.1 Current Passenger Rail Systems

Section 5.1 provides a description of current passenger rail services in Florida. Section 5.1.1 discusses intercity service provided by Amtrak, while Section 5.1.2 looks at commuter operations. Section 5.1.3 concludes with a discussion and photographs of the Diesel Multiple Units (DMUs) currently in operation on Tri-Rail, which are anticipated to also be used in Orlando with the 2006 announcement of a new commuter rail initiative in Central Florida.

Amtrak

The National Railroad Passenger Corporation (Amtrak) has provided intercity and long-distance services to Florida for more than 35 years. This section describes the history, current status, and services offered by Amtrak in the Sunshine State.

History

Throughout the first half of the 20th century, Americans relied heavily on intercity passenger rail to travel short and long distances. As automobiles became more economical and massive highway investments were made, the role of passenger rail quickly began to diminish in relationship to personal automobile travel. Consequently, the share of ridership on passenger railroads – both intercity and commuter – dropped significantly, leaving many passenger railroads out of business and forcing freight railroads with passenger operations to cease some services.

The Nixon Administration, realizing the need for a reliable, national intercity rail system, asked Congress to consider a bill that would form a national intercity railroad to relieve freight railroads of money-losing passenger operations. In 1970, Congress created the National Railroad Passenger Corporation (Amtrak) as a for-profit government corporation with trackage rights over all freight railroads. The bill that created Amtrak guaranteed priority over freight trains but required Amtrak to compensate the freight railroads for the incremental costs associated with operations over their tracks. Congress expected Amtrak would become profitable after a few initial years of Federal support. This was perhaps an unrealistic expectation, and one that few passenger rail systems are expected to achieve. The more appropriate question is whether the \$25 billion in Federal subsidies Amtrak has received since 1971 can be justified from the public benefits obtained (avoided highway costs, congestion mitigation, alternate transportation system in times of crisis, environmental and safety improvements, etc.).

Following several unsuccessful efforts in the late 1990s to restructure Amtrak and make the railroad self sufficient, Amtrak's current situation is tenuous. The 1997 Amtrak Reform and Accountability Act attempted to bring profitability to the railroad by 1) converting Amtrak from a government corporation to a private entity without monopoly protection; 2) allowing the railroad to add new routes and close money-losing

ones; and 3) providing \$2.2 billion in subsidies through 2002 with the hope that Amtrak would become self sufficient within five years. In 2002, the U.S. Department of Transportation's (DOT's) Office of Inspector General found that Amtrak had not made any progress toward self-sufficiency and that the railroad would have to receive public funds to continue operating. From Fiscal Year (FY) 2003 to FY 2005, Amtrak continued to receive annual appropriations, although the funding was far below levels requested by the railroad.

Current Amtrak Status²

Since FY 2006, the Federal policies on Amtrak have been to limit budget spending on the nation's intercity passenger rail system to encourage its management to take the necessary steps to reduce excessive costs, implement operational efficiencies, and improve the quality of the service provided. The Administration's FY 2006 Budget requested \$360 million for the Surface Transportation Board to maintain commuter operations that require the use of Amtrak personnel or property. The 2006 Budget language indicated that "with no subsidies, Amtrak would quickly enter bankruptcy, which would likely lead to the elimination of inefficient operations and the reorganization of the railroad through bankruptcy procedures." Without Federal money, Amtrak will quickly be forced into Chapter 7 "shutdown" bankruptcy, forcing the company to cease all rail operations and placing all railroad assets in the hands of a bankruptcy trustee responsible to the railroad's creditors. Chapter 7 bankruptcy does not allow the railroad to continue operating, unlike the familiar Chapter 11 bankruptcies used by several airlines that have allowed them to continue operations with time to reorganize and meet creditor's demands. The effect on Florida, if this provision were to make it through Congress, would be the immediate closure of Florida operations. Through bankruptcy restructuring, the Administration hopes that the nation's intercity passenger rail system will attract private investment, state and local funding, and make available Federal dollars to support the most viable routes.

Amtrak has begun implementing reforms similar to those proposed by former Transportation Secretary Norman Mineta in May 2005³ and Congress is currently examining several proposed pending Amtrak legislation (Table 5.1).

² National Association of Railroad Passengers and letter from Senator Patty Murray, Ranking Member Subcommittee on Transportation, Treasury, and General Government, to President Bush, February 16, 2005.

³ National Railroad Passenger Corporation, *FY Grant and Legislative Request: Rebuilding America's Passenger Rail System*, March 2006.

Table 5.1 Summary of Pending Amtrak Legislation

Title	Number	Description	Latest Major Action
<i>Passenger Rail Investment and Improvement Act of 2006</i>	S.1516	Allocate \$3.3 billion in operating grants and \$6.3 billion in capital grants between 2006 and 2011. Capital grants would be shifted to the states starting with 3% in 2006 and growing to 33% by 2011.	10/18/2005 Placed on Senate Legislative Calendar under General Orders
<i>Amtrak FY 2006-2007 Authorization Bill</i>	H.R.1630	Authorize appropriations for the benefit of Amtrak for Fiscal Years 2006 through 2008 and other purposes	11/08/2005 Placed on the Union Calendar
<i>Amtrak Reauthorization Bill</i>	S.294	The bill would reauthorize Amtrak, and for other purposes	01/16/2007 Referred to the Senate Committee on Commerce, Science, and Transportation
<i>Get Real Incentives to Drive Plug-in Act</i>	H.R.589	The bill would promote the development and use of plug-in hybrid electric vehicles, including Amtrak vehicles, and for other purposes	01/19/2007 Referred to House Committees on Science and Technology, Ways and Means, and Oversight and Government Reform
<i>Omnibus Crime Control and Safe Streets Act of 1968 Amendment Bill</i>	S.368	The bill would enhance the COPS ON THE BEAT grant program and would include officers for the Amtrak Police Department under the amended act	01/17/2007 Referred to Senate Committee on the Judiciary
<i>Security and Safety of Rail and Rail Transit Transportation Systems</i>	H.R.534	The bill would allow Amtrak to be eligible for grants for making fire and life-safety improvements and infrastructure upgrades to tunnels on the Northeast Corridor in New York City, New York, Baltimore, Maryland, Washington, District of Columbia, and Boston, Massachusetts. The bill would allocate \$126 million annually between Fiscal Years 2008 and 2011 and \$133 million in FY 2012.	01/17/2007 Referred to House Committees on Homeland Security and Transportation and Infrastructure
<i>Rail Security Act of 2007</i>	S.83	A bill to provide increased rail transportation security. This Act may award grants to Amtrak (\$63.5 million in FY 2008) through the Secretary of Transportation to secure Amtrak trains and stations, hire additional police and security officers, expand emergency preparedness efforts, secure major tunnel access points and obtain a watch list identification system approved by the Assistant Secretary.	01/04/2007 Referred to the Senate Committee on Commerce, Science, and Transportation

Source: The Library of Congress, THOMAS.

Florida Route Descriptions

Amtrak currently operates 43 intercity routes through 46 states. Its network covers 22,000 miles of track, most of which is owned by for-profit freight railroads. Amtrak owns approximately 730 route miles, representing 3 percent of its national network. Most of the Amtrak-owned route mileage is located between Washington, D.C., and Boston (Northeast Corridor) and between Philadelphia and Harrisburg, Pennsylvania. Amtrak does not own any mileage in Florida, but operates a maintenance facility in Hialeah.

In Florida, Amtrak operates four distinct services, the *Auto Train*, *Silver Meteor*, *Silver Star*, and *Sunset Limited*. Amtrak operates in Florida over lines owned by CSX Transportation (CSXT) and the Florida Department of Transportation (South Florida Rail Corridor). Amtrak's current Florida routes include:

- ***Auto Train*** offers nonstop service between Lorton, Virginia (just south of Washington, D.C.), and Sanford, Florida. The *Auto Train* operates daily, with afternoon departures in each direction. The entire trip takes approximately 16 and one-half hours. It is the only combination auto/passenger train in the United States. The *Auto Train* operates over CSXT's "A" Line from the Florida-Georgia border to its terminus in Sanford. This popular service would likely extend further north (e.g., New York/New Jersey) were it not for clearance restrictions of the multilevel auto carriers in Baltimore and Washington, D.C.
- The ***Silver Star*** and the ***Silver Meteor*** offer service daily between New York City and Miami. Both services operate over mostly the same route within Florida, but follow different trajectories north of Savannah, Georgia, through the Carolinas. From the Florida-Georgia border, both routes operate over CSXT's "A" Line south to Auburndale. At Auburndale, the *Silver Meteor* continues southeast to West Palm Beach via CSXT and the South Florida Rail Corridor into Miami. From Auburndale, the *Silver Star* travels southwest to Tampa and then back to Auburndale where it retraces the *Silver Meteor's* aforementioned route to Miami. North of Florida, the *Silver Star* follows a route along the Appalachian Piedmont between Savannah, Georgia, and Raleigh, North Carolina, via Columbia, South Carolina. The *Silver Meteor* follows a route along the Atlantic Coastal Plain, serving Charleston, South Carolina, and Fayetteville and Raleigh, North Carolina. From Raleigh, both routes operate over the same line north to New York City. Both routes are subject to frequent delays due to freight congestion in areas of the Carolinas and Virginia. Most of the route within Florida does not suffer from delays. The two service routes may be potentially eliminated by Amtrak's new board and management team if they continue to register increasing losses. According to recent findings published by the Heritage Foundation, the two services connecting New York and Florida lost \$105.3 million in 2005 - compared to \$87.9 million in 2004 - on ticket sales of \$60.9 million, yielding a lost per passenger of \$146.⁴

⁴ Ronald D. Utt, *Springtime for Amtrak and America*, The Heritage Foundation, May 2006.

- Within Florida, the *Silver Star* serves the following stations: Jacksonville, DeLand, Winter Park, Orlando, Kissimmee, Lakeland, Tampa, Winter Haven, Sebring, West Palm Beach, Deerfield Beach, Fort Lauderdale, Hollywood, and Miami. The *Silver Star* travel time from Jacksonville to Miami is slightly longer than 11 hours. The total travel time between New York City and Miami is slightly longer than 30 hours.
- The *Silver Meteor* serves the same stations as the *Silver Star*, with the exception of Tampa. Because the *Silver Meteor* switches at Auburndale and does not stop in Tampa, it offers slightly faster service between Central and South Florida. The *Silver Meteor* carries passengers between Jacksonville and Miami in nine hours. The total travel time between New York City and Miami is 27 hours.
- Together, the *Silver Star* and *Silver Meteor* provide Amtrak’s **Cross Florida Service** between Orlando and Miami (*Silver Meteor*) and between Orlando and Miami via Tampa (*Silver Star*).
- The *Sunset Limited* provides tri-weekly service between Orlando and Los Angeles over the CSXT “A” Line from Orlando to Jacksonville and over CSXT across the Florida Panhandle. Within Florida, the *Sunset Limited* serves stations in Orlando, Winter Park, Sanford, DeLand, Palatka, Jacksonville, Lake City, Madison, Tallahassee, Chipley, Crestview, and Pensacola. The trip through Florida requires approximately 12 hours (eight to nine hours between Pensacola to Jacksonville and three and one-half hours between Jacksonville and Orlando). At 2,768 miles, the *Sunset Limited* is Amtrak’s longest route. Travel time on the entire route, between Los Angeles and Orlando, is nearly three days (67 hours, 15 minutes). **The *Sunset Limited* east of New Orleans has been suspended since August 27, 2005.** Hurricane Katrina caused extensive infrastructure damage in Louisiana, Mississippi, and Alabama. Although track has been repaired in all places, station reconstruction is expected to take much longer. The *Sunset Limited* has proven to be one of Amtrak’s least efficient routes serving only 81,348 passengers in 2005. The route generated \$35.2 million in annual losses in 2005 (compared to \$29.3 million in 2004) while contributing revenues of only \$10.8 million, yielding a loss of \$433 for each passenger.⁵ **As of December 2006 no decision has been made concerning the future status of this route east of New Orleans.**
- With its **Thruway Motorcoach Services**, Amtrak serves many Florida counties that do not have direct passenger rail access. The Thruway service provides rail-bus connections for communities previously served by the Palmetto Service between Lakeland and Jacksonville. On October 31, 2004, Amtrak discontinued its Palmetto service to Florida. The Palmetto, which originates in New York City, previously terminated in Miami via Jacksonville, Orlando, and Tampa over CSXT’s “S” Line. The Palmetto called on four stations between Lakeland and Jacksonville, including Ocala, Waldo, Wildwood, and Dade City. The Palmetto service now operates between New

⁵ Ronald D. Utt, *Springtime for Amtrak and America*, The Heritage Foundation, May 2006

York City and Savannah, Georgia. Other Thruway bus services include: Orlando/Tampa to St. Petersburg and Fort Myers (via Lakeland, Bradenton, Sarasota, and Port Charlotte); DeLand to Daytona Beach; Orlando to Orlando hotels and attractions; and Miami to Key West (via Miami International Airport, Homestead, Key Largo, Islamorada, Marathon, and Key West).

Table 5.2 summarizes Florida's Amtrak current passenger rail service.

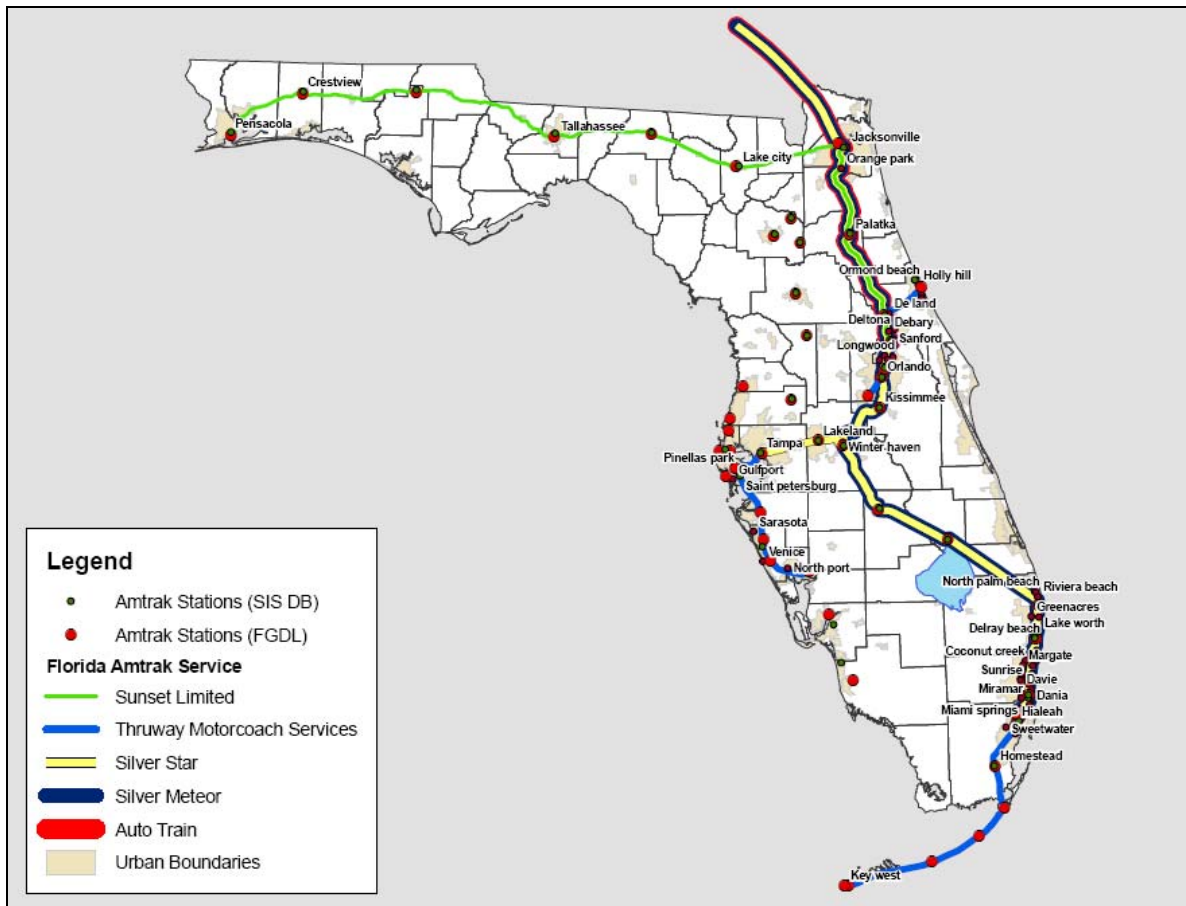
Table 5.2 Summary of Florida Amtrak Passenger Rail Service

Route	Frequency	Origin/Destination	Type of Service
<i>Auto Train</i>	Daily, each direction	Washington, D.C. (Lorton, Virginia) to Sanford, Florida	Conventional and personal auto transport
<i>Silver Meteor</i>	Daily, each direction	New York City to Miami	Conventional
<i>Silver Star</i>	Daily, each direction	New York City to Miami (via Tampa)	Conventional
<i>Sunset Limited</i>	Three times per week	Traditionally, this route operated from Los Angeles to Orlando (via Jacksonville). However, due to severe infrastructure damage from Hurricane Katrina, this service currently does not extend east of New Orleans, Louisiana.	Conventional

Source: Amtrak.

Amtrak provides passenger rail service to 24 stations in Florida. The map in Figure 5.1 provides an overview of Amtrak's current four routes serving Florida, including all passenger rail stations. The map also shows those locations that are served by Amtrak's Thruway Motor Services.

Figure 5.1 Amtrak Routes and Stations in Florida



Sources: Amtrak, Florida Geographic Data Library (FGDA), and Strategic Intermodal System (SIS) Database (DB) [refers to Amtrak stations that are designated to SIS].

Note: The Sunset Limited service has not been in service since August 2005 because of Hurricane Katrina. It is unclear at this point when service will be resumed.

Ridership

With 841,240 passengers in 2005, Florida is one of four states outside the Northeast Corridor with relatively high Amtrak ridership. Table 5.3 shows Florida in relation to the other high ridership states for 2005. Although Amtrak carries nearly one million annual passengers in Florida, much of this travel is interstate trips. For example, the busiest station within Florida is the Sanford *Auto Train* station, with 204,698 total passengers in 2005. This service is exclusively for interstate passengers.

Table 5.3 Top Amtrak Ridership States
Millions of Passengers

Rank	State	2005 Ridership	Rank	State	2005 Ridership
1	New York	10.176	7	Massachusetts	1.957
2	California	9.836	8	Maryland	1.835
3	Pennsylvania	4.948	9	Connecticut	1.459
4	District of Columbia	3.734	10	Washington	1.108
5	New Jersey	3.406	11	Virginia	.856
6	Illinois	3.248	12	Florida	.841

Source: Amtrak.

Note: Northeastern Corridor states are shaded.

After the Sanford *Auto Train* station, Orlando has the second highest ridership with 143,852 passengers in 2005. Miami, Jacksonville, and Tampa all had more than 50,000 passengers in 2005 and seven other stations had ridership of at least 20,000.

From 2004 to 2005, overall ridership in the State decreased by 7.9 percent. The Sanford *Auto Train* Station experienced the greatest absolute growth in ridership, adding 7,215 riders over 2004. Tampa, Winter Haven, Lakeland, and Palatka were the only other stations showing growth during this period. Lakeland showed the largest percentage growth (31.5 percent). All other stations lost ridership during the year, including Orlando, which had the greatest net loss (-20,421). Miami, Jacksonville, West Palm Beach, and Fort Lauderdale lost at least 6,000 passengers each. The full cancellation of the Palmetto route, in October of 2004, became evident in 2005 ridership totals. Ocala, which had previously served 10,209 passengers in 2004, served only 671 people in 2005. Clearly passengers do not utilize Amtrak Thruway bus service, which connects to train service in Jacksonville, as much as the previous rail service. Cities on the former Palmetto route - Waldo, Wildwood, and Dade City - all lost approximately 90 percent of the previous year's ridership. The stations served by the *Sunset Limited* experienced significant declines in ridership, due to the complete cancellation of service on August 27, 2005. Train stoppage occurred due to infrastructure damage caused by Hurricane Katrina. Table 5.4 shows 2004 to 2005 Amtrak ridership in Florida by station.

Since 1980, Amtrak's Florida ridership has grown by about 34 percent, from 626,115 to 841,240 in 2005. The railroad's peak Florida ridership was achieved in 1992, with 1.2 million passengers.

Table 5.4 Florida Amtrak Ridership by Station
Fiscal Years 2004 and 2005

Station	2005	2004	Percent Change	Net Change
Sanford (Auto Train Station)	204,698	197,483	3.65%	7,215
Orlando	143,852	164,273	-12.43%	-20,421
Miami	68,545	82,193	-16.60%	-13,648
Jacksonville	64,089	70,474	-9.06%	-6,385
Tampa	53,824	50,895	5.75%	2,929
West Palm Beach	47,908	55,171	-13.16%	-7,263
Fort Lauderdale	41,105	48,004	-14.37%	-6,899
Kissimmee	30,734	30,215	1.72%	519
Hollywood	28,087	31,166	-9.88%	-3,079
Winter Haven	23,597	20,952	12.62%	2,645
Winter Park	23,177	24,269	-4.50%	-1,092
Deerfield Beach	22,375	26,208	-14.63%	-3,833
DeLand	19,237	20,080	-4.20%	-843
Sebring	15,130	18,343	-17.52%	-3,213
Lakeland	12,856	9,775	31.52%	3,081
Palatka	11,180	10,210	9.50%	970
Sanford ^b	9,174	10,710	-14.34%	-1,536
Delray Beach	7,854	8,537	-8.00%	-683
Pensacola ^c	3,254	4,130	-21.21%	-876
Okeechobee	3,129	4,379	-28.55%	-1,250
Tallahassee ^c	2,488	2,888	-13.85%	-400
Chipley ^c	1,424	1,886	-24.50%	-462
Crestview ^c	1,212	1,357	-10.69%	-145
Ocala ^a	671	10,209	-93.43%	-9,538
Lake City ^c	606	703	-13.80%	-97
Madison ^c	362	399	-9.27%	-37
Waldo ^a	297	4,049	-92.66%	-3,752
Wildwood ^a	205	2,644	-92.25%	-2,439
Dade City ^a	170	1,951	-91.29%	-1,781
Total Florida Ridership	841,240	913,553	-7.92%	-72,313

Source: Amtrak.

Note: ^a Signifies station formerly served by Palmetto service suspended in October 2004. Ridership totals for these stations include passengers using Thruway connecting motorcoach service after Palmetto operations ceased.

^b Signifies rail service ended on October 2005, due to deterioration of Sanford main line station, which Amtrak does not own. The Sanford Auto Train utilizes a separate terminal.

^c Signifies rail service suspended on August 27, 2005. Suspension due to damage inflicted by Hurricane Katrina.

Economic Impact⁶

In 2005, Amtrak provided 947 full-time jobs in Florida, generating nearly \$47 million in wages. During 2005, Amtrak procured \$25.7 million in goods and services in Florida, with much of the money spent in the following locations: Jacksonville \$11,178,964; Orlando \$7,241,923; Hialeah \$3,020,445; Miami \$1,216,697; and Fort Lauderdale \$1,056,021. Expenditures in Jacksonville are primarily due to the concentration of railroad equipment maintenance firms in the Jacksonville area. Amtrak's Hialeah maintenance facility performs light overhauls for Viewliner, Amfleet, and Heritage cars for Silver Service Trains. Amtrak also operates a maintenance facility in Sanford, which services the Superliner cars of the *Auto Train* and *Sunset Limited*.

Travel Times in Comparison to Automobiles and Planes

Of the more than 841,000 annual passengers on Amtrak in Florida, most of this travel was interstate trips. Florida intercity passenger rail travel is very low in comparison to intercity highway and airline travel. One of the principal reasons is the slower travel times. Table 5.5 provides a comparison of some transit times for autos, planes, and rail. All air travel times include one extra hour to allow for check-in and security, though no extra time was added for travel to and from the airport or train station. Averaged across these five markets, air travel is one hour and 37 minutes faster than autos, and autos are two hours and 29 minutes faster than rail.

Another issue reducing the competitiveness of current intercity passenger rail service in Florida is the low-frequency and off-peak travel times. In the markets listed, there are usually one or two rail departures per day. Jacksonville to Tampa, for example, has two rail trips on an average weekday. One departs at 6:50 a.m. and the other at 9:23 a.m. Air, by way of contrast, offers 12 trips from Jacksonville to Tampa on the same weekday.

To provide another contrast, New York City to Washington, D.C., and Jacksonville to Tampa are both approximately 225 miles apart. Business travelers in the New York-D.C. corridor can select from any of the hourly departures of the Metroliner trains (two hours and 59 minutes travel time) or the regional trains that run between the Metroliner service (approximately 3.5 hours travel time). The flexibility of schedule and the time savings to the business traveler make passenger rail a competitive, viable option to air travel for New York-D.C. travel. The five hours and 31 minutes travel time in the Jacksonville-Tampa Corridor make it difficult for a traveler to justify the lost opportunity costs from time that could have been used conducting business.

⁶ Amtrak Fact Sheet, Fiscal Year 2005, State of Florida.

Table 5.5 Comparison of Modal Travel Time for Select Florida Cities

	Highway Mileage^a	Automobile^a	Airplane^b	Amtrak^c
Jacksonville-Pensacola ^d	354	5 hours, 10 minutes	4 hours, 10 minutes	8 hours, 7 minutes
Jacksonville-Tampa	190	3 hours, 9 minutes	2 hours, 5 minutes	5 hours, 13 minutes
Jacksonville-Miami	342	5 hours, 9 minutes	2 hours, 51 minutes	9 hours, 4 minutes
Orlando-Miami	231	3 hours, 32 minutes	2 hour, 03 minutes	5 hours, 40 minutes
Tampa-Miami	249	4 hours, 8 minutes	1 hour, 55 minutes	5 hours, 31 minutes
Average		4 hours, 14 minutes	2 hours, 37 minutes	6 hours, 43 minutes

Source: Cambridge Systematics.

Notes: ^a Highway mileage obtained from the Florida Department of Transportation (FDOT) official mileage (www3.dot.state.fl.us/mileage/default.asp) and automobile times obtained from Microsoft Maps and Directions (<http://mappoint.msn.com/>). No allowance is made for congestion.

^b Airplane times were obtained from Expedia.com, sorted by shortest time. One hour was added to all air travel times to allow for airport check-in and security.

^c The shortest Amtrak time is listed. This time includes any layover time at a connection, but does not include delays.

^d There were no direct flights between Jacksonville and Pensacola. The shortest trip time was three hours and 10 minutes, which includes a connection in Atlanta. Times allow for the time zone change.

Commuter Services

Tri-Rail, currently Florida's only commuter rail system, transports more than 3.1 million annual passengers in the urban corridor linking Miami, Fort Lauderdale, and West Palm Beach. Daily ridership has peaked at more than 11,000 during weekdays, and more than 4,000 on Saturdays and Sundays since 2004.⁷ Tri-Rail is operated by the South Florida Regional Transportation Authority (SFRTA) and covers a 72-mile-long corridor (142.2 directional route miles). Currently, Tri-Rail has 18 stations along the South Florida coast including five stations in Miami-Dade County, seven in Broward County, and six in Palm Beach County. The rail connects to the Metrorail in Miami at the Tri-Rail/Metrorail Transfer Station.

⁷ South Florida Regional Transportation Authority (SFRTA).

Current Operations

Tri-Rail operates 40 daily round trips on weekdays, eight on Saturday, and seven on Sunday and major holidays. All trips cover the entire 72-mile Tri-Rail route between the Mangonia Park (West Palm Beach) and Miami Airport Stations. The map in Figure 5.2 shows the locations of commuter rail stations along the Tri-Rail line.

Tri-Rail operates over a 72-mile corridor owned by the Florida Department of Transportation (FDOT) and dispatched by CSX Transportation (CSXT). SFRTA contracts with CSXT to provide a number of services to the railroad, including dispatching and maintenance of track, bridges, buildings, and signal systems. CSXT dispatches all trains on the SFRTA line, including its freight trains and Amtrak intercity passenger rail trains. This arrangement is scheduled to change, with FDOT and/or SFRTA assuming all dispatching along the line.

Figure 5.2 Tri-Rail Commuter Rail System Map



Source: Tri-Rail (South Florida Regional Transportation Authority).

History

Tri-Rail, which commenced operations on January 9, 1989, began as a demonstration commuter rail project to alleviate highway congestion during the widening of I-95. The following timeline describes the history of Tri-Rail from 1985 to 2003.

Table 5.6 Tri-Rail Timeline of Major Events

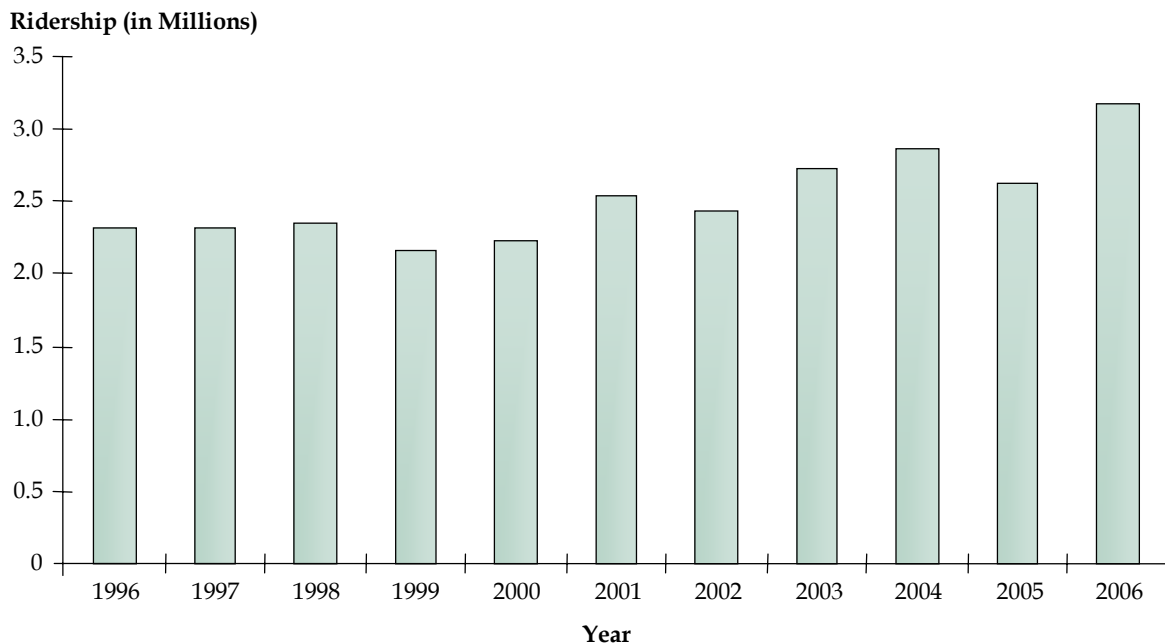
1984-1985	Final Planning Studies were completed, allowing early organizers to take additional steps in preparing the region for commuter rail service.
1986	Tri-County Rail Organization (TCRO) formed - through an interlocal agreement made between Dade, Broward, and Palm Beach Counties. The agreement authorizes TCRO to eventually manage regional commuter rail operations.
1989	Tri-County Commuter Rail Authority created - through Florida Statutes, thereby replacing TCRO.
2003	South Florida Regional Transportation Authority (SFRTA) formed - in 2003, Governor Jeb Bush signed legislation transforming the Tri-County Commuter Rail Authority (Tri-Rail) into SFRTA, a regional authority charged with providing greater mobility in South Florida. SFRTA is empowered by the State to enhance the movement of people and goods to improve economic viability and quality of life in South Florida.
2006	SFRTA completes its double-tracking project, with the exception of the new river bridge span. The number of daily weekday trains is increased from 30 to 40. June 2006 ridership shows a 31.5% increase from 2005. Also the number of on time trains increased to 81.6%, up from 33.2% experienced in 2005.

Source: Cambridge Systematics.

Ridership

Among United States commuter rail systems, Tri-Rail ranked among the top 15 in ridership in 2004, with 2.8 million annual unlinked trips, or 84.8 million annual passenger miles. Ridership on Tri-Rail has grown steadily since its formation, with some slight upward and downward fluctuation from year to year. From 1996 to 2004, ridership grew from 2,305,492 to 2,861,217, an increase of 24 percent. The chart in Figure 5.3 illustrates recent Tri-Rail ridership trends.

Figure 5.3 Annual Tri-Rail Ridership
Unlinked Trips (in Millions)



Source: 1996-2004 National Transit Database.

In looking at 2004 figures, SFRTA's commuter operations are comparable to many other transit operations around the country. Dallas, San Jose, and Southern Connecticut all have one commuter line. Seattle and Northern Virginia both have service on two commuter lines. Table 5.7 compares general line characteristics for each of the commuter train operations. Dallas's system is by far the smallest, while Seattle's is the newest.

Based on 2004 operating statistics, it becomes apparent that SFRTA's level of operations is among the highest. SFRTA also has the highest cost-effectiveness and service efficiency in comparison to its counterparts. Table 5.8 shows complete data on performance measures.

SFRTA's operating expenses are second largest at \$25 million, and its fare revenues cover about 25 percent of total operating costs. Virginia Railway Express (VRE), which is a larger system, is the only agency whose farebox revenues cover a larger amount of operating costs - about 50 percent. None of the other agencies offer anywhere close to the amount of revenue miles that SFRTA and VRE offer. Both agencies annually run excess of 1.7 million revenue miles, while the next largest agency, Altamont Commuter Express (ACE), offers only 700,000.

SFRTA also has the best cost-effectiveness and service efficiency among the other observed agencies. Operating expenses per passenger-mile were only \$0.30 for SFRTA - minimally better than VRE and ACE, but significantly better than Dallas, Seattle, and Connecticut. SFRTA's operating expense per annual vehicle revenue-mile also calculated lowest, at \$12.32. Seattle had the highest total for this calculation, at \$35.10.

Table 5.7 Rail Line Characteristics for Selected Commuter Operations

Agency	Fixed Guideway Directional Route Miles	Vehicles Operated in Maximum Service	Beginning Date of Service	Service Runs	Time to Run Length of Service
South Florida Regional Transportation Authority (SFRTA)	142.2	20	1989	West Palm Beach to Miami	110 minutes
Dallas Area Rapid Transit (DART)	29.0	21	1996	Dallas to Fort Worth	65 minutes
Virginia Railway Express (VRE)	161.5	69	1992	Manassas to D.C., Fredericksburg to D.C.	75 minutes, 90 minutes
Altamont Commuter Express (ACE)	172.0	18	1998	Stockton to San Jose	130 minutes
Connecticut Department of Transportation (CDOT)	101.2	22	1990	New London to New Haven	45 minutes
Central Puget Sound Regional Transit Authority (ST)	146.9	23	2000 2003	Tacoma to Seattle, Everett to Seattle	60 minutes, 50 minutes

Sources: 2004 National Transit Database, Agency web sites.

Table 5.8 Rail Performance Measures for Selected Commuter Operations

Agency	Operating Expenses	Annual Passenger Miles	Annual Vehicle Revenue Miles	Annual Unlinked Trips	Operating Expense Per Passenger-Mile	Operating Expense Per Annual Vehicle Revenue-Mile
South Florida Regional Transportation Authority (SFRTA)	\$25,244,842	84,761,980	2,048,688	2,821,329	\$0.30	\$12.32
Dallas Area Rapid Transit (DART)	\$17,287,377	15,356,242	685,629	1,338,021	\$1.13	\$25.21
Virginia Railway Express (VRE)	\$35,764,754	103,651,104	1,778,656	3,447,944	\$0.35	\$20.11
Altamont Commuter Express (ACE)	\$11,255,698	29,519,910	749,250	616,024	\$0.38	\$15.02
Connecticut Department of Transportation (CDOT)	\$7,172,599	8,058,030	565,254	398,929	\$0.89	\$12.69
Central Puget Sound Regional Transit Authority (ST)	\$16,019,009	24,030,761	456,409	955,298	\$0.67	\$35.10

Source: 2004 National Transit Database.

Other Rail-Based Transit Systems

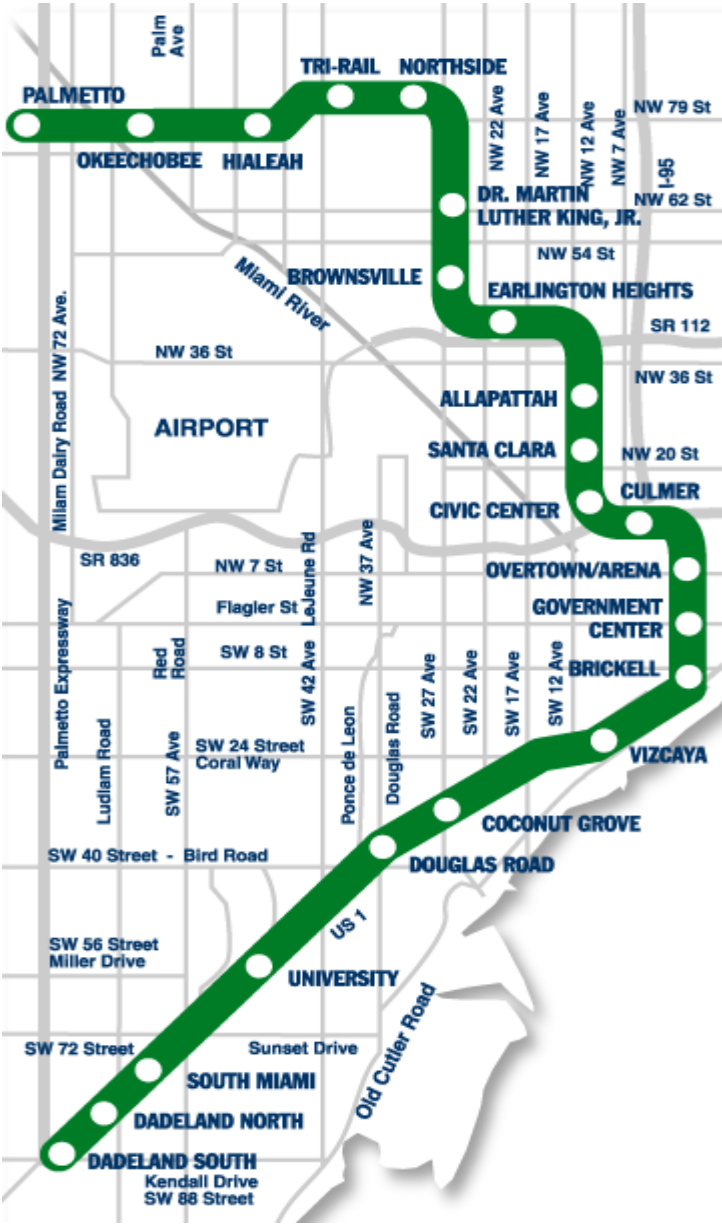
In addition to Tri-Rail, which is a commuter railroad, there are several rail-based passenger transportation systems operating in the State of Florida. These include:

- **Metrorail**, operated by the Miami-Dade Transit Agency, is an electrically powered, elevated, rapid-transit heavy rail system extending from Kendall in South Miami-Dade to Medley in West Miami-Dade. Metrorail has 22 stations connecting a major portion of Miami-Dade County's businesses, cultural, and shopping centers (see Figure 5.4). Travel from one end of the system to the other takes only 42 minutes over the 22.4-mile system, with top speeds of 58 mph and average speeds of 31 mph. This system, which first opened in May 1984, currently has 136 cars, with a capacity of 164 passengers per car. Total ridership in FY 2005 was 17.0 million. Expected FY 2006 revenues total \$17.2 million and the 2006 operating budget is \$41.3 million.⁸
- **Metromover**, located in Miami, is the largest automated guideway in the United States. It is operated by the Miami-Dade Transit Agency, has more than 8.5 directional route miles, and serves 21 stations. This electrically powered, fully automated peplemover system, which first opened in April 1986, currently has 29 cars, with a capacity of 96 passengers per car and operates free of charge. Metromover connects with Metrorail at Government Center and Brickell stations (see Figure 5.5). Total ridership in FY 2005 was 8.7 million. The system's FY 2006 operating budget is \$8.3 million.⁹
- **TECO Line Streetcar System** (light rail), operated by the Hillsborough Area Regional Transit Authority (Tampa/Ybor City), offers 10 station stops along 4.6 directional route miles.
- **Sky Train** is a people mover system located in Jacksonville. Sky Train is operated by the Jacksonville Transportation Authority, has more than 5.4 directional route miles, and serves eight stations.

⁸ Miami-Dade County Metrorail Internet Site at: <http://www.co.miami-dade.fl.us/transit/metrorail.asp>.

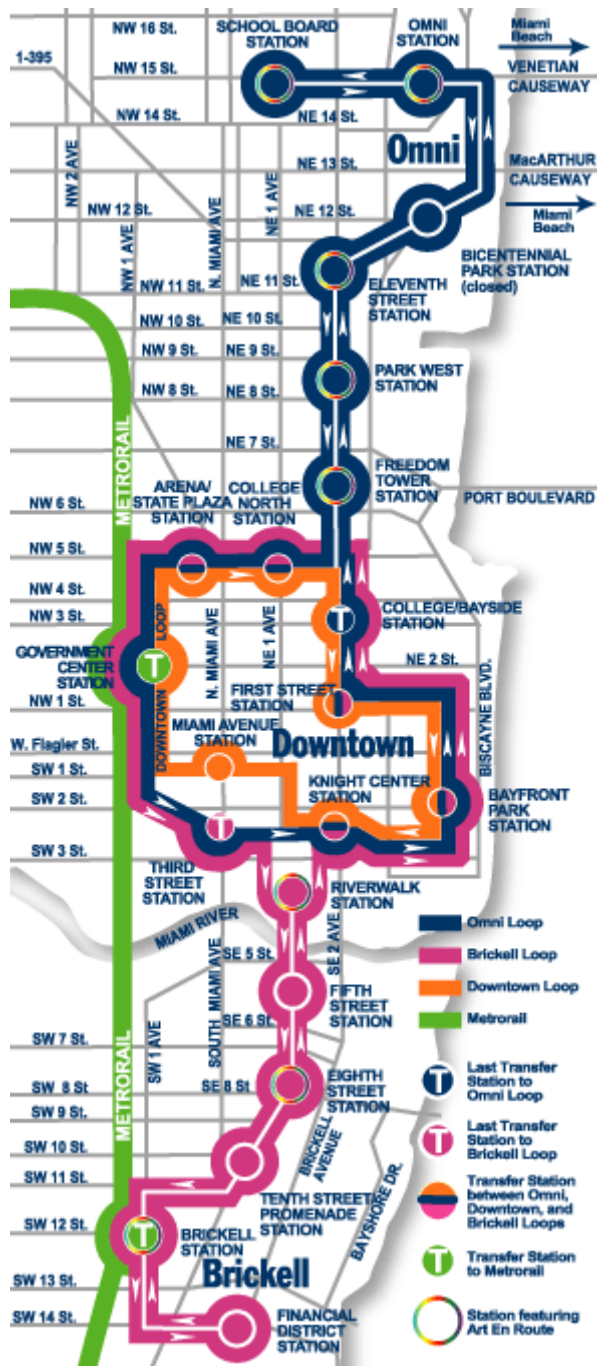
⁹ Miami-Dade County Metrorail Internet Site at: <http://www.co.miami-dade.fl.us/transit/metrorail.asp>.

Figure 5.4 Metrorail System Map



Source: Miami-Dade County Metrorail Internet site, <http://www.co.miamidade.fl.us/transit/metrorailstations.asp>.

Figure 5.5 Metromover System Map



Source: Miami-Dade County Metrorail Internet site, <http://www.miamidade.gov/transit/moverstations.asp>.

■ 5.2 Status of Proposed Passenger Rail Systems

Section 5.2 discusses the status of proposed future passenger rail services in Florida. Section 5.2.1 examines future intercity passenger rail service, while Section 5.2.2 considers the future of commuter services. Finally, Section 5.2.3 describes the recent history and current status of high-speed rail in Florida.

Florida Intercity Passenger Rail Service

Background

In response to continued economic and demographic growth in Florida and the increasing pressure on the State's transportation network to provide mobility for residents and visitors, The Florida Department of Transportation (FDOT) began exploring the potential of higher speed intercity rail service to assist in meeting Florida's mobility needs through multimodal strategies.

FDOT developed a draft Vision Plan for a statewide passenger rail system to serve the major travel markets in the State. The plan calls for an incremental and phased approach to the implementation of a statewide intercity passenger rail system in Florida. It was developed based on the financial and economic objectives of the United States Department of Transportation (U.S. DOT) Federal Railroad Administration (FRA) for intercity passenger rail. The plan aims to:

- Develop an affordable statewide intercity passenger rail system that will connect all major urban regions in the State that are not commonly served by air or rail;
- Use a combination of FEC and CSX rights-of-way with inland and coastal options as well as segments of highway corridors already owned by FDOT and other public and partner entities such as I-4 between Orlando and Tampa and the Beachline Corridor between Orlando and the east coast; and
- Develop a system that is eligible for Federal funding by meeting FRA's public-private partnership, financial, and benefit/cost requirements.

Potential Corridors for Florida Intercity Passenger Service and Anticipated Future Travel Volumes

Development of successful intercity passenger rail services is a function of many different factors, including:

- High density of person trips between the cities and along the corridor;
- Competitive distance range (FDOT specified this as 100 to 300 miles);

- Existing rail infrastructure or rights-of-way (reduces initial capital costs, making project more financially feasible);
- Good collection/distribution services at the origin and destination rail stations (this can include subways, buses, taxicabs, monorails, and commuter/light rail); and
- Cost of service.

According to a recent FDOT study, by 2040, the intercity travel market will grow from just over 100 million trips currently to nearly 200 million trips by 2020 and 320 million by 2040. This increase will add pressure on existing transportation facilities and call for the development of substantial new infrastructure to meet the demand. The largest numbers of intercity trips are between central Florida and Tampa Bay (Orlando-Tampa); southeast Florida and central Florida (Miami-Orlando); and southeast Florida and the Tampa Bay region (Miami-Tampa). Additional significant travel is anticipated between Jacksonville (northeast Florida) and Orlando (central Florida). These key markers should be connected in the initial phase of the Florida Intercity Passenger Rail System. As the system grows and expands to Jacksonville, intermediate markets such as St Augustine, Daytona Beach, and Cocoa Beach may also be served. Table 5.9 details the anticipated volume of travel in select primary markets in Florida.

Table 5.9 Potential Travel Markets for Intercity Passenger Rail Service

Intercity Travel Markets	Existing Rail Corridor to be Potentially Used to Support Proposed Markets	Person-Trips (Millions)		
		Year 2000	Year 2020	Year 2040
Southeast Florida - Central Florida	SFRC/CSXT	9.45	18.42	30.39
Southeast Florida - Tampa Bay	SFRC/CSXT/I-4	4.85	8.54	14.09
Southeast Florida - Northeast Florida	SFRC/FEC	1.30	2.28	3.77
Central Florida - Tampa Bay	CSXT/I-4	14.16	29.16	48.12
Central Florida - Northeast Florida	CSXT/I-4	3.54	7.32	12.08
Tampa Bay - Northeast Florida	CSXT/I-4	1.55	2.91	4.80

Source: *Florida Intercity Passenger Rail Vision Plan, Draft Executive Report*, Florida Department of Transportation, August 2006.

The proposed markets could potentially be served using existing railroad rights-of-way. In meetings held with CSX and FEC, both railroad companies expressed their willingness to consider allowing use of their property for intercity passenger rail so long as their ability to grow their freight business is not affected. Options for utilizing the I-4 corridor to serve some of the proposed markets are also under consideration.

Florida Intercity Passenger Service Vision Plan

The Florida Vision Plan was developed using several system assumptions including:

- Serve three of Florida's large markets initially and ultimately the majority of the State's urban areas;
- To the maximum extent feasible, build the new passenger rail system on existing rail and highway rights-of way; and
- Ensure that the proposed passenger rail service does not affect freight mobility.

Two independent routes were evaluated for potential service:

- A **Coastal Route**, primarily relying on FEC's right-of-way to south Florida, the SFRC, the Beachline Expressway between Cocoa Beach and Orlando, and the I-4 right-of-way between Orlando and Tampa (see Figure 5.6); and
- An **Inland Route**, primarily relying on CSX tracks and rights-of-way, the South Florida Rail Corridor (SFRC), and the I-4 right-of-way between Orlando and Tampa (see Figure 5.7).

Figure 5.6 Florida Intercity Passenger Rail Service Vision Plan
Coastal Route



Figure 5.7 Florida Intercity Passenger Rail Service Vision Plan
Inland Route



For each route option, the vision plan has four proposed phases. Phase 1 would be implemented within the first 5 to 7 years of the program, Phase 2 would be implemented by 2015, and Phases 3 and 4 during the subsequent 5 to 10 years.

Inland Route

The Inland Route offers a generally lower-cost opportunity to incrementally build-up the intercity rail system. This route however, depends on a partnership with CSX.

Phase 1 consists of using the CSX line to connect Orlando, Tampa, and Miami. Phase 1 provides for upgrading West Palm Beach to Auburndale to 110 mph and mixing freight and passenger operations between Tampa and Orlando. To ensure that CSX is not impacted by the passenger rail system, a fully separated passenger infrastructure is provided between Auburndale and Tampa. This includes dedicated track, a major grade separation crossing for passenger and freight in Lakeland, and a dedicated rail bridge over Six Mile Creek in Tampa.

Phase 2 connects the four major market centers of Florida namely Miami, Tampa, Orlando, and Jacksonville. Phase 2 consists of an extension of passenger rail service to Jacksonville on existing CSX lines.

Phase 3 includes train speed, service frequency, and station location enhancements for the routes implemented in Phases 1 and 2, and new passenger rail service along the I-4 corridor to address the issue of increasing freight traffic on the Auburndale-Tampa route.

Phase 4 includes connections to Southwest and Northwest Florida. The Northwest alignment would utilize existing right-of-way and include five stations between Jacksonville and Pensacola. The Southwest alignment would utilize the I-75 right-of-way and include five stations between Tampa and Naples.

Coastal Route

The Coastal Route option depends on a partnership with the FEC railroad instead of the CSX and serves communities between Jacksonville and West Palm Beach. This route is a slightly more expensive option but potentially could provide higher ridership and better financial performance.

Phase 1 consists of using the FEC right-of-way to provide service between Miami and Jacksonville. In addition, a new rail line would be built up using the Beachline right-of-way between Cocoa Beach, Orlando International Airport, and International Drive tourist attractions area at Canadian Court.

Phase 2 consists of using the I-4 right-of-way to expand intercity rail service to Tampa. This phase would also include train speed and service frequency enhancements.

Phase 3 provides additional capacity and better connection between Miami, Orlando, and Tampa.

Phase 4 includes connections to Southwest and Northwest Florida. The Northwest alignment would utilize existing rights-of-way and include five stations between Jacksonville and Pensacola. The Southwest alignment would utilize the I-75 right-of-way and include five stations between Tampa and Naples.

Financial Analysis and Benefits

The *Florida Intercity Passenger Rail Service Vision Plan* includes an analysis of the revenues, costs, and public benefits attributed to each of the four phase services described above. Revenues are based on annual ridership projections and estimated revenues per passenger-mile. Costs include capital costs and operating costs. These are summarized in Table 5.10.

Overall capital costs to implement the four phases include changes to speed, capacity, and grade crossings necessary to obtain 79 mph, 110 mph, and 125 mph services between city pairs.

Table 5.10 Projected Service, Ridership, Costs, and Revenues
Year 2006 Dollars

Alignment	Number of Train Sets	Annual Ridership (Thousands)	(Million Dollars)		
			Capital Costs	Passenger Revenue	Operating Expense
<i>Inland Route</i>					
Phase 1	7	1,790	\$1,100	\$65.0	\$65.0
Phase 2	15	2,400	\$1,200	\$101.0	\$70.7
Phase 3	21	4,400	\$3,500	\$175.0	\$115.5
Phase 4	N/A	N/A	\$1,500	N/A	N/A
<i>Coastal Route</i>					
Phase 1	13	1,950	\$2,100	\$73.0	\$67.9
Phase 2	25	5,500	\$4,000	\$205.0	\$116.9
Phase 3	25	5,700	\$4,700	\$211.0	\$130.8
Phase 4	N/A	N/A	N/A	N/A	N/A

Source: FDOT, Florida Intercity Passenger Rail Vision Plan.

Major capital improvements on the passenger rail system will include:

- Track replacement and upgrades in several locations to ensure the track performs effectively at its designated Federal Railroad Administration class (Class IV for 79 mph track, Class VI for 110 mph track, and Class VII for 125 mph track);
- Additional passenger and freight sidings to ensure effective train passing;
- Significant double-tracking of existing track to ensure the freight railroads are not impacted by the proposed passenger rail service;
- Upgraded signaling and communications systems to provide improved dispatching and increased safety;
- Fencing along the entire length of the corridor in areas of high speeds to maximize the safety and security of the system;
- On 110 mph sections, “quad gates” at grade crossings to “seal” the corridor and prevent auto, pedestrian, and truck traffic from entering the rail right-of-way when trains are approaching; and
- On 125 mph sections, grade-separated track so that passenger rail operations are separated from freight rail operations as well as highway.

Operating costs include train-related expenses (train labor, power, host railroad user fees, insurance, reservations/marketing, commissions, and segment-related equipment), route-related expenses (station operating costs and off-train, segment-related expenses), and system expenses (overhead for financial, legal, and planning aspects of train operations).

Once fully operational, the proposed routes are projected to cover their operating costs with fare box receipts. Each phase has a positive operating ratio, ranging from 1.0 for the Phase 1 Inland Route to 1.43 for the Phase 2 Coastal Route.

In terms of user benefits, the Vision Plan shows very promising results. For the overall system, estimated user benefits exceed \$15 billion for a total of \$2.25 billion in state investment.

As with most forms of major infrastructure development, a mixture of Federal, state, and private funding is necessary to fund the passenger rail system. It is assumed that at least 50 percent of capital needs will be funded through Federal contributions. Funding for the remaining capital costs will be derived from state funds, local partners (including expressway and airport authorities) and private partners.

Conclusion

Several steps will be required to move towards implementing the Florida Intercity Passenger Rail System and ensuring that funding is available for the proposed phases. FDOT should:

- Discuss the proposed plan with various stakeholders, including the freight railroads;
- Carry out a detailed environmental evaluation for the project;
- Carry out preliminary engineering to a level of detail that allows the development of unit costs without the large contingency factor included in the capital costs;
- Develop a public-private partnership with the freight railroads and negotiate agreements for the shared use of rights-of-way; and
- Develop partnerships with the local communities and authorities and transit agencies regarding station areas, service, and utilization of right-of-way.

More details on the specific needs, operating plans, costs, and revenue assumptions can be found in the *Florida Intercity Passenger Rail Service Vision Plan*.

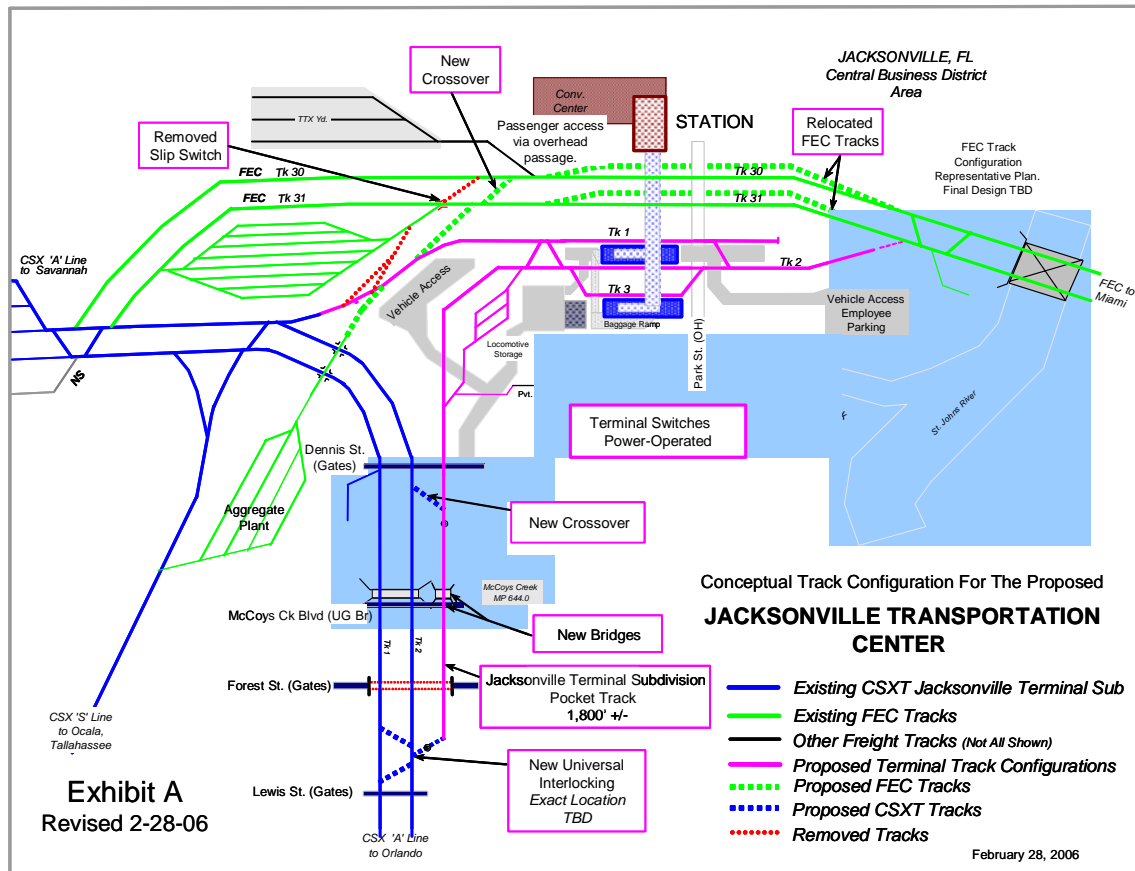
Jacksonville Transportation Center

A separate proposal, but one which supports the *Florida Intercity Passenger Rail Service Vision Plan*, is a \$127 million refurbishing of the of the Jacksonville Terminal (Prime Osborn). Once completed, this modernized Jacksonville Transportation Center (JTC) will serve the Jacksonville Transportation Authority (JTA) buses, the Skyway, Greyhound,

Amtrak, and potential future commuter rail services. The JTC will also contain 2,200 parking spaces, over 30,000 square feet of retail space, and offices for the JTA.

Most relevant to this Rail Plan is the proposal to relocate the current Amtrak station at Clifford Lane to the proposed JTC. This will require construction of track to connect the JTC with the CSXT mainline (Amtrak’s current route). Current designs will allow Amtrak trains access to and exit from the CSXT line with minimal delay, and with minimal impact on freight service. Also part of the proposal is a connection to the Florida East Coast mainline, to facilitate possible passenger service over that route. [See Figure 5.8] The total estimated cost for this need is \$34 million (in 2007 dollars).

Figure 5.8 Conceptual Track Configuration for Access to the Proposed Jacksonville Transportation Center



Source: Florida Department of Transportation District 2 Office and DMJM Harris/ AECOM.

Commuter Rail Services

South Florida Regional Transportation Authority

SFRTA has several expansion plans, both in progress and being considered, for Tri-Rail. These include:

- Double-tracking;
- Jupiter Corridor;
- Scripps Transit Corridor;
- South Florida East Coast Corridor Study;
- Kendall Connection/Homestead Extension;
- Boca Raton Intermodal Transit Facility; and
- Expanded Passenger Service in Miami-Dade County.

During the next six to eight months, SFRTA plans to internally examine and prioritize its new development plans. After which, expansion plans will be presented to the public and judged upon external factors, such as interagency collaboration and community support.

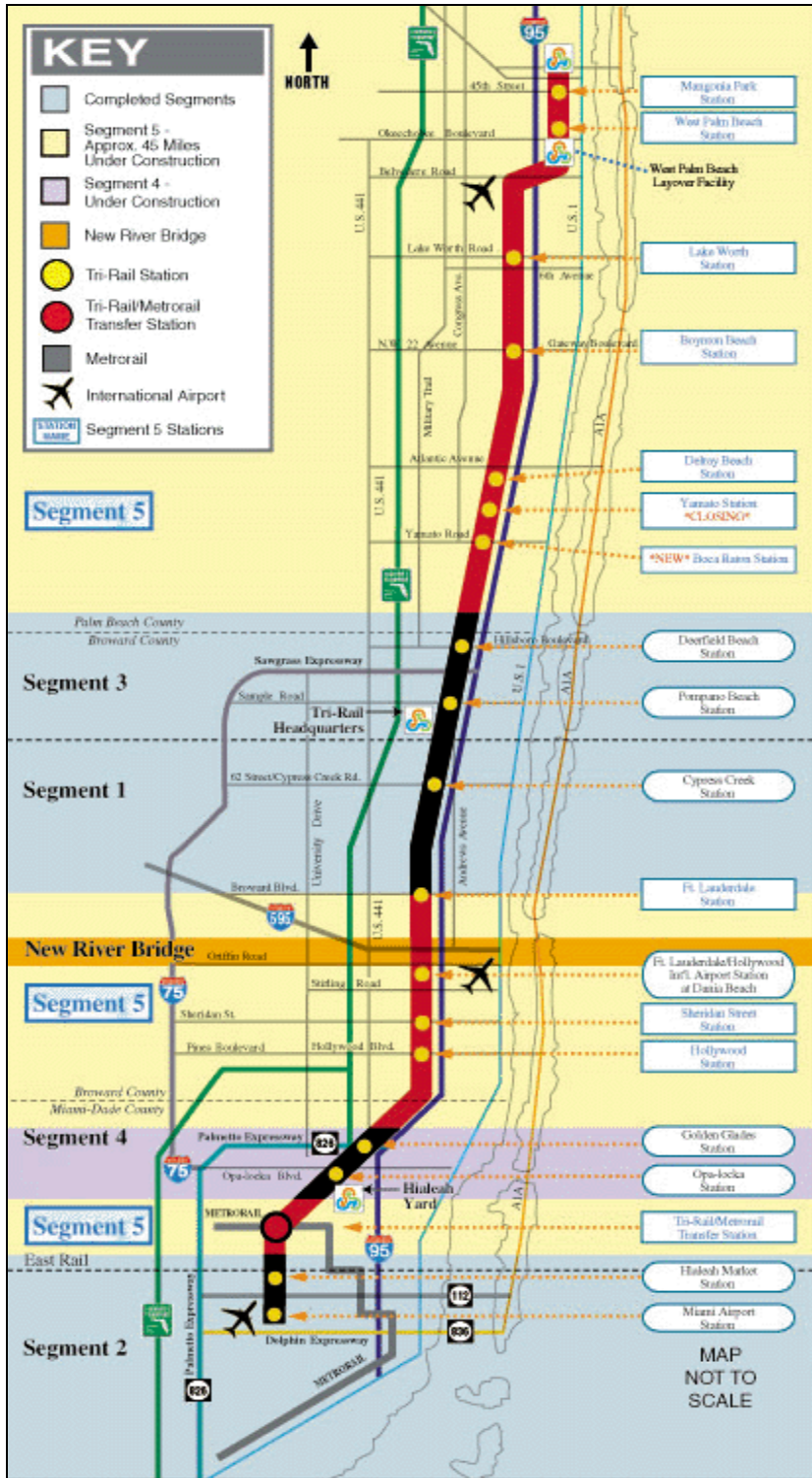
Double-Tracking

The Double-Track Corridor Improvement Program involves construction of a second mainline track parallel to the existing track along the 72-mile South Florida Rail Corridor (SFRC) and development of a new signal system. The program began in the late 1990s in response to expected increases in this heavily traveled corridor. All aspects of the double-tracking have been completed with the exception of the New River Bridge. This final segment is expected to be completed in early 2007. This \$333.8 million project included the installation of 43.5 miles of second mainline track; upgrades to the existing signal system; construction of 11 new bridges; replacement and/or rehabilitation of 13 bridges; modification and renovation of 10 stations; acquisition of locomotives and two cab cars as well as enhancements to grade crossing providing full closure at all 70 grade crossings.

Segment 1 added 8.14 miles of double-track to the system on either side of the Cypress Creek Station. Segment 2 added 1.5 miles of double-tracking at the southern end of the network, as well as a station at Miami International Airport. Segment 3, completed in September 2000, covered 6.97 miles of track work and upgrades at the northern end of Broward County and very southern end of Palm County. Segment 4, another 6.89 miles of double-tracking in Miami-Dade County around the Golden Glades and Opa-locka stations. The "Notice to Proceed" with the design/build of Segment 5, three disjointed sections covering the remainder of the system, was issued in January 2002. Segment 5 was completed recently in March 2005 giving commuters more options in making transportation choices with added trains and reduced travel times. There are currently only two miles of double-tracking left to be completed at the New River Bridge in Fort Lauderdale.

The Tri-Rail system showing these five segments is displayed in Figure 5.9.

Figure 5.9 South Florida Rail Corridor Double-Track Improvement Program



Source: South Florida Regional Transportation Authority Internet site at http://www.tri-rail.com/double_tracking/fact_sheet.htm.

Benefits of the new system include:

- Enhanced on-time performance (81.6 percent on time trains versus 33.2 percent);
- More convenience through greater scheduling flexibility;
- Increased service frequency (40 to 48 trains per weekday versus 30);
- Reduced travel time;
- Increased access and options for leisure riders;
- Enhanced comfort at stations;
- Improved protection from the weather;
- Future expansion capabilities;
- More efficient movement of goods and freight; and
- Less traffic congestion.

SFRTA estimates that these improvements will serve 27,900 average daily boardings by 2015.¹⁰

Jupiter Corridor

The Jupiter Corridor is a proposed 15.7-mile extension of Tri-Rail from West Palm Beach to Jupiter, Florida, along FEC right-of-way. A possible extension further north into Martin County will also be considered. SFRTA views this as a short-term project with a tentative completion in 2009 at a total estimated cost of \$250 million. Funding would be drawn from a combination of FDOT rail and transit grants, FDOT programs including the Strategic Intermodal System (SIS) and the Transportation Regional Improvement Program (TRIP), Federal Transit Administration (FTA) New Starts and other FTA programs, Palm Beach STP, and private-sector sources. The funding is required for track and signal improvements, grade crossing improvements, station construction, new maintenance layover facility, and acquisition of rolling stock.

Scripps Transit Corridor

The Scripps Research Institute is the largest, private, nonprofit biomedical research organization in the United States. They have 2,800 employees based in a one-million-square-foot facility in La Jolla, California. Scripps recently built a new facility in Palm Beach County to act as the east coast headquarters. Initially providing 545 above-average-wage jobs, Scripps anticipates the total number of Scripps and spin-off jobs to approach 6,500.

The plan involves development of a 3,700-acre research and development park on property currently owned by Mecca Farms and Vavrus Ranch. Part of SFRTA's medium-

¹⁰www.tri-rail.com.

to long-range plan is to provide Tri-Rail service to this facility over existing CSXT track. The service would be a 12.1-mile northwestern extension from the existing Mangonia Park Station and would include three potential stations. The total estimated cost is \$184 million.

South Florida East Coast Corridor (SFECC) Study

The South Florida East Coast Corridor (SFECC) study came to existence in response to the need to support existing and future passenger travel needs in Palm Beach, Miami-Dade, and Broward counties. The study, led by FDOT District 4 in partnership with local and regional agencies, will investigate various alignments and transit technologies along the SFECC. The scope of the Transit Analysis Study is to develop and analyze alternatives that potentially integrate passenger and freight movements along the existing FEC rail corridor. Right-of-way on streets and areas parallel to the SFECC as well as stretches of waterways will be evaluated for the alternative transit routes. Transit technologies under consideration include buses, commuter rail, light rail, and heavy rail.

The proposed project would provide additional north-south mobility options for area residents, visitors, and employees in addition to expanding transportation options to support existing and potential growth. The study area covers an 85-mile stretch from the City of Tequesta in Palm Beach County and the Central Business District (CBD) of the City of Miami (Figure 5.10). The corridor could include a connection to the Miami Intermodal Center (MIC) located adjacent to the City of Hialeah. The project has the potential to serve and expand overall transit ridership in the southeast Florida region with connections to existing and proposed transit. This includes connecting with Metrorail, Metromover, and Metrobus services in the tri-county area.

Public involvement workshops were held in Broward County, Miami-Dade County, and Palm Beach Counties to present the alternatives developed regarding the corridor study. Results of the SFECC workshop were presented to the MPO board for action at their December 7 for input and guidance.

Figure 5.10 South Florida East Coast Corridor Study Area



Source: South Florida East Coast Corridor Study Internet site at <http://www.sfecstudy.com/>.

Kendall Connection/Homestead Extension

The Kendall area, located in southwest Miami-Dade County, is primarily a suburban residential district. Many of the residents travel over severely congested routes to employment centers located north of the community. This rail project would connect Kendall residents with the proposed Miami Intermodal Center (MIC), providing service for both work and pleasure trips.

This project will connect the Kendall area with the MIC to be located at the Miami International Airport over a 17.4-mile extension along CSXT track parallel to State Roads 826 and 874. There are six proposed stations on this line (MIC, Blue Lagoon, Coral Way, Sunset, Killian, and Metro Zoo/Coral Reef). This is part of Tri-Rail's 2020 Long-Range Master Plan. Funding, estimated at \$815 million (\$511 million in 2003 dollars), has not yet been identified.

The recent agreement between CSXT and FDOT on the sale of approximately 61.5 miles of the CSXT "A" Line to FDOT (Deland in Volusia County and Poinciana Boulevard in Osceola County) includes a provision making it possible to extend commuter rail service in South Florida from the vicinity of Miami International Airport south and then southwest to the terminus at Homestead.

Boca Raton Intermodal Transit Facility

The South Florida Regional Transportation Authority has completed the purchase of a 6.6-acre site in Boca Raton for the development of an Intermodal Transit Facility. The property was purchased from Boca Village at a cost of \$2.7 million. Construction of a new station in Boca Raton will be part of the Segment 5 Project, the final phase of a \$333 million project to double-track 72 miles of the South Florida Rail Corridor (see section on Double-Tracking above).

Expanded Passenger Service in Miami-Dade County

The new commuter rail initiative in Central Florida (see Section 5.2.2.1) that was unveiled on August 2, 2006, by Governor Bush is anticipated to influence Tri-Rail passenger service. The recent agreement between CSXT and FDOT, which includes the purchase of 61.5 miles of CSXT track in the Orlando area, allows FDOT, the South Florida Regional Transportation Authority, or other agency to assume control of maintenance and dispatch along the 81-mile South Florida Rail Corridor. The State previously had this right, but the new agreement eliminates a costly provision requiring the State to provide labor protection for CSXT employees. FDOT and CSXT will revisit the current maintenance cost-sharing formula and are exploring a per car charge. As noted in Section 5.2.2.1 on the Kendall Connection/Homestead Extension, this could grant Tri-Rail permission to run passenger services deep into Miami-Dade County along the 32-mile Homestead extension.

Orlando

From 1999 to 2003, the population in the Orlando Metropolitan Area (Orange, Osceola, and Seminole Counties) increased by 17 percent. During this same timeframe, registered vehicles increased 23.6 percent, the roadway congestion index increased 18.9 percent, and the travel time index increased 11.2 percent.¹¹ This continued rapid growth has prompted METROPLAN ORLANDO (the metropolitan planning organization or MPO for the Orlando Metropolitan Area) and LYNX (the Central Florida Regional Transportation Authority) to look toward commuter rail solutions to mitigate highway congestion. There is both a light rail and a commuter rail system under study. A light rail system connecting Orlando International Airport with the visitor attractions on International Drive is being planned as the first phase.

Central Florida Commuter Rail

A 61-mile, 15- to 16-station commuter rail system linking DeLand, Orlando, and Kissimmee also is being planned. These trains would operate in the 65 to 79 mph range utilizing existing CSXT right-of-way. The service is proposed to be offered at 30-minute peak rush hour headways, with off-peak service times at approximately two hours headway in each direction.

¹¹*Tracking the Trends 1999-2003: A Transportation System Indicators Report for the Orlando Metropolitan Area*, METROPLAN ORLANDO, January 2005.

The alternatives analysis and NEPA phase of the Central Florida rail project have already been completed. The FTA is reviewing all documents and will most likely issue a “findings of no significant impact (FONSI).” This will allow the project to move forth without preparing any additional environmental studies. The CTrail project is expected to enter preliminary engineering in March 2007.

The initial operating segment (IOS) from DeBary to Orlando (31 miles) is still scheduled to open in 2009. This has been further reinforced by Governor Jeb Bush’s announcement on August 2, 2006, of a new initiative to bring commuter rail to Central Florida.¹² FDOT has reached an “Agreement in Principle” with CSX Transportation that include the purchase of 61 miles of tracks from the freight company for the commuter trains from Deland to Kissimmee, expansion of the State’s control on the South Florida Rail Corridor, and enhancement of CSX freight operations throughout the State. The State will be granted complete operations, maintenance and dispatch controls of the Central Florida Corridor and the South Florida Rail Corridor. CSX will retain easement for exclusive freight operations along the Central Florida Corridor. The State will have 12 hours of exclusive daytime commuter passenger rail operations from 5:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 10:00 p.m. CSX will have 5 hours of exclusive freight operation. The agreement calls for exclusive daytime commuter passenger rail operations from 5:00 a.m. to 10:00 a.m. and from 3:00 p.m. to 10:00 p.m. CSX will get exclusive use of the tracks for freight from midnight to 5:00 a.m. During the remaining seven hours, both passenger and freight cars will use the tracks. CSX will divert most of its through trains from the “A” Line that runs through Orlando to the “S” Line running from Jacksonville to Wildwood and through Ocala.

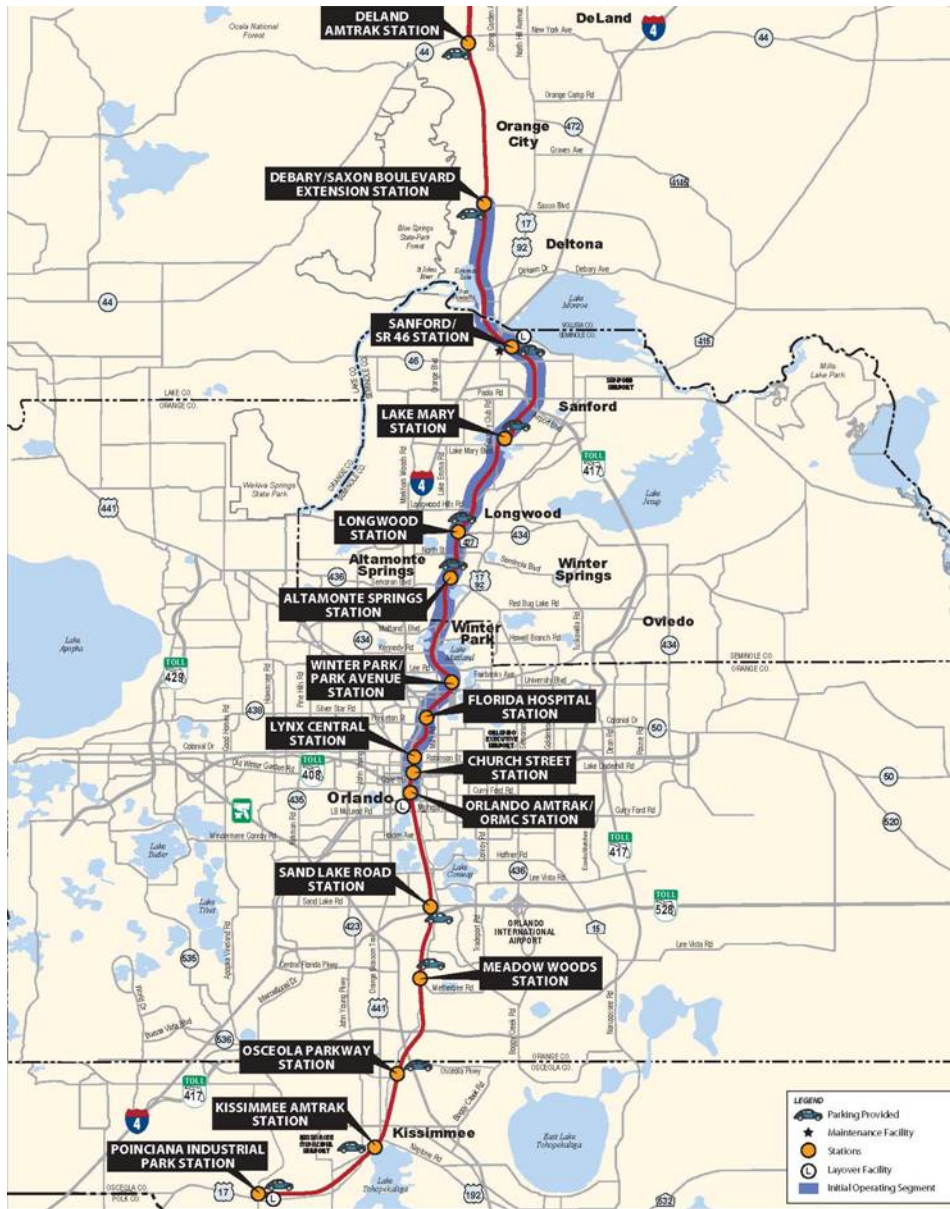
The State fund deal includes \$150 million for land acquisition, \$198 million to construct capacity projects along the CSX “S” Line, \$52 million towards the Florida Improvement Plan and the “A” Line Rand Yard construction projects designated to alleviate congestion and/or provide new rail/freight capacity, \$59 million to construct the five grade crossing separations in Alachua, Sumter, and Marion counties, \$9 million towards supporting roadway and related infrastructure from the new Integrated Logistics Center (ILC) in Winter Haven, and \$14 million for the relocation of the Taft yard to the new ILC logistics center near Winder Haven. In addition, the State is anticipate to contribute 25 percent of capital costs or \$140 million to building the system, including the anticipated 15 to 16 stops. The Federal government is expected to contribute 50 percent of the needed resources. The remaining 25 percent will be channeled through local County and city governments. The State is also anticipated to pay \$100 million per annum for operation and maintenance cost for the first seven years of operations.

The south segment of the line, from downtown Orlando to Poinciana Avenue, is scheduled for completion by 2013 (23 miles). A timeframe for the final phase of this project between DeBary and DeLand (7 miles) has yet to be announced (Figure 5.11). The existing rail corridor already has 18.5 miles of double-track. Twenty-four miles of double-track will be added for the IOS. Current operating speeds along this stretch of railroad are

¹²A New Direction for Tri-Rail?, *Miami Herald*, August 2, 2006.

79 mph. The most expensive portion of track improvements is expected to be the complete overhauling of the current signal system. Preliminary studies predict between 6,000 boardings¹³ and 9,000 boardings.¹⁴

Figure 5.11 Central Florida Commuter Rail Transit



Source: Central Florida Commuter Rail Transit.

¹³North-South Commuter Rail Transit Briefing Booklet, Florida Department of Transportation, June 2004.

¹⁴Commuter-Rail Line on Tap for '09, *The Orlando Sentinel*, August 3, 2006.

The commuter rail in Central Florida is anticipated to operate with two Diesel Motor Units (DMUs) train sets purchased by the State using state and Federal earmarks. DMU is an example of railcar technology that is easily deployable in markets where other types of rolling stock (e.g., conventional locomotive-coach trains) would be too costly to operate. The DMU also may allow certain types of train trips that are not otherwise practical, such as operating a single train comprised of two or more DMUs from a central business district and then separating the train at a suburban junction into two or more pieces (each with a powered DMU). In this way, DMU-type technology can support a branching distribution network into suburban and exurban commuting markets where operating a conventional locomotive-coach train set would be prohibitively expensive in terms of cost per passenger.

Each purchase consists of two bi-level DMUs and one bi-level trailer. The total cost of these purchases amounted to \$22 million. FDOT contracted with the South Florida Regional Transportation Authority to operate the train sets in revenue service demonstration. The train sets will be transferred to operate on the Central Florida Commuter Rail tracks once the system becomes operational.

Tampa

The Hillsborough Area Regional Transit Authority (HART) is designated as a regional transportation organization providing public mass transit services in Hillsborough County, which includes the City of Tampa. HART either directly provides or provides through arrangements with other organizations the following services:¹⁵

- Local fixed-route and express bus service;
- Vanpool and Guaranteed Ride Home service;
- One hundred percent wheelchair/bicycle-accessible buses;
- Transportation Accessible Program (TAPS);
- Door-to-door paratransit service;
- Travel planning assistance;
- Circulator service in South County;
- Travel training;
- Employer/Subscription mini-bus service; and
- Bus Buddy Training.

In 1995, the Hillsborough County MPO adopted the 2015 Long-Range Transportation Plan, which included a regional rail system. After much study, the HART board selected a light rail line in 2001 that provides new rail service to Tampa. This is a 20-mile rail line

¹⁵ Adapted from <http://www.hartline.org/>.

that will connect Downtown Tampa to the University of South Florida, Hyde Park, West Tampa, and the Westshore Business District. It is estimated that nearly 30,000 riders will use the rail service daily. The annual capital cost of the overall system is approximately \$985 million, while the annual operating cost is \$22 million. If funding is secured, construction is scheduled to start in 2008, with the first 10-mile segment open by 2011.

Metrorail¹⁶

Metrorail has several expansion plans being considered. These include:

- MIC-Earlington Heights Connector;
- North Corridor;
- East-West Corridor;
- South Dade Corridor; and
- Bay Link.

MIC-Earlington Heights Connector

The MIC-Earlington Heights Corridor is an approximately 2.4-mile heavy rail extension of the existing Metrorail. This corridor will extend from the new Miami Intermodal Center (MIC) at the Miami International Airport to the existing Earlington Heights Metrorail Station at NW 22nd Avenue and NW 41st Street (Figure 5.12). The project will include one station at the MIC. The project is estimated to cost \$523 million in the year of expenditure dollars. Four hundred twenty-three million dollars would be paid through local proceeds from the half-penny sales infrastructure surtax; the remaining \$100 million should be channeled through FDOT state funds. The connector is scheduled to be in operation in December of 2010.

¹⁶People's Transportation Plan Transit Corridor Development, Miami Dade Transit, May, 2006.

Figure 5.12 Metrorail’s MIC-Earlington Heights Connector

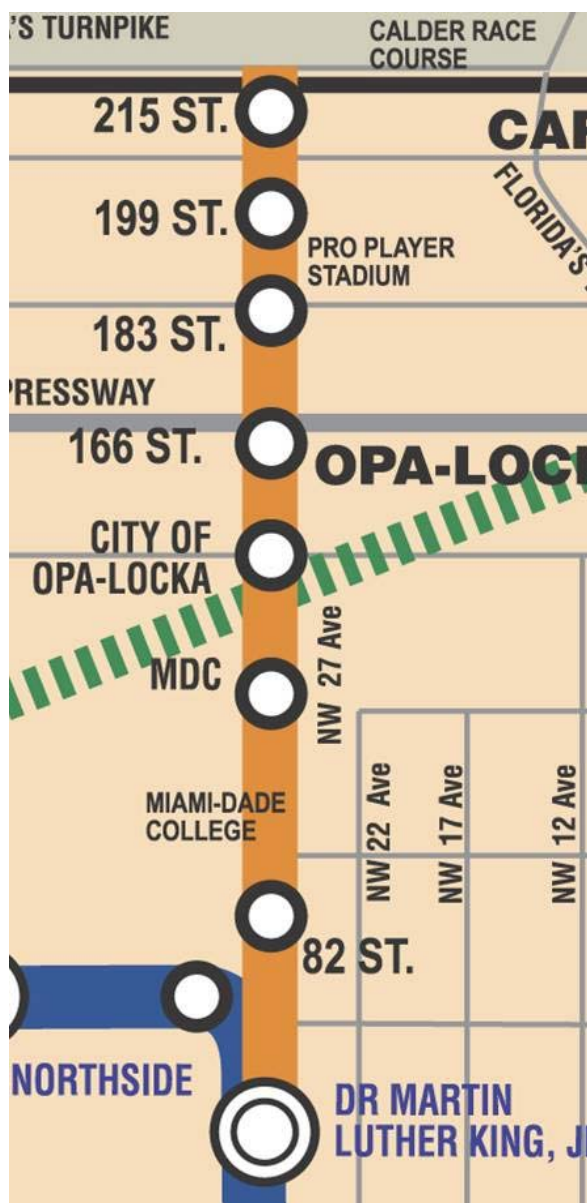


Source: Miami-Dade Transit.

North Corridor

The North Corridor is a 9.5-mile heavy rail extension of Metrorail from the existing Dr. Martin Luther King Jr. Metrorail Station to the Broward/Miami-Dade County Line (Figure 5.13). The project should include seven stations and is estimated to cost approximately \$1.457 billion in year of expenditure dollars. This project is expected to be completed toward the middle of 2014.

Figure 5.13 Metrorail’s North Corridor



Source: Miami-Dade Transit.

East-West Corridor

The East-West Corridor will extend approximately 10.1 miles from the Miami-Intermodal Center (MIC) to Florida International University (FIU) (Figure 5.14). The project will include six Metrorail Stations and a rail maintenance yard. Costs are anticipated to reach \$2.281 billion in year of expenditure dollars. The East-West Corridor is scheduled to open by June 2016.

Figure 5.14 Metrorail's East-West Corridor



Source: Miami-Dade Transit.

South Dade Corridor

Metrorail is currently studying new transit improvements from the Dadeland area to Florida City in response to the significant demographic and economic growth in Miami-Dade County. Metrorail's vision for transit improvement includes short-term (1 to 7 years), mid-term (8 to 15 years), long-term (16 to 20 years), and visionary (beyond 20 years) strategies as follows:

- **Short-Term Strategies** - Includes identifying Metrorail Station locations for immediate use as park and ride facilities and commencing and Environmental Impact Statement (EIS) process for a Metrorail extension to SW 104th Street (Phase 1);
- **Mid-Term Strategies** - Includes extending Metrorail to SW 104th Street and completing and EIS for the Phase 2 extension to Cutler Bay;
- **Long-Term Strategies** - Includes acquiring land for future Metrorail maintenance facilities and constructing parking garages at key park and ride locations; and
- **Visionary** - Includes constructing Metrorail extensions to Cutler Bay (Phase 2) and Florida City (Phase 3).

Bay Link – Miami Date Transit

A supplementation Draft Environmental Impact Statement (DEIS) was completed and a locally preferred alternative consisting of a light rail/streetcar system operating from Downtown Miami to South Miami Beach, was approved by the Miami Dade County Metropolitan Planning Organization (MPO) on September 25, 2003. A preliminary Engineering (PE) request package for the Federal Transit Administration (FTA) was subsequently completed but was not submitted to FTA due to funding limitations with the 2005-2009 Transportation Improvement Program (TIP) and the MDT *Pro Forma*. Work on this corridor is currently on hold. The corridor will be re-evaluated for development with possible funding available beginning in 2016.

High-Speed Rail

*Background*¹⁷

Florida has been evaluating high-speed rail since at least the mid-1970s, when the Florida Transit Corridor Study analyzed 150 mph trains operating between Daytona Beach and St. Petersburg. In the 1980s, Governor Bob Graham created the Florida High-Speed Rail Committee, which issued a report recommending public/private partnerships be formed to implement a high-speed rail network to meet Florida's mobility needs in the 21st Century. In 1984, the Florida Legislature enacted the Florida High-Speed Rail Transportation Committee Act and, by 1986, a study was completed recommending a high-speed rail system connecting Miami, Orlando, and Tampa. Proposals were received and reviewed, but eventually they were rejected by the State as too expensive. In 1992, the Florida Legislature passed the New High-Speed Rail Act, bringing FDOT into the efforts. In 1995, FDOT announced a funding commitment of \$70 million per year for 30 years for high-speed rail. This led to the partnership with the Florida Overland Express (FOX).

High-speed rail operates in the 120 to 200 mph range, or faster, and requires a minimum of Class VII or greater track. The primary advantage of high-speed rail is that it expands the 75- to 300-mile competitive range of intercity service, especially providing stronger alternatives to air travel at longer distances. The primary disadvantage of high-speed rail is the cost associated with new alignments, track upgrades, rolling stock, and highway-rail grade crossing separations. The Orlando-Tampa corridor, for example, already is heavily congested with freight trains and would require a new alignment for high-speed passenger rail. Safety reasons also prompt a higher degree of separation between high-speed passenger and freight trains, either through dedicated track or temporarily.¹⁸

¹⁷Background information obtained from: <http://www.floridahighspeedrail.org/>. In particular, the document *History of High-Speed Rail in Florida: Chronology of Events*, was used.

¹⁸For example, there are sections of the Northeast Corridor owned by Amtrak where freight trains are only permitted to operate between 10:00 p.m. and 6:00 a.m.

The Florida Overland Express Public/Private Partnership

FOX consisted of a consortium that included Fluor Daniel, Oderecht Contractors, Bombardier, and GEC Alstom. This consortium proposed the construction of 320 miles of new electrified, grade-separated, dedicated high-speed rail track linking Miami, Orlando, and Tampa at a total cost of \$6.1 billion. Top speeds would reach 200 mph, providing travel times of 1.5 hours between Orlando and Miami. The FOX consortium proposed debt financing with bonds fully repaid from system revenues and a \$70 million annual contribution from the State.

A ridership and revenue report was developed for FDOT in 1998 to evaluate the FOX effort.¹⁹ This study included: intercity highway and air surveys to estimate the demand for intercity trips; development of travel forecasting models using revealed choices (existing conditions) and stated-preferences (hypothetical scenarios); and estimates of future ridership and revenues for the FOX system.

The FOX study analyzed several alternatives, and provided detailed ridership and revenue estimates comparing three alignments:

- **FOX Baseline Alignment** - The Baseline alignment would attract an estimated eight million riders in 2010, with revenues of \$413 million generated by these riders.
- **Sawgrass Mills Alignment** - The Sawgrass Mills alignment differed from the Baseline by relocating the Broward County station near Sawgrass Mills Mall, a large outlet shopping mall in Sunrise, Florida, rather than near Fort Lauderdale airport. This alignment would require 11 minutes in additional travel time in comparison to the Baseline alignment and would have generated an estimated at 7.3 million riders and \$375 million in revenue for 2010.
- **Inland Alignment** - The Inland alignment proposed an “inland” route, without service to the Palm Beach station. The Inland alignment travel time would be five minutes faster between Tampa and Miami than the Baseline alignment. This alignment would generate an estimated at 5.02 million riders and \$136 million in revenue.

The corresponding capital and operating cost estimates are not included in the FOX study.

In 1999 this effort was terminated and in 2000 the more cost-effective *Florida Intercity Passenger Rail Service Vision Plan* was prepared by Amtrak.

¹⁹*Florida Overland Express High-Speed Rail Study: Final Ridership and Revenue Report*, prepared for Florida Department of Transportation by KPMG Peat Marwick LLP, April 1998.

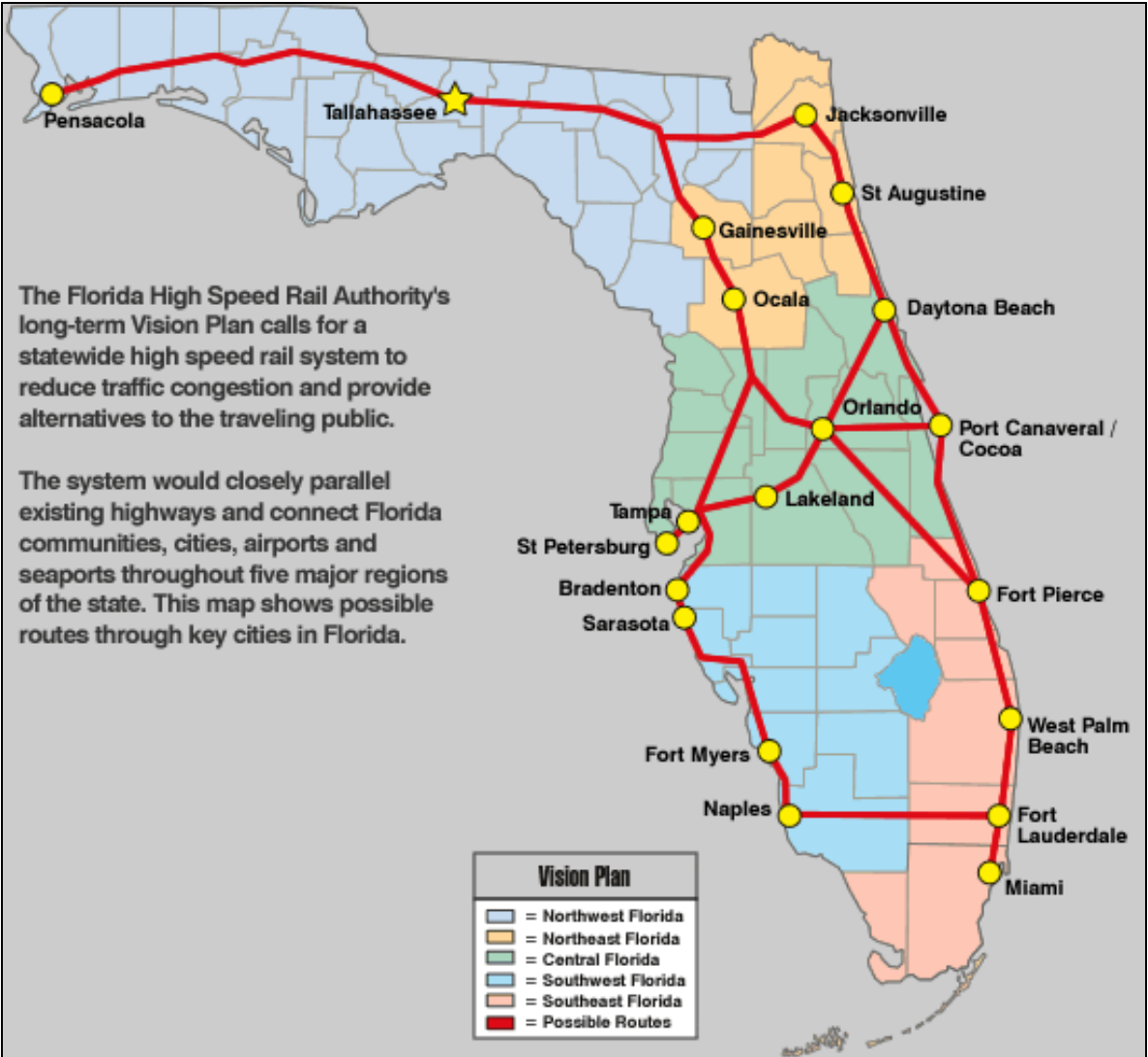
Florida High-Speed Rail from 2000 to Present

In November 2000, Florida voters approved an amendment to the state constitution mandating the development of high-speed passenger transportation service linking Florida's five largest urban areas. This service would have speeds in excess of 120 mph and would operate on dedicated rails or guideways. This prompted the Florida Legislature to enact the Florida High-Speed Rail Authority Act, which created the nine-member Florida High-Speed Rail Authority.

The High-Speed Rail Authority created a vision for a high-speed rail network linking the major population centers in Florida (see Figure 5.15). The Authority issued a request for proposal in October 2002 to design, build, operate, maintain, and finance an initial high-speed rail service between Tampa and Orlando. The cost estimate was \$2.4 billion. The route would begin near the Tampa Central Business District and travel parallel along I-4 into Orlando and on to the Orlando International Airport. A Phase I, Part 2 extension into St. Petersburg also was planned.

Growing concern over the costs of implementing a high-speed rail network led to efforts to repeal the amendment. In November 2004, Florida voters chose to overturn the original amendment, resulting in removal of the constitutional mandate. Although the amendment has been repealed, the Florida High-Speed Rail Authority decided it was in the best interest of the State of Florida to complete the Final EIS and to pursue a Record of Decision from the FRA for the initial Tampa-Orlando segment, completing and preserving the progress to date.

Figure 5.15 Florida High-Speed Rail Authority Long-Term Vision Plan



Source: The Florida High-Speed Rail Authority Internet site at <http://www.floridahighspeedrail.org/>.

The Future of Florida High-Speed Rail

As of this writing, the Florida High-Speed Rail Authority is completing the work in progress (EIS and Record of Decision) for the initial Tampa-Orlando segment. Beyond that, the future of high-speed rail in Florida is unclear. Possible scenarios include:

- **Additional Studies** - It seems likely that studies will continue, either publicly or privately sponsored, evaluating the prospects of high-speed rail in Florida; and
- **Intercity Service Evolving into High-Speed Service** - This would appear to be the most likely candidate and would follow the pattern in the Northeast Corridor. Implementing 79 mph intercity passenger rail service would then allow track upgrades and a gradual speed increases along selected corridors. This has occurred in the heavily traveled Northeast Corridor, where Amtrak operates Acela trains at 150 mph along some segments. Primary issues with this approach are separation of passenger and freight rail, and the numerous highway-rail at-grade crossings.

6.0 Florida Freight Rail Needs Assessment

This section presents short- and long-term freight rail needs in Florida. The assessment is based on data provided directly by Florida's freight railroads, ports, public agencies, and other key stakeholders. In total, this needs assessment identifies 147 short- and long-term capital improvement projects and other initiatives. Several freight rail needs have been included in this total, even though they have not progressed to the point of having full solutions and cost estimates. The total cost for the projects where costs estimates are available is \$732 million. In addition to this total, there is another \$427 million that FDOT has agreed in principal to apply to CSXT capacity expansion projects. Therefore, the total freight rail needs in Florida total \$1.16 billion.¹

Section 6.1 describes the purpose of gathering the needs, while Section 6.2 outlines the methodology used. Section 6.3 discusses the needs by type of project and by railroad, Section 6.4 describes the needs at each of the ports, and Section 6.5 profiles the needs by FDOT District. The final section contains a comprehensive matrix of freight rail needs in Florida.

■ 6.1 Purpose

The primary purpose of the needs assessment is to develop a comprehensive list of necessary and desired freight rail improvements, allowing FDOT to gauge the condition of the system and assess potential public involvement. Railroad needs, for the purposes of this rail plan, are restricted to capital needs and do not include operating expenses or subsidies. A need is a need regardless of whether it is privately or publicly funded or remains unfunded. Thus, the needs included in this assessment should be considered "unconstrained" needs that have no funding commitments. FDOT will review and evaluate these needs when determining appropriate levels of public support.

¹ Although the total amount of \$427 million for CSXT rail capacity expansion has been agreed upon and a preliminary project list developed, the actual projects are subject to change. Costs for the individual projects are not available at this time, with the following exceptions: \$6.21 million for the Anthony siding; \$3.314 million for the Wildwood siding and crossover; \$9 million for improved roadway access into the Winter Haven ILC; \$23 million for the Taft Yard relocation; and, \$6 million for improvements to Rand Yard.

Inclusion of a need in the Florida Rail Plan does not constitute a commitment on the part of FDOT or the State of Florida to provide funding.

This document also does not include all freight rail needs. The freight railroads are private, for-profit businesses and in some cases did not submit all their capital needs for inclusion in this public document. This is especially true in cases where private capital is available to fully fund planned improvements, where the railroads believe that public involvement in specific projects is less likely, and where disclosure of a need could adversely affect strategic business ventures. Therefore, the needs that are listed in this section are those that have been reported and do not involve speculation or rumors.

■ 6.2 Methodology

The Department developed a comprehensive list of needs for Florida's freight rail system from prior studies and a set of interviews and reviews with key stakeholders. Specifically, the freight railroads, the Florida Department of Transportation Central and District offices, and the Florida ports were engaged in this effort. The identified needs range from well developed plans that have been through a full planning and design process, to new concepts, to a wish list of projects. This is the reason why not all projects have full information in the comprehensive list contained in Table 6.5. The only restrictions were:

- The needs focus on freight rail projects, since passenger rail needs continue to be identified in other studies. Although some passenger rail needs were included, especially when they also impacted freight operations, this list should not be considered a comprehensive list of passenger rail needs;
- The needs focus on projects that improve the movement of rail freight. For example, improvement of a road-rail grade crossing to help mitigate highway congestion is not a freight rail need; and
- The needs focus on capital improvements, and do not include operating expenses for the freight railroads.

The freight rail system is dynamic and driven by customer demands and trends. Therefore, needs continually change. The needs identified in this Rail Plan are current through February 2007, and were assembled with the procedure outlined in Table 6.1.

Table 6.1 Procedure for Identifying Freight Rail Needs

Timeframe	Activity
May-July 2006	Start with the list of needs from the 2004 Florida Rail Plan and update with additional project needs from the Strategic Intermodal System, other studies, and knowledge of FDOT and the project team.
June 2006	Conduct initial in-person interviews with some of the railroads and ports.
August 2006	Parse the list of needs and e-mail to the railroads, ports, and FDOT District offices for review.
September-October 2006	Conduct extensive in-person interviews with the railroads, ports, and FDOT District offices.
October-November 2006	Follow up with reminder telephone calls and clarify any questions.
January-February 2007	Send out to the railroads, ports, and FDOT District offices for final review, and conduct final round of follow up questions as necessary.

■ 6.3 Needs by Type and by Railroad

The 2006 needs assessment and review identified approximately \$1.16 billion in needs on the Florida freight rail system. The unconstrained needs included in this assessment are divided into eight categories based on the type of project. Each need is assigned only one category designation based on the type of category that most closely fits the nature and intent of the need. There are projects that could be assigned to multiple categories, but in this needs assessment they are limited to a single category. The following table briefly defines each category type.

Table 6.2 Freight Railroad Needs by Category

Category	Category Description	Cost (in Thousands)
Maintenance and Repair	Projects associated with line and structure maintenance, including bridge rehabilitation, track and tie replacement, resurfacing, and repairs to signs and signals.	\$25,109
Grade Crossings	Grade crossing improvement projects, including safety and grade separation projects. Includes \$145 million for five grade separations on CSXT.	\$247,800
Safety and Security	Projects that enhance safety of rail, port, or other freight handling personal, or the general public.	\$500
Signal Systems	Projects that upgrade railroad signaling systems, leading to safer operations and enhanced system capacity.	\$52,500
Line Upgrade and Extension	Projects that increase the capacity of the freight rail network, including double-track projects, line extensions, and upgrades to accommodate 286k railcars, etc.	\$429,871
CSXT Capacity Expansion	These \$244 million in projects are part of the CSXT - FDOT agreements: Central Florida Freight Rail Capacity Projects and Florida Improvement Plan. The deal also includes five grade separations (\$145 million), improved roadway access into Winter Haven ILC (\$9 million), relocation of Taft Yard (\$23 million), and improvements to Rand Yard (\$6 million) for a total of \$427 million.	\$244,00
Facility Upgrade and Expansion	Projects that increase the capacity of freight rail facilities, including expansion of intermodal rail facilities and yards, enhanced connectivity and crossovers, and the construction of new facilities and yards.	\$146,920
Landside Access	Projects that enhance landside access, including intermodal ramps and truck access to railroad terminals.	\$12,250
Total		\$1,158,950

Table 6.3 contains a summary of needs by railroad or port, and category. Railroad and port needs exceeding \$50 million include improvements to CSXT, FEC, NS, and Port Everglades. Detailed descriptions of the needs are contained in Table 6.5.

Table 6.3 Summary of Needs by Railroad and Type^a
Costs in Thousands of 2006 Dollars

Railroads and Ports	Maintenance and Repair	Grade Crossings	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Total
Alabama and Gulf Coast	\$2,055								\$2,055
AN	\$1,500								\$1,500
Bay Line	\$10,704				\$7,220				\$17,924
CSX Transportation		\$145,000			\$43,000	\$244,000	\$29,000	\$9,000	\$470,000
Florida Central					\$16,660				\$16,660
Florida East Coast	\$3,250		\$500	\$16,000	\$251,715		\$11,250	\$750	\$283,465
First Coast	\$4,100						\$5,000		\$9,100
Florida Midland					\$7,800				\$7,800
Florida Northern					\$11,800				\$11,800
Georgia and Florida Railway					\$14,000				\$14,000
JTA/ Amtrak							\$34,000		\$34,000
Norfolk Southern	\$3,000	\$36,000		\$36,500	\$5,000		\$5,000		\$85,500
Port Everglades		\$36,800					\$35,500		\$72,300
Port Manatee					\$750		\$1,130		\$1,880
Port of Jacksonville					\$3,560		\$6,700	\$2,500	\$12,760
Port of Miami	\$500				\$1,500				\$2,000
Port of Palm Beach					\$15,950		\$4,956		\$20,906
Port of Tampa		\$30,000			\$11,300		\$2,000		\$43,300
South Central Florida Express					\$39,616				\$39,616
Tri-Rail							\$12,384		\$12,384
Total	\$25,109	\$247,800	\$500	\$52,500	\$429,871	\$244,000	\$146,920	\$12,250	\$1,158,950

^a A blank cell does not necessarily indicate an absence of projects in this category. Project cost may not have been identified by the source(s). See Section 6.6 for specific projects.

CSX Transportation

CSX Corporation, based in Jacksonville, Florida, owns companies providing rail, intermodal and rail-to-truck transload services. CSX's principal operating company, CSX Transportation Inc. (CSXT), operates the largest railroad in the eastern United States with approximately 21,000-mile rail network linking commercial markets in 23 states, the District of Columbia, and the Canadian provinces of Ontario and Quebec. This section first describes the proposed CSXT integrated logistics center, followed by a discussion of the freight rail needs in Florida.

CSX Transportation Integrated Logistics Center

An integrated logistics center (ILC) is a hub where activities related to transport, logistics and goods distribution are carried out by various operators. The purpose of an ILC is to better manage and coordinate transportation and logistics handled by different operators in one location, to reduce costs and increase productivity, and to spur transportation and distribution-related economic activity drawn to the area. The real key is that an ILC allows consolidation of long-haul shipments, thereby reducing transportation costs.

Integrated logistics centers are also developed to encourage economic development around a central transportation facility. Existing ILCs have generated significant and sustained economic development, including two Burlington Northern Santa Fe locations (Alliance, TX and Joliet, IL), and three Union Pacific owned locations (Rochelle, IL, Wilmer, TX, and Mesquite, TX). CSX Transportation has proposed a 1,250-acre ILC for Winter Haven, Florida, north of Old Bartow-Lake Wales Road and west of the existing CSX Transportation railroad tracks. The CSXT ILC would be the first facility of its kind in the southeastern United States, and would serve the growing population in Orlando, Tampa, and central Florida.²

Once completed, the CSXT ILC is projected to incorporate 3 million square feet of warehouse, 1.5 million square feet of industrial sites, and 0.5 million square feet of office space. Economic research shows that over a 10-year period, operations like the proposed ILC could produce more than \$10 billion in economic activity and add \$900 million in state and Federal tax revenue.³

Aside from the financial benefits, the CSX ILC is anticipated to benefit the community in many ways. Economic benefits include increases in employment opportunities, community redevelopment activities, and tax revenue. The ILC would help to reduce congestion on the highway by reducing truck traffic and therefore help to reduce the environmental impact of freight transportation by reducing pollutant emissions and fuel

² Source of information and statistics: "CSX Real Property Inc.: Development Of An Integrated Logistics Center In Winter Haven", Florida, January 2006.

³ Ibid.

consumption. As part of the 2006 Florida Rail Plan, Section 7 profiles this project in a benefits case study.

Needs on CSX Transportation

CSXT has 51 individual project needs in Florida, totaling \$470 million. Five of these are grade separation projects, 1 is an upgrade of the Bascule Bridge in Ft. Lauderdale, 2 are facility upgrade projects, 1 is a landside access project supporting the Winter Haven ILC, and the remainder are line capacity improvement projects.

A bundle of 21 projects that will increase capacity on the “S” line is known as the Central Florida Freight Rail Capacity projects. These have a pending FDOT funding commitment of \$198 million. Two of these projects, the Anthony and Wildwood siding projects, are currently approved for SIS funding. FDOT has agreed to the funding level for increasing capacity on the “S” line, but the actual list of 21 projects is subject to change. Another \$23 million is pending FDOT funding for relocation of the Taft Yard in Orlando to the new facility in Winter Haven.

An additional 20 CSXT projects will expanded capacity on other portions of the CSXT Florida network, including the line parallel to Interstate 10. These are identified as the Florida Improvement Plan. These projects are part of a pending \$46 million FDOT funding commitment, and will require an additional \$46 million in matching funds from CSXT. Included in the Florida Improvement Plan is an additional \$6 million for improvements to the Rand Yard in Sanford.

There also are five road-rail grade separation projects totaling \$145 million that are tentatively approved for funding from FDOT. Though not a railroad project, FDOT has agreed to \$9 million in funding to improve roadway access into the Winter Haven ILC, pending funding availability.

One final CSXT need is a railroad improvement project included in the Growth Management Plan scheduled for Desoto, Charlotte, Lee, and Collier counties in District 1. The estimated cost for this program is \$43 million, pending funding by FDOT and local agencies.

Florida East Coast Railroad

The Florida East Coast Railroad (FEC) extends along a 351-mile corridor between Jacksonville and Miami, with exclusive rail access to the Port of Palm Beach, Port Everglades (Ft. Lauderdale), and the Port of Miami. Beyond its coastal rail corridor, FEC provides drayage services throughout the Southeast with terminals located in Atlanta, Jacksonville, Ft. Pierce, Ft. Lauderdale, and Miami.

The FEC identified 24 project needs on their system during the needs assessment and review, with a total cost estimate of \$283 million. FEC has projects in all categories, except for grade crossings.

Maintenance and Repair projects identified as needs include systemwide bridge rehabilitation and a Miami Canal bridge project. A security project was identified at the Bowden Intermodal facility. A systemwide upgrade in the signaling system, to an Advanced Transportation Controller system, is also planned.

FEC needs account for over half of the line upgrade and extension needs identified for all railroads in Florida. FEC is expanding capacity throughout their system and has a series of double-track projects between Jacksonville and Miami with costs estimated at \$252 million.

Two facility upgrade and expansion projects were identified during the needs review, at Bowden Yard and Fort Pierce. These projects will expand Trailer-on-Flat-Car (TOFC) and Container-on-Flat-Car (COFC) capabilities of the FEC.

There are also two landside access projects for FEC. One is located at Bowden Intermodal Facility. This project would relocate the ingress/egress point for the Bowden Yard. The new configuration should maximize the ease of circulation and cargo transfers and reduce the potential for truck-train accidents. A reconfigured circulation pattern will keep trucks on the north and west boundaries of the yard and off of US 1. The other project is located at the Hialeah Intermodal Facility.

The Genesee and Wyoming Railroads

Genesee and Wyoming Incorporated (GWI) currently operates more than 49 railroads in five countries (United States, Canada, Mexico, Bolivia, and Australia). GWI's subsidiary, Rail Link, provides rail-switching services at 35 locations in 11 states, and operates 26 short-line railroads.⁴ GWI operates four railroads in Florida: AN Railway, Bay Line Railroad, First Coast Railroad, and Talleyrand Terminal Railroad.

Timber trestle repairs and upgrades as part of the bridge maintenance program are the only needs currently identified for the AN Railroad. Projects are slated to be carried out at various locations for an estimated cost of \$1.5 million.

Projects on the Bay Line Railroad are focused in Bay and Jackson Counties, and at the Panama City Intermodal Distribution Center. The Bay Line has 90 pound rail that needs to be upgraded, along with crossties, to allow heavier railcars on their mainline. Upgrades to the track between the Port of Panama City and the Panama City Intermodal Distribution Center (IDC) and side track at the IDC complete the Bay Line Projects for an estimated total of \$18 million.

Four projects were identified through the needs assessment review for the First Coast Railroad. Two projects related to the tie and surface program were identified from Fernandina to Yulee. The Amelia River bridge is slated to be rehabilitated for an

⁴ <http://www.gwrr.com>.

estimated cost of \$1.9 million. The fourth First Coast Railroad project is the development of the First Coast Nassau County Intermodal Terminal between mileposts S605.20 and S606.24. This project will cost approximately \$5 million. The total funding needs for First Coast Railroad projects is \$9.1 million.

Talleyrand Terminal Railroad has one need identified in conjunction with the Port of Jacksonville. The project identified is a holding yard and a second lead track to the facility (parallel to the existing track) to support on-dock operations and increase access flexibility. This project is estimated to cost \$4.9 million. [Note: this is listed as a Port of Jacksonville project, not a Talleyrand project.]

The Pinsky Railroad

The three Pinsky Railroad Company subsidiaries, Florida Central, Florida Midland, and Florida Northern Railroads, have five track upgrade projects identified and two unloading facilities planned. Two track upgrade projects were identified on the Florida Central Railroad with a total estimated cost of \$16.7 million. Two track upgrade projects are planned on the Florida Northern Railroad with an estimated total cost of \$11.8 million. Two unloading facilities are also planned on the Florida Northern Railroad. One project was identified for the Florida Midland Railroad, a track upgrade project with a total estimated cost of \$7.8 million.

Other railroads

There are five other railroads in Florida with identified needs: the Alabama and Gulf Coast Railroad, Georgia and Florida Railway, Norfolk Southern Railroad, South Central Florida Express, and the Tri-Rail commuter railroad.

The review of Florida rail system needs identified several maintenance projects on the Alabama and Gulf Coast Railroad. Track rehabilitation projects were identified in Pensacola, near Pace Boulevard and over 28.2 miles in Escambia county. Two bridges in Escambia County were identified as needing either rebuilding or rehabilitation. Total estimated project costs for the Alabama and Gulf Coast Railroad are \$2.0 million.

There is one rail need identified for the Georgia and Florida Railway. This project involves upgrading 77-miles of track (including tie replacement and surfacing) between Adel, Georgia and Foley, Florida to support a new coal-fired power plant due to go on-line in 2010 in Foley. The estimated cost of this project is \$14 million.

Norfolk Southern Railway identified 15 projects in the needs review process. Of these 15 projects, 2 are maintenance projects (tie and surface), 5 are grade separation projects, 5 are signal system projects, and 1 is a facility upgrade project. The total estimated cost for Norfolk Southern projects is \$85 million, of which \$36 million is for the grade crossing separations and another \$36.5 million is for the signal system upgrades.

The projects needs identified for the South Central Florida Express (SCFE) include 51 miles of new prime rail and upgrades to the relay rail between Sebring and Moore Haven, Florida. These projects are currently funded through a combination of FDOT and railroad contributions. This Sebring-Moore Haven upgrade is profiled in a benefits analysis in Section 7. Another need involving the SCFE is the \$13.3 million Bryant Rail Upgrade. This project involves upgrading track owned by U.S. Sugar (the parent corporation of the SCFE) to provide access to a 4,000-acre mine east of Belle Glade and Pahokee, Florida.

Tri-Rail, a passenger railroad, runs along the South Florida coast providing commuter services in the Miami area. Three projects were identified during the needs review, a Tri-Rail/Metrorail transfer center and two station improvements. Total estimated costs for these projects are \$12.4 million. Note: as mentioned above, this does not include additional passenger projects included in other plans, nor is it intended as a comprehensive list of Tri-Rail capital and operating needs. Further descriptions of the Tri-Rail operations and plans can be found in Section 5.

■ 6.4 Summary by Port

Florida has 14 seaports, several of which have significant rail projects currently underway or scheduled to begin in the near future. The following discussion highlights some of the key rail needs at each port.

Port Everglades

Port Everglades is located near Fort Lauderdale, Hollywood, and Dania, Florida, and is governed by the Broward County Board of County Commissioners. Port Everglades has two major projects involving rail – a grade crossing project and a facility upgrade project. The total estimated expenditure for these projects is approximately \$72 million.

The grade separation project is a road-rail overpass located at Eller Drive. Scheduled for completion in 2010, the overpass will separate the roadway from a proposed spur of the Florida East Coast Railway. The rail spur will serve a new intermodal container transfer facility scheduled to begin construction in 2012.

The intermodal container transfer facility is a planned 40-acre facility located in the Southport area of Broward County. A rail spur will connect the intermodal facility with the Florida East Coast Railway. This will provide Port Everglades with its first on-dock ship-to-rail conveyance facility for containerized cargo, eliminating the current need for intermediate drayage to a rail transfer facility.

Port Manatee

Port Manatee, governed by the Manatee County Port Authority, is located near the entrance to Tampa Bay. The port handles fresh produce, forestry products, and other bulk

commodities. A switching railroad at the port provides a connection to the CSXT line that can haul Port Manatee goods to Jacksonville and throughout the U.S. Port Manatee currently has two rail projects totaling \$1.9 million: extension of track to parallel south Dock Street, and holding tracks at the CSX interchange.

Jacksonville Port Authority

The Port of Jacksonville, governed by the Jacksonville Port Authority (JaxPort), is located in northeastern Florida on the north Atlantic coast. JaxPort has multiple cargo terminals for intermodal container transport, automobiles, and refrigerated cargo.

JaxPort identified eight rail project needs. Of these eight projects, four are line upgrades or extensions, three are facility upgrades or expansion projects, and the remaining need is a landside access project.

The two line upgrade projects at JaxPort focus on improving rail connectivity and off-terminal staging. Planned projects are a rail link at CFS Corporation and off-terminal improvements at the Blount Island facility.

The facility improvement needs include projects located at Blount Island, Dames Point, and the Tallyrand terminal. An intermodal and double-stack access and service project is scheduled for Blount Island and Dames point. Rail loops are planned for Blount Island and Container Way. A rail yard is planned for the oil terminal at JaxPort, and a holding yard and a second lead track are planned at the Talleyrand Terminal (parallel to the existing track) to support on-dock operations and increase access flexibility. A total of \$12.8 million in needs have been identified for the Port of Jacksonville.

Rail access for new terminal development at Dames Point is also identified as a need for JaxPort. This is categorized as a landside access project and was also included in the 2003 Florida Rail Connectivity Needs Assessment.

Port of Miami

Governed by the Miami-Dade Board of County Commissioners, the Port of Miami serves markets in the Far East and Europe, as well as Central and South America. The 2006 needs assessment and review identified four projects at the Port of Miami. These four projects are:

- Track Extension to serve the Port of Miami Terminal Operating Companies (POMTOC) and Maersk;
- Airport/Seaport rail Link (east/west corridor);
- On-port railroad marshalling yard; and
- Bridge repairs to the existing rail bridge.

Total estimated costs for these rail projects at the Port of Miami are \$2 million.

Port of Pensacola

The Port of Pensacola is an enterprise department of the City of Pensacola and is governed by the Pensacola City Council. The Port has one need currently identified, revitalizing the rail spur at the waterfront complex. A cost estimate for this project was not available.

Port of Palm Beach

The Port of Palm Beach District, located in Palm Beach County, is an independent special taxing district (an autonomous port) and a subdivision of the State of Florida. The Port of Palm Beach identified seven rail projects needed to enhance operations.

Three of these projects are part of the Florida Seaport Transportation and Economic Development Council (FSTED) 2004 project application. These include a combination of both on-dock and off-dock improvements to enhance intermodal rail movements. The total combined cost estimate is \$18.4 million.

Another project, totaling \$2.5 million, involves partial reconstruction of the Florida East Coast Railway near the port (north of 13th Street to south of State Route 710). The goal is to improve efficiency and safety by reducing the amount of switches and directional moves performed by the railroad. Once completed, this project will reduce the amount of time the roads are blocked, thereby reducing traffic congestion for the City of Riviera Beach.

There are two yard projects at the port of Palm Beach. One is a rail extension for the North Yard. This project will allow direct discharge of containers between the terminal and railcars, facilitating improved cargo transfers for Tropical Shipping. The other project is an intermodal yard rebuild to improve the staging area for containers. Cost estimates are not available for either project at this time.

The final need initiated by the Port of Palm Beach is development of an inland port in South Florida. This inland port would serve not only the Port of Palm Beach, but would also provide a staging area away from the congested eastern seaboard for the other southeastern Florida ports. This project will require development of an inland intermodal facility, along with construction of new rail lines connecting the ports to the facility. FDOT is conducting an initial feasibility study, which has the following goals:

- To define what attributes the inland port should possess, including transportation and industrial support features;
- To determine if the inland port can effectively serve the port network in the southern half of Florida and complement other ventures elsewhere in the State;
- To identify potential locations for developing the inland port, including but not limited to locations previously identified as potentially suitable by other studies; and

- To determine if an inland port concept is feasible and beneficial for South Florida.

Port of Tampa

The Port of Tampa is the largest of the Florida ports, as measured by tonnage. Bulk products handled include phosphate rock, fertilizer products, petroleum, coal, and general cargo. Inbound and outbound traffic closely reflect the port's ties with the nearby phosphate industry. The port also is one of the State's major cruise ports.

There are seven rail needs identified at the port. Three of these involve road-rail grade crossing projects that improve rail mobility, reduce roadway congestion, and improve safety. One of these projects is a grade separation of the CSXT Tampa-Bradenton line and Causeway Boulevard, a major connector to I-75 for port traffic. Another would grade separate U.S. 41 and the CSXT port lead track. The final project, is actually a \$4 million set of improvements to seven other grade crossings in the area. The total costs of all these grade crossing improvements is \$ 30 million.

The other four projects all involve upgrading and extending rail track and services at the port. These include the Eastport rail track extension, development of rail facilities at Hooker's Point, upgrades to rail infrastructure at Pendola Point, and a Portway rail access and refurbishing project. The total costs for these four projects is \$13 million.

■ 6.5 Summary by FDOT District

Table 6.4 contains a summary of needs by district and category. It is followed by a summary and a map of all of the identified freight rail needs for each of the seven FDOT Districts. Note that the CSXT capacity expansion projects are listed as "multiple" under the District heading. This was necessary since individual project costs were not available, and since the project list is still subject to change. The District maps do include the CSXT capacity projects currently proposed for that District.

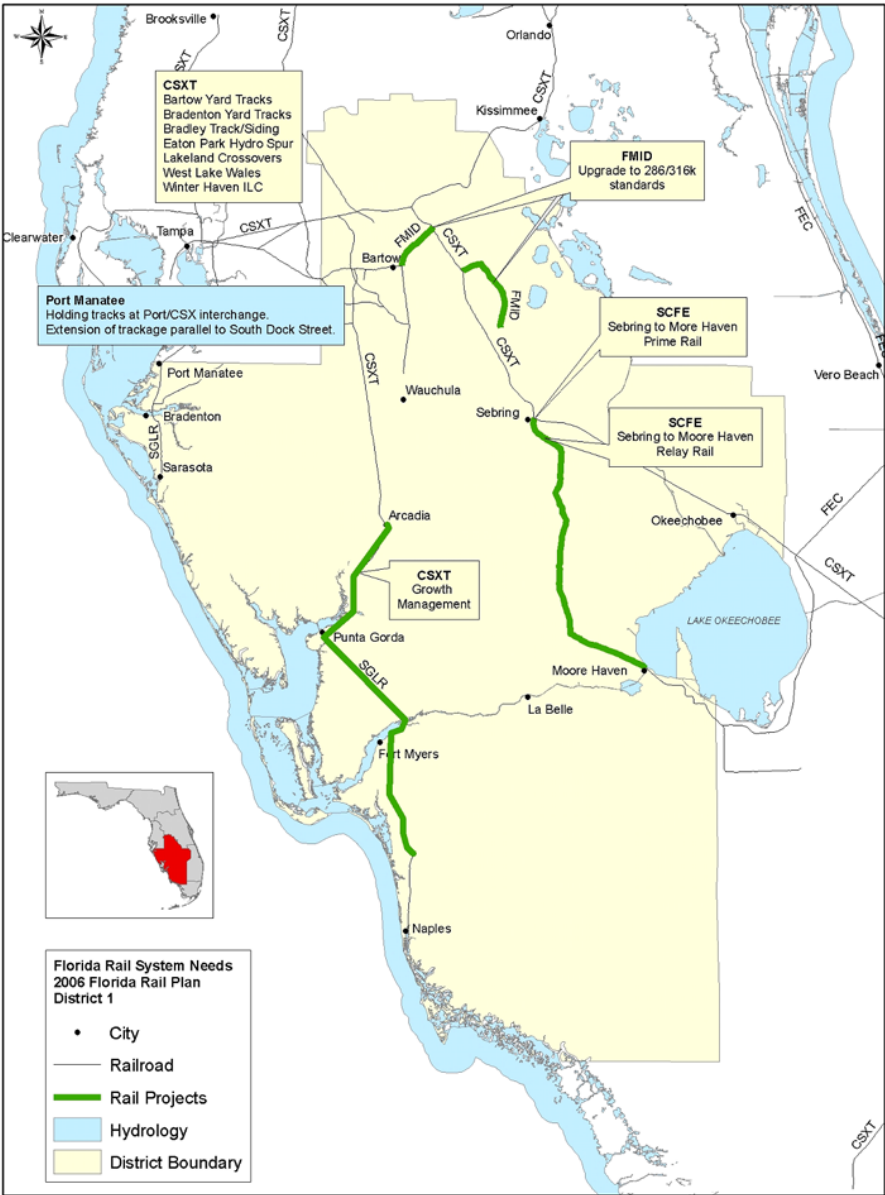
Table 6.4 Summary of Needs by District and Type
Thousands of 2006 Dollars

District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Total
1	-	-	-	-	\$77,866	-	\$1,130	\$9,000	\$87,996
2	\$7,100	\$36,000	\$500	\$36,500	\$43,447	-	\$53,700	\$2,750	\$179,997
3	\$14,259	-	-	-	7,220	-	-	-	\$21,479
4	-	\$36,800	-	-	\$146,897	-	\$60,194	-	\$243,891
5	-	-	-	-	\$97,044	-	29,000	-	126,044\$
6	\$1,750	-	-	-	\$18,095	-	\$896	\$500	\$21,241
7	-	\$30,000	-	-	\$11,300	-	\$2,000	-	\$43,300
Multiple	\$2,000	145,000	-	\$16,000	\$28,002	244,000	-	-	435,002\$
Total	\$25,109	\$247,800	\$500	\$52,500	\$429,871	\$244,000	\$146,920	\$12,250	\$1,158,950

District 1 – Southwestern and Central Florida

District 1 encompasses 12 counties in south central and southwestern Florida and includes the major metropolitan areas of Sarasota-Bradenton, Fort Meyers, and Naples. The combined freight railroad needs for this District are nearly \$88 million. Line upgrades and extensions is the single largest needs category, with a cost estimate of more than \$77 million. Other needs in District 1 include facility upgrades and expansion, and \$9 million for improved roadway access into the proposed CSXT Winter Haven Integrated Logistics Center. (See Figure 6.1)

Figure 6.1 District 1 Rail Projects

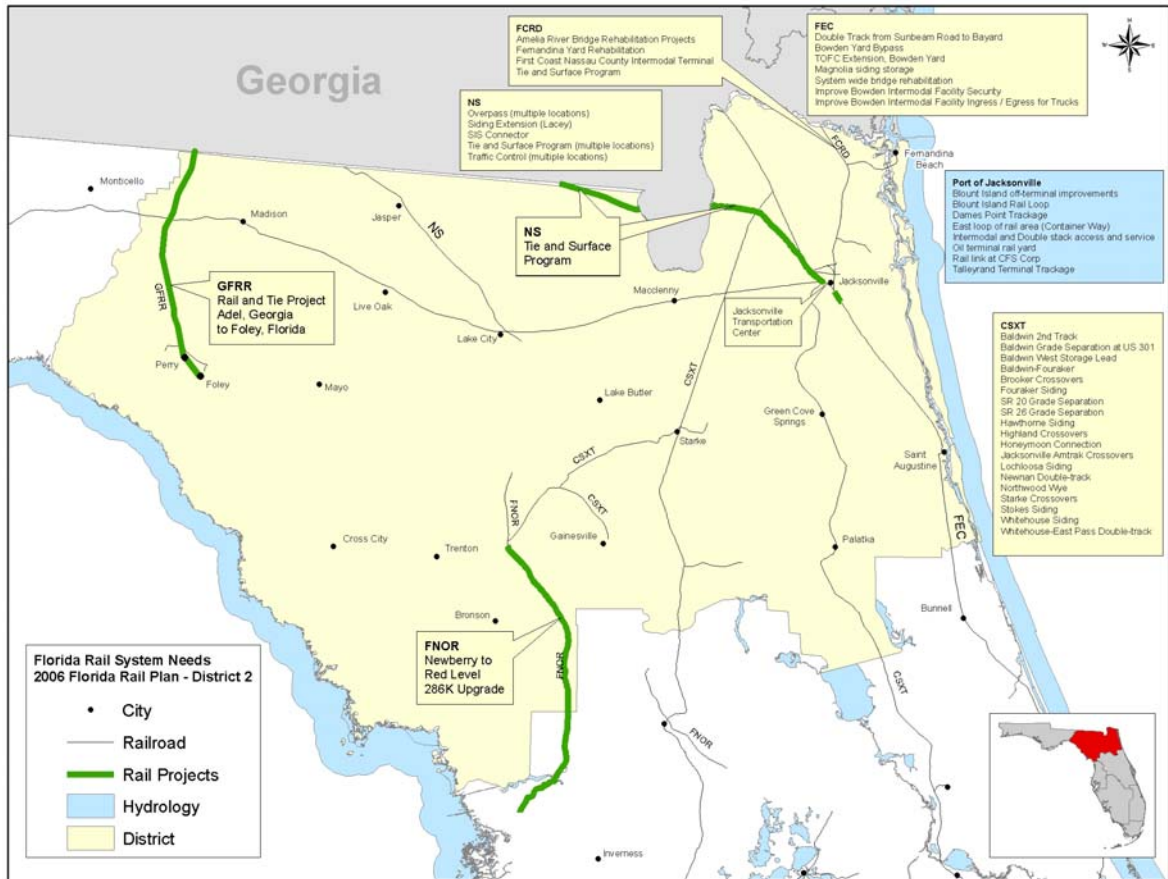


District 2 - North Central and Northeast Florida

District 2 spans the width of the peninsula from the “Big Bend” region along the northwestern section of the Gulf Coast to the greater Jacksonville region on the State’s Atlantic shore. Freight rail needs in District 2 total \$180 million, including major investments in line upgrades and extensions (\$43 million), grade crossings (\$36 million), signal systems (\$37 million), and facility upgrades and expansion (\$54 million). The

largest proposed projects include rail improvements associated with terminal expansion at the Port of Jacksonville and double tracking capacity expansion by FEC. Included in the \$54 million for facility upgrades and expansion is \$34 million for access between the proposed Jacksonville Transportation Center and the CSXT and FEC mainlines.

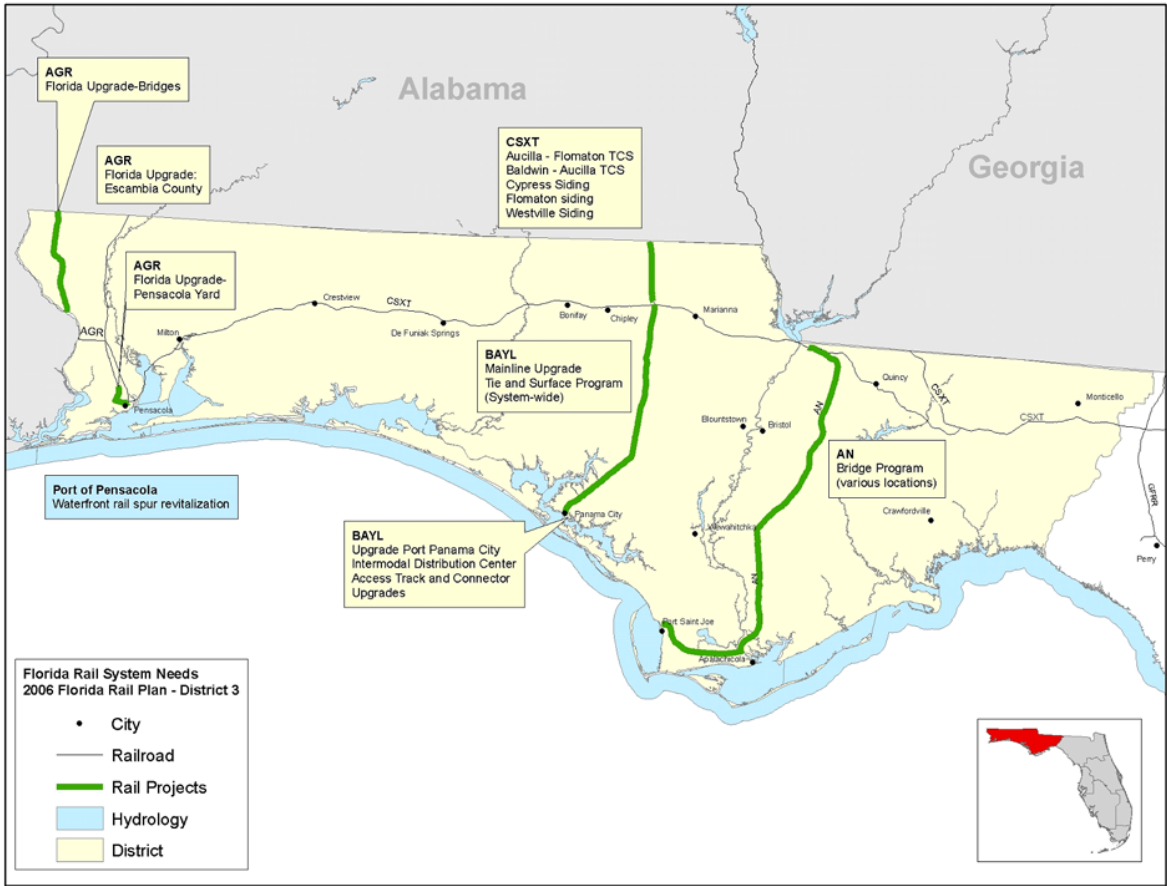
Figure 6.2 District 2 Rail Projects



District 3 – Florida’s Panhandle

District 3 covers 16 counties of the Florida Panhandle and includes the Tallahassee, Panama City, and Pensacola metropolitan areas. The total freight rail needs for District 3 are approximately \$21 million. Two-thirds of the freight rail needs in District 3 are projects related to maintenance. (See Figure 6.3)

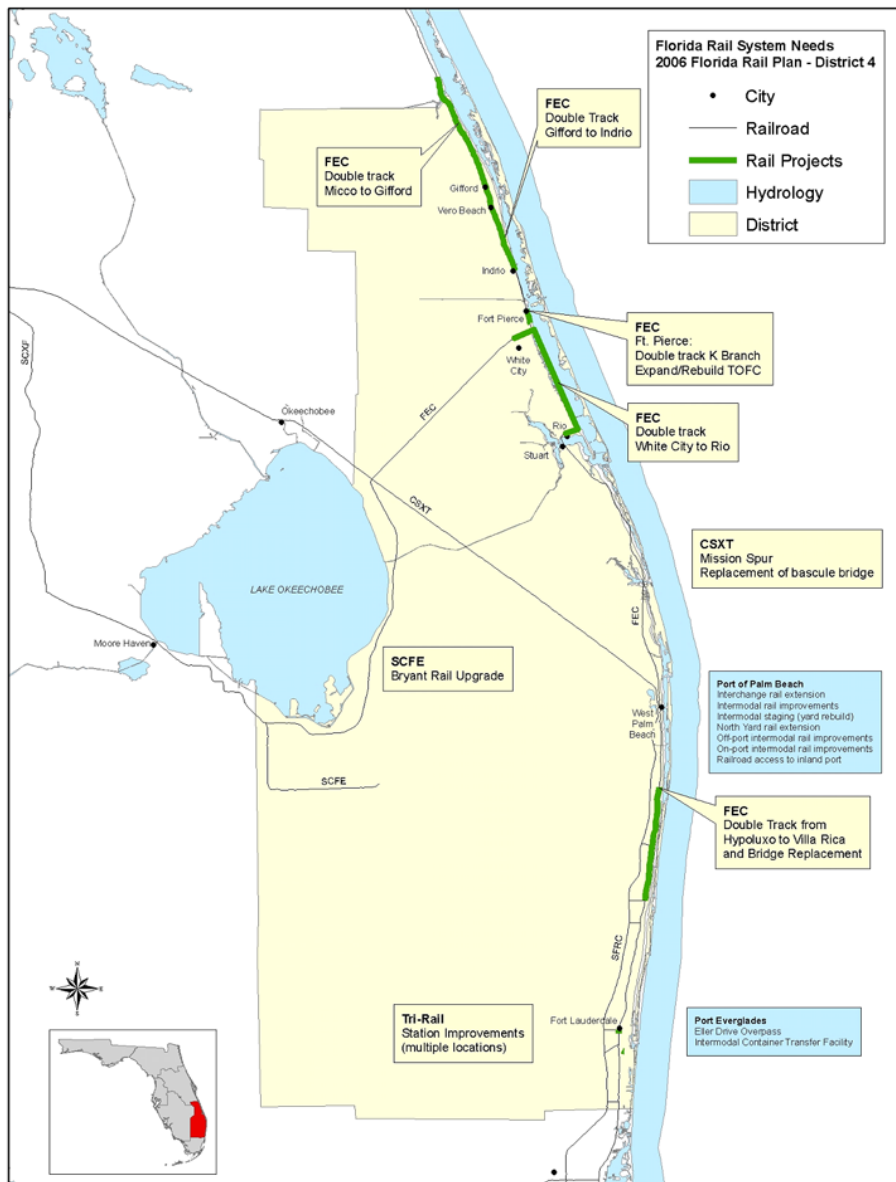
Figure 6.3 District 3 Rail Projects



District 4 - Southeast Seaboard

District 4 is comprised of five densely populated counties on Florida’s southeastern seaboard and is anchored by the Fort Lauderdale and West Palm Beach urbanized areas. Within District 4, there are \$244 million in freight rail needs, the greatest needs total for any single District. Several major proposed projects totaling nearly \$134 million are associated with line improvements on FEC. There are also an additional \$93 million in needs for access and intermodal improvements at the Port of Palm Beach and Port Everglades. (See Figure 6.4)

Figure 6.4 District 4 Rail Projects

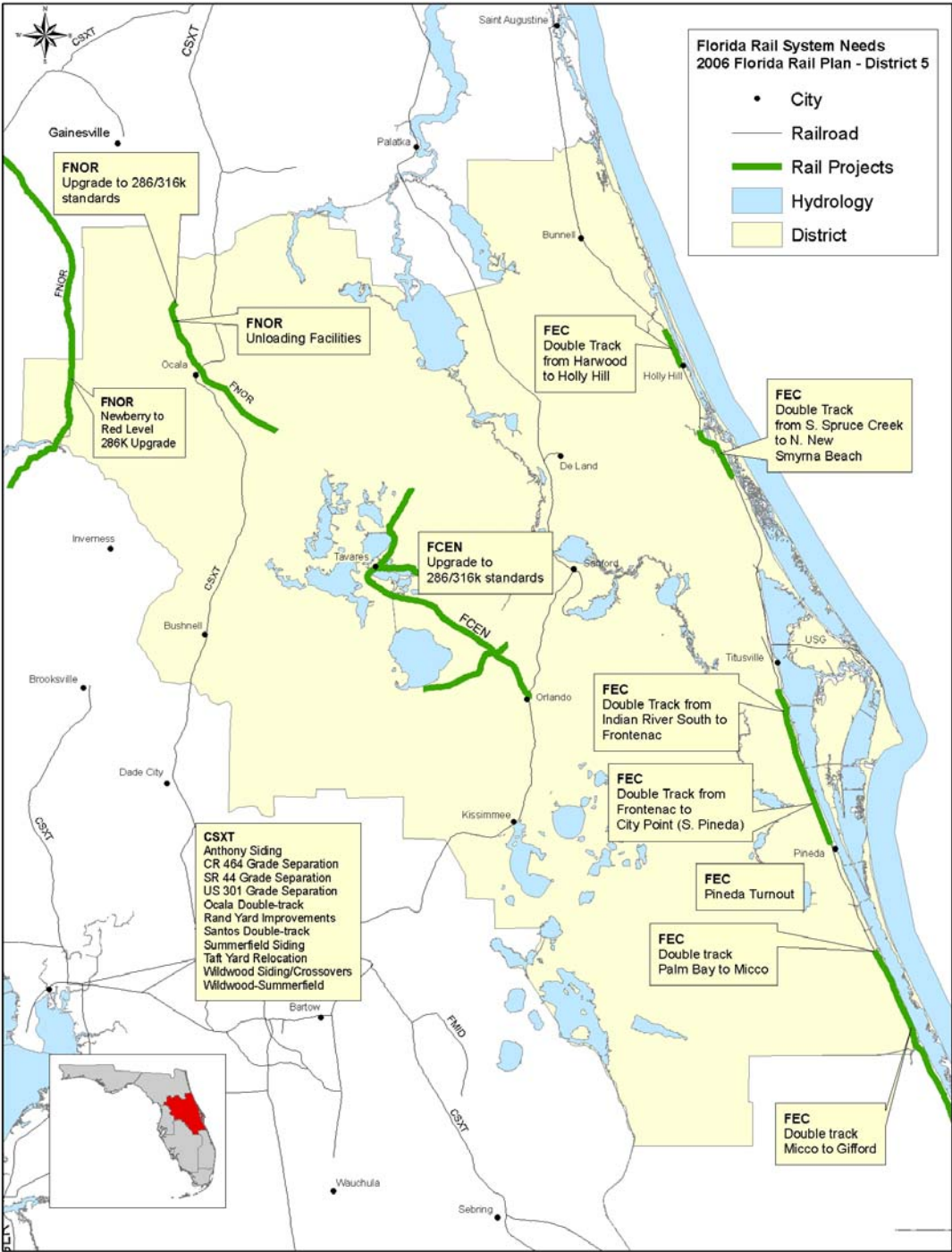


District 5 - Central and Eastern Florida

District 5 encompasses nine counties of central and eastern Florida. The District contains the Orlando, Daytona Beach, and Melbourne urbanized areas and has more than \$126 million in needed freight rail improvements. The single largest proposed projects are double-track improvements to FEC totaling more than \$67 million dollars. There are two CSXT yard projects totaling \$29 million: relocation of Taft Yard to the Winter Haven ILC;

and, improvements to Rand Yard. The Florida Northern has almost \$8.0 million in line upgrade projects to accommodate 286k railcars and facility upgrades. (See Figure 6.5)

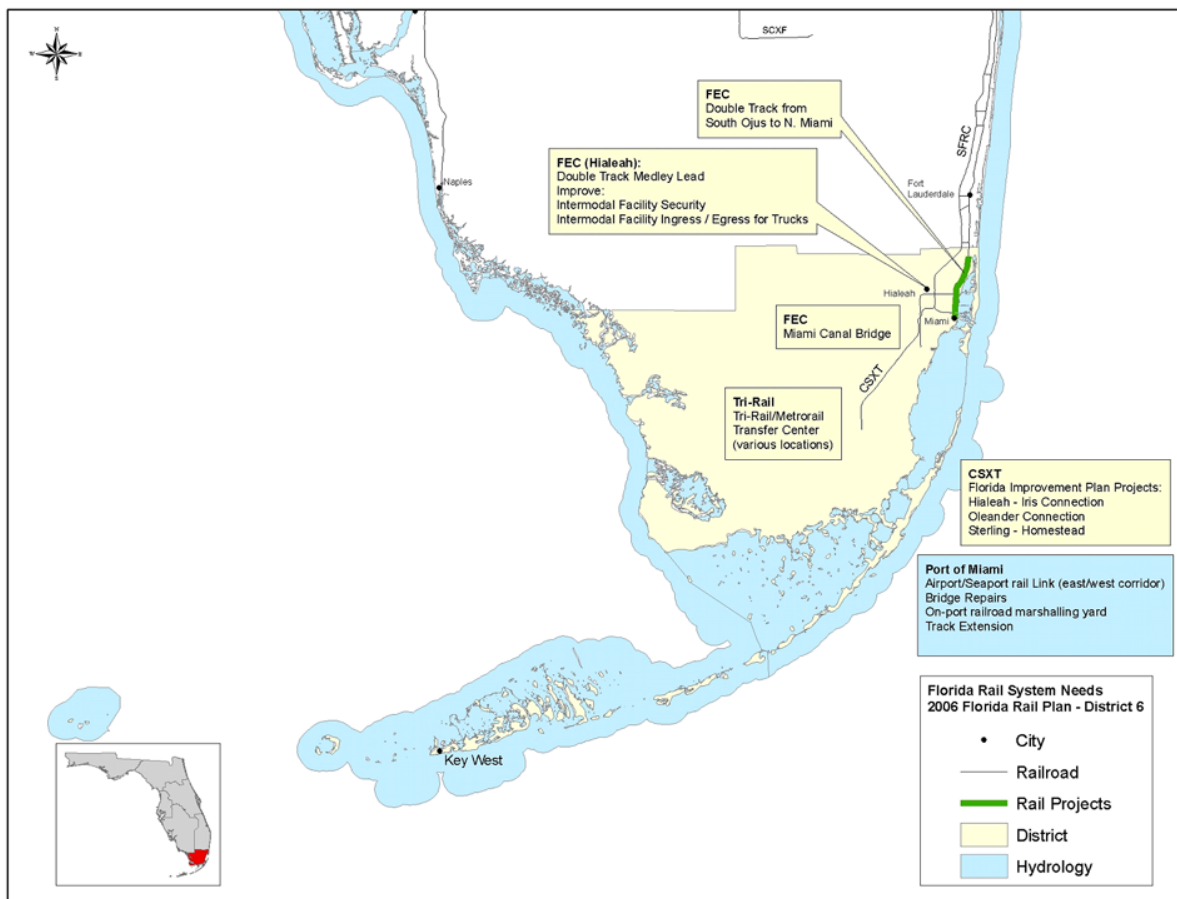
Figure 6.5 District 5 Rail Projects



District 6 – South Florida and Miami-Dade

South Florida’s Miami-Dade and Monroe Counties comprise District 6. This geographically diverse District includes the Florida Keys, the Everglades, and metropolitan Miami, where most rail activity is concentrated. The total estimated freight rail needs for the District are \$21 million, including more than \$15 million in double-track improvements on FEC. Other needs in District 6 include intermodal improvements at the Port of Miami and a Tri-Rail transfer center. (See Figures 6.10)

Figure 6.6 District 6 Rail Projects

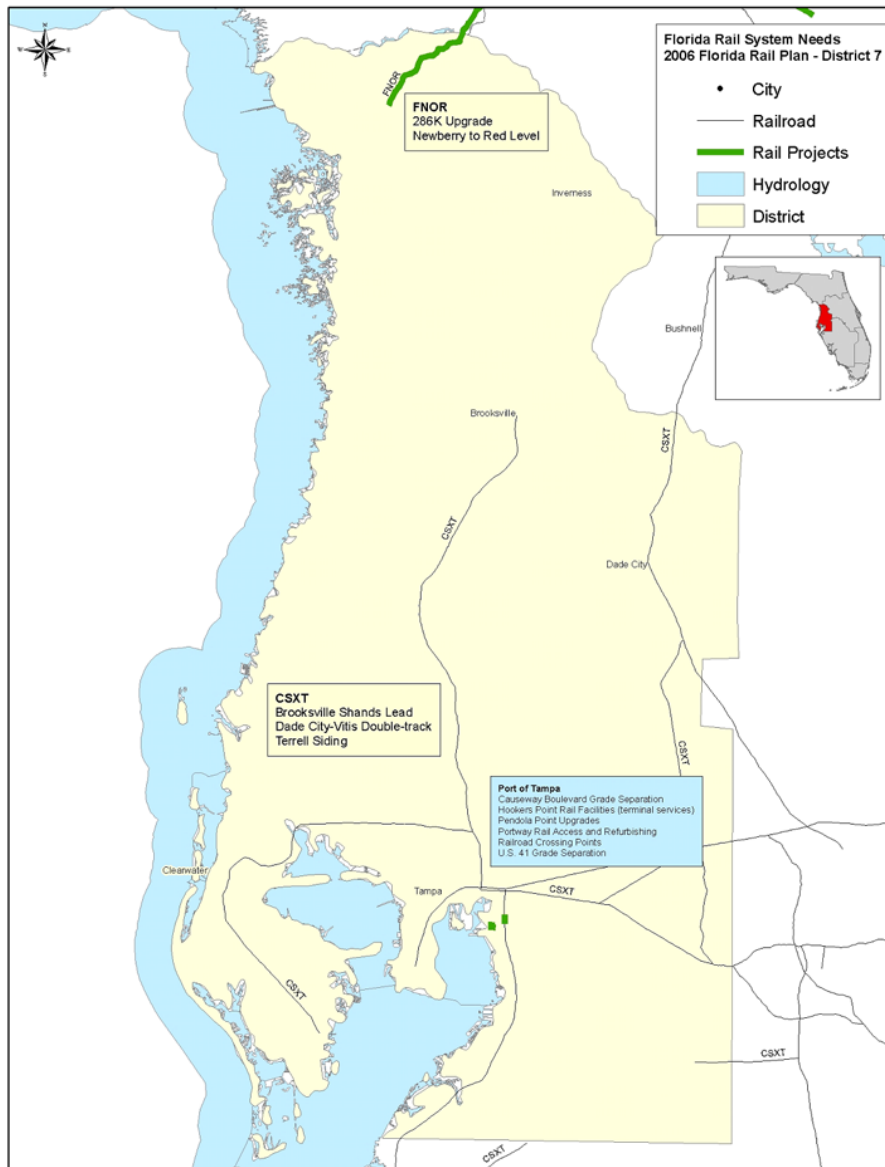


District 7 – Tampa Bay and West Central Florida

Five counties comprise District 7, which includes the Tampa-St. Petersburg-Clearwater urbanized area. Just over \$43 million in needed rail improvements were identified, including \$26 million in road-rail grade crossing projects to enhance safety and improve mobility. Another \$7.3 million is needed for on-port rail improvements at the Port of

Tampa, including refurbishment of existing trackage and industrial access. (See Figure 6.7)

Figure 6.7 District 7 Rail Projects



Multiple Districts

There are \$435 million in projects spanning two or more districts. These are typically large corridor improvement proposals, such as the \$16 million project to upgrade the signaling system on the Florida East Coast Railway, or systematic upgrades, such as the \$2 million

FEC systemwide bridge rehabilitation project. Most of the multiple district needs are the bundle of needs under the CSXT capacity expansion projects. Although these needs do have specific locations, as previously noted, these needs are still subject to change and individual costs are not available. Multiple district projects are noted in the comprehensive table of needs (Table 6.5).

■ 6.6 Detailed Needs Table

Table 6.5 contains the detailed needs identified by freight stakeholders participating in the Florida Freight Rail Plan 2006 Update. The following table presents, in detail, every project identified through the process described in this report. The table is sorted by railroad or port and then by district. Each project is further identified by the following attributes:

- District(s);
- Category (Maintenance and Repair, Safety and Security, etc.);
- Railroad or Port;
- Project Name;
- Location;
- Project Description;
- Cost estimate (in current 2006 dollars);
- Timeframe;
- Source; and
- Notes.

The information contained in the detailed needs table has been edited for length and clarity but otherwise represents the extent of information provided by the stakeholder participants in the needs identification process. Thus, some cells are blank and, for some needs, there is a lack of cost estimates and other information that may become available in the future. There also is a difference, by stakeholder, in the amount of detail provided; e.g., some railroads might have included milepost information as part of the location description while others made general references to counties.

Table 6.5 Detailed Projects and Needs by Railroad
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
3	●									Alabama and Gulf Coast Railroad	Florida Upgrade	Escambia County	Replace crossties, install switch ties, add ballast, surface the line, and birch cut (approximately 28.2 miles)	1,303	2007	Alabama and Gulf Coast Railroad	Provides rail link between Port of Pensacola and national/U.S. rail network and is primary outbound rail line for Federal humanitarian shipments. The line also provides emergency redundancy for the CSXT line.
3	●									Alabama and Gulf Coast Railroad	Florida Upgrade-Bridges	Escambia County	Rebuild one bridge and rehabilitate one bridge	359	2007	Alabama and Gulf Coast Railroad	Provides rail link between Port of Pensacola and national/U.S. rail network and is primary outbound rail line for Federal humanitarian shipments. The line also provides emergency redundancy for the CSXT line.
3	●									Alabama and Gulf Coast Railroad	Florida Upgrade-Pensacola Yard	Pensacola, off Pace Boulevard	Rebuild four tracks at the Pensacola Yard	393	2007	Alabama and Gulf Coast Railroad	Provides rail link between Port of Pensacola and national/U.S. rail network and is primary outbound rail line for Federal humanitarian shipments. The line also provides emergency redundancy for the CSXT line.
3	●									AN Railroad	Bridge Program	Various Locations	Timber trestle repairs and upgrades	1,500		AN Railroad	
3	●									Bay Line Railroad	Mainline Upgrade	Bay and Jackson Counties	Relay and rehab all existing 90# rail left in mainline	7,600		Bay Line Railroad	
3					●					Bay Line Railroad	Port Panama City Intermodal Distribution Center Connector Upgrade	Bay County	Upgrade 15.75 miles of track between Port Panama City and Port Panama City Intermodal Distribution Center	7,220		Bay Line Railroad	In progress.
3	●									Bay Line Railroad	Tie and Surface Program	Bay and Jackson Counties	Replace crossties on mainline	2,350		Bay Line Railroad	Will be done outside of existing grant area and outside of other mainline project.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
3	●									Bay Line Railroad	Upgrade Port Panama City Intermodal Distribution Center Access Track	Bay County	Rehabilitate side track (Majette passing track on east side of Bay Line, along western boundary of Panama City Intermodal Distribution Center (track is 5,494 feet in length)	754		Bay Line Railroad	In Progress. Track provides the only access to the Port Panama City Intermodal Dist. Center.
1						●			●	CSXT	Bartow Yard Tracks	Polk County	Florida Improvement Plan	Included in \$46 million FDOT funding		FDOT	Pending 50% FDOT funding.
1						●			●	CSXT	Bradenton Yard Tracks		Florida Improvement Plan	Included in \$46 million FDOT funding		FDOT	Pending 50% FDOT funding.
1						●			●	CSXT	Bradley Track/Siding		Florida Improvement Plan	Included in \$46 million FDOT funding		FDOT	Pending 50% FDOT funding.
1						●			●	CSXT	Eaton Park - CH Sub and Hydromine Spur		Florida Improvement Plan	Included in \$46 million FDOT funding		FDOT	Pending 50% FDOT funding.
1					●				●	CSXT	Growth Management	Desoto, Charlotte, Lee, and Collier	Growth Management Program	43,000	2007-2014	FDOT	Pending FDOT and Local funding.
1						●			●	CSXT	Lakeland Crossovers		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
1								●	●	CSXT	Roadway improvements into Winter Haven ILC	Winter Haven, Polk County	Improve landside access into Winter Haven ILC. Add Logistics Center and move existing auto yard from North Orlando.	9,000	2008/1	FDOT	
1						●			●	CSXT	West Lake Wales Yard	Polk County	Florida Improvement Plan	Included in \$46 million FDOT funding		FDOT	Pending 50% FDOT funding.
5							●		●	CSXT	Relocate Taft Yard	Orlando	Relocate Taft Yard to Winter Haven ILC	23,000		FDOT	
5							●		●	CSXT	Improve Rand Yard	Sanford	Make improvements to Rand Yard	6,000		FDOT	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2						●			●	CSXT	Baldwin Second Track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Baldwin Grade Separation at U.S. 301	Duval County	Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
2						●			●	CSXT	Baldwin West Storage Lead		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
2						●			●	CSXT	Baldwin-Fouraker		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Brooker Crossovers		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Fouraker Siding		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
2		●							●	CSXT	Grade Separation	SR 20		Included in \$145 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2		●							●	CSXT	Grade Separation	SR 26		Included in \$145 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Hawthorne Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Highland Crossovers		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Honeymoon Connection		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2						●			●	CSXT	Jacksonville Amtrak Crossovers	Jacksonville	Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
2						●			●	CSXT	Lochloosa Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Newnan Double-track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Northwood Wye	FEC Railway/ West Palm Beach	Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
2						●			●	CSXT	Starke Crossovers		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Stokes Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Whitehouse Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2						●			●	CSXT	Whitehouse-East Pass Double-track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
3						●			●	CSXT	Aucilla - Flomaton TCS		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
3						●			●	CSXT	Baldwin - Aucilla TCS		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
3						●			●	CSXT	Cypress Siding		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
3						●			●	CSXT	Flomaton siding		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
3						●			●	CSXT	Westville Siding		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
4						●			●	CSXT	Mission Spur		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
4	●								●	CSXT	Replacement of Bascule Bridge	New River (Ft. Lauderdale)	South Florida Rail Corridor bridge	-	2012/2014	FDOT	
5						●				CSXT	Anthony Siding		Central Florida Freight Rail Capacity Project	6,210 (included in \$198 million)		FDOT	Approved for FDOT SIS funding.
5		●							●	CSXT	Grade Separation	CR 464		Included in \$145 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5		●							●	CSXT	Grade Separation	SR 44		Included in \$145 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5		●							●	CSXT	Grade Separation	U.S. 301		Included in \$145 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5						●			●	CSXT	Ocala Double-track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5						●			●	CSXT	Santos Double-track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5						●			●	CSXT	Summerfield Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
5						●				CSXT	Wildwood Siding/ Crossovers		Central Florida Freight Rail Capacity Project	3,314 (included in \$198 million)	2007/2008	FDOT	Approved for FDOT SIS funding.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
5						●			●	CSXT	Wildwood-Summerfield		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
6						●			●	CSXT	Hialeah - Iris Connection	Miami Dade County	Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
6						●			●	CSXT	Oleander Connection		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
6						●			●	CSXT	Sterling - Homestead		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
7						●			●	CSXT	Brooksville Shands Lead		Florida Improvement Plan	Included in \$46 million FDOT funding for improvement plan projects		FDOT	Pending 50% FDOT funding.
7						●			●	CSXT	Dade City-Vitis Double-track		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
7						●			●	CSXT	Terrell Siding		Central Florida Freight Rail Capacity Project	Included in \$198 million FDOT funding for capacity projects		FDOT	Pending FDOT funding at 100%.
2	●									First Coast Railroad	Amelia River Bridge Rehabilitation Projects	MP 43.2	reconstruction, improvements to safety features, recondition mechanism	1,900		FDOT	
2	●									First Coast Railroad	Fernandina Yard Rehabilitation	Nassau County	Tie and surface 12 miles of track	1,100		FDOT	Will increase reliability and safety of rail operations.
2							●			First Coast Railroad	First Coast Nassau County Intermodal Terminal	Gross, Nassau County (MP S605.20 - S606.24)	Develop intermodal terminal to serve rail and truck opportunities	5,000		FDOT	
2	●									First Coast Railroad	Tie and Surface Program	Fernandina to Yulee	Replace crossties on mainline	1,100		FDOT	
5					●					Florida Central Railroad	286K Upgrade	Plymouth to Orlando		9,660	2007	FDOT	2006-2011 SIS Funding.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance & Repair	Grade Crossing	Safety & Security	Signal Systems	Line Upgrade & Extension	CSXT Capacity Expansion	Facility Upgrade & Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
5					●					Florida Central Railroad	Upgrade to 286/316k standards		\$3,400,000 for track (17 miles at \$200,000 per mile) and \$3,600,000 for ties and resurfacing (60 miles at \$60,000 per mile)	7,000	less than 5 years	FDOT	
2					●					Florida East Coast Railway Company	Bowden Yard Bypass	Bowden Yard, Jacksonville, 3.04 miles; mile marker 5.4 (Reba Street) to 8.44 (Mobile Gas)	Construction of 3.04 miles of track to serve as a double track around the Bowden Rail Yard to allow through trains to avoid the yard. This will reduce delays for trains and vehicular traffic and create efficiencies for all Florida rail movements along the east coast	7,097	5 to 10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
2					●					Florida East Coast Railway Company	Construct mile long storage track off Magnolia siding			2,290		Cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
2					●					Florida East Coast Railway Company	Double Track from Sunbeam Road to Bayard	Sunbeam Drive to Bayard Road, Jacksonville, 5.7 miles; mile marker 9.7 to 15.4.	Construction of 5.7 miles of new track adjacent to the existing single line track, including double tracking of four bridges. The project will connect two existing side tracks to create a stretch of double track that will allow for more efficient movement for the 20 daily trains that move through the area each day by decreasing wait time for Bowden Yard trains to exit southbound. Vehicular crossing time will be reduced at cross streets	11,500	07/08	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2								●		Florida East Coast Railway Company	Improve Bowden Intermodal Facility Ingress / Egress for Trucks	Bowden Yard, Jacksonville, 0.3 miles; mile markers 5.29 to 5.55. The new ingress/egress will be located along the north end of the yard near Gordon Street	Relocate the ingress/egress point for the Bowden Yard approximately 420 feet to the north of the existing point along U.S. 1 near Gordon St. The new configuration should maximize the ease of circulation and cargo transfers and reduce the potential for truck-train accidents. A reconfigured circulation pattern will keep trucks on the north and west boundaries of the yard and off of US 1	250	5 to 10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT" (Total cost for improvements to Hialeah and Bowden = \$500,000; split for convenience)	
2			●							Florida East Coast Railway Company	Improve Bowden Intermodal Facility Security			500		Cost estimate from memo: "FEC Estimate for Priority Needs for FDOT" (Total cost for improvements to Hialeah and Bowden = \$1,000,000; split for convenience)	
2							●			Florida East Coast Railway Company	TOFC Extension Bowden Yard	Bowden Yard, Jacksonville, 0.6 miles; mile markers 4.56 to 5.15	Move crossovers and extend the lead track so that traffic in the main yard does not get congested. Project will expand the capacity of the Bowden Intermodal Facility and improve the connectivity of the FEC with CSX and NS. The project will improve throughput capacity and reduce the number of trucks that backup outside the Bowden Yard, especially for the crossings on the south of the yard	3,000	5 to 10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
4					●					Florida East Coast Railway Company	Double Track from Hypoluxo to Villa Rica	MP 311.30 to MP 319.60		1,500	2007/2008	FDOT	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade & Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
4					●					Florida East Coast Railway Company	Double Track from Hypoluxo to Villa Rica	Hypoluxo to Villa Rica (Boca) 8.3 miles	Connection of two existing side tracks, including two bridges, to create a stretch of double track that will allow for more efficient movement of the 22 daily trains that use the segment and reduce vehicular delays at the segment's 22 at-grade crossings	21,146	2007/2008	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
4					●					Florida East Coast Railway Company	Double track Gifford to Indrio			37,118		"FEC Estimate for Priority Needs for FDOT"	
4					●					Florida East Coast Railway Company	Double track K Branch at Ft. Pierce	MP 0 to MP 7		26,204		Cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
4					●					Florida East Coast Railway Company	Double Track White City to Rio	MP 246.4 - 257.1	Double track 10.7 miles of tract south of Ft. Pierce to north Rio (Stuart)	31,679	2011/2016	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
4							●			Florida East Coast Railway Company	Expand / Rebuild TOFC in Ft. Pierce	Fort Pierce, 1.5 miles; mile markers 242 and 243	Repair and reconstruct the existing TOFC facility to accommodate new intermodal growth associated with a proposed Wal-Mart Distribution facility and other distribution facilities that will likely follow Wal-Mart	8,250	5- 10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
5					●					Florida East Coast Railway Company	Double Track from Indian River South to Frontenac	Indian River to North Frontenac, 6.1 miles from mile markers 158 to 164.1	Construction of 6.1 new miles of track adjacent to the existing single line track and the Frontenac Intermodal Facility to connect two existing side tracks to create a stretch of double track that will allow for more efficient movement of the 20 daily trains that use the segment and reduce vehicular delays. The principal cause of the delays is a regular stop by a train carrying autos at Frontenac - which stops for an average of one hour - blocking traffic on the single track	14,400	2007	FEC Railway Strategic Intermodal System Project Needs Request	This project is the top priority of the FEC for improving operational efficiency and reducing vehicular delays. Costs from the report: Double Tracking From Indian River to North Frontenac. Total private funds: \$6,140,598; total matching funds requested: \$6,140,597. New cost (\$13.2M) from "FEC Estimate for Priority Needs for FDOT."
5					●					Florida East Coast Railway Company	Double track Frontenac to City Point			7,596	2007/2008	Cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
5					●					Florida East Coast Railway Company	Double Track Harwood to Holly Hill	MP 98.0-105.1	Construction of 7.1 miles of double track and two new railroad bridges	30,171	10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
5					●					Florida East Coast Railway Company	Double track S. Spruce Creek to N. New Smyrna Beach			15,713		Cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	
5					●					Florida East Coast Railway Company	Pineda Turnout	MP 180.5-178.8	Relocate North Pineda turnout north to MP 178.8 and construct two additional miles of track	4,704	5-10 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
6					●					Florida East Coast Railway Company	Double Track from South Ojus to N. Miami	North Miami to South Ojus, 4.3 miles; mile marker 353.25 (South Ojus) to 357.6 (North Miami)	Connection of two existing side tracks, including 3 bridges, to create a stretch of double track that will allow for more efficient movement of the 17 daily trains that use the segment and reduce vehicular delays at the segment's 9 at-grade crossings	15,055	5 years	FEC Railway Strategic Intermodal System Project Needs Request; cost estimate from memo: "FEC Estimate for Priority Needs for FDOT"	This project is one of the top priorities for the FEC for improving efficiency and reducing vehicular delays. The annual cost of delays at these 9) at-grade crossings has been estimated at over \$900,000 annually. This project was an unfunded Transportation Outreach Project Request in 2002/2003.
6					●					Florida East Coast Railway Company	Double Track the Medley Lead	Medley Lead, Hialeah, 5.4 miles; mile marker 0 of the Medley Lead to 5.4	Construction of 5.4 miles of new track adjacent to the existing single line track, including the construction of 1 bridge. This project is a companion project of the North leg Wye at the Hialeah Rail Yard and will enable trains to increase speed through 13 at-grade crossings to reduce vehicular congestion and enhance efficiency	1,540	2007	"FEC Estimate for Priority Needs for FDOT"	The North Leg Wye will allow trains to move from the Medley Lead to the east without stopping at the Hialeah Rail Yard.
6								●		Florida East Coast Railway Company	Improve Hialeah Intermodal Facility Ingress / Egress for Trucks; security			500		cost estimate from memo: "FEC Estimate for Priority Needs for FDOT" (Total cost for improvements to Hialeah and Bowden = \$1,000,000; split for convenience)	
6	●								●	Florida East Coast Railway Company	Miami Canal Bridge	Miami		1,250	2008	FDOT	
2,4,5,6	●									Florida East Coast Railway Company	Systemwide bridge rehabilitation	Stewart, Jupiter @ Ft. Lauderdale		2,000		"FEC Estimate for Priority Needs for FDOT"	
2,4,5,6				●						Florida East Coast Railway Company	Upgrade ATC Signal System			16,000		"FEC Estimate for Priority Needs for FDOT"	
4,5					●					Florida East Coast Railway Company	Double track Micco to Gifford			24,002	2008	"FEC Estimate for Priority Needs for FDOT"	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
1					●					Florida Midland Railroad	Upgrade to 286/316k standards		\$6,000,000 for track (27 miles at \$200,000 per mile) and \$1,800,000 for ties and resurfacing (30 miles at \$60,000 per mile)	7,800	less than 5 years	Florida Midland Railroad	
5							●			Florida Northern Railroad	Unloading Facilities		2 planned, both at Candler (EOL) chemical and lumber unloading	-		Florida Northern Railroad	
5					●					Florida Northern Railroad	Upgrade to 286/316k standards		\$6,000,000 for track (30 miles at \$200,000 per mile) and \$1,800,000 for ties and resurfacing (30 miles at \$60,000 per mile)	7,800	less than 5 years	Florida Northern Railroad	
2,5,7					●					Florida Northern Railroad	286K Upgrade	Newberry to Red Level		4,000	2008	Florida Northern Railroad	2006-2011 SIS Funding.
2					●					Georgia and Florida Railway	Upgrades to access new coal power plant in Foley, FL	Adel, GA to Foley, FL	Upgrade rail, ties, and resurfacing for 77 miles of track	14,000	2010	Norfolk Southern Railroad	To support new coal plant in Foley, FL.
2							●			Jacksonville Transportation Authority/Amtrak	Jacksonville Transportation Center	Jacksonville	Provide access between CSXT and FEC mainlines and the proposed Jacksonville Transportation Center	\$34,000	Less than 5 years	FDOT, District 2	Cost estimate is in 2007 dollars
2		●								Norfolk Southern Railway	Overpass	Old Kings Road, MP 255.5G	Project to make full siding available for train meets requiring more than a short stop	4,000	2011/2012	Norfolk Southern Railroad	
2		●								Norfolk Southern Railway	Overpass	Fairfax Avenue, MP SL 2.1		6,000	2013/2014	Norfolk Southern Railroad	
2		●								Norfolk Southern Railway	Overpass	Wigmore Street, MP SL 5.86	Build overpass to reduce traffic conflicts	7,000	2012/2013	Norfolk Southern Railroad	Expected increases in port traffic will produce excessive vehicle and train traffic conflicts at this location. A grade separation at this location will improve consistency of traffic flow and emergency vehicle response times while increasing capacity and fluidity on our Springfield Lead to the port.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2		●								Norfolk Southern Railway	Overpass	Huron and 12th Streets (MP 258.8G)		9,000	2013/2014	Norfolk Southern Railroad	Will provide access to property owners in area who are currently cut off by train movements. Will also allow for five grade crossings to be closed at: Old Kings Road, MP 258.3G, DOT # 713556M; 20th Street, MP 258.44G, DOT # 713557U; St. Clair Street, MP 258.65G, DOT # 713562R, 20th Street, south leg of wye track to SL line, DOT # unknown, and Old Kings Road, south leg of wye track to SL line, DOT # unknown.
2		●								Norfolk Southern Railway	Overpass	N. Main Street (US 17), MP SL 4.15		10,000	2015/2016	Norfolk Southern Railroad	
2					●					Norfolk Southern Railway	Siding Extension	Lacey, FL	Build passing siding	5,000	2008	Norfolk Southern Railroad	
2							●			Norfolk Southern Railway	SIS Connector	Soutel Road to Simpson Yard	New access road	5,000	2011/2012	Norfolk Southern Railroad	This road would allow both NS and CSX to close our grade crossings (double track) at Edgewood Road (NS DOT # 713553S). This would improve operating options for both railroads and reduce traffic delays to intermodal traffic to and from Simpson Yard that can currently be delayed by either CSX or NS trains (sometimes both).
2	●									Norfolk Southern Railway	Tie & Surface Program	NS Yard		1,000	2009	Norfolk Southern Railroad	
2	●									Norfolk Southern Railway	Tie & Surface Program	Navair, Florida to Valdosta, Georgia	Insert ties and resurface between Navair, Florida and Valdosta, Georgia (28.8 miles total, 24.8 in Florida)	2,000	2008	Norfolk Southern Railroad	
2				●						Norfolk Southern Railway	Traffic Control	Westlake to lacy (MP 252.0G to 254.5G)	Install three power switches and TC for Duval Interlocking	5,000	2011/2012	Norfolk Southern Railroad	Provide visibility of all NS and CSX trains in the area of Duval Interlocking in order for the NS dispatcher to control and regulate conflicting train movements at this location more efficiently.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2				●						Norfolk Southern Railway	Traffic Control	Crawford, MP 244.0G to 245.5G	Install two power switches and signal siding for NS and CSX	6,000	2012/2013	Norfolk Southern Railroad	Provide visibility of all NS and CSX trains in the area of the Crawford Interlocking in order for the dispatcher to control and regulate conflicting train movements at this location more efficiently.
2				●						Norfolk Southern Railway	Traffic Control	Various Locations	On mainline and Springfield Lead not already upgraded via previous projects (approximately 25 miles)	15,000	2015/2016	Norfolk Southern Railroad	
2				●						Norfolk Southern Railway	Traffic Control	FJ Interlocking, MP SL 4.8		2012/2013	Norfolk Southern Railroad	Provide visibility of all NS and CSX trains at FJ Interlocking in order for the NS Dispatcher to control and regulate conflicting movements at this location more efficiently and to minimize vehicle traffic delays on 21st Street from train operations at this location.	
2				●						Norfolk Southern Railway	Traffic Control/Siding work	Eddy	Extend siding at Eddy and install TC, MP 215.0G to 217.7G, to include two power switches and signal siding	4,500	2013/2014	Norfolk Southern Railroad	Addition in anticipation of expected growth in train traffic. Will improve capacity and fluidity of train traffic in and out of Jacksonville.
2				●						Norfolk Southern Railway	Traffic Control/Siding work	North Division Street to Myrtle Avenue on Springfield Lead	Extend siding (1.6+/- miles) to include TC, two power switches and signal siding	6,000	2013/2014	Norfolk Southern Railroad	Expected increases in port traffic will produce train conflicts on this line that must be addressed with a longer passing siding and visibility of trains by NS dispatcher in order to minimize train and vehicle traffic delays in this area.

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
4		●							●	Port Everglades	Eller Drive Overpass	Eastern terminus of I-595 where it transitions into Eller Drive in Broward County (Eller Drive from east of the I-595/U.S. 1 interchange to McIntosh Road)	Construction of an overpass over a proposed spur of the FEC to serve a proposed 40 acre Intermodal Container Transfer Facility.	36,800	2004 to 2010	Port Everglades	Pending funding approval by FDOT SIS. The overpass will separate rail activities from highway traffic to the port (cruise and cargo) to provide safety and efficiency.
4							●			Port Everglades	Intermodal Container Transfer Facility	Southport area of Port Everglades in Broward County (south of Eller Drive and west of McIntosh Road)	The development of an approximately 40 acre Intermodal Container Transfer Facility in Southport which would connect to the FEC main line through a rail spur	35,500	Begin 2012	Port Everglades	The ICTF project cost estimate does not include the costs associated with equipment that is necessary to operate an ICTF. The \$25 million cost is for the development of the land and the proposed rail spur which will come from the north side of Eller Drive all the way down to the proposed ICTF in Southport. Will provide the port with its first ship-to-rail conveyance facilities for containerized cargo thereby eliminating the current practice of intermediate drayage to a rail transfer facility.
1							●			Port Manatee	Port/CSX Interchange Holding	Port Manatee	Holding tracks at Port/CSX Interchange	1,130		Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	
1					●					Port Manatee	South Dock St. Extension	Port Manatee	Extension of trackage to parallel South Dock Street	750		Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
2					●					Port of Jacksonville	Blount Island off-terminal improvements	Port of Jacksonville	Blount Island off-terminal improvements, portions of overall rail plan	-		Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	
2					●					Port of Jacksonville	Blount Island Rail Loop	Port of Jacksonville	Blount Island Rail Loop	2,500		A Five-Year Plan to Accomplish the Mission of Florida's Seaports, 2000/2001-2004/2005 (2001), Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	
2								●		Port of Jacksonville	Dames Point Trackage	Port of Jacksonville - Dames Point Terminal	Provide rail access for new terminal development	2,500		Rail Connectivity Needs Assessment	
2					●					Port of Jacksonville	East loop of rail area (Container Way)	Port of Jacksonville	East loop of rail area (Container Way)	780		Florida Rail System Plan (2002)	
2							●			Port of Jacksonville	Intermodal and Double-stack access and Service	Blount Island and Dames Point		-			
2							●			Port of Jacksonville	Oil terminal rail yard	Port of Jacksonville	Oil terminal rail yard	1,850		Florida Rail System Plan (2002)	
2					●					Port of Jacksonville	Rail link at CFS Corp	Port of Jacksonville	Rail link at CFS Corp	280		Florida Rail System Plan (2002)	
2							●			Port of Jacksonville	Talleyrand Terminal Trackage	Port of Jacksonville - Talleyrand Terminal	A holding yard and a second lead track to the facility (parallel to the existing track) to support on-dock operations and increase access flexibility	4,850		Rail Connectivity Needs Assessment	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
6					●					Port of Miami	Airport/Seaport rail Link (east/west corridor)	Port of Miami	Airport/Seaport rail Link (east/west corridor)	-		Port of Miami Master Development Plan (2000), Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	
6	●									Port of Miami	Bridge Repairs	Port of Miami	Repairs to the existing rail bridge, including upgrades, sign, lights, and controls, etc.	500		FDOT	Rail Connectivity Needs Assessment discusses a variety of rail access improvements above and beyond those included here.
6							●			Port of Miami	On-port railroad marshalling yard	Port of Miami	On-port railroad marshalling yard	-		FSTED Future Planned Major Port Projects and Intermodal Connectors (2003)	
6					●					Port of Miami	Track Extension	Port of Miami	Track extension to serve the Port of Miami Terminal Operating Companies (POMTOC) and Maersk, including 4,000 feet of track (3 spurs)	1,500		FDOT	Rail Connectivity Needs Assessment discusses a variety of rail access improvements above and beyond those included here.
4					●					Port of Palm Beach	Interchange Rail Extension	Port of Palm Beach (north of 13th Street to south of SR 710)	Reconstruction of FEC rail to improve efficiency and safety by reducing amount of switches and directional moves performed. Would also reduce traffic congestion for City of Riviera Beach and the Port of Palm Beach	2,500	1 year	Port of Palm Beach	Rail Connectivity Needs Assessment estimated cost for "lead track capacity" \$1.8m.
4							●			Port of Palm Beach	Intermodal rail improvements	Port of Palm Beach	Intermodal rail improvements	4,956		FY 2004 FSTED Project Applications	
4							●			Port of Palm Beach	Intermodal Staging		Yard rebuild	-		Port of Palm Beach	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
4							●			Port of Palm Beach	North Yard Rail Extension	Tropical Terminal - Port of Palm Beach	North Yard rail extension to allow direct discharge of containers to/from terminal and railcars to facilitate transfer of cargo for Tropical Shipping	-		Port of Palm Beach	
4					●					Port of Palm Beach	Off-port intermodal rail improvements	Port of Palm Beach	Off-port intermodal rail improvements	7,150		FY 2004 FSTED Project Applications	
4					●					Port of Palm Beach	On-port intermodal rail improvements	Port of Palm Beach	On-port intermodal rail improvements	6,300		FSTED Future Planned Major Port Projects and Intermodal Connectors (2003), FY 2004 FSTED Project Applications	
4					●					Port of Palm Beach	Railroad Access to Inland Port		Railroad Access to Inland Port	-		Port of Palm Beach	
3					●					Port of Pensacola	Waterfront rail spur revitalization	Port of Pensacola	Revitalize rail spur at waterfront complex	-		Year 2020 Florida Statewide Intermodal System Plan - Interim Final Report (2000)	
7		●								Port of Tampa	Causeway Boulevard Overpass	Causeway Boulevard and CSXT at the Port of Tampa	Grade separation for Causeway Boulevard, a major connector to I-75 for port traffic, over main Tampa-Bradenton CSXT line that feeds both port and private terminals	15,000		Rail Connectivity Needs Assessment	
7					●					Port of Tampa	Eastport rail track extension	Port of Tampa	Eastport rail track extension	2,000		Port of Tampa	
7							●			Port of Tampa	Hookers Point Rail Facilities	Port of Tampa	Development of rail facilities on Hookers Point	2,000		Master Plan Update (2000)	
7					●					Port of Tampa	Pendola Point upgrades	Port of Tampa	Pendola Point upgrades	2,000		Port of Tampa	
7					●					Port of Tampa	Portway Rail Access and Refurbishing	Port of Tampa	Portway rail access to berths and industrial parcels, and refurbishing of existing rail segments for Hookers Point, Point Sutton, Pendola, or Port Redwing	7,300		Strategic Investment Plan to Implement the Intermodal Access Needs of Florida's Seaports (Landside Access Study), Parts I and II (1998)	

Table 6.5 Detailed Projects and Needs by Railroad (continued)
Thousands of 2006 Dollars

FDOT District	Maintenance and Repair	Grade Crossing	Safety and Security	Signal Systems	Line Upgrade and Extension	CSXT Capacity Expansion	Facility Upgrade and Expansion	Landside Access	Pending Approval for State Funding	Railroad or Port	Project Name	Location	Description	Cost Estimate (\$1,000 of 2006 Dollars)	Timeframe	Source	Notes
7		●								Port of Tampa	Railroad crossing projects	Various locations	7 existing railroad crossings that require immediate to short term attention	4,000		Port of Tampa	
7		●								Port of Tampa	U.S. 41 Overpass	U.S. 41 and CSXT at the Port of Tampa	Overpass to carry U.S. 41 over CSXT port lead tracks that now cross at-grade reduce vehicle delay of cargo and non-port traffic at the crossing	11,000		Rail Connectivity Needs Assessment	Some U.S. 41 improvements recently received funding through FDOT's SIS Program.
1					●					South Central Florida Express	Sebring to Moore Haven Prime Rail	Sebring to Moore Haven	New prime rail (51 miles) – Funded	14,000	2008	South Central Florida Express	Attract new business and improve infrastructure of railroad.
1					●					South Central Florida Express	Sebring to Moore Haven Relay Rail	Sebring to Moore Haven	Upgrade relay rail including 11 turnouts (51 miles) – Funded	12,316	2008	South Central Florida Express	Attract new business and improve infrastructure of railroad .
4					●					South Central Florida Express	Bryant Rail Upgrade	East of Belle Glade and Pahokee, FL	Upgrade to U.S. Sugar track to access a 4,000 acre mine	13,300	2008	FDOT	Track is owned by U.S. Sugar, which is the parent corporation of SCFE.
4							●			Tri-Rail	Station Improvements	Delray, Ft. Lauderdale, Pompano		1,156	2007/2008	FDOT	
4							●			Tri-Rail	Station Improvements	Delray, Ft. Lauderdale, Pompano		10,332	2008/2009	FDOT	
6							●			Tri-Rail	Tri-Rail/Metrorail Transfer Center	Delray, Ft. Lauderdale, Pompano		896	2009/2010	FDOT	

7.0 Rationale For Investment of Public Funds in the Freight Railroads

The U.S. freight railroads are almost entirely privately owned, for-profit companies. Within Florida all of the freight rail operators are private industries. Despite this private ownership, the rail industry provides numerous public benefits that warrant taxpayer participation in capital improvements. These range from economic development, to reduced highway congestion, to improved environmental quality and safety. When the benefits to the public exceed the taxpayer funding for a project, it is appropriate to use tax dollars on these facilities. This is consistent with the public-private partnerships defined in 343.875 of the Florida Statutes.

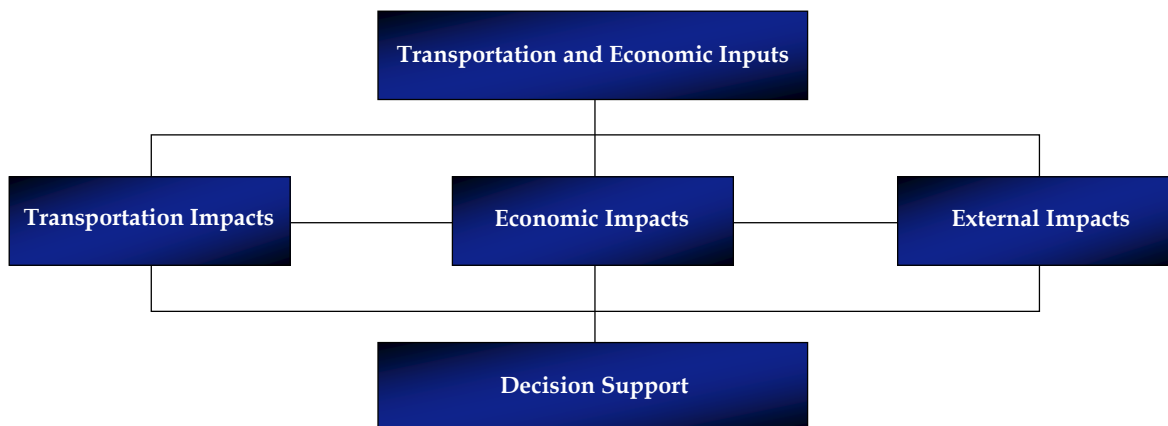
To determine when projects meet these criteria, this section first describes how public benefits can be measured and quantified using a Freight Rail Investment Calculator developed for FDOT. This calculator forms one component of the overall decision process of how public funds should best be invested to spur economic growth and enhance freight and passenger mobility in Florida. Following the description of the calculator are two case studies: the Winter Haven integrated logistics center; and a track upgrade project for the South Central Florida Express. These case studies are based on real data and illustrate the benefits of investment in the freight railroads, while also providing further insights into the overall decision process of investment of public funds.

■ 7.1 The Florida Freight Rail Investment Calculator

The question that always arises when contemplating public sector investments in the privately owned freight railroads is “what does the public gain?” One framework for establishing the public value of investment in the rail system is depicted in Figure 7.1.¹ This figure provides a convenient framework for describing how freight rail investments can be converted into public benefits, and how a portfolio of projects can be selected for public investments.

¹ Adapted from “Return on Investment on Freight Rail Capacity Improvement,” National Cooperative Highway Research Program Project 08-36, Task 43, Transportation Research Board, April 2005.

Figure 7.1 Framework for Evaluating Transportation Investments



- **Transportation and Economic Inputs** - Investments in transportation infrastructure are expected to generate system improvements and/or spur economic development. Estimates of these impacts become the inputs into the benefits calculations.
- **Transportation Impacts** - Determines the transportation-related benefits from the proposed improvements. This includes reduced highway maintenance costs and reduced shipper costs.
- **External Impacts** - Includes non-transportation benefits attributable to transportation improvements. These include safety, security, and environmental impacts.
- **Economic Impacts** - Converts the various impact measures into direct and indirect economic benefits. This includes job creation, income taxes, and reductions in passenger delays.
- **Decision Support** - Combines the above benefits and generates output used to evaluate and help determine the best allocation of public investments.

This framework is consistent with Florida’s Strategic Intermodal System (SIS) goals:

1. **Safety and Security** - A component of external impacts;
2. **System Preservation** - Not explicitly modeled, but can be considered an external impact and a future transportation impact;
3. **Intermodal Mobility** - A component of transportation impacts;
4. **Economic Enhancement** - The same as economic impacts; and

5. **Quality of Life** – A component of transportation impacts (congestion mitigation), external impacts (environmental and safety), and economic impacts (jobs and economic growth).

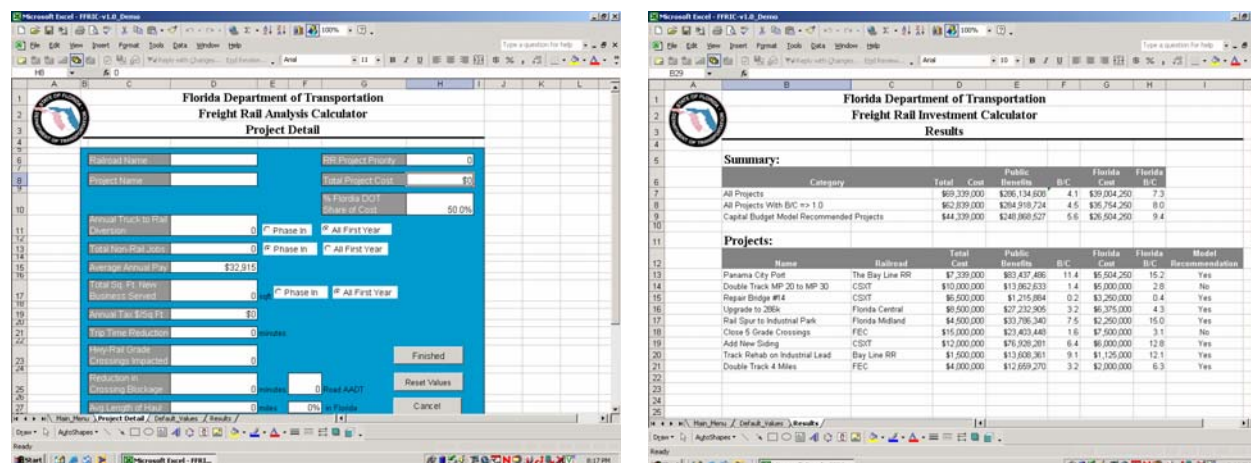
Cambridge Systematics adapted the evaluation framework in Figure 7.1 into a Microsoft Excel-based Capital Budget Model Decision Support System for the FDOT. Specifically the software quantifies the public benefits accruing from:

- Transportation Impacts:
 - Avoided Highway Maintenance Costs;
 - Shipper Logistics Costs; and
 - Highway Delay at Rail-Highway Grade Crossings.
- Economic Impacts:
 - New or Retained Jobs; and
 - Tax Increases from Industrial Development.
- External Impacts:
 - Highway Safety Improvements; and
 - Environmental Quality Improvements.

The software calculates the benefit/cost ratio for each project, considering the factors listed above and the time-value of money. A Capital Budget Model is then run to select the combination of projects that maximizes the public benefits resulting from every dollar invested in the rail system. Figure 7.2 contains screen shots of the model developed for Florida DOT.

The Freight Rail Investment Calculator is one part of the overall decision process of how public funds should best be invested to spur economic growth and enhance freight and passenger mobility in Florida. The following case studies provide further insight into the decision process, and illustrate the benefits of investment in the freight railroads.

Figure 7.2 Freight Rail Investment Calculator: Project Detail Entry Screen and Final Report Screen
Projects are illustrative and not based on real data



7.2 Case Study 1: CSX Transportation Integrated Logistics Center in Winter Haven, Florida

Case Study 1: Background

CSX Transportation serves the Orlando, Tampa, and Central Florida markets with rail yards within Orlando and Tampa. The problem is that the population in this region continues growing at a rapid pace, straining all of the existing transportation infrastructure. Urban rail yards, such as Taft Yard in Orlando, have little room for expansion to support this growth.

A solution is to build a new rail facility outside the urban boundaries, and then use local trucks or rail to serve current and new customers. A popular concept in Europe, that has been increasingly adopted in the United States, is integrated logistics centers (ILC). ILCs, sometimes referred to as freight villages or logistics parks, provide a hub where long-distance transportation services connect with local pick-up and delivery services. For outbound movements, the ILC acts as a local collector, consolidating a sufficient density of traffic for efficient long-haul interstate transport. For inbound movements, the ILC is used to break down the shipments for local delivery.

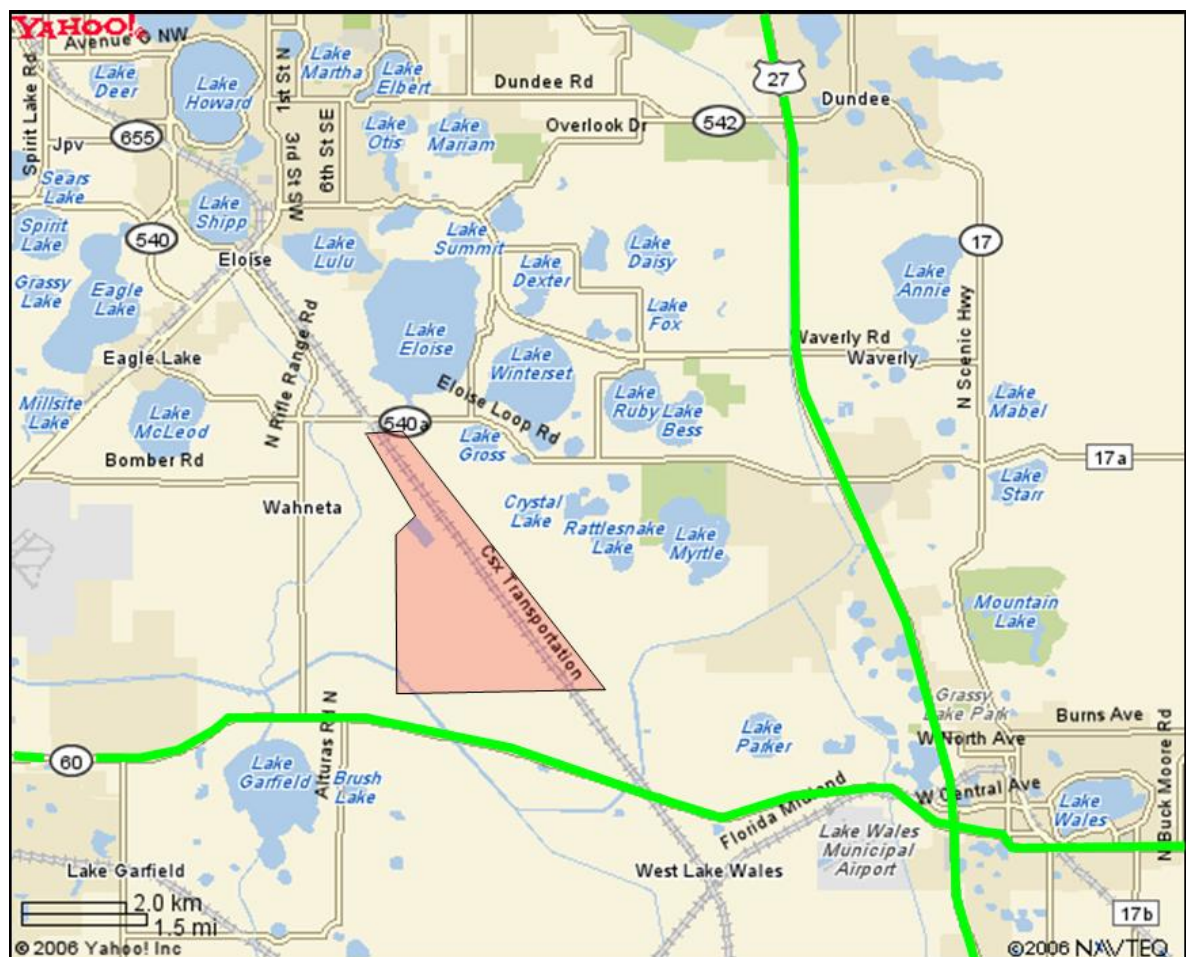
The U.S. freight railroads are increasingly using this strategy of running high-density service between ILCs, and leaving local collection and distribution to other carriers. Other ILCs can be found in Alliance, Texas and Joliet, Illinois on the Burlington Northern Santa Fe, and Rochelle, Illinois and Wilmer, Texas on the Union Pacific.

One further advantage of the ILC concept is that it generally attracts ancillary business to the region. These include warehouses, packaging and other final preparation companies, and manufacturing companies looking to lower logistics costs.

Case Study 1: Description of Solution

CSX Transportation has announced plans to develop a 1,250-acre integrated logistics center in Winter Haven, Florida to serve the central Florida market, including Orlando and Tampa. This facility is located north of State Route 60 and west of U.S. 27 as shown in Figure 7.3. A more detailed description of this facility is contained in Section 6.0.

Figure 7.3 Location of CSXT Winter Haven Integrated Logistics Center



Source: Florida Department of Transportation.

Construction of the Winter Haven ILC will require a combination of private and state funding. Section 6.0 details the projects, but in general it will require:

- Construction of the actual facilities, including purchase of the 1,250 acres, 3 million square feet of warehouse space, 1.5 million square feet of industrial space, and 0.5 million square feet of office space. This will be funded with railroad and other private funds.
- Several capacity expansion improvements to CSXT's "S" Line between Jacksonville and Winter Haven. These are collectively known as the "Central Florida Freight Rail Capacity Projects." FDOT has agreed in principal to provide \$198 million in funding for these projects not only to allow for ILC construction, but to allow the shift of freight movements away from the Orlando area to the "S" Line in anticipation of development of a commuter rail system in the area. Funding required beyond this is the responsibility of CSXT.
- Road-rail grade separations at five locations on CSXT's "S" Line between Jacksonville and Winter Haven. FDOT has agreed in principal to provide \$145 million in funding for these projects (also part of the commuter rail system development). Funding required beyond this is the responsibility of CSXT.
- Improvements to the local roadways providing access to/from the Winter Haven ILC. FDOT has agreed in principal to provide \$9 million in funding for these projects (also part of the commuter rail system development). Funding required beyond this is the responsibility of CSXT.

While the direct funding provided by FDOT for the ILC is \$9 million, FDOT's overall expenditure in support of the project is \$352 million.

Case Study 1: Decision Analysis

In this section, two alternative scenarios are compared:

1. **Do Nothing** - Assumes that any investment is made by the private sector, which most likely will result in not building the Winter Haven ILC. For the purposes of this analysis, the do nothing scenario assumes no improvements made.
2. **Alternative: Development of the Winter Haven ILC** - The full \$352 million investment is made by FDOT, along with the required private sector investments, to build the Winter Haven ILC.

The first step in determining the value of state investment in this project is to determine if the benefit/cost is greater than or equal to one. A benefit/cost analysis was performed using the Florida Freight Rail Investment Calculator (FRIC), previously described in this section. This tool uses the standard Federal Railroad Administration 10-year planning horizon and determines the benefit/cost in current year dollars. The relevant input values are listed in Table 7.1 and the results of the benefit/cost analysis are contained in

Table 7.2. The jobs estimates were provided by FDOT, from a CSXT supplied report. Truck to rail diversions were estimated by FDOT, based on information from the railroad that the ILC would support three additional trains per day once fully operational. Multipliers to convert measures into dollars of public benefit were obtained from the FRIC. For these multipliers, the original source is listed. Best professional judgment and information from comparable projects and data sources were used to obtain the other multipliers.

Table 7.1 Decision Analysis Input Values for Winter Haven Integrated Logistics Center

Item	Value	Source
Net New Jobs to Florida	8,500	Provided by FDOT, based on report provided by CSXT. Will be phased in over planning horizon.
Truck to Rail Diversions	219,000/year	Based on three intermodal trains per day. Provided by FDOT. Will be phased in over planning horizon.
Average Wages	\$33,200/year	Total annual payroll of \$282.2 million provided by FDOT, based on report provided by CSXT.
State Tax Collection	\$400 million/ 10 years	Provided by FDOT, based on report provided by CSXT. Total taxes estimated at \$900 million/10 years, comprised of \$400 million/10 years to State and \$500 million/10 years to Federal.
Length of Haul (Total)	2,000 miles	Provided by FDOT.
Length of Haul (Florida)	200 miles	Provided by FDOT.
Percent of Traffic Originating in Florida	36%	Calculated by Cambridge Systematics from "Railroad Service in Florida, 2005" published by the Association of American Railroads. Calculated ratio of origins to origins plus terminations of mixed freight (predominately intermodal) in Florida.
Average Rail Rate	\$0.068/ton-mile	Cambridge Systematics analysis of 2004 Surface Transportation Board (STB) Carload Waybill Sample for Florida for Standard Transportation Commodity Code (STCC) 4611110. Average rate of \$0.061 per ton-mile, plus \$150 at origin and \$150 at destination for truck drayage. Inflated to 2006 values using the Consumer Price Index (CPI).
Average Truck Rate	\$0.12/ton-mile	Cambridge Systematics. Approximate rate for a truck load, long-haul shipment.
Highway Maintenance Costs	\$0.216/VMT	Addendum to the 1997 Federal Highway Cost Allocation Study Final Report U.S. DOT, FHWA, May 2000. Weighted average of pavement rate for 80 kip 5-axle trucks on rural and on urban interstates. Inflated to 2006 values using the CPI.
Roadway Safety	\$0.091/VMT	National Highway Safety Traffic Administration, 2004 National Statistics. Inflated to 2006 values using the CPI.
Difference between Truck and Train Emissions	\$0.00953/VMT	EPA Mobile 6 and "Monetary Values of Air Pollution Emissions in Various U.S. Cities," Wang and Santini, Transportation Research Board Paper No. 951046, 1995. Inflated to 2006 values using the CPI.

Table 7.1 Decision Analysis Input Values for Winter Haven Integrated Logistics Center (continued)

Item	Value	Source
Average Truck Weight	17 tons	Cambridge Systematics analysis of 2004 STB Carload Waybill Sample for Florida. Average weight for a container/trailer.
Time Value of Money	7.5%	Cambridge Systematics, Inc.
Annual Inflation Rate	3.0%	Cambridge Systematics, Inc.
Planning Horizon	10 years	Federal Railroad Administration.

Table 7.2 Benefit/Cost Analysis for Winter Haven Integrated Logistics Center

Item	Value (in Millions) ^a
Net New Jobs in Florida	\$1,199
Local Tax Collection	\$400
Highway Maintenance Savings	\$40
Emissions	\$1
Highway Safety	\$17
Logistics Cost Savings	\$1,645
Total Benefits	\$3,302
Cost (Florida Share)	\$352
Florida B/C	9.38

^a Value over 10-year planning horizon, discounted to 2006 dollars.

This analysis produces a favorable public benefit/public cost ratio of 9.38 for construction of the Winter Haven ILC. The logistics cost savings to the shippers from using rail instead of truck is projected to be the largest benefit at \$1,645 million over the 10-year planning horizon. This is driven by the difference in truck and rail rates for shipments that can now travel by lower cost rail service. While this is not a direct public benefit, it should positively impact consumer prices and lead to even more business expansion. The second largest category of public benefits is generated by the 8,500 new jobs, which contributes a benefit of \$1,199 million in increased wages over the 10-year planning horizon. Fewer trucks on the roadways leads to highway savings in the form of reduced maintenance (\$40 million), improved safety (\$17 million), and lower emissions (\$1 million).

It also should be noted that much of the \$352 million investment also is in support of development of the Central Florida Commuter Rail system that will provide significant additional public benefits, including reductions in roadway congestion in the Orlando area.

This benefit/cost analysis provides one important component of the overall decision analysis. Table 7.3 examines a broader range of criteria, broken out by various user groups. A low, medium, or high category is assigned to each scenario for each user group. This information is summarized in Table 7.4.

Table 7.3 Decision Analysis Matrix for Winter Haven Integrated Logistics Center

Measures		No Action	Winter Haven ILC
State	Jobs	Small change through normal growth, though yard and line capacity issues will limit rail growth.	8,500 full-time jobs, associated with the ILC.
	Tax Benefits	Potential increase through other land use activities, though nothing specific identified.	\$900 million in taxes over a 10-year period generated by the ILC. \$400 million to State and \$500 million to Federal.
	Truck to Rail Diversion	Likely rail to truck diversions as congestion causes continued deterioration of service.	Estimated at approximately 219,000 trucks per year, which represents three 200 container intermodal trains per day.
	Environmental Benefits	Increase in long-haul trucks as demand for freight traffic grows and capacity problems lower rail market share.	Reduction in long-haul trucks, but increase in local trucks to/from ILC. Increase in locomotives. Overall positive benefit, though an EIS is needed to fully understand the impacts.
	Partner Funding	Without rail investment, shippers will incur higher logistics costs from increased use of trucking.	Shippers and railroad will benefit from this project. CSXT will contribute to project funding.
	Benefit/Cost	N/A (Cost = \$0).	B/C = 9.38 (FL Cost = \$352 million).
Summary State Benefits		LOW	HIGH
Shippers	Business Cost Impacts	Possible loss of rail services as congestion becomes worse. Forces use of more expensive modes.	Allows shippers to divert some truck shipments to lower cost rail service. Truck costs estimated at \$0.12/ton-mile and rail rates (plus drayage) estimated at \$0.068/ton-mile.
	Access to Service	Should remain constant.	ILC will provide increased capacity and more opportunities for rail intermodal access in Tampa, Orlando, and Central Florida.
	Service Reliability	Will become worse without investment and railroad and roadway congestion increases.	Improved access, increased capacity, improved track, and improved operating strategies will improve reliability of rail service.
Summary Shipper Benefits		LOW	HIGH

Table 7.3 Decision Analysis Matrix for Winter Haven Integrated Logistics Center (continued)

	Measures	No Action	Winter Haven ILC
Passenger Rail	Rail Capacity for Passenger Trains	No change.	Although passenger rail was not explicitly considered in this analysis, the Winter Haven facility will focus CSXT service on the “S” line, freeing capacity for passenger rail on the “A” line. This step is necessary for the proposed Orlando commuter rail service.
Summary Passenger Rail Benefits		LOW	MEDIUM
Railroads	System Velocity Improvements	Without improvements current congestion and problems will worsen, leading to reductions in velocity.	Will increase velocity by expanding capacity on “S” line, eliminating congestion in existing yards, grade separating 5 crossings, and reducing local train service on CSXT.
	Hours of Train Delay	Should increase, but requires simulation analysis.	Should decrease, but requires simulation analysis.
	Yard Dwell Time	Should increase, but requires simulation analysis.	Should decrease, but requires simulation analysis.
	Increased Revenue Traffic	Continued disinvestment by Class I railroads of selected rail markets.	Increased of 219,000 annual containers/trailers (3 additional unit trains per week).
	Equipment Utilization	Continued congestion and increased delays will reduce equipment utilization.	Equipment utilization will greatly improve due to increased velocity and reduction of local service.
Summary Railroad Benefits		LOW	HIGH
Ports	Throughput	No change.	Could have some positive impact on Tampa and Manatee, but will require truck drayage or rail shuttles.
	Market Share	No change.	Could have some positive impact on Tampa and Manatee, but will require truck drayage or rail shuttles.
Summary Port Benefits		LOW	LOW
Communities	Environmental Benefits	Likely increase in long-haul and local trucks as rail lines become more congested.	Reduction in long-haul trucks, but increase in local trucks. Increase in trains. Will require an EIS to understand full impacts.
	Safety Benefits	Increase due to more trucks on roadways as traffic grows.	Decrease from less long-haul trucks, offset by increase due to more local trucks serving the ILC. Improved safety at the 5 road-rail grade separation projects.
	Reduced Roadway Delays	Increase due to more trucks on roadways as traffic grows.	Decrease from less long-haul trucks, offset by increase due to more local trucks serving the ILC.
	Local Jobs	Normal increase from constrained growth.	8,500 direct and indirect, due to the ILC.
Summary Community Benefits		LOW	HIGH

Table 7.3 Decision Analysis Matrix for Winter Haven Integrated Logistics Center (continued)

	Measures	No Action	Winter Haven ILC
National	National Significance	None.	Will have positive impacts on other regions, especially where CSXT provides single line service. Choke points along the eastern seaboard will limit value to northeastern markets.
	Other States Benefiting	None.	Southeastern and Midwestern states. Some northeastern states, including New Jersey and New York.
Summary National Benefits		LOW	MEDIUM

Table 7.4 Summary of Decision Analysis by User Group for the Winter Haven Integrated Logistics Center

User Group	No Action	Full Implementation of Winter Haven ILC
State	Low	High
Shippers	Low	High
Passenger Rail	Low	Medium
Railroads	Low	High
Ports	Low	Low
Communities	Low	High
National	Low	Medium

Development of the Winter Haven ILC will have high positive impacts on the State, shippers, the freight railroads, and the communities. The State and communities benefit from increased jobs and the diversion of long-haul trucks from the roadway. Communities near the ILC will have to deal with an increase in local trucks between the ILC and its customers, partially offsetting the benefits. The freight railroads benefit both from increase revenues generated by the additional traffic, and reduced operating costs from less congestion and higher velocities. Shippers benefit greatly from the lower rates, increased competition, and greater reliability provided by the improved rail services. Passenger rail does not directly benefit from this project, but focusing CSXT traffic on the “S” line is a necessary step in initiating commuter rail service on the “A” line in Orlando. There are national and regional benefits from this project, especially to the Midwest and Southeastern regions. There could be large benefits to the Northeast, but several choke points along the eastern seaboard (including tunnels in Baltimore and Washington, D.C.) restrict double-stack intermodal

trains. This project is aimed at providing service to the growing population in Central Florida, and is not directed at the ports. Assuming the ports do not lose existing rail service, there may be some small gains associated with the ILC.

■ 7.3 Case Study 2: South Central Florida Express Track Upgrade

Case Study 2: Background

The South Central Florida Express (SCFE) has been owned and operated by the U.S. Sugar Corporation since 1994. SCFE operates on 171 route miles on both sides of Lake Okeechobee in South Florida. The line on the west side of Lake Okeechobee interchanges with CSXT at Sebring; the line on the east side of Lake Okeechobee operates over the FEC to the Atlantic Coast where it has haulage rights into Jacksonville.

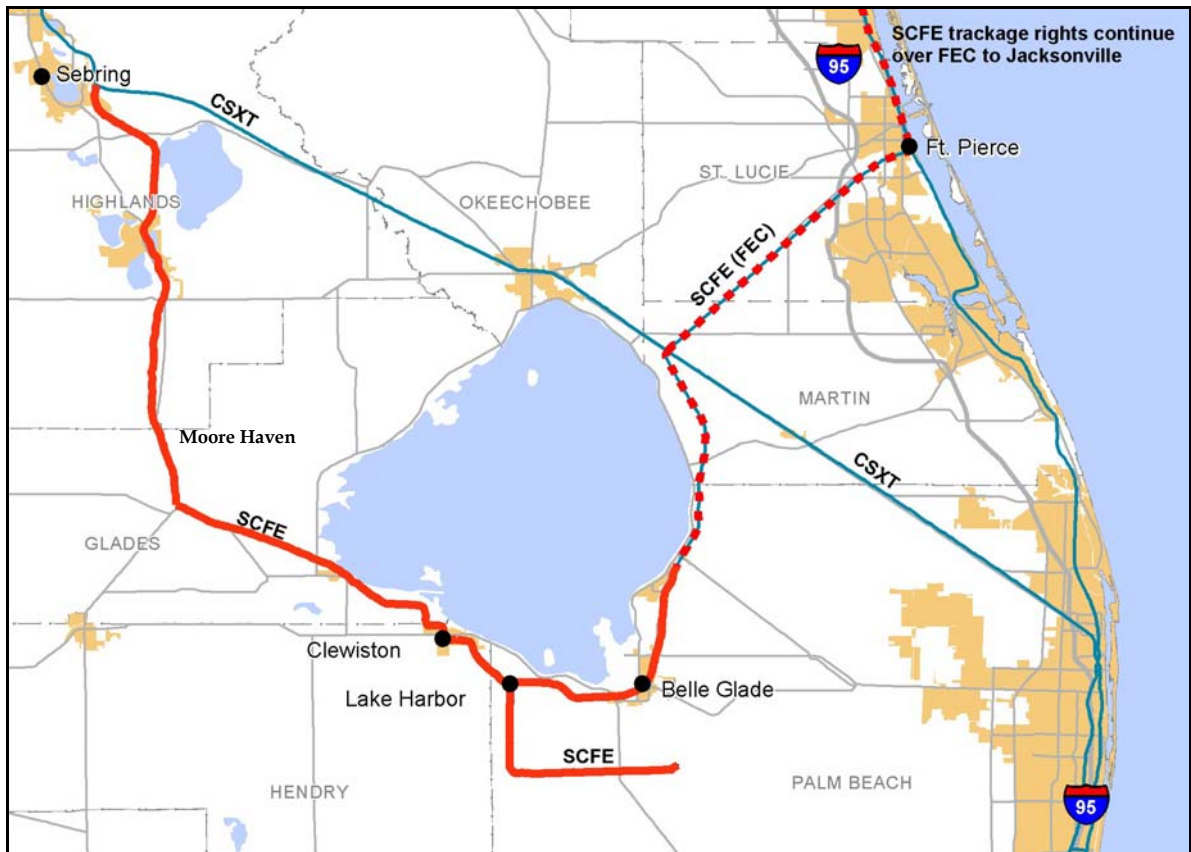
As its ownership implies, SCFE's principal purpose is to transport sugarcane, though the railroad also hauls bulk raw sugar, packages and bulk-refined sugar, fertilizer, molasses, pulpwood logs, rolled paper, and farm equipment. The railroad owns approximately 1,000 special-purpose sugar cane cars. The SCFE provides cost competitive transportation that allows Florida sugar to compete against foreign imports. U.S. Sugar uses rail to haul sugarcane from the fields into the processing plants. In one specific movement, the bulk refined sugar is moved from the plant to the chocolate factory in Hershey, Pennsylvania. The South Central Florida Express originates 10 covered hoppers of refined sugar each week, which they haul over the FEC to Jacksonville for interchange NS for delivery to Hershey. Without rail, Florida sugar would not be competitive in this and other long-distance markets.

The problem is that sugar is heavy, and the Class I railroads prefer to use higher weight capacity railcars. The SCFE track between Moore Haven and Sebring can only handle the older standard weight of 263,000 pounds. The current industry standard is 286,000 pounds.

Case Study 2: Description of Solution

The solution is simple. The 51 miles of track between Moore Haven and Sebring needs to be upgraded from the current 85-pound rail to 136-pound rail to support the heavier railcars (see Figure 7.4.) Also, all bridges must be inspected to make sure they can support the same weight standards. This project has been approved, and went out for bid in the fall of 2006. The total cost is \$14 million for the track upgrade, with FDOT contributing 75 percent of the project costs and the SCFE contributing the other 25 percent.

Figure 7.4 South Central Florida Express



Source: www.railwayage.com.

Case Study 2: Decision Analysis

In this section, two alternative scenarios are compared:

1. **Do Nothing** - Assumes that any investment is made by the private sector. For this purposes of this analysis, the do nothing scenario assumes the track upgrade is not performed.
2. **Alternative: Upgrade the track between Moore Haven and Sebring** - The full \$14 million investment is made by FDOT and the SCFE to upgrade the 51 miles of track.

The first step in determining the value of state investment in this project is to determine if the benefit/cost is greater than or equal to one. A benefit/cost analysis was performed using the Florida Freight Rail Investment Calculator (FRIC), previously described in this section. This tool uses the standard Federal Railroad Administration 10-year planning horizon and determines the benefit/cost in current year dollars. The relevant input values

are listed in Table 7.5 and the results of the benefit/cost analysis are contained in Table 7.6. The jobs estimates and truck to rail diversions were provided by FDOT, based on information obtained from the railroad. Multipliers to convert measures into dollars of public benefit were obtained from the FRIC. For these multipliers, the original source is listed. Best professional judgment and information from comparable projects and data sources were used to obtain the other multipliers.

Table 7.5 Decision Analysis Input Values for the South Central Florida Express Track Upgrade

Item	Value	Source
Net New Jobs to Florida	200	Provided by FDOT. Will be phased in over planning horizon.
Truck to Rail Diversions	12,000/year	Based on one additional train per week (65 car trains, 52 weeks per year, 3.5 trucks per railcar). Provided by FDOT. Will be phased in over planning horizon.
Average Wages	\$17,152/year	U.S. Department of Labor, Quarterly Census of Employment and Wages. Selected: Hardee County; NAICS 111-Crop Production; Private Ownership; All Company Sizes; Average Annual Wages for 2005. Inflated to 2006 using CPI.
Length of Haul (Total)	2,000 miles	Provided by FDOT.
Length of Haul (Florida)	200 miles	Provided by FDOT.
Percent of Traffic Originating in Florida	100%	This project supports additional shipments of sugar cane out of Florida.
Grade Crossings Impacted	36	Provided by FDOT.
Change in Gate Down Time	38 minutes	Provided by FDOT. Averages >1 minute additional gate down time per crossing per day.
Roadway Average Annual Daily Traffic	1916	Average daily traffic for the 36 crossings.
Average Rail Rate	\$0.027/ton-mile	Cambridge Systematics analysis of 2004 Surface Transportation Board (STB) Carload Waybill Sample for Florida for Standard Transportation Commodity Code (STCC) 01-Agricultural Products. Inflated to 2006 values using the Consumer Price Index (CPI).
Average Truck Rate	\$0.12/ton-mile	Cambridge Systematics. Approximate rate for a truck load, long-haul shipment.
Highway Maintenance Costs	\$0.216/VMT	Addendum to the 1997 Federal Highway Cost Allocation Study Final Report U.S. DOT, FHWA, May 2000. Weighted average of pavement rate for 80 kip 5-axle trucks on rural and on urban interstates. Inflated to 2006 values using the CPI.
Roadway Safety	\$0.091/VMT	National Highway Safety Traffic Administration, 2004 National Statistics. Inflated to 2006 values using the CPI.

Table 7.5 Decision Analysis Input Values for the South Central Florida Express Track Upgrade (continued)

Item	Value	Source
Difference between Truck and Train Emissions	\$0.00953/VMT	EPA Mobile 6 and "Monetary Values of Air Pollution Emissions in Various U.S. Cities," Wang and Santini, Transportation Research Board Paper No. 951046, 1995. Inflated to 2006 values using the CPI.
Delay Value per Vehicle Minute	\$0.28/vehicle minute	These are benefits from changes in roadway waiting time at rail-highway grade crossings. The largest component is person-minutes of waiting, calculated by dividing the average annual pay for private industry in Florida by the average minutes in a work year. A smaller component is the fuel burned while idling. On average, a car consumes 25 cm ³ of fuel per minute. ^a This equates to \$0.016/veh-min at current fuel prices. ^b
Average Truck Weight	17 tons	Cambridge Systematics, Inc.
Time Value of Money	7.5%	Cambridge Systematics, Inc.
Annual Inflation Rate	3.0%	Cambridge Systematics, Inc.
Planning Horizon	10 years	Federal Railroad Administration.

^a The 25 cm³ of fuel burned per minute by an average car was obtained from the Automotive Service Association Internet site at: <http://www.asashop.org/autoinc/june99/techtotech.htm>. That source listed a range of 20 to 30 cm³ per minute.

^b One cm³ equals 0.000264 U.S. gallons. Using an average fuel charge of \$2.40 per gallon, this equals 25 x 0.000264 x \$2.4 = \$0.016.

Table 7.6 Benefit/Cost Analysis for the South Central Florida Express Track Upgrade

Item	Value (in Millions)*
Net New Jobs in Florida	\$14.6
Highway Maintenance Savings	\$2.2
Emissions	\$0.1
Highway Safety	\$0.9
Grade Crossing Delay	\$0
Logistics Cost Savings	\$161.2
Total Benefits	\$179.0
Cost (Total is \$14 million, Florida share is 75%)	\$10.5
Florida B/C	17.0

* Value over 10-year planning horizon, discounted to 2006 dollars.

This analysis produces a favorable public benefit/public cost ratio of 17.0 for upgrading the SCFE track between Moore Haven and Sebring. The logistics cost savings to the shippers from using rail instead of truck is projected to be the largest benefit at \$161.2 million over the 10-year planning horizon. This is driven by the difference in truck and rail rates, and though it is not a direct public benefit it should positively impact consumer prices and lead to even more business expansion. **Please note that the logistics cost savings in this analysis may be overstated.** Given the large discrepancy between truck and rail rates (\$0.12/ton-mile for truck versus \$0.027/ton-mile for rail), Florida sugar would likely not be competitive in long-haul markets without rail service. A more detailed analysis should compare the logistics costs savings with the cost of losing the business (reduced sales of Florida sugar and possible job losses). The lower benefit is the correct value to use in the benefit/cost ratio.

The second largest category of public benefits is generated by the 200 new jobs, which contributes a benefit of \$14.6 million in increased wages over the 10-year planning horizon. Fewer trucks on the roadways leads to highway savings in the form of reduced maintenance (\$2.2 million), improved safety (\$0.9 million), and lower emissions (\$0.1 million). The increase in trains has a negative benefit from longer automobile delays at the 36 road-rail grade crossings. Given that the increase in trains is only projected to be three per week, the additional delays will be small and this negative benefit is negligible.

One other item that should be considered a benefit in a more detailed analysis is the taxes collected locally and by the State from increased business development at U.S. Sugar that are attributable to this track upgrade project.

This benefit/cost analysis provides one important component of the overall decision analysis. Table 7.7 examines a broader range of criteria, broken out by various user groups. A low, medium, or high category is assigned to each scenario for each user group. This information is summarized in Table 7.8.

Table 7.7 Decision Analysis Matrix for the South Central Florida Express Track Upgrade

	Measures	No Action	SCFE Track Upgrade
State	Jobs	Limited growth from less demand caused by higher logistics costs.	200 net new full-time jobs to Florida.
	Tax Benefits	Increase through normal growth	Likely increases resulting from expansion of U.S. Sugar business
	Truck to Rail Diversion	None	Estimated at approximately 12,000 trucks per year.
	Environmental Benefits	Increase in truck volumes, though without rail some of the sugar business would be lost to foreign competition.	Reduction in truck traffic on the roadways.

Table 7.7 Decision Analysis Matrix for the South Central Florida Express Track Upgrade (continued)

	Measures	No Action	SCFE Track Upgrade
State (continued)	Partner Funding	Shippers cover expense through higher logistics costs from trucking or alternative suppliers	Shippers and railroad will benefit from this project. SCFE will contribute 25% of total \$14 million cost.
	Benefit/Cost	N/A (Cost = \$0)	B/C = 17.0 (FL Cost = \$10.5 million)
Summary State Benefits		LOW	HIGH
Shippers	Business Cost Impacts	Loss of some long-haul business since truck is prohibitively expensive for this commodity.	Allows shippers to expand markets due to low rail rates (estimated at \$0.027/ton-mile from the STB Waybill Sample).
	Access to Service	Should remain constant	More frequent rail service and heavier 286k cars will provide improved service opportunities.
	Service Reliability	Should remain constant	Improved track should improve reliability
Summary Shipper Benefits		LOW	HIGH
Passenger Rail	Rail Capacity for Passenger Trains	No change	No change
Summary Passenger Rail Benefits		LOW	LOW
Railroads	System Velocity Improvements	Should remain constant, assuming normal maintenance is performed	May slightly increase system velocity, but will have small impact
	Hours of Train Delay	Requires simulation analysis	Requires simulation analysis
	Yard Dwell Time	Should remain constant	Should have low impact
	Increased Revenue Traffic	Should remain constant	Will increase by 3 trains per week.
	Equipment Utilization	Should remain constant	Will allow heavier, more efficient railcars to be used
Summary Railroad Benefits		LOW	HIGH
Ports	Throughput	No change	No change
	Market Share	No change	No change
Summary Port Benefits		LOW	LOW
Communities	Environmental Benefits	Should remain constant	Will offer benefits through less trucks on roadways
	Safety Benefits	Should remain constant	Safety improvements from less trucks on roadways
	Reduced Roadway Delays	Should remain constant	Decreased delays due to less truck traffic, but this is minimal since not a congested area
	Local Jobs	Normal increase from constrained growth	200direct and indirect, due to increased rail activity
Summary Community Benefits		LOW	MEDIUM
National	National significance	None	None
	Other States Benefiting	None	States with companies using Florida sugar, e.g., Pennsylvania
Summary National Benefits		LOW	LOW

Table 7.8 Summary of Decision Analysis by User Group for the South Central Florida Express Track Upgrade

User Group	No Action	Full Implementation of SCFE Track Upgrade
State	Low	High
Shippers	Low	High
Passenger Rail	Low	Low
Railroads	Low	High
Ports	Low	Low
Communities	Low	Medium
National	Low	Low

Completion of the SCFE track upgrade between Moore Haven and Sebring will have high positive impacts on the State, shippers, and the freight railroads. The State benefits from increased jobs and the diversion of long-haul trucks from the roadway. Shippers, both U.S. Sugar and their customers, benefit greatly from the lower rates. Without rail service, U.S. Sugar would likely lose some long-haul business and the shippers would have to purchase from another, presumably more expensive, source. The freight railroads benefit both from increased revenues generated by the additional traffic, and reduced operating costs from improved equipment utilization. Communities in the area will have some benefits accruing from increased local jobs, but they also will have increased rail service leading to longer delays at grade crossings and increased pollution from the locomotives, which partially offsets the benefits. These communities include Sebring, Lake Placid, Palmdale, Moore Haven, and Clewiston.

Passenger rail does not directly benefit from this project, nor do the ports. This project does help out U.S. Sugar customers in other states, such as Pennsylvania, but it does not have regional or national significance.

8.0 Financing Florida's Rail System

■ 8.1 Introduction

Strong productivity gains in Florida's economy are dependent upon an efficient transportation network. The continued rapid growth in people and goods movement has strained the existing network, and required the State to take an aggressive approach to providing the needed mobility necessary to shape the State's economic future. The State has shown its readiness to support policies with stronger commitment for transportation improvements through the passage of several programs and legislation that place more emphasis on freight and multimodal needs. These include the recently enacted Florida Strategic Intermodal System (SIS), the recently adopted 2005 Growth Management Bill (Florida Senate Bill 360), and the Transportation Regional Incentive Program (TRIP).

Advances towards a national rail policy and funding framework were more modest in the Federal Safe, Accountable, Flexible and Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) than many had hoped for. However, there is a growing recognition that multistate coalitions and the Federal government will play a role in the future of the nation's rail system because the scale of the rail system transcends state boundaries. There has been much recent emphasis in national transportation policy discussions of the need for a national rail policy to ensure that there is adequate investment to eliminate critical rail chokepoints and add needed capacity. The emphasis has increased as states have considered the difficulties of accommodating more truck traffic on highways and as shippers and motor carriers face increased fuel costs and labor shortages.

The purpose of Section 8 is to identify existing and emerging national and state funding opportunities for Florida rail improvement projects.

■ 8.2 Federal Rail Programs

Federal rail funding mechanisms can be grouped into two categories: Federal grants and Federal financing tools (tax credits and loans). Federal grants are direct investments by the Federal government into the state transportation system that do not require repayment. Although they generally require a contribution from the state or other non-Federal source, grants usually cover a significant portion of the proposed project amount. Loans and tax credits, on the other hand, are examples of nondirect investment. Loans are funds that are borrowed from the Federal government by a state (or other non-Federal source). They must be repaid to the Federal government over a fixed timeframe. In the

case of tax credits, no repayment is required, but the source of funding comes not from a direct investment, but from an alleviation of tax responsibility. Of the three funding types, tax credits may provide the greatest flexibility for the private sector and the least control by the public sector over the types of projects that are advanced.

Federal Grants

Federal Department of Transportation

Funding programs discussed in this section are examples of direct investment by the Federal government that often cover between 80 to 90 percent of total project costs, with the remaining 10 to 20 percent the responsibility of the state or another non-Federal entity. Some programs, notably the Section 130 grade crossing program, are being used by Florida DOT as described in Section 2. Table 8.1 provides a summary and overview of these grant sources.

Table 8.1 Federal Grant Sources Summary

Program	Code	Funding Use	Funding Allocation	Status of Funds Appropriated
Highway Railroad Grade Crossing program	FHWA Section 130	Improvement of highway-railroad crossings	Federal share is 90 percent	To be appropriated from the Highway Trust Fund
Congestion Mitigation and Air Quality (CMAQ)	TEA-21	Projects that improve/mitigate congestion	Formula-based	Appropriated from FY 2006 through FY 2009
Capital Grant Program for rail line relocation and improvement projects	Section 9002 SAFETEA-LU	Rail line relocation and improvement projects that foster economic development	Federal share is 90 percent, not to exceed \$20 million [only 50 percent is required for projects < \$20M]	Not Appropriated for FY 2006 and FY 2007
Projects of National and Regional Significance (PNRS) program	SAFETEA-LU Section 1301	Projects of national significance (rail, highway, or any project eligible under 23 USC)	Federal share is 80 percent	Appropriated from FY 2006 through FY 2009
Freight Intermodal Distribution Pilot program	SAFETEA-LU Section 1306	Development of intermodal freight transportation	Up to \$1 million per project per year	To be appropriated from the Highway Trust Fund

Table 8.1 Federal Grant Sources Summary (continued)

Program	Code	Funding Use	Funding Allocation	Status of Funds Appropriated
New Starts program	SAFETEA-LU Section 5309	Fixed-guideway transit projects, including new systems and extensions to existing systems	Formula-based	Appropriated for FY 2006 and FY 2007
New Small Starts	SAFETEA-LU Section 1309	Transit capital investments less than \$75 million	Program will start operating in 2007 through 2009	Appropriated for FY 2006
Fixed-Guideway Modernization	SAFETEA-LU	Modernization and rehabilitation of fixed-guideway transit systems	Formula-based	Appropriated for FY 2006
Economic Development Administration Funds	Public Works and Economic Development Act of 1965	Projects that promote job creation or retention in rural/industrial regions	Application and selection process	Appropriated for FY 2006 and FY 2007
Community Facilities program		Community facilities in rural regions	Application and selection process	Appropriated for FY 2006

The projects described in this section are continuations of existing programs or were newly created by the SAFETEA-LU legislation. There had been high hopes that Congress would take a bolder stance on funding flexibility as part of the reauthorization process and allow funding of rail projects from highway provisions as was done for transit; however, this did not happen. There were successes, including the new provisions for Transportation Infrastructure Finance and Innovation Act (TIFIA) loans that allow funding of freight projects. However, there continues to be a lack of diversity of funding sources for freight projects. Highway agencies, much of the trucking industry, and portions of the construction industry are opposed to opening the Highway Trust Fund for investments in non-highway projects, fearing that this will aggravate the shortfall in investments in highways. This continues to be an obstacle to a major national funding program for rail.

Another disappointing aspect of the recent Federal reauthorization process was the degree to which promising new programs were subject to project earmarks and how little discretion the U.S. Department of Transportation was given in implementing these programs. This was particularly true of the National Corridor Infrastructure Improvement Program, the Projects of National and Regional Significance, and the Freight Intermodal Distribution Pilot Grant Program. Almost all funds in those programs were

earmarked by Congress to specific projects. Nonetheless, the Federal Highway Administration (FHWA) is preparing regulations for these programs with the intent of influencing the character of the projects that were earmarked by Congress. While this might seem to be of little importance to Florida, it may still be beneficial for the State to comment on the regulations and to meet with the FHWA staff to influence the regulations for these programs and their future directions. This could set the stage for a more favorable outcome in the next reauthorization (as well as ensure that any project earmarks received by the State of Florida can be implemented consistent with the State's rail policies).

FHWA Section 130 – Highway Railroad Grade Crossing Program

The FHWA Section 130 Highway Railroad Grade Crossing program provides grants for the improvement of highway-railroad grade crossings that enhance safety, and other projects, including: separation or protection of grades at crossings; the reconstruction of existing railroad grade crossing structures; and the relocation of highways or rail lines to eliminate grade crossings.

Funds from the FHWA Section 130 Program can be used to further freight rail projects, provided that the projects improve safety at grade crossings. In general, Federal funding is available at a 90 percent share. For certain projects (including signing, pavement markings, active warning devices, and crossing closures), the Federal share may amount to 100 percent.

The funds for this program remained practically unchanged between 1987 and 2003, totaling around \$150 million annually. SAFETEA-LU increased Section 130 program funding to \$220 million per year for FY 2006 to FY 2009. The State of Florida's use of this program was described in Section 2.

Congestion Mitigation and Air Quality (CMAQ) Program

The Congestion Mitigation and Air Quality (CMAQ) program was created in 1991 by Intermodal Surface Transportation Efficiency Act (ISTEA) in order to provide innovative funding for transportation projects that improve air quality, and help achieve compliance with national air quality standards set forth by the Clean Air Act. CMAQ funds are often used for freight and passenger projects, including priority control systems for transit vehicles, intermodal facilities, rail track rehabilitation, and new rail sidings. CMAQ funds also can be used for construction activities that benefit private companies, if it can be shown that the project will improve air quality by removing trucks off the road. In one innovative use, CMAQ funding was used to cover part of the operating costs of Amtrak's Downeaster service between Boston and Portland, Maine.

SAFETEA-LU provided \$8.6 billion for the CMAQ program for the FY 2006 through FY 2009 period. The funds are fully allocated to the individual states. Florida will receive approximately \$217 million for FY 2004 to FY 2009.

Because CMAQ funding funds are allocated to states based on the population of local areas in the state that are in noncompliance, or seeking to maintain compliance, with national standards for ozone and carbon monoxide (CO), there is little that Florida can do to increase its share. However, it can estimate its next CMAQ allotment and make plans for packaging funds with other sources to create the largest benefit to the rail system. Projects that will result in either maintaining or adding to the amount of traffic diverted from autos and trucks to rail would be particularly well suited for these funds.

Capital Grant Program for Rail Line Relocation and Improvement Projects

The Capital Grant Program for Rail Line Relocation and Improvement projects was created under Section 9002 of SAFETEA-LU to fund local rail-line relocation and improvement projects. States are eligible to receive grant funds from this program for the following types of rail projects:

- Rail line improvement projects serving the purpose of mitigating the impacts of rail traffic on safety, motor vehicle traffic flow, community quality of life, and/or economic development; and
- Rail line relocation projects involving a lateral or vertical relocation of any portion of the rail line.

Section 9002 of SAFETEA-LU authorizes, but does not appropriate, \$350 million per year for each of the FY 2006 through FY 2009 period. According to the grant allocation requirements slated under this program, at least 50 percent of the grant funds awarded under this program in a fiscal year must be provided as grant awards not exceeding \$20 million each. The state or non-Federal entity receiving the grant is required to pay at least 10 percent of the total cost of the project being funded by this grant program. There is no funding allocation for FY 2006. However, Florida should track the progress of this source to ensure that it has projects at the ready in the event that funds are appropriated in the FY 2007 to FY 2009 cycle.

Projects of National and Regional Significance (PNRS) Program

The Projects of National and Regional Significance (PNRS) program was created by Section 1301 of SAFETEA-LU to provide grant funds for high-cost projects of national or regional significance. Projects eligible for funding under this program include any surface transportation project authorized under 23 United States Code (USC) for assistance, including freight rail projects. In addition, projects must have a total eligible project cost greater than or equal to the minimum of \$500 million; or 75 percent of the total Federal highway funds apportioned to the state where the project is located (in the most recent fiscal year). Federal shares for this program are generally 80 percent of project total cost. Eligible project activities include development phase activities, right-of-way acquisition, construction, reconstruction, rehabilitation, environmental mitigation, construction contingencies, equipment acquisition, and operational improvements.

Funds are allocated to projects based on a competitive evaluation process based on the ability of projects to satisfy criteria that include, but are not limited to, generating national economic benefits, reducing congestion, and improving transportation safety. SAFETEA-LU authorized \$1.602 billion for this program from FY 2006 to FY 2009. Florida should consider positioning several of the larger rail infrastructure projects for PNRS funding in the future. The State also should consider supporting projects under this program that are located in other states, but have significant benefits to Florida. These include capacity expansion and double-stack container clearances on the rail lines parallel to I-95.

Freight Intermodal Distribution Pilot Grant Program

The Freight Intermodal Distribution Pilot Grant program was created under Section 1306 of SAFETEA-LU to provide grant funds to states to facilitate and support the development of intermodal freight transportation initiatives at the state and local levels for congestion reduction and safety enhancements, and to provide capital funds to address freight distribution and infrastructure needs at intermodal freight facilities and inland ports. This is a pilot program, and Congress earmarked all the grant funds from this program, totaling \$30 million, to five states (Alaska, California, Georgia, North Carolina, and Oregon) for six projects, with each project receiving \$1 million for the five years from FY 2005 through FY 2009.

New Starts Program

The New Starts program was continued under Section 5309 of SAFETEA-LU, which provides funds for new fixed-guideway transit projects, including new systems and extensions to existing systems. Rail transit projects eligible for funding under New Starts include heavy-rail transit systems, light-rail transit (LRT) systems, automated guideway transit systems, and commuter rail. Projects eligible for New Starts funding are earmarked in the SAFETEA-LU authorization. Funds for project construction are generally provided after a detailed review of the project by the Federal government and a subsequent entry into a contingent funding commitment that is referred to as the Full Funding Grant Agreement (FFGA).

Section 1309 of SAFETEA-LU also created a new “Small Starts” (Capital Investment Grants Less Than \$75 million) program for smaller projects with a Federal New Starts share of less than \$75 million.

Congress earmarked \$6.578 billion in New Starts funding in SAFETEA-LU from FY 2006 through FY 2009. The new “Small Starts” program will be funded, starting FY 2007 to FY 2009, with a \$200 million takedown annually from the New Starts apportionments. Although funds already are earmarked for the FY 2006 to FY 2009 cycle, Florida can track the guidelines for selection of projects and position potential passenger rail projects for consideration during the next funding cycle.

Fixed-Guideway Modernization

The Fixed-Guideway Modernization program, also referred to as the Rail Modernization program, remains unchanged under Section 5309 of SAFETEA-LU, and provides funds for the modernization and rehabilitation of fixed-guideway transit systems. All types of rail transit projects are eligible for funding from this program. Fixed-Guideway Modernization program is classified as a formula program for authorization in SAFETEA-LU; wherein, funds are apportioned to projects based on a formula contained in authorizing legislation.

SAFETEA-LU authorizes \$6.076 billion from FY 2006 through FY 2009 for this program. Although this entire funding source is currently earmarked for projects and, therefore, not available for new applicants, it is a potential funding source in the coming fiscal cycle.

United States Department of Commerce

Economic Development Administration (EDA) Funds

The U.S. Department of Commerce's Economic Development Administration (EDA) provides grants for economic development projects in economically distressed industrial sites. A critical objective of the program is to promote job creation and/or retention in the region. Eligible projects must be located within an EDA-designated redevelopment area or economic development center. Freight-related projects that are eligible for funding from this program include: industrial access roads; port development and expansion; and railroad spurs and sidings.

Evidence of the economic distress that the project is intended to alleviate is required of the grantees. The program provides grant assistance up to 50 percent of a project cost; however, it can provide up to 80 percent of cost for projects located in severely depressed areas.

During the last quarter of 2005, the EDA announced 117 grants greater than \$100,000, totaling almost \$103 million. The total value of grants awarded under the program totaled over \$240 million. This funding source could be used by the State of Florida for rail improvement projects such as industrial rail spurs and sidings in industrial areas that can be shown to support employment growth and contribute to economic development.

U.S. Department of Agriculture

Community Facilities Program

The U.S. Department of Agriculture Community Facilities program provides three types of funding for the construction, enlargement, extension, or improvement of community facilities in rural areas and towns with a population of 20,000 or less. The three programs are:

1. Direct Community Facility Loans;
2. Community Facility Loan Guarantees; and
3. Community Facility Grant Program.

Grant assistance is available for up to 75 percent of project cost. Rail-related community facilities eligible for funding from this program include rail spurs serving industrial parks, and other railroad infrastructure in the region such as yards, sidings, and mainline tracks.

The Community Facility Program amounts to \$297 million in direct loans, \$208 million in loan guarantees, and \$17 million in grants for FY 2007. The average loan, loan guarantee, and grant amounts are estimated to be \$442,000, \$860,000, and \$32,000, respectively. This funding source could be used by the State of Florida for rail improvement projects in rural agricultural and industrial regions.

Federal Loans and Tax Credits

The funding programs described in this section include both loans and credit enhancement programs. In the case of loans, a project sponsor borrows funds directly from a state DOT or the Federal government under the condition that the funds will be repaid. Credit enhancement involves the state DOT or the Federal government making the funds available on a contingent, or standby, basis. An example of this is a Transportation Infrastructure Finance and Innovation Act (TIFIA) loan guarantee. This type of credit enhancement helps to reduce the risk to investors and, thus, allows the project sponsor to borrow at lower interest rates. Table 8.2 lists the loans and tax credit programs and their intended use.

Table 8.2 Federal Loans and Tax Credits Summary

Program	Code	Projects Funded	Funding
Railroad Rehabilitation and Investment Financing (RRIF) program	TEA-21 Section 7203	Acquisition, improvement, or rehabilitation of freight and passenger rail facilities, also refinance existing debt	Direct loans and loan guarantees to public and private entities
TIFIA	23 USC 181-189	Large surface transportation projects of national significance	Loans and guarantees, contingent Federal loans
State Infrastructure Banks (SIB)	National Highway System (NHS) Designation Act Section 350	Transportation projects	Subordinate loans, interest rate buydowns on third-party loans, loan guarantees, and line of credit
Railroad Track Maintenance Credit	Internal Revenue Code Section 45G	Track maintenance on any Class II or Class III track	Tax credit equal to 50 percent of the maintenance and rehabilitation expenditures
Private Activity Bonds	SAFETEA-LU Section 11143	Surface Transportation Projects	National capacity of liability \$15 billion

Several loan and credit programs that can be used to finance freight rail projects at the state level were created or changed substantially in SAFETEA-LU. These include:

- The Railroad Rehabilitation and Investment Financing Program (RRIF), which saw a tenfold increase in funding, from \$3.5 billion to \$35 billion between 2000 and 2006.
- Transportation Infrastructure Finance and Innovation Act (TIFIA), which widened the definition of eligible projects to include freight rail projects (previously, rail projects had not been eligible for TIFIA support). Eligible projects now include projects that improve/facilitate public or private freight rail facilities that provide benefits to highway users, intermodal freight transfer facilities, and Port terminals and port access.
- Private Activity Bonds (PABs) were established as a new source of funding in SAFETEA-LU. The Act amended the IRS code to allow use of PABs for highway and freight transfer facilities. PABs, otherwise known as tax-exempt facility bonds, are qualified bonds, which means that interest on the bonds is excluded (not subject to income reporting) for Federal income tax purposes in the gross income of recipients. With this qualified status and the resulting tax benefit to investors, exempt facility bonds can be offered at lower interest rates, reducing the cost of financing projects for the bond issuer.

These three actions helped to widen the pool of funding available to freight rail projects. They are explained in greater detail below.

Railroad Rehabilitation and Investment Financing (RRIF) Program

Section 9003 of SAFETEA-LU amended the RRIF program, which was created originally under Section 7203 of the 1998 Transportation Equity Act for the 21st Century (TEA-21). The RRIF program, administered by the Federal Railroad Administration (FRA), provides financial assistance in the form of direct loans and loan guarantees to eligible recipients for the following types of rail projects:

- Acquisition, improvement, or rehabilitation of freight (intermodal or carload) and passenger rail equipment and facilities, including tracks, yards, bridges, etc.;
- Refinancing of outstanding debt incurred in the acquisition, improvement, or rehabilitation of freight and passenger rail equipment and facilities; and
- Development of new freight and passenger rail facilities.

The RRIF program does not provide financial assistance for rail operating expenses. Recipients eligible for direct loans and/or loan guarantees from the program include public and private entities, railroads, joint ventures (including at least one railroad), limited-option freight shippers (e.g., shippers who own a plant or facility served by no more than a single railroad), and interstate compacts consented to by Congress under Section 410(a) of the Amtrak Reform and Accountability Act of 1997.

Thirteen loans, totaling \$517 million, have been issued since 2002. The smallest and largest loans approved were \$2.1 million for Mount Hood Railroad and \$233 million for the Dakota, Minnesota, and Eastern Railroad.

Direct loans from the program can be used to finance 100 percent of the total project cost, while loan guarantees can be made for up to 80 percent of the cost of a loan, for terms up to 25 years. The program requires applicants to cover the subsidy costs through payment of a “credit risk premium” equal to a fraction of the loan amount calculated based on the financial viability of the applicant and the value of the collateral provided to secure the debt.

Transportation Infrastructure Finance and Innovation Act (TIFIA)

The Transportation Infrastructure Finance and Innovation Act (TIFIA) was created in 1998 by TEA-21. The strategic goal of this program is to leverage limited Federal resources and stimulate private capital investment by providing credit assistance (up to one-third of the project cost) for major transportation investments of national or regional significance. The program has a project cost threshold for eligibility, which is the lower of \$50 million, or 33 percent of a state’s annual Federal-aid apportionment for highway projects.

SAFETEA-LU expanded TIFIA eligibility to certain private rail projects. Eligibility for freight facilities includes the following:

- Public or private freight rail facilities providing benefits to highway users;
- Intermodal freight transfer facilities;
- Access to freight facilities and service improvements, including capital investments for Intelligent Transportation System (ITS); and
- Port terminals, but only when related to surface transportation infrastructure modifications to facilitate intermodal interchange, transfer, and access into and out of the port.

The TIFIA credit program offers three distinct types of financial assistance: secured (direct) Federal loans to project sponsors; loan guarantees by the Federal government to institutional investors; and standby lines of credit in the form of contingent Federal loans. Federal credit assistance from this program cannot exceed 33 percent of the total project cost.

SAFETEA-LU authorized \$122 million per year to pay the subsidy costs of supporting Federal credit under TIFIA. There is no limit on amount of credit assistance that can be provided to borrowers in a given fiscal year. Repayment of TIFIA loans must come from tolls, user fees, or other dedicated revenue sources. As of July 2006, TIFIA assistance amounted to \$3.2 billion, leveraging \$13.2 billion of investment in 14 transportation projects. Among these projects is the Miami Intermodal Center, a multiyear program of ground access improvements to and within the Miami International Airport, including a commuter rail element which was awarded \$439 million in TIFIA loans.

TIFIA is a promising funding source that should be targeted by the State of Florida during reauthorization of SAFETEA-LU.

State Infrastructure Banks (SIB)

The State Infrastructure Bank (SIB) program was started as a pilot program that was authorized under Section 350 of the National Highway System Designation Act of 1995 (NHS Act). SIBs are revolving infrastructure investment funds which are established and administered by states and are eligible for capitalization with Federal-aid highway apportionments and state funds. The purpose of SIBs is to provide innovative and flexible financial assistance to states for rail, highway, and transit projects in the form of loans and credit enhancements. Florida has established an SIB and has used it to finance highway projects. The total disbursed amount to date is \$403.8 million.

Financial assistance is available to public and private entities through the SIBs. The assistance includes below market rate subordinate loans, interest rate buydowns on third party loans, loan guarantees, and line of credit for the FY 2005 to FY 2009 time period. The following Federal transportation funds may be used to capitalize SIBs:

- **Highway account.** Up to 10 percent of the Federal-aid highway apportionments to the state for the NHS program, Surface Transportation Program (STP), Highway Bridge Program, and the Equity Bonus;
- **Transit account.** Up to 10 percent of the Federal funds for transit capital projects under Urbanized Area Formula Grants, Capital Investment Grants, and Formula Grants for other than Urbanized Areas; and
- **Rail account.** Federal funds for rail capital projects under Subtitle V (Rail Programs) of Title 49 USC.

A state setting up and using a SIB is obliged to match the Federal SIB capitalization funds on an 80 to 20 Federal/non-Federal basis. The exception is funds from the highway account, where a sliding-scale matching-provision applies.

Railroad Track Maintenance Credit

The Railroad Track Maintenance Credit authorized under Section 45G of the Internal Revenue Code provides tax credits to qualified taxpayers for expenditures on railroad track maintenance on railroad tracks owned or leased by a Class II or a Class III railroad. The amount of tax credit provided equals 50 percent of the qualified railroad track maintenance and rehabilitation expenditures. Qualified railroad track expenditures include all expenditures towards maintenance and rehabilitation of railroad track, including roadbed, bridges, and related track structures.

Eligible taxpayers qualifying for this credit include any Class II or Class III railroad, and any person transporting property on a Class II or a Class III railroad facility, or furnishing railroad-related property or services to a Class II or a Class III railroad on miles of track assigned to such person by the Class II or Class III railroad. The maximum credit allowed under this program is \$3,500 per mile of railroad track owned or leased by an eligible taxpayer, or railroad track assigned to the eligible taxpayer by a Class II or a Class III railroad that owns or leases the railroad track. This credit program, which was released in 2004, was for a three-year period from December 31, 2004 to December 31, 2007. However, for eligible taxpayers not having enough taxable income to make full utilization of the credit, the credits can be carried forward for a 20-year period.

Private Activity Bonds (Tax Exempt Bonds)

Title XI Section 11143 of SAFETEA-LU amended Section 142(a) of the IRS Code to allow the issuance of tax-exempt private activity bonds for highway and freight transfer facilities. States and local governments are allowed to issue tax-exempt bonds to finance

highway and freight transfer facility projects sponsored by the private sector. SAFETEA-LU includes a cap of \$15 billion on private activity bonds.

Passage of the private activity bond legislation reflects the Federal government's desire to increase private sector investment in United States transportation infrastructure. Providing private developers and operators with access to tax-exempt interest rates lowers the cost of capital significantly, enhancing investment prospects. Increasing the involvement of private investors in highway and freight projects also generates new sources of money, ideas, and efficiency.

Tax-exempt bond is an obligation issued by a state or local government, where the interest received by the investor is not taxable for Federal income tax purposes. Because of the exception of Federal income tax on the interest earned, these bonds have a lower cost of financing compared to taxable bonds. Section 11143 of SAFETEA-LU created a new type of exempt facility eligible to be financed with tax-exempt bonds, the qualified highway, or surface freight transfer facility. The new type of exempt facility bonds finance certain projects for surface transportation, projects for certain international bridges or tunnels, or facilities to transfer freight from truck to rail or rail to truck, provided the project or facility receives Federal assistance. In general, the law limits the total amount of such bonds to \$15 billion and directs the Secretary of Transportation to allocate this amount among qualified facilities.

Section 142(m) 1) defines “qualified highway or surface freight transfer facilities” as:

(A) Any surface transportation project that receives Federal assistance under Title 23, United States Code (as in effect on August 10, 2005, the date of the enactment of Section 142(m));

(B) Any project for an international bridge or tunnel for which an international entity authorized under Federal or state law is responsible and which receives Federal Assistance under Title 23, United States Code (as so in effect); or

(C) Any facility for the transfer of freight from truck to rail or rail to truck (including any temporary storage facilities directly related to such transfers) that receives Federal assistance under Title 23 or Title 49 as so in effect.

■ 8.3 Florida Rail Programs

This section presents an overview of the current level of state funding dedicated to advancing freight and passenger rail projects in Florida. A description of the new legislation and investment policies and their current and potential implications to rail transportation follows.

Existing Funding for Passenger and Freight Related Transportation Projects in Florida

Historically, rail funding has been provided for acquisition of rail corridors and assistance in developing intercity passenger and commuter rail services, development of fixed guideway systems, rehabilitation of rail facilities, and rail safety. State resources were also dedicated to fund improvement of access to intermodal facilities, and acquisition of associated rights-of-way. State funds for rail projects are channeled through the Florida Department of Transportation (FDOT) Work Program (WP). The majority of these funds (47 percent) are channeled through state traditional sources, including fuel tax, vehicle registration, aviation, and rental car fees that are deposited into the State Transportation Trust Fund (STTF). Federal contributions – primarily from motor fuel tax returns deposited in the Federal Highway Trust Fund – account for 18 percent of all WP funds. Additional sources include tolls and bonds (18 percent), doc stamps (8 percent), right-of-way and bridge bonds (2 percent), and general revenues (1 percent).

According to the FDOT WP, rail hubs and corridors are anticipated to receive over \$509.9 million in state funding between FY 2007 and FY 2011, a \$435.1 million increase over the previous FY 2001 to FY 2006 WP. The significant increase in state resources is mainly attributed to the Strategic Intermodal System (SIS) program which is anticipated to provide more than \$331.2 million (64.9 percent of total rail state funds) to support rail facilities. The majority of the state funds (\$443.2 million or 86.9 percent) are expected to advance passenger rail projects, which in many cases provide freight benefits as well. The remaining 66.7 million will be dedicated to fund freight projects and studies.

Table 8.3 details the level of funding estimated by FDOT to be available for rail projects between FY 2007 and FY 2011.

Table 8.3 Rail State Revenues
Millions of 2000 Dollars

Capacity Program Emphasis Areas	2007	2008	2009	2010	2011	Five-Year Total
Public Transportation Rail	\$205.2	\$37.9	\$69.3	\$86.5	\$94.5	\$493.2
High Speed Rail	\$4.0	-	-	-	-	\$4.0
Intermodal Rail	\$3.5	\$1.3	\$3.7	\$2.0	\$2.0	\$12.5
Freight Rail	\$66.0	\$0.67	\$0.01	\$0.01	\$0.0	\$66.7
Passenger Rail	\$146.6	\$38.5	\$73.0	\$88.5	\$95.5	\$443.2
SIS Passenger Rail	\$95.4	\$23.7	\$42.8	\$53.5	\$59.9	\$275.3
SIS Freight Rail	\$55.2	\$0.65	-	-	-	\$55.9
Total SIS	\$150.6	\$24.3	\$42.8	\$53.5	\$59.9	\$331.2
Total Work Program	\$212.6	\$39.2	\$73.1	\$88.5	\$96.5	\$509.9

Source: FDOT Work Program. Totals may not add up due to rounding.

FDOT is currently reviewing and updating Federal and state funding estimates for rail in light of new Federal and state legislation, including the recently enacted SAFETEA-LU program, the 2005 Growth Management Bill (Senate Bill 360), the 2005 Strategic Intermodal System Plan (SIS), and the new Transportation Regional Incentive program (TRIP). New legislation and the restructuring of investment policies within FDOT are likely to affect the amount of money that will be dedicated to rail projects in the future. A description of the new legislation and investment policies and their implications to rail corridors and facilities are described below.

Florida Senate Bill 360 – Growth Management

In July 2005, the Florida Legislature passed SB 360, an Act of Relating to Infrastructure Planning and Funding. The bill appropriates \$1.5 billion in new money for transportation, water, and school infrastructure program when certain planning standards are adopted; it also “promises” \$750 million per year in recurring annual appropriations. The bill requires that by December 1, 2007, all Capital Improvement Elements must demonstrate through a “financial feasibility test” that adopted levels of service for required concurrency facilities can be met and maintained; thereafter an annual update by comprehensive plan amendment must be performed. In Fiscal Year 2006, Transportation-related projects will receive \$600 million in statewide nonrecurring money and \$514.6 million in statewide recurring money as follows:

- Strategic Intermodal System (SIS) – \$200 million nonrecurring and \$345.4 million recurring;
- Small County Outreach Program (SCOP) – \$27.1 million recurring;
- Transportation Regional Incentive Program (TRIP) – \$275 million nonrecurring and \$115 million recurring;
- “New Starts Transit” Program – \$54.1 million recurring;
- County Incentive Grant Program (CIGP) – \$25 million nonrecurring; and
- State Infrastructure Bank – \$100 million nonrecurring.

Projects eligible for Growth Management (GM) funding should:

- Be consistent with adopted local government comprehensive plans;
- Identified as a backlog facility;
- Support mobility within a designated infill area, redevelopment and revitalization areas, and multimodal districts;
- Provide improved alternatives for moving goods; and
- Be on designated Strategic Intermodal System (SIS) or Emerging SIS facilities.

To date, 275 projects were submitted for GM funding. Of these 248 were identified as consistent with the goals of Growth Management and the SIS and should receive an

additional \$2.4 billion between FY 2006 and FY 2011 through FDOT's Work Program. Rail projects are scheduled to receive \$312.0 million or 13.0 percent of this total amount. A list of potential rail projects that could be slated for advancement in the near future is presented in Table 8.4.

Table 8.4 Summary of Potential Growth Management Funds dedicated to Freight and Passenger-Related Rail Transportation Projects in Florida

Location	Description	Total (\$)
Southwest Florida Rail Corridor	Purchase of Right-of-way, Arcadia to Collier County Rail Preservation Corridors	\$6,863,000
South Central Florida Express	Track Upgrade, Sebring to Moore Haven	\$10,500,000
Florida Northern Railroad	Track Upgrade, Newberry to Red Level Power Plant	\$3,000,000
Port of Jacksonville	Intermodal Rail Improvements at Dames Point Terminal	\$1,000,000
Port of Jacksonville	Dames Point on-site Rail Extension	\$1,500,000
Port of Jacksonville	Dames Point/Blount Island Combined Switching Yard	\$1,500,000
Florida East Coast Railway	Double Track, Bayard to Magnolia	\$5,750,000
Florida East Coast Railway	Passing Track – Siding, Sunbeam Road to Bayard	\$2,484,000
Port of Panama City	Rail Yard Expansion Enhancements, Internal Rail	\$350,000
Port of Panama City	Rail Yard Expansion for Multibulk Terminal, Internal Roadway	\$350,000
Port of Pensacola	Rail Loop Track Extension, Internal Rail	\$500,000
Bay Line Railroad	Passing Track – Siding, Majette Passing Track	\$565,000
Tri-Rail	New Passenger Service, Delray Beach, Fort Lauderdale Airport, and Pompano	\$5,744,000
Port of Palm Beach	On-port Intermodal Rail Improvements, Internal Rail	\$3,338,000
Florida East Coast Railway	Double Track, Micco to Gifford	\$12,001,000
Port Everglades	Intermodal Container Transfer Facility, Internal Rail	\$675,000
Port Everglades	Heavy Rail Track, Internal Rail	\$1,125,000
Pending Central Florida Rail Infrastructure	Track Upgrade, Deland, Orlando and Kissimmee	\$220,004,000
I-4 Maintenance of Traffic	New Passenger Service, Kissimmee to Deltona	\$53,500,000
Florida East Coast Railway	Track Upgrade, Miami Canal Bridge to U.S. 27	\$625,000
Florida East Coast Railway	Double Track, Medley	\$600,000
Port of Tampa	Internal Rail, Rail Improvements at Port Redwig, Eastport, and to Hookers Point Phase I	\$1,840,000
Port of Tampa	Internal Rail, Rail Improvements at Port Redwig, Eastport, and to Hookers Point Phase II	\$2,084,000
Port of Tampa	Container Yard Improvements, Internal Rail	\$2,084,000

Source: Florida Department of Transportation (FDOT) Office of Policy Planning.

Strategic Intermodal System (SIS)

In 2003, Florida's Governor signed legislation that proposed the implementation of a Strategic Intermodal System (SIS). The development of the SIS was initially proposed in the 2020 Florida Transportation Plan, which "envisions a transportation system that will enhance Florida's economic competitiveness."¹ The SIS includes transportation hubs, corridors and connectors, which meet a set of criteria developed to identify those transportation facilities and services that are critical to Florida's economic development. The initial SIS Strategic Plan was adopted in January 2005. The plan is accompanied by several components that were officially adopted with the plan: an implementation guidance document, an atlas of maps, lists of designated SIS and Emerging SIS facilities (hubs, corridors, and connectors), and a list of resources used to develop and referenced to guide implementation of the SIS Strategic Plan. Several freight and passenger rail corridors and terminals in Florida have been designated as SIS facilities, including (see Figures 2.4 and 2.5):

- The FEC mainline from Miami to Jacksonville;
- The CSX mainline from Miami to Tampa, from Tampa to Jacksonville, from Tampa through Orlando to the Georgia border and across the northern portion of the State from Jacksonville to the Alabama border;
- Heavily traveled CSX routes connecting the phosphate mines in the Tampa Bay region;
- The Norfolk Southern Railway (NS) mainline connecting Jacksonville to the rest of the NS system;
- Existing Amtrak service operating along CSX lines through much of the State;
- Existing Tri-Rail service in southeast Florida;
- CSX Intermodal Rail Terminal in Jacksonville;
- FEC Intermodal Rail Terminal in Jacksonville, Fort Lauderdale; and Miami;
- Amtrak stations in Orlando and Sanford;
- Joint Amtrak/Tri-Rail stations in Miami (Airport), Hollywood, Fort Lauderdale, Deerfield Beach, Delray Beach, and West Palm Beach;
- Tri-Rail stations in Miami (Metrorail transfer), Golden Glades, Cypress Creek, Pompano Beach, Boca Raton, Boynton Beach, Lake Worth, and Mangonia Park; and
- Existing or planned multimodal terminals in Miami (the Miami Intermodal Center), Kissimmee, Orlando, DeLand, and Jacksonville.

¹ Florida Department of Transportation. *Florida's Strategic Intermodal Plan*. January 2005.

Pursuant to 2004 Legislation, at least 50 percent of new flexible highway capacity funds must be allocated to the SIS/Emerging SIS and \$100 million per year was provided in SIS/Emerging SIS funding. This legislation also authorized FDOT to fund SIS/Emerging SIS facilities, regardless of ownership (including roadways off the State Highway System, for example). Substantial funding for SIS/Emerging SIS facilities also will be available from traditional state transportation capacity programs for highways, aviation, rail, and seaports.

In addition, the Department is moving towards implementing an investment policy that eventually allocates 75 percent of all flexible capacity funds to the SIS/Emerging SIS, excluding transit funds and Federal urban attributable funds to areas over 200,000 residents. Capacity and operational improvements to SIS/Emerging SIS corridors and connectors will be eligible for funding, with emphasis directed toward reducing bottlenecks and improving access to hubs; issues also affecting the efficient movement of goods to, from, and within Florida. At SIS and Emerging SIS hubs, the emphasis will be on improving the functionality, not the size, of the hub. State funding will be available for projects that streamline movement of interregional, interstate, and international passengers and goods and provide substantial public benefit, such as ground transportation and terminal connections between the hubs and the SIS connectors just outside the fence (i.e., off-port property).

SIS funds will be allocated as part of the Department's Work Program development process. FDOT is taking an incremental approach to expanding the eligibility for future SIS funding. FDOT funding eligibility guidelines have been developed for SIS hub, corridor, and connector projects for the development of the Work Program for FY 2007 through FY 2011. Of the \$509.9 million dedicated to fund rail projects in Florida, \$331.2 million or 64.9 percent are expected to be funded through the SIS program. The majority of SIS rail funds (\$275.3 million or 83.13 percent) are slated for passenger rail projects; the remaining \$55.9 million will support freight rail projects and studies.

Transportation Regional Incentive Program (TRIP)

Whereas the SIS was created to serve travel demand between regions, and between Florida and other states and nations, 2005 legislation (s. 339.2819, Florida Statutes) created the Transportation Regional Incentive Program (TRIP) to better meet the increasing demand for regional travel and commerce. State funds are available throughout Florida to provide incentives for local governments and the private sector to help pay for critically needed projects that benefit regional travel and commerce. FDOT will pay for 50 percent of project costs, or up to 50 percent of the non-Federal share of project costs for public transportation facility projects. To be eligible for funding through the TRIP program local governments should demonstrate that selected projects are included in their capital improvement programs, are consistent with the SIS, support facilities that serve national, statewide, or regional functions and function as an integrated transportation system, and have commitments of local, regional, or private matching funds.

The TRIP program is projected to produce more than \$1.0 billion to support the various Florida Districts and regions between FY 2007 and FY 2011. FDOT and District Offices are

currently estimating the additional money Metropolitan Planning Organizations will receive as a result of this new legislation. The impact of the new TRIP program on rail is currently unclear.

■ 8.4 Other Funding Sources

The other source of funding for freight rail projects that must not be overlooked is investments by the railroads. In 2006, U.S. Class I freight railroads spent more than \$8.3 billion laying new track, buying new equipment and improving infrastructure. This was a 21 percent increase from 2005 and represented record levels of investment.² Much of this money went toward maintenance of existing facilities, but there was significant double-tracking and siding construction to expand freight rail capacity along several high-density routes.

The emergence of both the public and private sectors to enter into new partnerships such as the Alameda Corridor in Southern California and the CREATE project in Chicago are the most likely scenario of the future funding for large-scale rail projects. Multistate coalitions such as those pioneered by the I-95 Corridor Coalition with its Southeastern Rail Operations Study (SEROps) hold promise as models for how states and private freight railroads can work together in the future. The American Association of State Highway Officials (AASHTO) in its new Freight Bottom Line Report is attempting to define directions for national rail freight policy, recognizing the need to define a national rail network and better understand the choke points in this network. Recent funding increases proposed for Amtrak and the strong role that a number of states have taken in intercity passenger rail also suggest directions for future public funding of the passenger rail system.

Florida continues to take an aggressive position in promoting an appropriate role for the public sector in shaping the future of the private rail system. By clearly defining when and how the public sector should play a constructive role in partnership with the private sector to advance rail system goals, the State of Florida is a leader in the national rail policy discussion. By examining emerging directions in this national discussion, the State also can position itself effectively to take advantage of emerging funding opportunities and offer itself as a model for the rest of the nation. As growth in trade and passenger travel put increasing pressure on the state's rail system, the necessity of protecting, maintaining, and growing the system will be viewed as a crucial aspect of the state's economic well being.

² Association of American Railroads, "Major Freight Railroads to Invest \$8.3 Billion in Infrastructure in 2006," March 16, 2006, retrieved from <http://www.aar.org/Index.asp?NCID=3582>.

9.0 Vision and Recommendations

Freight and passenger rail, perhaps more than any other mode of travel, must support both state and national mobility and economic goals. Within Florida, the 2025 Florida Transportation Plan (FTP) provides the vision and policy framework for allocating over \$160 billion in funding across all transportation modes to meet the mobility needs of residents, visitors, and businesses. State investments in freight and passenger rail are guided by the five 2025 FTP goals for Florida's multimodal transportation system:

- Provide a safer and more secure transportation system for residents, businesses, and visitors;
- Enrich the quality of life and responsible environmental stewardship;
- Support adequate and cost-efficient maintenance and preservation of Florida's transportation assets;
- Strengthen the economy through enhanced mobility for people and freight; and
- Provide sustainable transportation investments for Florida's future.

At the national level, the American Association of State Highway and Transportation Officials (AASHTO) published a report entitled "The Freight Rail Bottom Line Report." This report found that market forces would continue to pressure the rail industry to streamline and downsize, to maximize revenues, and to minimize capital costs. The railroads would be profitable, but would not be able or willing to expand capacity to keep pace with the rapidly growing demand for goods movement. The Freight-Rail Bottom Line Report concluded that relatively small additional investments in the nation's freight rail system could be leveraged to provide relatively large public benefits. The AASHTO reported presented two alternative futures:

- **Market-Driven Evolution** - A rail industry that continues to be stable, productive, and competitive with enough business and profit to operate, but not to replenish its infrastructure quickly or grow rapidly; or
- **Public-Policy-Driven Expansion** - A rail industry that provides cost-effective transport needed to serve national and global markets, helps relieve pressure on overburdened highways, and supports social, economic, and quality-of-life goals.

Florida has been a leader among the states in accepting the challenge of partnering with the railroads to expand the rail system through public policy and public investments, while adhering to the goals in the 2025 FTP. By focusing on key corridors, such as Orlando/Tampa to Jacksonville, Jacksonville to Miami, and Jacksonville westward along

I-10, Florida is adding multimodal capacity where it is most needed. By purchasing rail lines in South Florida and in Orlando, Florida is investing in commuter operations to support these growing metropolitan areas. By investing in the short line industry, Florida is maintaining vital rail corridors and maintaining the valuable freight collector/distributor networks that offer direct customer service.

This section first looks at the vision for freight rail in Florida, as part of a national system and as part of the State's multimodal transportation network, and the value to the State of a strong and reliable rail system. This Section then concludes with several recommendations for enhancing Florida's rail system.

■ 9.1 Vision

Some states are major thoroughfares with millions of passengers and millions of tons of freight passing through each year on their way to other locations. Other states contain large hubs that provide critical connections in the nationwide transportation system. Florida, by nature of its peninsular geography, contains a transportation system that predominately supports Floridians.¹ Therefore, a vision for rail in Florida must focus on: 1) connecting Florida with the rest of the U.S. and North America; and, 2) supporting intrastate movement of people and freight.

Florida railroads as part of the national transportation system

Florida is predominately a destination. More than three times as much rail tonnage is inbound to Florida consumers, rather than outbound by Florida producers (38.9 percent of total Florida rail tonnage is inbound versus 11.8 percent outbound). Some of the largest moves include:

- Coal from Kentucky and West Virginia arrives at Central Florida electric power plants via the CSXT rail line;
- Containers filled with international consumer goods arriving through West Coast ports destined for Jacksonville, Orlando, Tampa, Miami, and other markets throughout Florida using both the CSXT line and the FEC line;
- Nonmetallic minerals used to support construction projects arrive from Georgia and Alabama for distribution throughout Florida on CSXT and the FEC;

¹ There are exceptions, such as the ports and airports which are transfer locations for international travel, but this is small compared to the traffic originating in or destined for Florida.

- Outbound shipments of orange juice and other citrus products from Central Florida on the CSXT line and the FEC line are sent to markets in the Northeast, Midwest, and West Coast; and
- Outbound shipments of phosphates and phosphate products (classified as chemicals) are shipped from Central Florida to markets throughout the U.S. and Canada over the CSXT rail line.

The three most important rail corridors for hauling these and other goods are precisely the three corridors that FDOT has been partnering with the railroads to expand capacity. These are the primary corridors that link Florida with the rest of North America. They are:

- **CSXT “S” Line** - FDOT is working with CSX Transportation to expand capacity along the “S” Line between Jacksonville and Orlando/Tampa. By adding additional sidings and grade separating road-rail crossings, the “S” Line will be better positioned to handle the expected traffic growth generated by the Winter Haven integrated logistics center. This will improve the flow of goods into and out of Central Florida, providing some relief to the truck traffic on the I-4 and I-75 corridors.
- **CSXT I-10 Line** - Running parallel to Interstate 10, the CSXT line spans Florida from Jacksonville to Pensacola, and provides continued east-west service to New Orleans where it connects with western carriers. This line delivers food and international containers of consumer goods from the West Coast, along with delivering products to and from Texas, Louisiana, and other southern states.
- **Florida East Coast Line** - The FEC runs along the populous Atlantic seaboard from Jacksonville to Miami parallel to the I-95 corridor. At Jacksonville, the FEC interchanges traffic with Norfolk Southern and CSX Transportation. Increased rail traffic has created capacity problems, causing a need for the railroad to double-track the entire line. This expansion will support delivery of rock and steel used in construction, intermodal containers of consumer goods, assembled automobiles, food, and other products. It also will provide expanded capacity for potential future passenger rail services.

Florida railroads as an integral part of the State’s multimodal transportation system

Of the 119 million tons of freight moved by rail in 2004 in Florida, 57 million (48 percent) was local to the State (i.e., both originated and terminated in Florida). This is an unusually high percentage, and reflects the importance of the rail network to intrastate mobility. Most of the tonnage consisted of phosphates, fertilizers, and construction materials. There also was significant intrastate rail moves of containers, food, and lumber.

- Florida is a world leader in the production of phosphate rock, due to mineral deposits in the west and central parts of the State (the Bone Valley area). In 2005, Florida mined

30.0 million tons of phosphate rock, accounting for slightly more than one-fifth of world production. Phosphate is one of three primary nutrients in fertilizer. CSXT supports this industry by hauling the phosphate rock the relatively short distance from Bone Valley to the Port of Tampa and to the fertilizer plants.

- Rail is involved in the movement of many of the materials essential to the Florida construction industry, including metals (e.g., structural steel and architectural pieces), lumber, and cement. The largest tonnages, though, are for movement of aggregate rock. Crushed limestone moves from the Miami-Dade area on the FEC and CSXT to construction markets in Central Florida, Jacksonville, and other areas. More than 16 million tons of crushed stone moved from Dade County to Duval County in 2004, which would have been more than 2600 additional trucks per day on I-95 (assuming 20 tons per truck and operations of 300 days per year.)

The Class I railroads operate on a hub and spoke network, where the spokes (i.e., branch lines) are often used for providing direct customer service. To reduce costs, the Class I railroads are continually shedding the spokes and investing in hubs and the connections between hubs. This shift is referred to as going from “retail” railroading, with a large proportion of direct customer service, to “wholesale” railroading, where other carriers provide the direct customer service. Therefore, the vision for improving mobility in Florida includes maintaining and preserving this vital collector/distributor network. This involves:

- Supporting the short line railroads in their efforts to upgrade to the 286,000 pound railcar weight which is now the industry standard;
- Improving access to railroads hubs, including improved roadway access into the Winter Haven integrated logistics center; and
- Maintaining critical rail corridors for commuter and intercity passenger rail services, such as the recently announced rail line purchase in Orlando for commuter operations.

The Benefits to Florida from Public Investments in the Rail System

There are many benefits associated with establishing public-private partnerships to enhance the rail system. Section 7 of this plan discussed the mechanics of the benefit evaluation process, and provided two case studies that illustrated the rationale behind the investment decisions. Table 9.1 highlights some of the general benefits to the State of Florida, as they relate to the 2025 FTP goals, for improving the rail network.

Table 9.1 Benefits of Public Rail Investments to Florida

FTP Goal	Benefits of Public Rail Investments
Safety and Security	<p>Diverting passengers and freight to the railroads reduces the automobiles and heavy trucks on the roadways, thereby increasing safety.</p> <p>Improvements in road-rail grade crossing safety and education reduce accidents and saves lives.</p> <p>Developing alternative transportations modes improves security by offering options during times of emergency.</p>
Enriched Quality of Life	<p>Enhancing multimodal competition reduces travel time and costs for all travel modes.</p> <p>Lower logistics costs from multimodal competition helps to lower the costs of everything from energy prices to consumer goods.</p> <p>Diversion of automobile and truck traffic to rail lowers emissions, providing environmental benefits.</p>
Maintenance and Preservation of Transportation System	<p>Purchase of corridors (e.g., South Florida and Orlando) ensure the long-term preservation for passenger and freight rail services.</p> <p>Less heavy trucks on the roadways lowers roadway maintenance costs.</p>
Stronger Economy Through Enhanced Mobility	<p>Rail rates are generally lower than truck rates, which leads to greater profits and growth of Florida businesses as well as lower consumer costs.</p> <p>The low-cost, national rail network expands markets for Florida produced goods, such as citrus and sugar, and for the Florida ports.</p> <p>Improved passenger rail service reduces the time and costs for commuters, and also for intercity travelers (e.g., auto train).</p> <p>Improved intercity passenger rail services help mitigate highway and airport congestion, and provides competition to lower airfares.</p>
Sustainable Transportation Investments	<p>By leveraging available state funding with private capital in public-private partnerships, FDOT is developing both sustainable rail and highway systems.</p>

■ 9.2 Recommendations

This section offers a series of recommendations for the Florida Department of Transportation (FDOT). The recommendations are organized around the five goals established in the 2025 Florida Transportation Plan.

Provide a safer and more secure transportation system for residents, businesses, and visitors

Recommendation #1: The Department should continue to identify and support safety improvements to railroad-highway grade crossings, conduct public education campaigns, and actively monitor progress toward the reduction of grade-crossing accidents. Florida receives \$4.6 million annually from the Federal Section 130 Program to improve grade crossing safety. The State has agreed to an additional \$145 million to grade separate five crossings along CSXT lines as part of the Florida Improvement Program.

Recommendation #2: The Department should implement policy recommendations developed during the May 11, 2005 Governors Hurricane Conference. These are detailed in Section 2, and include:

- Development of revisions to Florida Statute to grant FDOT the authority to close any public or private highway-rail crossings during periods of disaster;
- Development of a master temporary highway-rail grade crossing closure list in the event of emergencies;
- Development of the framework and mechanics for FDOT Damage Review Teams by the Central Rail Office;
- Development of alternative methods for loss of electricity at signalized rail grade crossings;
- Establishment of a single point-of-contact by railroads for reporting to FDOT in a timely and consistent manner; and
- Reevaluation of the Federal Emergency Management Agency (FEMA) reimbursement procedures for damage and devastation.

Recommendation #3: The Department should work with the rail industry to provide a more safe and secure passenger and freight rail system. This includes improved security at rail facilities, supporting any new Federal security measures, and a willingness to help expedite adoption of new technologies when they are in the best public interest.

Enrich the quality of life and responsible environmental stewardship

Recommendation #4: The Department should continue to support investment in freight and passenger rail projects that enrich quality of life and support responsible environmental stewardship. This includes projects that: reduce transportation delays; improve transportation safety; improve air quality; reduce noise; and, reduce other negative transportation impacts to communities.

Support adequate and cost-efficient maintenance and preservation of Florida's transportation assets

Recommendation #5: The Department should continue to support maintenance and modernization of the rail system to enhance local freight and passenger rail service, when public benefits to the state, residents, and shippers can be demonstrated. This includes assisting short line railroads in meeting current 286,000 pound rail car weight standards. It also includes supporting new technologies, especially when those technologies support 2025 FTP goals.

Strengthen the economy through enhanced mobility for people and freight

Recommendation #6: The Department should continue to support expansion of a multimodal system to enhance interstate and intrastate movement of freight and passengers, with rail playing a critical role when public benefits to the state, residents, and businesses can be demonstrated. The primary funding sources will be the Strategic Intermodal System and private capital. Of the \$2.8 billion available for the SIS in Fiscal Years 2005/06 through 2010/11, approximately \$302 million in public funding has been proposed for 21 rail projects. The FDOT Central Rail Office needs to continue to build upon the key elements of the SIS:

- System designation, (see Section 2);
- Needs assessment, (see Section 6);
- Prioritization process (see Section 7); and
- Finance Strategy (see Section 8).

Recommendation #7: The Department should strengthen coordination with Florida Economic Development agencies to ensure that rail investments are supporting and spurring the desired economic growth. Evaluation of rail investments need to consider the type of business so focus is placed on industries important to Florida's current economy, or are targeted as important to sustain Florida's future economy. These include, but are not limited to, agriculture, international trade, energy, and construction.

Recommendation #8: The Department should consider how investments in freight and passenger rail support Florida's Future Corridors program. The goal of this program is to identify statewide transportation corridors that will be significantly improved or developed over the next 50 years. Statewide transportation corridors are generally described as those corridors that connect Florida to other states, or that connect two or more broad regions within Florida. A key element of this program will be the reuse or redesign of the State's existing interregional highway corridors to include managed lanes or to introduce rail and other modal options in or near corridor right-of-way.

Provide sustainable transportation investments for Florida's future

Recommendation #9: The Department should remain active in regional and national rail issues, to insure that Florida investments achieve maximum value, and to insure that efficient access to and from Florida is maintained. States have been very effective at supporting and funding improvements on short line railroads and funding spot improvements on Class I lines solely within their jurisdictions, but states have been less effective at funding corridor-scale rail improvements that cross state boundaries. The Class I railroads long ago reorganized themselves to invest and operate at the regional and national scale. The states and the Federal government have not built comparable institutional mechanisms to plan, negotiate, and finance large multistate rail projects. FDOT should continue participation in multistate projects that benefit Florida, such as the Southeastern Rail Operations Study (SEROps) and the Southeast High Speed Rail Initiative.

Recommendation #10: The Department should maximize use of Federal funding available through SAFETEA-LU and other programs. This is especially true for intercity passenger rail and for multistate initiatives. Federal funding support for freight rail investments has traditionally been offered through a mixture of grants, loans, and credit enhancement programs. These are described in Section 8.

Recommendations #11: The Department should convene and support a statewide rail advisory group comprised of railroads, shippers, and other parties with a stake in Florida's rail system. The Florida Railroad Association provides a forum for the railroads to discuss common issues and convey them to FDOT, but no comparable forum exists that brings together shippers, railroads, and public officials.

Recommendation #12: The Department should continue to engage the Florida railroads in public-private partnerships, with a goal of sustaining a freight and passenger rail system that provides benefits to both.

Glossary

AAR - Association of American Railroads. An association of private rail carriers that was founded to promote cooperation among the rail carriers; headquartered in Washington, D.C.

AASHTO - American Association of State Highway and Transportation Officials. AASHTO is a nonprofit, nonpartisan association representing highway and transportation departments in the 50 states, the District of Columbia, and Puerto Rico. It represents all five transportation modes: air, highways, public transportation, rail, and water. Its primary goal is to foster the development, operation, and maintenance of an integrated national transportation system.

Abandonment - Elimination of a line segment from a rail network. Abandonments must be approved by the Surface Transportation Board (STB).

Access Time - The time it takes to access a particular mode. For example, the access time for an automobile can be assumed to be zero. The access time for transit is the walk time plus the wait time for that mode.

ADT/AADT - Average Daily Traffic/Annual Average Daily Traffic. The number of vehicles or passengers using a facility on an average day. It is calculated by dividing the total yearly volume (of passengers or vehicles) by an appropriate number of days (365 if service is equal on weekends).

AGR - Alabama and Gulf Coast Railway. A Class III railroad with operations in Florida.

“A” Line - A former Atlantic Coast Line, which along with the “S” Line forms CSX Transportation’s major north-south lines terminating in central Florida. Between Jacksonville and central Florida, the “A Line” is the eastern CSXT line, passing through Pecan, Seville, Orange City, Sanford, Orlando, etc.

Amtrak - National Railroad Passenger Corporation. The U.S. operator of intercity passenger rail service. Amtrak has provided intercity and long-distance services to Florida for more than 35 years.

AN - AN Railway. A Class III railroad with operations in Florida.

APTA - American Public Transportation Association. An international organization that has been representing the transit industry since 1882. APTA members include bus, rapid transit and commuter rail systems, and the organizations responsible for planning, designing, constructing, financing, and operating transit systems.

Automatic Train Control System (ATC) - Automatic Train Control Systems. Technologies to monitor and control the movements of trains, thereby eliminating the risk of human error and reducing collisions.

AVO - Average Vehicle Occupancy. The number of persons per vehicle.

Ballast - Foundational material placed on the roadbed for the purposes of distributing weight, providing drainage, and holding the track line and surface.

Barge - A nonmotorized water vessel. Usually flat-bottomed and towed or pushed by other craft, used for transporting freight.

BAYL- Bayline Railroad. A Class III railroad with operations in Florida.

Berth - A specific segment of wharfage where a ship ties up alongside at a pier, quay, wharf, or other structure that provides a breasting surface for the vessel. Typically, this structure is a stationary extension of an improved shore and intended to facilitate the transfer of cargo or passengers.

Bogie - A set of wheels built specifically as rear wheels under a container. Used with roadrailer cars in Norfolk Southern's Triple Crown service.

Branch Line - A secondary line of a railway, typically stub-ended and designed to provide service to a customer.

Breakbulk Cargo - General cargo that is conventionally stevedored and stowed, as opposed to bulk or containerized cargo.

Bridge Traffic - A railroad's traffic that originates and terminates on other railroads, or off-line. Also known as overhead or through traffic. These terms also can reflect geographical regions, where bridge/overhead/through traffic traverses a region, but does not originate or terminate in that region.

Bulk Cargo - Homogeneous raw material shipped in shipload lots. Such commodities may include grain, coal, chemicals, or petroleum products.

Bulk Transfer - The transfer of bulk products, such as plastic pellets or liquid sweeteners, from one mode of transportation to another. Bulk transfer permits offrail shippers and receivers of varied commodities to combine long-haul efficiencies of rail with convenient door-to-door delivery of trucks.

Carload - Shipment of freight required to fill a rail car. A standard measure, along with tons, of railroad traffic volumes.

Carload Waybill Sample - As a means to provide regulatory oversight, the Surface Transportation Board (STB) requires all railroads terminating more than 4,500 cars per year to file a sample of waybills. The Waybill Sample database contains rail shipments data such as origin and destination points; type of commodity; number of cars, tons, and

revenue; length of haul; participating railroads; interchange locations; and Uniform Rail Costing System shipment variable cost estimates. The Waybill Sample contains confidential information and is used primarily by Federal and state agencies. It is generally not available for public use. However, there is a public-use version of the Sample that contains aggregated nonconfidential data.

CMAQ - Congestion Mitigation and Air Quality Improvement Program. Jointly administered by the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA), the CMAQ program was reauthorized in 1998 under the Transportation Equity Act for the 21st Century (TEA-21). The TEA-21 CMAQ program provides more than \$8.1 billion in funds to state departments of transportation (DOTs), metropolitan planning organizations (MPOs), and transit agencies to invest in projects that reduce criteria air pollutants regulated from transportation-related sources over a period of six years (1998 to 2003). The TEA-21 CMAQ program is similar to its Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) predecessor, but it features greater program flexibility, several new program options, an expansion of eligible activities available for funding, and the statutory formula for apportioning funds was redesigned to provide a more equitable distribution. This program has been continued in SAFETEA-LU.

CNG - Compressed Natural Gas. Often used as a fuel for transit or fleet vehicles.

COFC - Container On (rail) Flat Car. A form of intermodal movement of freight.

Congestion Pricing - Policies that attempt to reduce congestion by applying a price for roadway use during peak travel periods. Such policies may include parking surcharges and automated tolling.

Container - A large, weatherproof box designed for shipping freight in bulk by rail, truck, or steamship. Standard lengths include 20 ft, 40 ft, 48 ft, and 53 ft.

Containerized Cargo - Cargo that is practical to transport in a container, and results in a more economical shipment than other forms of unitization.

CREATE - Chicago Region Environmental And Transportation Efficiency Program. This project is an outgrowth of a public-private partnership between the State of Illinois, the City of Chicago, and several freight and passenger railroads. The project will maximize the use of five rail corridors for a faster and more efficient rail network, eliminate the wait for motorists at 25 grade crossings by creating grade separations that separate motorists from trains, and create six rail-to-rail “flyovers” - overpasses and underpasses that separate passenger trains from freight trains. Under the CREATE plan, railroads will, for the first time, make additional investment decisions based on what is best for the overall rail network. The railroads will pay for the benefits they receive under the project, and the city, state, and Federal government will pay for the public benefits generated by the plan. Due to the large number of rail interchanges in Chicago, this project will impact freight rail service across the U.S.

Cross Ties - The wooden, concrete, or steel crosspieces that keep two rails in gage.

CSXT - CSX Transportation. A Class I railroad, and one of the four largest railroads in the U.S. (along with BNSF, NS, and UP). CSXT, headquartered in Jacksonville, is the largest railroad operating in Florida.

CWR - Continuous Welded Rail. A number of rails welded together to form a continuous string (typically, in lengths of 1,400-feet).

Deficiency - A constraint in the transportation system that decreases the efficiency of the system. Deficiencies can include congestion; geometric limitations such as speed, height, or width restrictions; or facility conditions that restrict use or operations.

DMU - Diesel Multiple Unit. Self-propelled, bidirectional passenger rail cars with diesel engines, electric generators, and electric motors located below the passenger compartment.

DOT - Department of Transportation.

Double-Stack Containers - Containers that can be stacked atop one another on a flatcar.

Dray - A local move of a trailer or container by truck, especially between a rail yard or port and a customer.

EIS - Environmental Impact Statement.

Elasticity Factor - The effect on demand for one mode induced by the change in price of a competing mode.

Embargo - A means of controlling or stopping rail traffic when accumulations, congestion, or other problems, such as poor track conditions (typically of a temporary nature), interfere with normal operations.

ETC - Electronic Toll Collection. Use of technological advances in communications to assess a toll on a vehicle without the use of a tollbooth. Often used in congestion pricing strategies.

FCEN - Florida Central Railroad. A Class III railroad with operations in Florida.

FCRD - First Coast Railroad. A Class III railroad with operations in Florida.

FDOT or Florida DOT - Florida Department of Transportation.

FEC - Florida East Coast Railway. A Class II railroad operating entirely within the State of Florida.

FEU - Forty-Foot Equivalent Units. This is a common measure for containerized freight movements, though TEU (20-foot equivalent units) is the standard measure.

Federal Highway-Rail Grade Crossing Program (Section 130) - Provides funds for road-rail grade crossing safety improvement and education.

FHWA - Federal Highway Administration.

FMID - Florida Midland Railroad. A Class III railroad with operations in Florida.

FNOR - Florida Northern Railroad. A Class III railroad with operations in Florida.

FRA - Federal Railroad Administration. The FRA is a division within the U.S. Department of Transportation (DOT) that is responsible for conducting and monitoring research regarding freight and passenger rail operations, and enforcing Federal programs for railroad safety. The FRA is generally responsible for administering all Federal programs related to rail transportation.

FRA Track Classes - Federal Railroad Administration Track Classes. The FRA limits operating speeds on track based on physical condition. The established classes and their maximum speeds are as follows:

Class	Maximum Freight Train Speed
1	10 mph
2	25 mph
3	40 mph
4	60 mph
5	80 mph
6	110 mph

Exempt track does not meet Class I standards and can be operated only with written approval of the FRA and with certain restrictions. [Please note that Track Classes are distinct from Railroad Classifications.]

Freight - Any commodity being transported.

Freight Villages - Large logistics centers that form a central point for all rail shipments (intermodal, auto, general merchandise) and act as facilitators to attract manufacturing businesses that wish to relocate to lower logistics costs; they also create secondary jobs in warehouses, distribution centers, manufacturing, packaging plants, and other value-added businesses. Same as an integrated logistics center (ILC).

FTA - Federal Transit Administration.

FWCR - Florida West Coast Railroad. A Class III railroad with operations in Florida. In June of 2004, the STB granted the FWCR approval to abandon all service, though the railroad is still operating a limited service.

FY - Fiscal Year.

Gage (of track) - The distance between the parallel tracks on a rail line, measured at right angles. Standard gage is four-feet, eight-inches.

GFRR - Georgia and Florida Railway. A Class III railroad with operations in Florida.

GIS - Geographic Information Systems. The use of computers, software, and geographic data to display, manipulate, and analyze information.

GPS - Global Positioning Systems. Use of satellites and advanced communications technology to accurately locate and track items on the globe. Can be used by drivers, transit operators, and trucking companies to locate vehicles and provide alternative routes.

Grade Crossing - The point at which a roadway intersects and crosses a rail line. The crossing can be at-grade or grade separated.

Green Goat - A new, efficient diesel locomotive developed by RailPower Technologies - a Vancouver, British Columbia company. It is a hybrid switcher, in which the electric traction motors on the axles are powered by a large bank of custom-designed lead acid batteries.

Gross Ton-Mile - The movement of the combined weight of transportation equipment and its contents a distance of one mile.

GSP - Gross State Product. The total value of all products and services produced in that state.

GUI - Graphical User Interface. The portion of computer software visible to the user.

Haulage Rights - An arrangement where one railroad may negotiate rates or contracts with customers located on another railroad's line. The railroad receiving haulage rights supplies the cars and the railroad granting haulage rights operates the trains.

Headway - The time interval between consecutive vehicles passing a given point. Generally used to define transit service. Used in the following context: "Peak-period transit buses and trains generally run on five-minute headways."

HOV - High Occupancy Vehicle. A designated lane on a highway, also known as a carpool or "diamond" lane.

ICC - Interstate Commerce Commission. Former transportation regulating authority, eliminated by the ICC Termination Act of 1995. Replaced by the Surface Transportation Board (STB).

Inbound Traffic - Traffic terminating in one region that originated in another region. Typically used in this report to represents interstate traffic terminating in Florida.

Integrated Logistics Center (ILC) - Sometimes referred to as freight villages or logistics parks, ILCs provide a hub where long-distance transportation services connect with local pick-up and delivery services. For outbound movements, the ILC acts as a local collector, consolidating a sufficient density of traffic for efficient long-haul interstate transport. For inbound movements, the ILC is used to break down the shipments for local delivery.

Interchange - The exchange of carload traffic between railroads. An interchange point or location is the specific track or tracks on which cars are placed for delivery to another railroad.

Intermodal (or Multimodal) - Carriage by more than a single mode with a transfer(s) between modes to complete a trip or a freight movement. In passenger transportation, intermodal usually refers to trips involving more than one mode. For freight and goods movement, the definition refers to transfers between all freight modes, including ships, rail, truck, barge, etc., taken as a system for moving freight. Intermodal also refers to COFC and TOFC movements.

Intermodal Management System - Florida's systematic process of evaluating and monitoring intermodal facilities and linkages of statewide significance to identify and correct deficiencies that impede efficient connectivity with national and international transportation systems and markets.

Intermodal System - The transportation network consisting of public and private infrastructure for moving people and goods using various combinations of transportation modes.

Interstate - Traffic that originates in one state and terminates in another. Foreign and domestic port (import and export) traffic also is considered to be interstate in nature.

Intrastate - Traffic that originates and terminates in a single state. This traffic also is referred to as local.

Intrastate Carrier - A carrier operating solely within the boundaries of a single state; e.g., the Florida East Coast Railway (FEC).

ISTEA - Intermodal Surface Transportation Efficiency Act of 1991.

ITS - Intelligent Transportation Systems. Using technology to improve the efficiency of the transportation system.

Lading - Freight or cargo making up a shipment.

LCV - Longer Combination Vehicle. Any combination of truck tractor and two or more trailers or semitrailers that operate on the Interstate System at a gross vehicle weight greater than 80,000 pounds.

Line-Haul Service - The movement over the tracks of a railroad from one city to another, not including the switching service, or the movement of a truck over the highway from city to city.

LNG - Liquefied Natural Gas. This is often used as a fuel for transit or fleet vehicles.

Local Traffic - Freight or passenger movements that both originate and terminate in a region. If the region is defined as a state, local traffic represents intrastate traffic.

Long-Range Component - The long-range part of the Florida Transportation Plan, updated at least every five years, or more often as needed, to reflect changes in the issues, goals, and long-range objectives for the ensuing 20 years.

LRFA - Local Rail Freight Assistance Program. A Federal program designed to provide assistance (funding) for light-density rail lines. The program is not currently funded.

LRT - Light Rail Transit.

LRV - Light Rail Vehicle.

LTL - Less-Than-Truckload. The quantity of freight that is less than that required for application of a trailerload rate. LTL carriers, such as Yellow Freight, will combine shipments from multiple customers into a single truck.

Main Line - Two definitions apply. First is a designation made by each railroad of its own track, generally signifying a line over which through trains pass with relatively high frequency. A main line generally has heavier weight rail, more sophisticated signaling systems, and better maintenance than branch lines. The second is a designation of the through track between any two points, even on a branch line, as distinguished from side tracks, pass tracks, or spurs.

MAROps - Mid-Atlantic Rail Operations Study. MAROps is the joint product of five states (Virginia, Maryland, Delaware, Pennsylvania, and New Jersey), the I-95 Corridor Coalition (representing these five states and seven others in the NEC), and three railroads (Norfolk Southern, CSX Transportation, and Amtrak). The study addresses the barriers associated with planning and funding transportation system improvements across boundaries - across the jurisdictional boundaries between states and cities, across the interest boundaries between the public agencies and private firms, and across the financial boundaries between the highway and rail systems. The study identified 71 infrastructure and information system improvements that must be implemented across the five states and Washington, D.C., over the next 20 years to relieve these choke points. These improvements potentially impact the diversion of truck traffic to rail on the entire length of I-95 from Florida to Maine. A similar New England effort (NEROps) and southeastern effort (SEROps) are in progress.

MGTM/M - Million Gross Ton-Miles per Mile.

Mobility - The ability of people to complete desired trips, or for goods to be moved from place to place.

Modal Share - The percentage of freight or passengers moved by a particular type (mode) of transportation.

Mode Shift - The change in mode by an individual person or freight shipment. A person may shift modes when the relative cost in terms of time, money, and convenience between modes changes. For example: if transit fares were reduced, people who once drove alone

to work may decide to take the bus instead. Mode shifts can also occur between air, truck, rail, and water movement of freight.

MPO - Metropolitan Planning Organization. A government agency for cooperative decision-making for a metropolitan planning area.

Multilevel Auto Carrier - A type of train car that has two levels, used in the transport of vehicles.

Multimodal Transportation - More than one mode to serve transportation needs in a given area. This term is sometimes used interchangeably with intermodal.

NAAQS - National Ambient Air Quality Standards. Federal air quality standards established pursuant to Section 109 of the Clean Air Act that apply to outside air everywhere and are set to protect public health. Included are standards for carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO₂), ozone (O₃), particulate matter (PM₁₀), and sulfur dioxide (SO₂).

Net Ton-Mile - The movement of a ton of freight one mile. Excludes the weight of the vehicle hauling the freight.

NS - Norfolk Southern Railroad. A Class I railroad, and one of the four largest railroads in the U.S. (along with BNSF, CSXT, and UP). NS, headquartered in Roanoke, VA, offers service to Jacksonville and northern locations in Florida.

Operating Revenue - All revenue generated through the operation of transportation services.

Operation Lifesaver - Operation Lifesaver is a national, nonprofit education and awareness program dedicated to ending tragic collisions, fatalities, and injuries at highway-rail grade crossings and on railroad rights-of-way.

Originating Traffic - Includes both outbound and local traffic in Florida.

Outbound Traffic - Traffic originating in one region that terminates in another region. Typically used in this report to represent interstate traffic originating in Florida.

Peak-Hour - The hour of the day during which the volume is higher than at any other hour during the day.

Peak-Period - The time period that has the highest volume of traffic in a day. For example, the peak-period for urban highways is generally between 6:00 a.m. and 9:00 a.m.

Piggyback - The transportation of highway trailers (TOFC) or containers (COFC) on rail cars specifically equipped for the service. It is essentially an intermodal movement in which a truck performs pickup and delivery to a rail terminal, as well as delivery at the terminating rail head.

PMT - Personal Miles Traveled. This is the summation of the products of person trips multiplied by miles traveled per trip.

PPP - Public-Private Partnership. Public agencies and private industry working together to solve transportation problems.

Quiet Zone - A segment of rail line with one or more highway-rail grade crossings at which specific safety measures have been implemented allowing the avoidance of sounding of locomotive horns. The Final Rule on the Use of Locomotive Horns at Highway-Rail Grade Crossings is to take effect on June 24, 2005.

Rail - A rolled steel shape, commonly a Tee-section designed to be laid end-to-end in two parallel lines on cross ties or other suitable supports to form a track for railway rolling stock.

Rail Yard - A system of tracks within limits provided for switching cars, making up trains, storing cars, and other purposes.

Railroad Classifications - Railroad classifications are determined by the Surface Transportation Board (STB). In 2005, the classifications were as follows:

- **Class I** - \$319.3 million or more in operating revenues.
- **Class II** - a non-Class I line-haul railroad operating 350 miles or more with operating revenues of at least \$40 million.
- **Class III** - a non-Class I or II line-haul railroad.
- **Switching and Terminal Railroad** - a non-Class I railroad engaged primarily in switching and/or terminal services for other railroads.

Note: Class II and Class III railroads are generally referred to as “regional” and “short line” railroads, respectively.

Railroad Mileage - The following definitions apply: road or route miles signify the unduplicated mileage of a rail carrier’s system and is the typical measure of a railroad’s size. Track miles, a higher number than route miles, for a given system, taking into account second (or third) tracks; running track miles represent tracks normally used in train service, exclusive of yard tracks, industrial sidings and storage tracks; total track miles are the sum of running tracks plus all other tracks.

Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act) - Federal legislation that provided reform of railroad economic regulation and Federal funding for the rehabilitation of railroad facilities and equipment.

Ramp Metering - A traffic control policy using traffic flow monitoring and traffic signalization technologies at freeway access ramps to limit the flow onto the freeway. Ramp metering attempts to reduce the number of cars merging into free-flow traffic at a given time.

Regional Rail Reorganization Act of 1973 (3R Act) – Passed by Congress to finance and restructure eight Eastern bankrupt railroads and preserve essential transportation services in the Northeast and Midwest. This Act led to the creation of Conrail.

ROW – Right-of-Way. A strip of land for which an entity has a right to build, operate, and maintain a linear facility such as a road, railroad, or pipeline.

RRIF – Railroad Rehabilitation and Improvement Financing Program. The program provides direct loans and loan guarantees to state and local governments, government-sponsored authorities and corporations, railroads, and joint ventures that include at least one railroad. Eligible projects include: 1) acquisition, improvement, or rehabilitation of intermodal or rail equipment or facilities (including tracks, components of tracks, bridges, yards, buildings, and shops); 2) refinancing outstanding debt incurred for these purposes; or 3) development or establishment of new intermodal or railroad facilities. Funding for this program was greatly expanded under SAFETEA-LU, and the program was improved by eliminating some of the onerous restrictions.

SAFETEA-LU – Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users signed into law on August 10, 2005. It authorizes the Federal surface transportation programs for highways, highway safety, and transit for the five-year period 2005 to 2009.

Safety Management System – A systematic process that has the goal of reducing the number and severity of traffic crashes by ensuring that all opportunities to improve highway safety are identified, considered, implemented as appropriate, and evaluated in all phases of highway planning, design, construction, maintenance, and operation, and by providing information for selecting and implementing effective highway safety strategies and projects.

Safety Program – Includes projects designed to improve vehicle and pedestrian safety on the city, county, and state highway systems. The safety program is divided into three subprograms: rail-highway crossings, highway safety, and traffic safety grants.

SCFE – South Central Florida Express. A Class III railroad with operations in Florida.

SCORT – Standing Committee on Rail Transportation. Established by the American Association of State Highway and Transportation Officials (AASHTO), this Committee is charged with: reviewing, evaluating, and recommending transportation legislation; exchanging technical information and policy positions on railroad matters; evaluating, commenting upon, and suggesting revisions to Federal regulations; reaching a common viewpoint of the states on rail policies and problems; gathering information and investigating railroad concerns; providing technical expertise and management training for state railroad connected agencies; providing public information on rail transportation matters; cooperating and coordinating activities with transportation users and the railroad industry; taking a forward-looking view of and disseminating rail progress; and encouraging research necessary to reach these goals. It also is tasked with identifying and receiving reports from its subcommittees and task forces as to Federal regulatory mandates of national concern, and reporting on these matters.

SFRC - South Florida Rail Corridor. An operating rail corridor owned by the Florida Department of Transportation (FDOT). It extends from north of West Palm Beach to Miami. Maintenance and corridor operations are performed by CSX Transportation (CSXT) under contract to the FDOT. Tri-Rail, Amtrak, and CSXT freight all operate on this Corridor.

SFRTA - South Florida Regional Transportation Authority.

SGLR - Seminole Gulf Railway. A Class III railroad with operations in Florida.

Short-Range Objectives - One or more statements, for each long-range objective, of the specific, measurable, intermediate ends that are achievable and mark progress toward a goal. Specific objectives may be associated with more than one goal and/or long-range objective.

SIB - State Infrastructure Bank. A SIB is a revolving fund mechanism for financing a wide variety of highway and transit projects through loans and credit enhancement. SIBs are designed to complement traditional Federal-aid highway and transit grants by providing states increased flexibility for financing infrastructure investments. Under the initial SIB Pilot Program, 10 states were authorized to establish SIBs. In 1996, Congress passed supplemental SIB legislation as part of the Department of Transportation (DOT) Fiscal Year (FY) 1997 Appropriations Act that enabled additional qualified states to participate in the SIB pilot program. This legislation included a \$150 million General Fund appropriation for SIB capitalization. The Transportation Equity Act for the 21st Century (TEA-21, Public Law 105-178, as amended by Title IX of Public Law 105-206) extended the pilot program for four states (California, Florida, Missouri, and Rhode Island) by allowing them to enter into cooperative agreements with the U.S. DOT to capitalize their banks with Federal-aid funds provided in FY 1998 through FY 2003.

SIC - Standard Industrial Classification. Published by the U.S. Office of Management and Budget (OMB), the SIC is a numerical classification scheme for defining industries.

Side-Track - A short track extending alongside and often connecting at both ends with main track.

SIS - Strategic Intermodal System. Established in 2003 by the Florida Legislature, the SIS is a statewide network of high-priority transportation facilities, including the State's largest and most significant commercial service airports, spaceport, deepwater seaports, freight rail terminals, passenger rail and intercity bus terminals, rail corridors, waterways, and highways. The SIS will be used for: targeting expenditures to help the State's economic competitiveness, including increased corridor emphasis in planning and funding projects; applying innovative policies and technologies, including Intelligent Transportation Systems (ITS); clarifying the State's roles and responsibilities on and off this system; and providing input to the next update of the Florida Transportation Plan.

"S" Line - Along with the "A" Line, this is CSXT's major north-south line, which terminates in central Florida. It is the former Seaboard Air Line route, which is the western route between Jacksonville and Orlando/Tampa.

Slow Order - A speed restriction placed by railroad management on a designated segment of track, generally as a temporary measure during the performance of maintenance work. Sometimes, however, slow orders represent semipermanent restrictions due to deteriorated track conditions.

SOV - Single Occupancy Vehicle. An automobile in which only the driver is transported.

State Highway System - A network of approximately 12,000 miles of highways owned and maintained by the State or state-created authorities. Major elements include the Interstate, Florida's Turnpike, and other toll facilities operated by transportation authorities and arterial highways.

State Implementation Plan - The plan developed by the State and approved by the U.S. Environmental Protection Agency (EPA) that contains the strategies and mechanisms, enforceable under state law, necessary to meet the national ambient air quality standards and comply with Federal and state air quality laws and regulations.

Station - A place designated by name in a railroad timetable.

STB - Surface Transportation Board. The STB is an economic regulatory agency that Congress charged with the fundamental missions of resolving railroad rate and service disputes and reviewing proposed railroad mergers. The STB is divisionally independent, although it is administratively affiliated with the U.S. Department of Transportation (DOT). It was created in the Interstate Commerce Commission Termination Act of 1995 and is the successor agency to the Interstate Commerce Commission (ICC). The agency has jurisdiction over railroad rate and service issues and rail restructuring transactions (mergers, line sales, line construction, and line abandonments); certain trucking company, moving van, and noncontiguous ocean shipping company rate matters; certain intercity passenger bus company structure, financial, and operational matters; and rates and services of certain pipelines not regulated by the Federal Energy Regulatory Commission.

STCC - Standard Transportation Commodity Code. A standard seven-digit collapsible coding structure. The first five digits of the STCC coincide with the Commodity Classification for Transportation Statistics, a commodity adaptation of the Standard Industrial Classification (SIC) published by the U.S. Office of Management and Budget (OMB), which was developed for use in the Census of Transportation and adopted by the Interstate Commerce Commission (ICC) as the mandatory reporting form for all ICC-regulated carriers.

Strategic Issues - Critical challenges or fundamental policy concerns that affect the nature of a public condition. Strategic issues serve to identify the most significant opportunities and/or threats/problems that the agency must address in the next five years to help the agency succeed or prevent the agency from failing in its mission.

Subdivision - A portion of a railroad operating division, as designated in a timetable.

Switching Railroad - A non-Class I railroad engaged primarily in switching services for other railroads.

TCRO - Tri-County Rail Organization.

TDM - Travel Demand Management.

TEA-21 - The Transportation Equity Act for the 21st Century. Enacted June 9, 1998, as Public Law 105-178. TEA-21 authorizes the Federal surface transportation programs for highways, highway safety, and transit for the six-year period 1998 to 2003.

Terminal - An assemblage of facilities provided by a railway at a terminus or at an intermediate point for the handling of passengers or freight and the receiving, classifying, assembling, and dispatching of trains.

Terminating Traffic - Includes both inbound and local traffic in Florida.

TEU - Twenty-Foot-Equivalent Unit. The eight-foot by eight-foot by 20-foot intermodal container is used as a basic measure in many statistics.

Through Traffic - Represents traffic neither originating nor terminating in Florida, but passing through the State. This also is referred to as overhead traffic.

Tie - The transverse member of the track structure to which the rails are spiked or otherwise fastened to provide proper gage and to cushion, distribute, and transmit the stresses of traffic through the ballast to the roadbed.

TIFIA - The Transportation Infrastructure Finance and Innovation Act of 1998. Established a new Federal credit program (referenced as the TIFIA program) under which the U.S. Department of Transportation (DOT) may provide three forms of credit assistance - secured (direct) loans, loan guarantees, and standby lines of credit - for surface transportation projects of national or regional significance. The program's fundamental goal is to leverage Federal funds by attracting substantial private and other non-Federal coinvestment in critical improvements to the nation's surface transportation system. In all cases, the DOT uses a merit-based system to award credit assistance to project sponsors, who may include state DOTs, transit operators, special authorities, local governments, and private entities.

Timetable - The authority for the movement of regular trains subject to the rules. It may contain classified schedules and includes special instructions.

TOFC - Trailer On (rail) Flat Car. A form of intermodal piggyback movement of freight.

Track - An assembly of rails, ties, and fastenings over which cars, locomotives, and trains are moved.

- **Bad Order** - A track on which bad order cars are placed either for light running repairs or for subsequent movement to repair tracks.
- **Classification** - One of the body tracks in a classification yard, or a track used for classification purposes.
- **Crossover** - Two turnouts with track between, connecting two nearby and usually parallel tracks.

- **Interchange** - A track on which cars are delivered or received, as between railways.
- **Passing** - A track auxiliary to the main track for meeting or passing trains. Same as a “siding.”
- **Side** - A track auxiliary to the main track for purposes other than for meeting and passing trains.
- **Spur** - A stub track diverging from a main or other track.
- **Station** - A track upon which trains are placed to receive or discharge passengers, baggage, mail, and express.
- **Storage** - One of the body tracks in storage yards or one of the tracks used for storing equipment.
- **Team** - A track on which cars are placed for transfer of freight between cars and highway vehicles.
- **Trackage Rights** - Rights obtained by one carrier to operate its trains over the tracks of another carrier.

Track Capacity - The number of cars that can stand in the clear on a track. Track capacity can be defined in several ways, but essentially it is the number of trains that can traverse a rail line before significant delays or safety issues arise.

Trackage Rights - An arrangement by which one railroad may operate its trains over the tracks of another railroad. In overhead trackage rights, the tenant railroad may not directly serve the track owner’s customers.

Trains, Categories of:

- **Extra Train** - A freight train that does not operate regularly but only when required to move cars in excess of the normal flow of traffic.
- **Intermodal Train** - A train that handles only trailer on a flat car (TOFC) or container on a flat car (COFC) traffic.
- **Switch Runs** - Trains that operate in terminal areas or in road territory for short distances (normally shorter than 100 miles) and place and pull cars from industries along the line. Switch runs are also referred to as “locals” by some railroads.
- **Through Freight** - Trains that operate between terminals that may be several hundred or thousands of miles apart and do little or no picking up and setting off of cars en route.
- **Unit Train** - A train handling a large volume of one commodity. Typically those trains handle coal, ore, potash, etc., which originates at one point and is hauled to one destination.

Transit - Mass transportation by bus, rail, or other conveyance that provides general or special services to the public on a regular and continuing basis. It does not include school buses or charter or sightseeing services.

Transportation Corridor - Any land area designated by the state, a county, or a municipality that is between two geographic points and that is used or suitable for the movement of people and goods by one or more modes of transportation, including areas necessary for management of access and securing applicable approvals and permits. Transportation corridors shall contain, but are not limited to, the following: a) existing publicly owned rights-of-way; b) all property or property interests necessary for future transportation facilities, including rights of access, air, view, and light, whether public or private, for the purpose of securing and utilizing future transportation rights-of-way, including but not limited to, any lands reasonably necessary now or in the future for securing applicable approvals and permits, borrow pits, drainage ditches, water retention areas, rest areas, replacement access for landowners whose access could be impaired due to the construction of a future facility, and replacement rights-of-way for relocation of rail and utility facilities.

Transportation Expenses - The expenses directly associated with the operations of a railroad. They generally include the cost of crews, fuel, and other related items.

Travel Price - The travel cost per mile for a particular mode. For example, the average cost for automobile travel on a per mile basis that includes the cost of operating, maintaining, and insuring the vehicle.

TTI - Texas Transportation Institute.

TTR - Talleyrand Terminal Railroad. A switching railroad providing service to JaxPort.

Turnout - A device made of two movable rails with connections and a crossing frog that permit the movement of an engine, car, or train from one track to another. Also called a switch, although the switch is one component of a turnout.

Unit Train - A dedicated set of rail vehicles (a train) loaded with one commodity at one origin, unloaded at one destination each trip, and moving in both directions on a predetermined schedule without intermediate stops.

VMD - Vehicle Minutes of Delay. Waiting time measured by minutes, attributable to congestion.

VMT - Vehicle Miles of Travel. The total number of miles traveled for a mode during a given time period.

WIM - Weigh-in-Motion. A technology that weighs vehicles while they are moving down a road. Generally used to weigh heavy trucks, thereby eliminating the need for roadside weigh stations.

Work Program - The five-year listing of all transportation projects planned for each fiscal year by the Florida Department of Transportation (FDOT), as adjusted for the legislatively approved budget for the first year of the program.