

2002 FLORIDA RAIL SYSTEM PLAN



**Florida Department of
Transportation**

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of
Transportation**

**with assistance from
Wilbur Smith Associates**

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EXECUTIVE SUMMARY

The *Florida Rail System Plan* is the rail component of the *Florida Transportation Plan* which, through an annual series of policies, programs and projects, implements the Transportation element of the *State Comprehensive Plan*. Florida Statutes require this plan to be updated every two years.

Planning for and monitoring the state's rail system is somewhat different than the other modes of transportation as the vast majority of the system is owned and operated by the private sector. Only 81 miles of Florida's 2,871-mile rail system are in public ownership. Thirteen line-haul and four terminal railroads own/operate the remaining 97 percent of the system. Therefore, the state has limited input affecting many railroad decisions, but rather works with its rail carriers to resolve common problems and issues of mutual concern. The Florida Department of Transportation (FDOT), however, does have statutorily mandated roles relating to the "proper maintenance, safety, revitalization, and expansion of the rail system to assure its continued and increased availability to respond to statewide mobility needs." Thus, the Department can influence decisions affecting private rail system operations as they may relate to the public interest. Through the FDOT's Rail Office, the state pursues those mandates where authorized by statute.

The state also makes investments that indirectly facilitate rail freight business through its various intermodal programs, improving modal connections between Florida's seaports and rail-highway transfer facilities. The FDOT works with the ports on rail access matters as the amount of associated rail business represents significant freight traffic in terms of tonnage and value. As international trade has become a very significant portion of Florida's overall economy, such trends are expected to continue with associated increased demands.

Another major state effort is focused in the area of railroad safety. The FDOT participates in a joint federal/state railroad inspection program (track, signals, equipment, hazardous materials, and operating practices) and has seen derailments over the last 18 years reduced from over 200 per year to approximately 36 per year. It also administers the state's rail-highway grade crossing program. While grade crossing incidents totaled between 200 and 250 per year through most of the 1980s, incidents have steadily declined since 1988, and for

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the first time fell below 100 in 1995. In 2001, they were just over 100. The FDOT has been involved in a number of initiatives, state and federal, to reduce grade crossing incidents and it will remain committed to this important objective.

Since traditional railroad operators exited the rail passenger business upon the formation of Amtrak in 1971, the movement of people by rail has also fallen primarily into the public purview. In Florida, the state is involved in commuter, as well as conventional and higher speed intercity services. The movement of people by rail provides a number of public benefits justifying public expenditures and in an environmentally sensitive and populous state such as Florida, warrants a continuing commitment on behalf of its citizens.

Based on current rail industry freight and passenger transportation trends, and the goals established for the FDOT in the *2020 Florida Transportation Plan*, there will be a growing public role in rail transportation. It is anticipated that the rail system will need additional capacity in the near future as the demand for alternative transportation grows as highway congestion and environmental concerns increase. The FDOT and its Rail Office are committed to pursuing a number of key strategies in support of the *2020 Florida Transportation Plan*. The rail strategies, along with the applicable goals, are set forth below.

GOALS

1. Safe Transportation for Residents, Visitors, and Commerce

2. Preservation and Management of Florida's Transportation System.

3. A Transportation System that Enhances Florida's Economic Competitiveness

KEY STRATEGIES

- Continue to conduct public education campaigns for awareness of rail-highway crossing safety.
- Conduct research into innovative highway safety devices, including those which prohibit motorists from driving around rail-highway crossing systems and work with appropriate agencies to incorporate research results into program development.
- Identify hazardous roadway locations and features, including those at rail-highway crossings, and establish priorities to correct them.
- Continue to provide financial and technical assistance to local governments and transit agencies to maximize transit ridership improvements.
- Implement a coordinated intermodal planning approach to better support Florida's economy while continuing to identify port, airport, rail, and transit infrastructure needs.
- Improve ground access routes to major intermodal facilities, freight distribution centers and military installations.
- Designate a Strategic Intermodal System and implement a strategic plan for funding, managing and operating the system.
- Continue to improve intermodal connections and access through allocation of TOPs funds.

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4. A Transportation System that Enhances the Quality of Life in Florida
- Work with transportation authorities on the implementation and improvement of regional transit and rail services while continuing to support and improve the South Florida Rail Corridor.
 - Coordinate the area's land use and urban design in the development of transportation facilities.
 - Design multipurpose corridors that use medians for rail lines, and designated lanes for high occupancy and local vehicles.
 - Work with MPOs and local governments to develop strategies to fund transportation alternatives.

The Chapters that follow in this the 2002 edition of the *Florida Rail System Plan* expand on these key goals and strategies and, in addition, provide a "snapshot" of the trends and conditions of Florida's railroad industry as it exists today. The contents of these chapters demonstrate the increasing demand for both rail freight and passenger service and the expanding role of rail transportation in the state's multimodal transportation system. As the state begins to emphasize a true intermodal approach to improve the efficiency of the system, the need for additional involvement in traditional public roles such as grade-crossing safety, as well as new or expanded roles in rail service areas, such as funding, become evident.

Further information regarding the Florida Department of Transportation's public involvement, rail planning, and programming activities can be obtained by contacting the Rail Office by any of the means indicated below.

Mail Address: Florida Department of Transportation
Rail Office
605 Suwannee Street - M.S. #25
Tallahassee, Florida 32399-0450

Telephone Number: (850) 414-4500

Fax Number: (850) 922-4942

Web Address: <http://www.dot.state.fl.us/rail>

CHAPTER 1 INTRODUCTION

Purpose and Authority

The *Florida Rail System Plan* is the rail component of the *Florida Transportation Plan* which, through an annual series of policies, programs and projects, implements the Transportation element of the *State Comprehensive Plan*. Section 341.302, Florida Statutes requires that "the Florida Department of Transportation (FDOT), 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), 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 2 years and include plans for both passenger rail service and freight rail service."

Sections 341.302(4) through (16), 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; etc.

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."

Responsibilities

The FDOT is the designated State agency for railroad planning and programming. The Rail Office, located within the FDOT's Office of the State Public Transportation Administrator (see Exhibit 1-1) has this assignment. The functional responsibilities of the Rail Office include rail safety inspections, acquisition of rail corridors, assistance in developing intercity passenger and commuter rail service, fixed guideway system development, rehabilitation of rail facilities, and rail-highway grade crossing safety improvement. More detail is provided in Exhibit 1-2.

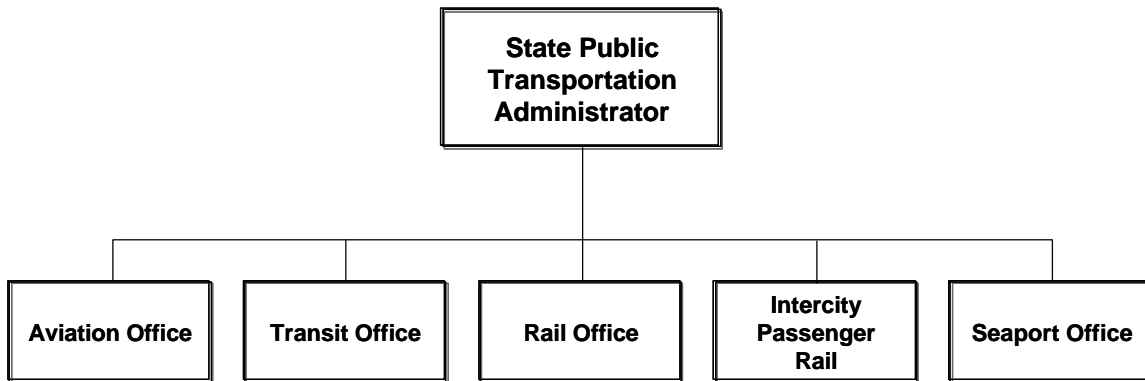


Exhibit 1-1

An on-going comprehensive examination of Florida's rail system by FDOT is an integral part of the overall transportation planning process for the State of Florida. Florida's population is growing faster than roadways can be built to accommodate growth. Thus, the FDOT's focus is on creating a balanced transportation system including alternative means to move people and goods. Florida's rail system will continue to play an important role in both the urban and rural development process.

The FDOT prepares all state rail planning documents and performs special studies and implements projects for specific rail lines and rail situations. As evidenced by this document, it also produces a biennial update of the *Florida Rail System Plan*, a modal planning document with respect to rail freight and passenger plant and operations. The Rail System Plan serves as the rail element of the *Florida Transportation Plan* and the *State Comprehensive Plan* as required by statute.

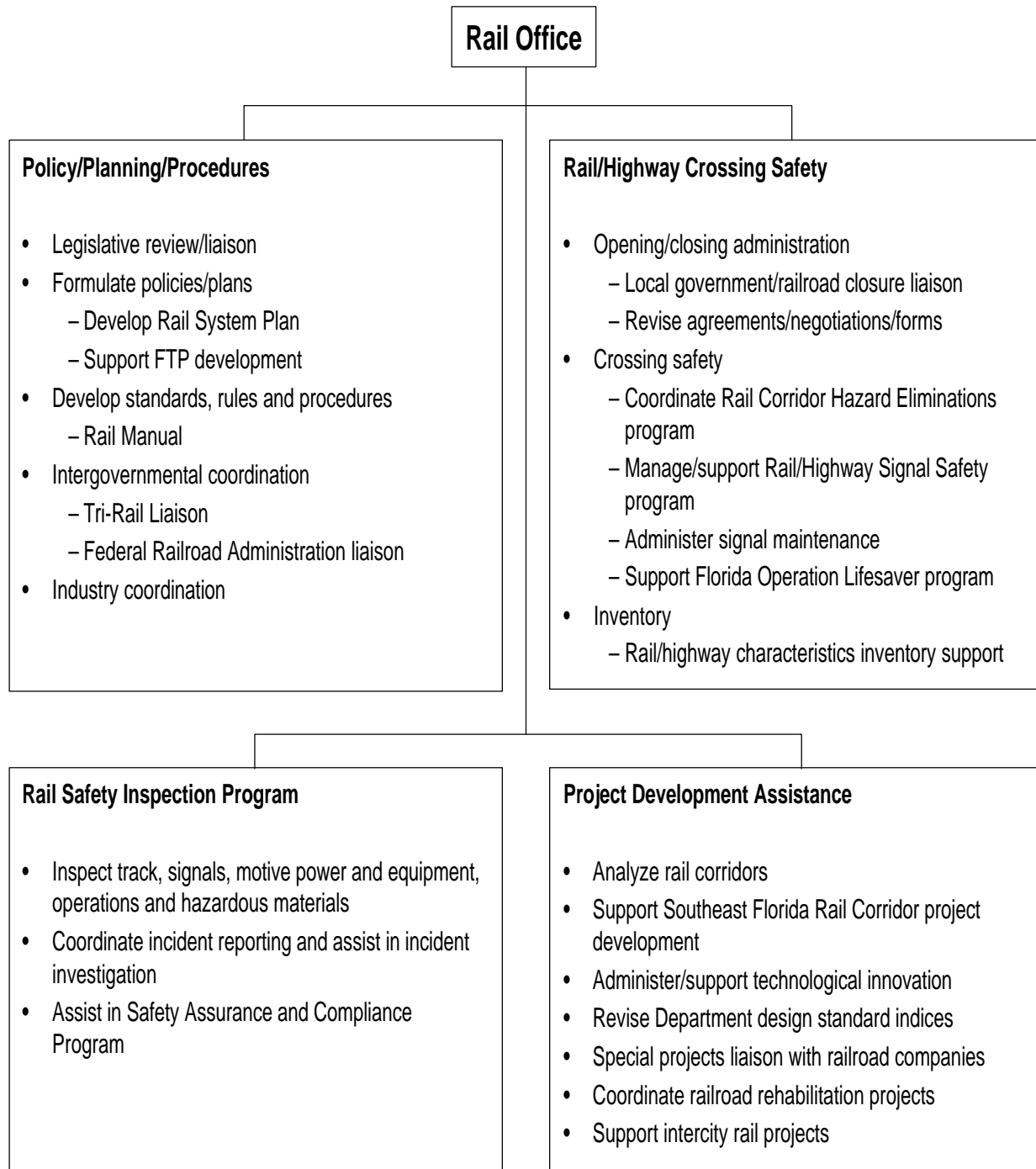


Exhibit 1-2

Objectives have been established by the FDOT for the rail system planning and programming process resulting from responsibilities under the *State Comprehensive Plan*, the *Florida Transportation Plan* and other statutory requirements under F.S. 311.07, 311.09, 320.20 (3), 320.20 (4), 341.053, 302, and 303. The State's rail program is guided by the FTP Mission Statement:

Florida will provide and manage a safe transportation system that ensures the mobility of people and goods, while enhancing economic competitiveness and the quality of our environment and communities.

Specific rail program support of FTP goals/objectives is discussed later in Chapter 6.

Program Components

Given the direction of the mission statement, the primary objectives for the freight element of the rail/intermodal program have been to maintain essential rail services where possible, promote modal connectivity and preserve facilities and corridors for future transportation uses in cases where it is not possible to preserve rail service. In support of these concepts and objectives, the FDOT has created a flexible program that, among other things: (1) identifies endangered services and lines, (2) evaluates and determines problems/solutions, (3) provides and coordinates funding for acquisition, rehabilitation, and new facility construction, (4) promotes joint facility use to increase mobility and revenues or reduce costs, and (5) evaluates intermodal linkages/facilities to promote desirable multimodal alternatives.

Rail Project Funding

Local Rail Freight Assistance Program - An important component of the state's rail planning process has been the development of the *Florida State Rail Plan* based on the requirements contained in CFR 266.17. This rail planning effort qualified the state to receive federal funds through the Local Rail Freight Assistance Program (LRFA) for the purpose of improving statewide freight rail services. The FDOT has participated in this federal program since its inception in 1978 and in excess of \$11.7 million in rail rehabilitation projects have been financed with a combination of federal and railroad funding during that period.

Railroads used the FDOT's rail program and this federal funding source as "seed" capital, primarily to assist small rail carriers on essential light density lines. These federal funds have previously been

loaned and matched by recipient carriers first on a 70/30 basis. A subsequent restructuring provided for the granting of federal loan repayments for rehabilitation purposes on a 50/50 matching ratio. The LRFA Program has not been funded by Congress since 1995, however, and FDOT has just completed the process of implementing projects which will use its last remaining funds.

Future Rail Assistance Funding - Additional rail projects will require other funding sources. The reauthorization of the Intermodal Surface Transportation Efficiency Act (ISTEA), the Transportation Equity Act for the 21st Century (TEA-21), contains several provisions for rail assistance project funding. Section 7202, Light Density Line Pilot Programs, is intended to replace LRFA with \$17.5 million in grants authorized annually. However, funds were not appropriated. Another TEA-21 rail initiative, Section 7203, Rail Rehabilitation and Improvement Financing (RRIF), provides for federal loans or loan guarantees up to an aggregate amount of \$3.5 billion with at least \$1 billion to go to non-Class 1 railroads. The details of the program were finalized by the FRA (49 CFR 260), effective September 5, 2000 after an initial delay. Priority is to be given to projects which:

- enhance safety;
- enhance the environment;
- promote economic development;
- are included in state transportation plans;
- promote U. S. competitiveness; and,
- preserve/enhance service to small communities/rural areas.

The reauthorization process for TEA-21 itself is now beginning which offers new possibilities. Additionally, other legislation is being proposed in Congress which could provide additional federal funding.

State Rail Assistance Funding - FDOT's Transportation Outreach Program (TOP) was created by the 2000 Florida Legislature to replace the Fast-Track Economic Growth Transportation Initiative of 1999. It is dedicated to funding transportation projects of a high priority. A minimum of \$60 million is to be available annually. However, recent state budget constraints have endangered this source.

Under the TOP program, virtually any transportation project which enhances the movement of people or cargo is eligible for funding. Projects are submitted annually and are reviewed, prioritized and selected by a seven-member advisory council. Final project approval is to be made by the Legislature through the General Appropriations Act. Although funding for FY 02/03 was awarded, no program has been established as yet for FY 03/04 funding.

Introduction

In three years of funding from the initial Fast Track effort and two years of its successor Transportation Outreach Program, a total \$229.6 million were awarded by the Florida Legislature. Of this total amount, rail and rail-related projects were awarded \$17.8 million or roughly 7.8 percent of the total. Most of the rail project funds went to CSX Transportation, \$11.9 million, while only one short-line carrier was awarded project funds -- \$945,000 to Georgia and Florida RailNet. Three million dollars awarded for the Eller Drive overpass at Port Everglades are included in the rail total.

Public Involvement Process

Both formal and informal public participation are encouraged by the FDOT as part of its daily activities. This participation process ranges from informal railroad shipper meetings to more formal processes. The rail program public involvement process for updating the Rail System Plan is based on the requirement set forth in CFR 226.15, and by FDOT policy as prescribed in the 2020 Florida Transportation Plan.

Public Input - Public participation in developing the annual rail and intermodal program of projects is encouraged by the FDOT through extensive outreach and statewide workshops. This participation can range from mailouts and surveys requesting information, to attendance at rail/intermodal user forums addressing specific transportation alternatives. Additionally, the FDOT maintains continuous public input efforts through development of the *Florida Transportation Plan* and the FDOT's Five-Year Work Program. Public meetings and hearings are included in these efforts, and close contact with Metropolitan Planning Organizations (MPOs) (and the MPO Advisory Council¹ membership) on rail/intermodal issues is maintained, as it is with the state's rail carriers and seaport community on matters involving rail/intermodal access. The FDOT, through its district offices, annually develops a program update of intermodal projects for its annual work program with input from appropriate MPOs in urbanized areas, or Boards of County Commissioners in non-urbanized areas.

¹ This Council is made up of a governing board consisting of an elected official from each of the state's 25 Metropolitan Planning Organizations.

Document Summary by Chapter

Chapter 2--Freight Rail/Intermodal - Chapter 2 defines the Florida Rail System by describing the major characteristics of each of the System's components and its rail freight traffic commodities and volumes. It also discusses statistics relative to rail-served intermodal facilities, and discusses challenges faced by the freight rail system.

Chapter 3--Passenger Rail/Intermodal - The highlights of Chapter 3 include an overview of present and future rail passenger services in Florida, rail-served intermodal passenger facilities, a discussion of existing and proposed regional rail services, and an overview of potential approaches to intercity passenger rail service.

Chapter 4--Rail Safety - Chapter 4 contains an overview of the rail safety inspection program, including Florida's recent rail incident history, the status of recommendations resulting from the Commission on the Safety and Security of Railroad-Highway Grade Crossings, and an explanation of Florida's rail-highway crossing safety improvement program.

Chapter 5--Rail – Seaport/Intermodal - This chapter discusses issues and initiatives relating to Florida's freight rail network and deepwater seaport system with respect to intermodal shipping, international commerce and global trade patterns. It also reveals trends and conditions expected to impact these facilities in the near-term, seaport rail-related intermodal needs, and how these challenges are addressed by the FDOT through transportation policies and modal programs.

Chapter 6--Future Directions - A discussion of how the State of Florida intends to address rail and intermodal transportation issues and needs in the future is the subject of this chapter. Included are goals and objectives consistent with and in support of those of the *Florida Transportation Plan*, the rail program, and a short-range rail action plan.

CHAPTER 2 FREIGHT RAIL/INTERMODAL

This chapter defines the Florida Rail System by describing the major characteristics of each of the System's components and the use made of them. Also discussed are systemwide trends and conditions.

RAIL SYSTEM COMPONENTS

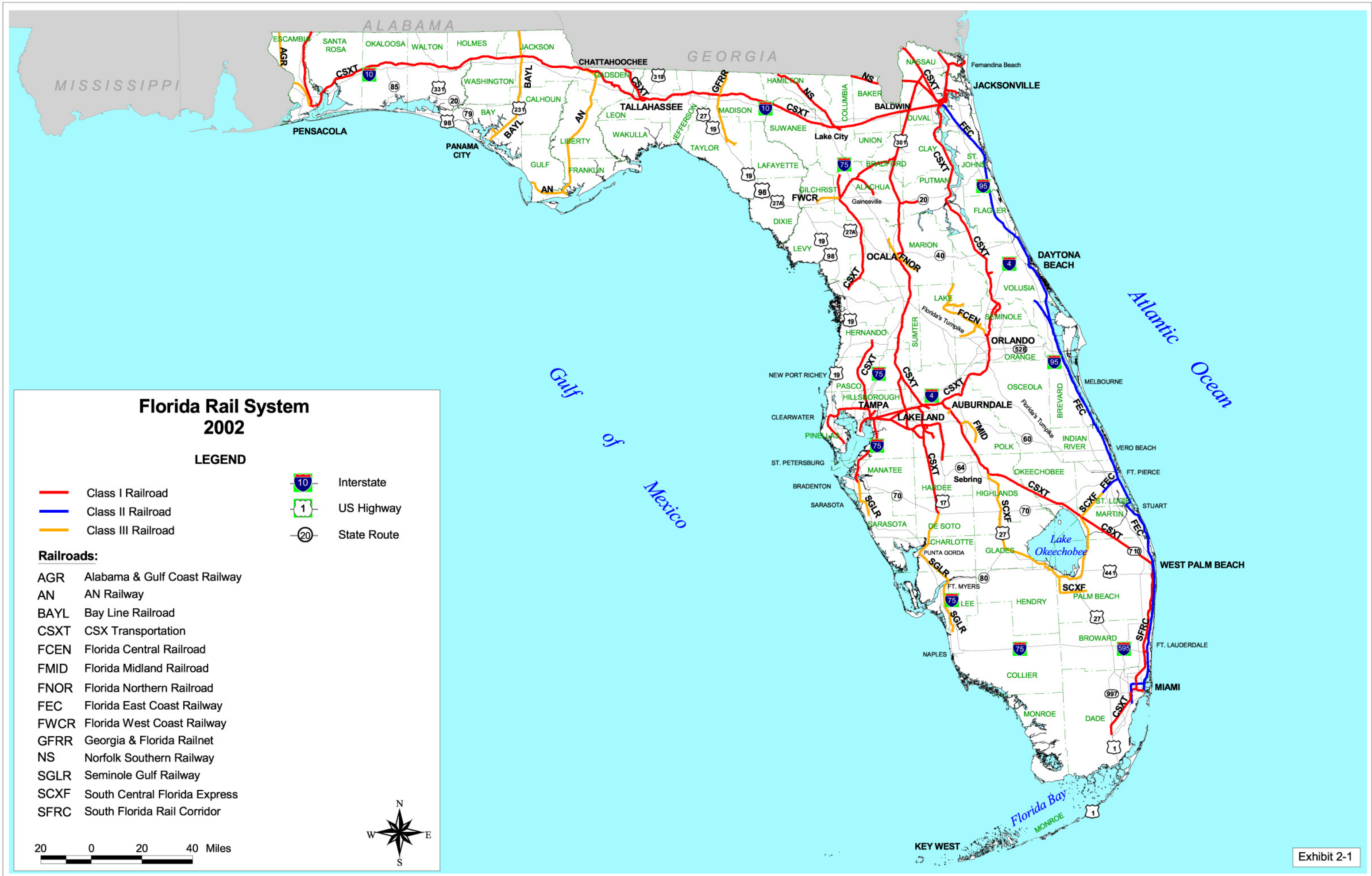
Freight Railroads

The Florida Rail System, as depicted on Exhibit 2-1, is comprised of 13 line-haul railroads and four terminal or switching companies. The line-haul carriers range in size from fairly small intrastate railroads to members of large rail systems extending from Florida into Canada. Of the line-haul railroads, two are Class I carriers¹, one is a Class II, and the remainder are Class III carriers. As seen in Exhibit 2-2, these railroads comprise a 2002 state rail system of 2,871 miles. CSX Transportation's (CSXT) 1,616 Florida route miles represent 56 percent of the statewide rail system. The Florida East Coast Railway (FEC), with 386 route miles, is the second largest carrier in terms of Florida mileage accounting for 13.5 percent of the state rail system.

Alabama and Gulf Coast Railway (AGR) – This Class III carrier operates 140 miles of former Burlington Northern Santa Fe line between Kimbrough, Alabama and Pensacola. It has 44 route miles in the state running from the Alabama-Florida State line to a terminus in Pensacola. Formerly operated by the States Rail organization, it became part of the RailAmerica family in 2002. The major commodities transported in Florida are lumber and wood products; and, pulp, paper, and allied products.

AN Railway, L.L.C. (AN) - The Class III AN Railway operates entirely within the State of Florida over its 96-mile route between Chattahoochee and Port St. Joe. Its major commodity group transported is lumber and wood products. It connects with CSXT in Chattahoochee. Presently, operations of this railroad are somewhat curtailed due to industry closings and port

¹As of December 2001, Class I railroads have annual gross revenues of \$266.7 million or more. Class II railroads have annual gross revenues of more than \$20.5 million, but less than \$266.7 million. Class III carriers have annual gross revenues less than \$20.5 million. These limits are updated annually to reflect inflation.



Florida Rail System 2002

LEGEND

- Class I Railroad
- Class II Railroad
- Class III Railroad
- Interstate
- US Highway
- State Route

Railroads:

- AGR Alabama & Gulf Coast Railway
- AN AN Railway
- BAYL Bay Line Railroad
- CSXT CSX Transportation
- FCEN Florida Central Railroad
- F MID Florida Midland Railroad
- FNOR Florida Northern Railroad
- FEC Florida East Coast Railway
- FWCR Florida West Coast Railway
- GFRR Georgia & Florida Railnet
- NS Norfolk Southern Railway
- SGLR Seminole Gulf Railway
- SCXF South Central Florida Express
- SFRC South Florida Rail Corridor

20 0 20 40 Miles



**Exhibit 2-2
FLORIDA FREIGHT RAILROADS
2002**

RAILROAD	MILES OF RAILROAD OPERATED IN FLORIDA		PERCENT OF FLORIDA RAIL SYSTEM OWNED/LEASED
	Owned/Leased	Trackage Rights	
Alabama and Gulf Coast	44		1.5
AN Railway	96		3.4
Bay Line	63		2.2
CSX Transportation ¹	1,616	130	56.3
Florida Central	66	10	2.3
Florida East Coast	386		13.5
Florida Midland	27		0.9
Florida Northern	27		0.9
Florida West Coast	14		0.5
Georgia and Florida RailNet	48		1.7
Norfolk Southern	96	53	3.3
Seminole Gulf	119		4.2
South Central Florida Express	158		5.5
South Florida Rail Corridor ²	81		2.8
Terminal Companies	30		1.0
TOTALS	2,871	193	100.0

- (1) Amtrak also operates over 1,098 route miles in Florida but does not own any mainline trackage in the State. It operates over CSXT main tracks from Alabama and Georgia to Jacksonville and from Jacksonville to Tampa and Miami. Trackage rights includes the 81-mile South Florida Rail Corridor owned by the State of Florida, but maintained and dispatched by CSXT on behalf of the State, for its own freight trains, Amtrak intercity passenger trains and Tri-Rail commuter trains.
- (2) Not an operating carrier. See Note 1.

inactivity. It is now leased to and operated by Rail Management Corporation, the same operator of the Bay Line, the agreement being consummated with the St. Joe Company in 2002.

Bay Line Railroad, L.L.C. (BAYL) - The Bay Line (formerly Atlanta and St. Andrews Bay Railway Company) operates from Panama City to Dothan, Alabama where it connects with both CSXT and the Norfolk Southern Railway (NS). Approximately 63 route miles of the Class III carrier are located in Florida. Major commodities are non-metallic minerals, lumber and wood products and pulp, paper and allied products. It is owned and operated by Rail Management Corporation.

CSX Transportation (CSXT) - This Class I railroad, a transportation unit of CSX Corporation, operates approximately 23,000 route miles and serves 23 states, the District of Columbia and two Canadian provinces. As Florida's largest railroad, it operates 1,746 route miles in Florida, covering virtually every area of the state. In addition to the 1,616 miles it owns, it also operates over the SFRC and over Georgia and Florida RailNet. Major Florida commodities are nonmetallic minerals, chemicals and allied products, coal, and miscellaneous mixed shipments (intermodal). CSX Intermodal is the intermodal arm of CSX Corporation.

Florida Central Railroad (FCEN) - This short line, formed in 1986 from former CSXT branch lines, is located northwest of Orlando. The 66 track miles operated by the Class III railroad are comprised of its 41-mile main track between Orlando and Umatilla and branches from Tavares to Sorrento (11 miles) and from Forest City to Winter Garden (14 miles). A portion of the latter branch (Toronto to Forest City) is out of service as is the Tavares to Sorrento branch. It also operates over 10 miles of trackage rights through Orlando to Taft Yard for interchange with CSXT. The railroad is one of five operated by the Pinsky organization, three of which are located in Florida. Principal commodities handled by the railroad consist of food or kindred products, lumber and wood products, chemicals, and nonmetallic minerals.

Florida East Coast Railway Company (FEC) - This Class II railroad serves, as its name implies, the east coast of Florida, with its main line running from Jacksonville to Miami. The carrier's 386 route miles, making it the second largest railroad in Florida, are contained completely within the State. In addition to its main track, it operates a branch from Ft. Pierce to Cana, and three branches in the Miami area. Major commodities handled by the FEC are nonmetallic minerals, vehicles and various commodities moved in containers and trailers (intermodal traffic). The carrier is the transportation unit of FEC Industries.

Florida Midland Railroad (FMID) - Another member of the Pinsky group, formed after the Florida Central (1987), this Class III carrier operates two disconnected lines, also CSXT spin-offs, in central Florida -- West Lake Wales to Frostproof and Winter Haven to Gordonville. The segment from Wildwood to Leesburg was abandoned in 2001. The 27 miles of line are used to transport nonmetallic minerals, food and kindred products, lumber or wood products, and chemicals or allied products.

Florida Northern Railroad (FNOR) - Another railroad of the Pinsky group, FNOR runs from Lowell to Candler, 24.3 miles. The line passes through Ocala where it connects with the CSXT mainline and operates a 2.7-mile industrial track. Major commodities transported by this Class III carrier are nonmetallic minerals, lumber or wood products, and food or kindred products.

Florida West Coast Railroad (FWCR) - Another railroad formed from CSXT lines, FWCR operates 14 miles of line running from Newberry to Trenton. The Class III carrier transports principally farm products.

Georgia and Florida RailNet (GFRR) - The GFRR operates trackage spun off by NS running from the Georgia-Florida State Line, near Ashville, to Perry and Foley, 48 miles. It also operates a number of lines in South Georgia. It is one of a family of lines operated by North American RailNet. In Florida, it transports principally wood products and pulp, paper and allied products. CSX Transportation has trackage rights over the line.

Norfolk Southern Railway (NS) - This Class I railroad operates a total of approximately 21,500 route miles and serves 22 states, the District of Columbia, and one Canadian province. In Florida, NS operates 96 route miles and has trackage rights over CSXT from Jacksonville to Palatka. The railroad also has a haulage agreement with the FEC from Jacksonville to Miami. The Norfolk Southern Railway Company is owned by the Norfolk Southern Corporation. Major commodities transported over the NS in Florida are nonmetallic minerals; lumber and wood products; food and kindred products; pulp, paper, and allied products; and, various commodities moved in trailers and containers (intermodal).

Seminole Gulf Railway (SGLR) - The 119-mile Class III SGLR operates (since 1987) two separate lines formerly operated by CSXT -- Oneco to Venice and Arcadia to Vanderbilt Beach. It interchanges with CSXT at Oneco and Arcadia, respectively. The Sarasota – Venice segment of the former line is currently out of service. The Seminole Gulf management is associated with the Bay Colony Railroad of Massachusetts. Major commodity groups associated with the lines are lumber or wood

products, food and kindred products, and nonmetallic minerals. The railroad also operates a dinner train on the Fort Myers line segment.

South Central Florida Express (SCXF) - This Class III rail carrier operates 158 miles of line (former CSXT) running from Sebring to the sugar cane fields and refineries south of Lake Okeechobee near Clewiston, with branches to Cana and Okeelanta, the former leased from FEC. In addition, it has a haulage agreement with FEC to Jacksonville. The railroad is a subsidiary of U.S. Sugar, Inc. Major commodities are chemicals, and farm and food products. It connects with CSXT in Sebring and FEC near Cana.

South Florida Rail Corridor (SFRC) - The State of Florida, through the FDOT, owns the 81-mile former CSXT rail corridor between West Palm Beach and Miami with a branch to Miami International Airport. Maintenance and operations are accomplished through a contractual arrangement between CSXT (freight carrier) and the FDOT SFRC. As many as 12 freight and 42 passenger trains (Tri-Rail commuter and Amtrak intercity) operate within the corridor daily.

Switching and Terminal Companies - The four railroads falling into this category serve three local areas--Jacksonville, Talleyrand Terminal Railroad and St. Johns River Terminal Company; Port Manatee, Manatee County Port Authority; and, Palm Beach, Port of Palm Beach District Railway. In total, these carriers operate approximately 30 miles of track. St. John's River Terminal Company is a member of the Norfolk Southern Railway corporate family.

Rail System Changes

Changes in Florida's rail system since the 2000 Rail System Plan have been principally related to ownership and operators as mentioned in the preceding descriptions of Florida's rail carriers. One abandonment, Florida Midland's Wildwood – Leesburg line (13.2 miles), was experienced, and one perennial abandonment candidate, CSXT's Sterling – Homestead line, was removed from that category by the carrier.

Intermodal Freight System

“Intermodalism” refers to an approach to planning, building and operating the transportation system that emphasizes optimal utilization of transportation resources and connections between modes. This is accomplished through the interface between transportation modes that carry freight (as well as people). It is the efficiency and effectiveness of this linkage that determines the quality of intermodal transportation. The benefits of an efficient intermodal transportation system can be significant. Intermodalism offers the promise of lowering transportation costs, increasing economic productivity and efficiency, reducing congestion, increasing returns from private/public infrastructure investments, improving mobility of all sectors of the population, and reducing energy consumption and environmental impacts.

Federal Initiative - Congress recognized the importance of the intermodal approach to transportation decision-making and the transportation system in 1991’s Intermodal Surface Transportation Efficiency Act (ISTEA) by stating “it is the policy of the United States to develop a National Intermodal Transportation System that is economically efficient and environmentally sound, provides the foundation for the Nation to compete in the global economy and will move people and goods in an energy efficient manner.” This policy continued in 1997 with the Transportation Equity Act for the 21st Century (TEA-21). Railroads, through their connections with other modes, are involved in many intermodal traffic movements.

State Initiative – The Florida Department of Transportation embarked on a new planning process to develop a Strategic Intermodal System for the movement of both passengers and freight. Initiated in late 2000, the on-going effort intensified in late 2001. It includes the establishment of future policies, an institutionalized process for designating and updating such a system, a process for developing, adopting, and updating a strategic plan for the system, identifying transportation corridors throughout the state based on primary function, implementing such a system, and maintaining a planning forum for the system on an ongoing basis. The Rail Office is supplying data and participating in other areas of the planning effort.

Rail Intermodal Facilities - At the heart of intermodal transportation is the use of each mode of transportation for the type of transport for which it functions most efficiently. Transfers of freight between modes are necessary in the process, and they occur in a variety of ways and facilities.

TOFC/COFC - Many of these connections are related to piggyback (TOFC -- trailer on flat car) and container (COFC -- container on flat car) intermodal facilities. Rail-highway intermodal facilities were once more common when the focus was on the movement of trailers (TOFC) and only a ramp was needed for loading and unloading. A combination of a greater use of containers, requiring more investment in loading equipment, and overall operating efficiency, has led to the creation of hub centers consolidating many former facilities and increasing trucking distances. The advent of the double-stack car and its cost savings has spurred the use of containers and the number of containers in intermodal movements surpassed the number of trailers for the first time in 1992. Over 70 percent of all intermodal movements now occur in containers.

There are seven railroad TOFC/COFC facilities located across the state, and major seaports are also equipped to handle these operations. Many of the state's railroads have invested extensively in intermodal rolling stock and special equipment to handle container and double-stack unit train movements. Facility locations in Florida are shown in Appendix A.

Bulk Facilities - Another form of intermodal terminal used by the railroads is the bulk transfer facility. These facilities permit the transfer of bulk materials between rail and truck for those businesses which do not have direct rail service. They possess the necessary equipment to transfer all types of products, including hazardous materials, efficiently and safely. However, all products are not handled at all terminals. Some terminals are owned by the railroads, although usually operated under contract by an outside party, while others are privately owned and operated, many associated with trucking companies. There are 13 bulk transfer facilities located in Florida as shown in Appendix A.

Reload/Warehouse Operations – There are also many rail users located on Florida's rail system that load or unload rail cars for businesses that do not have direct rail service, and/or also provide storage or distribution service. These shipments typically involve break-bulk commodities such as lumber and other building materials, or consumer products.

Team Tracks - Railroads provide team tracks in many locations. These facilities are sidetracks with varying amounts of space to transfer freight between rail cars and trucks and are available for use by the general public. The name is a holdover from the days wagons pulled by teams of horses were used instead of trucks. These facilities are located throughout the state in most communities served by rail.

Water Ports - International trade is a principal component of Florida's economy. Two-thirds (as measured by value) of Florida's international commerce moves by water. All but two of Florida's deepwater seaports -- Canaveral and Key West -- are rail served. Florida's railroads play a major role in landside transport relating to the remaining ports, making them major intermodal partners. The rail-seaport relationship is discussed in more detail in Chapter 5.

RAIL TRAFFIC AND FLOWS

The state's rail system handles a variety of freight traffic, but as will be shown, it is dominated by bulk commodities and short-haul movements.

Commodities Transported

Exhibit 2-3 depicts the rail freight tonnages originating and terminating in Florida in 2001 by commodity classification. Of the total 158 million tons (down from 169 million tons in 1999) originated or terminated, 101 million tons were intrastate traffic (both originating and terminating within Florida). The traffic statistics are dominated by one commodity group, nonmetallic minerals, accounting for 52 percent of total originating and terminating tonnage. The carloadings in this commodity group are comprised of crushed stone and chemical or fertilizer materials. In a distant second place is chemicals or allied products (11.9 percent), and the third-ranking commodity is coal (10.1 percent).

Commodities which terminate in the state from origins outside of the state (excluding intrastate traffic), 42.9 million tons, far outweigh those which originate in the state and are shipped out of it (13.9 million tons). Coal is the principal terminating commodity from out-of-state, with food products a distant second. Chemicals and food products comprise the largest originating commodities with out-of-state destinations.

Freight Rail/Intermodal

Exhibit 2-3 FLORIDA RAIL FREIGHT TRAFFIC 2001

<u>STCC</u>	<u>COMMODITY DESCRIPTION</u>	<u>TONNAGE</u> (1000 Tons)		<u>Totals</u>	<u>Percent of Total</u>
		<u>Originated</u>	<u>Terminated</u>		
11	Coal	00	15,992	15,992	10.1
14	Nonmetallic Minerals; Except Fuels	38,952	42,453	81,405	51.6
20	Food or Kindred Products	2,695	4,205	6,900	4.4
24	Lumber or Wood Products; Except Furniture	585	2,495	3,080	2.0
26	Pulp, Paper, or Allied Products	1,768	1,515	3,283	2.1
28	Chemicals or Allied Products	10,805	8,020	18,825	11.9
32	Clay, Concrete, Glass, or Stone Products	1,200	2,219	3,419	2.2
46	Miscellaneous Mixed Shipments	2,776	5,018	7,794	4.9
49	Hazardous Materials	1,806	3,795	5,601	3.5
	All Others ¹	<u>3,830</u>	<u>7,696</u>	<u>11,526</u>	<u>7.3</u>
	Totals	64,417	93,408	157,825	100.0

(1) Includes all commodities comprising less than 2 percent of total.
w/d - withheld due to disclosure concerns.
SOURCE: 2001 STB Carload Waybill Sample.

In addition, there were 2.8 million tons of rail traffic which passed through Florida with neither origins nor destinations in the state. Hazardous materials, lumber, pulp/paper and chemical products along with intermodal traffic, are the principal through commodities.

Traffic by Railroad

Based on the same 2001 total tonnage figures, CSXT is not only the largest rail carrier in the state in terms of physical plant, but also in terms of traffic volume. Of the total tonnage moved by Florida's Class I and II railroads in 2001, CSXT accounted for 77 percent of the total; Florida East Coast, 19 percent; and NS, 4 percent.

Traffic Patterns

Another view of Florida's rail traffic is obtained by examining the movement of that traffic between origin and destination, and the generation of traffic by regions within Florida.

Origins and Destinations - Terminations of freight tonnage originating in Florida are shown in Exhibit 2-4 based on 2001 Surface Transportation Board (STB) Carload Waybill Sample statistics. Originations of freight tonnage terminating in Florida are also shown in Exhibit 2-4. A major portion of these tonnages, as stated earlier, moved entirely within Florida – 101 million tons (50.5 million originating tons and 50.5 million terminating tons) of the 157.8 million total of the state's 2001 originating and terminating traffic, or 64 percent of the total, were intrastate traffic.

Major destinations of freight tonnage originating in Florida, other than Florida itself, included Georgia, Ohio, New Jersey and Illinois in roughly equal amounts just over one million tons each. Alabama, Tennessee, Louisiana were the next largest with around 800,000 tons each.

Major origins of freight tonnage terminating in Florida included Kentucky, Illinois, Georgia, Alabama, and Louisiana in that order. Kentucky, largely coal, was by far the largest with 13.3 million tons or almost one-third of the total. Eliminating the intrastate movements, freight tonnage terminating in Florida in 2001 was over three times the tonnage originating in the state.

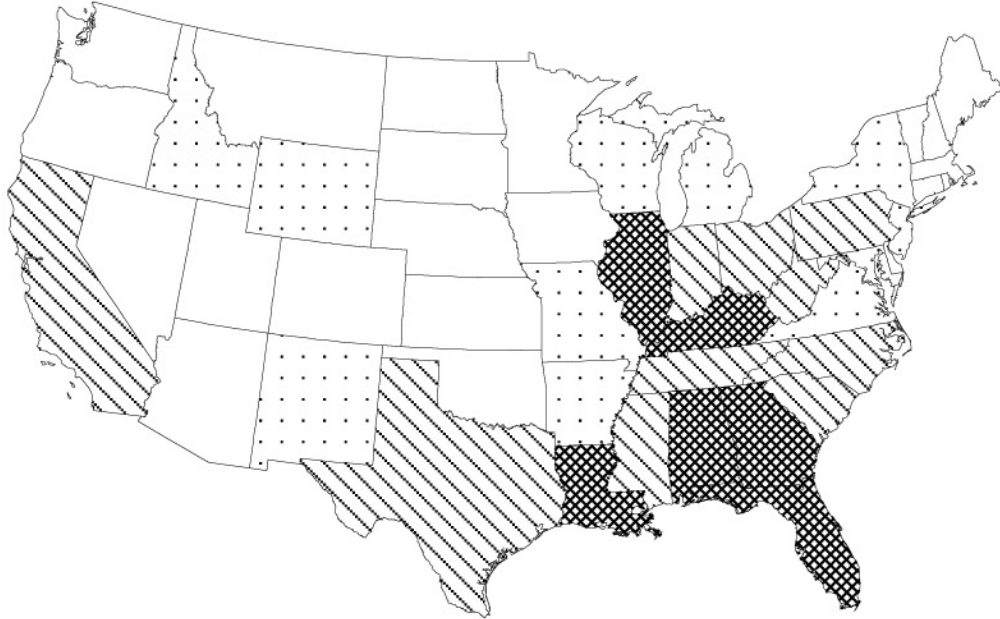
Traffic Flow of Selected Commodities - The major commodities originating or terminating in Florida included nonmetallic minerals, coal and chemicals/allied products. Together, the three commodity categories comprised almost three-fourths (72.6 percent) of total tonnage.

Nonmetallic Minerals - This classification includes a variety of commodities dominated in Florida by crushed stone and phosphate rock. Origins and destinations of the commodities as shown in Exhibit 2-5, are largely related to Florida and the adjacent states of Alabama and Georgia. Most of the total tonnage, however, is attributable to intrastate transport (97 percent). This is indicative of the heavy movement of phosphate rock from the Bone Valley in central Florida to area chemical plants and Gulf coast ports, and the short-haul nature of crushed stone due to its relatively low value.

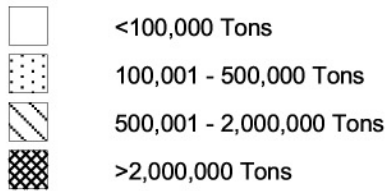
Coal - The next largest commodity, accounting for just over ten percent of total Florida rail tonnage is coal. As evident from Exhibit 2-6, the principal source of coal moving to Florida by rail is Kentucky followed at some distance by Illinois, West Virginia and Pennsylvania.

RAIL TRAFFIC FLOWS

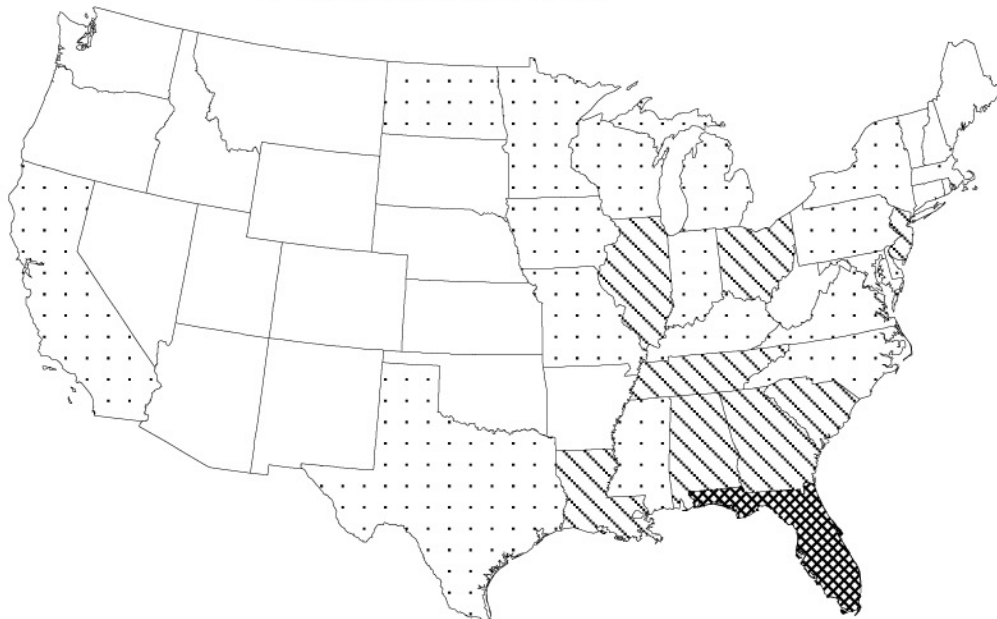
ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



LEGEND



TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA



NONMETALLIC MINERALS

ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA

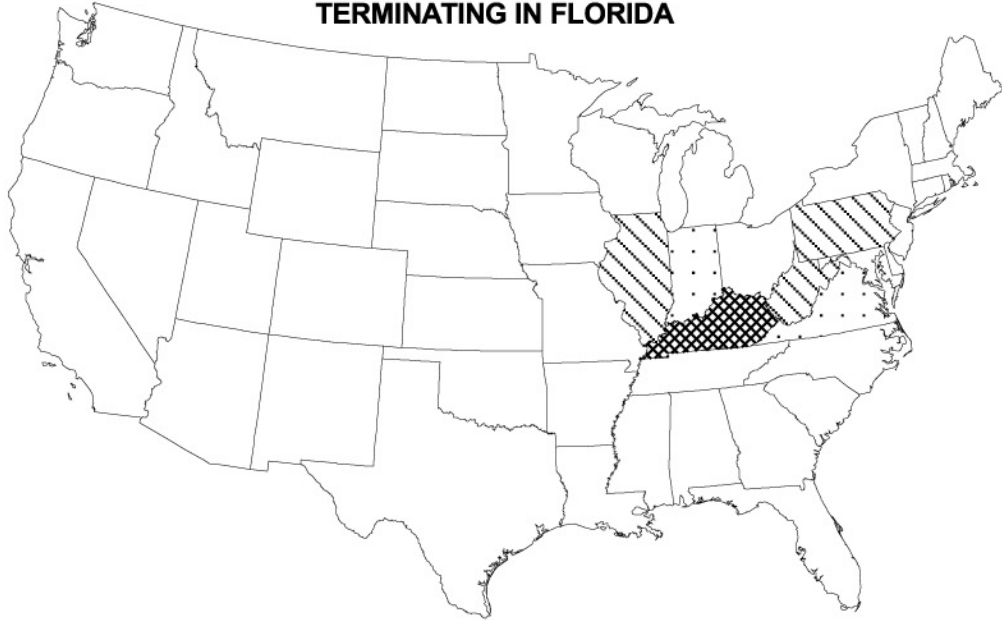


TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA

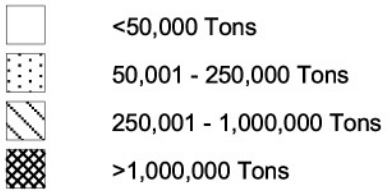


COAL

ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



LEGEND



TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA



A former combination water-rail movement of significance that used one of Florida's water ports is now all rail.

Chemicals or Allied Products - The third most significant commodity classification, chemicals or allied products, has more widespread origins and destinations than the first two commodities (see Exhibit 2-7), but it too is dominated in Florida by a single commodity -- superphosphate (chemically treated phosphate rock). This single commodity accounts for 83 percent of the total commodity tonnage. Chemical origins and destinations are largely intrastate. The next largest origin/destination state is Louisiana. However, more is shipped into Florida than received from Florida origins.

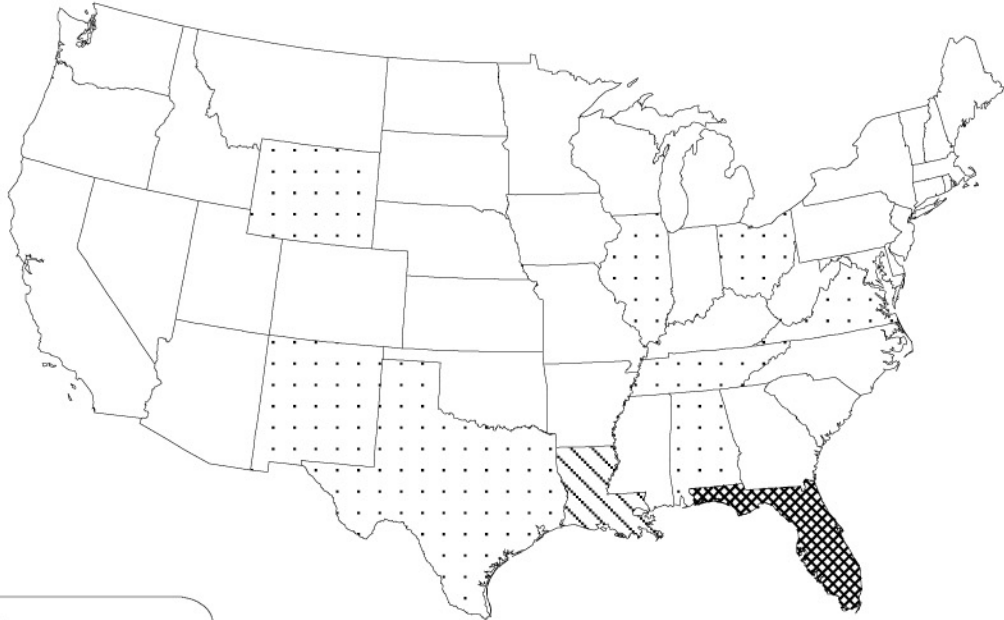
Originating and Terminating Tonnage by FDOT District - Another view of Florida rail traffic flows is provided in Exhibit 2-8 which depicts traffic origins and destinations by area using FDOT district boundaries. District 1 originates the most tonnage (51 percent of totals); followed by District 6 (25 percent). The two Districts are the home of the Bone Valley phosphate district and many of Florida's major limerock mines. Traffic terminations, at 25 percent of totals, are highest in District 7, the export point for much of the phosphate. District 2 terminations are also heavy (23 percent) and are comprised predominately of receipts of coal, nonmetallic minerals, wood products and chemicals or allied products. District 1 tonnage with 22 percent of totals is derived from a variety of commodities.

Traffic Density – Exhibit 2-9 depicts the traffic density of each rail line of the Florida rail system in 2001. The traffic density measure used on Exhibit 2-10 is million gross ton-miles per mile of track. Gross tons are comprised of the weight of locomotives, rolling stock including cabooses, and lading (freight). A traffic density figure of 5.0 shown on the map, for example, indicates that 5.0 million gross ton-miles per mile moved over the particular line segment in 2001.

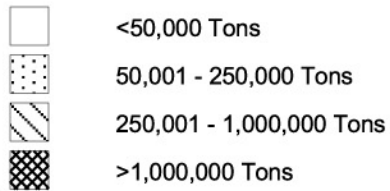
Examination of Exhibit 2-9 reveals the relative use of each component of the state's rail system. Some of the highest tonnages occur on the CSXT north-south route through Ocala running from Georgia to the central part of the state and in west central Florida in the Bone Valley Phosphate area and related port terminals. Other high tonnage lines are the main line of CSXT running east-west through the northern part of the state (panhandle), the main line of the Florida East Coast from Miami to Jacksonville, and the main track of the Norfolk Southern from Georgia to Jacksonville.

CHEMICAL PRODUCTS

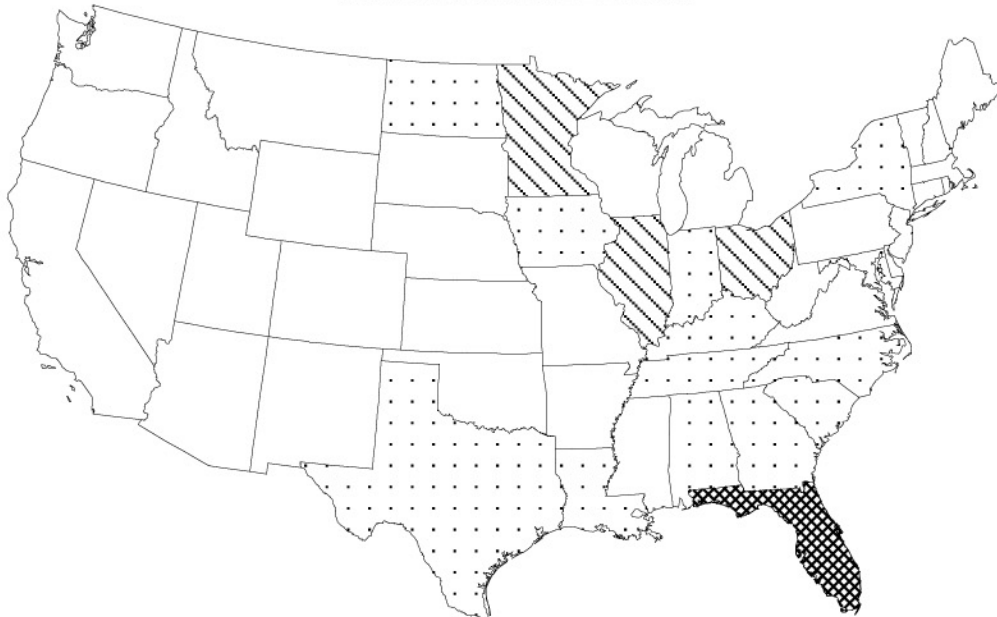
ORINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



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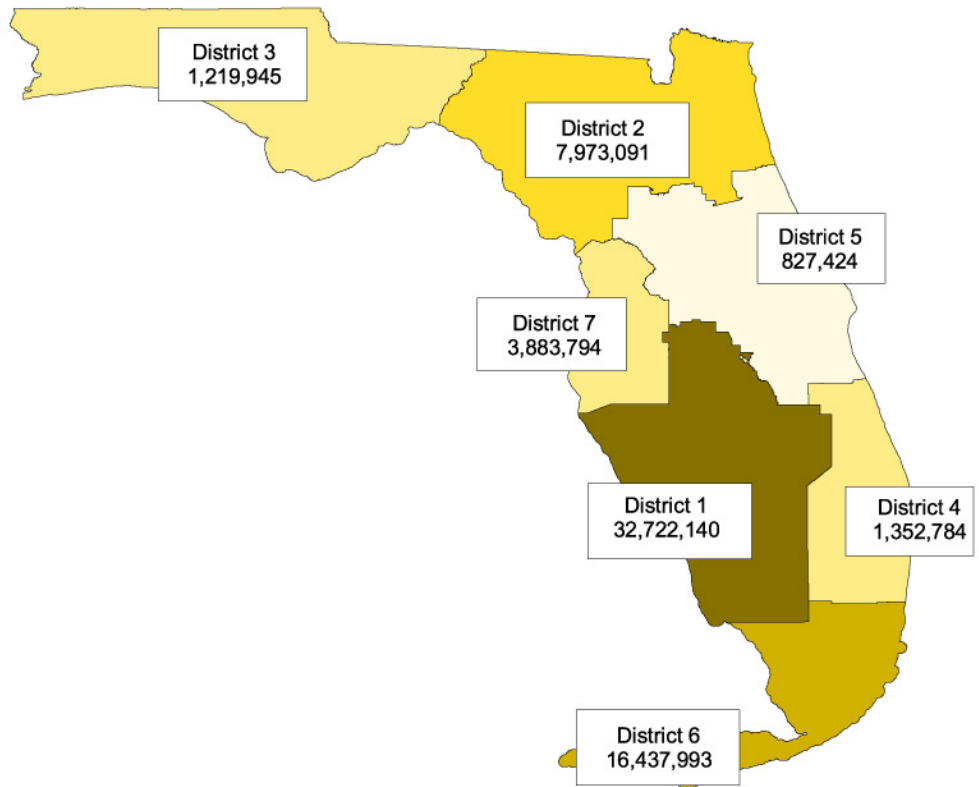


TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA

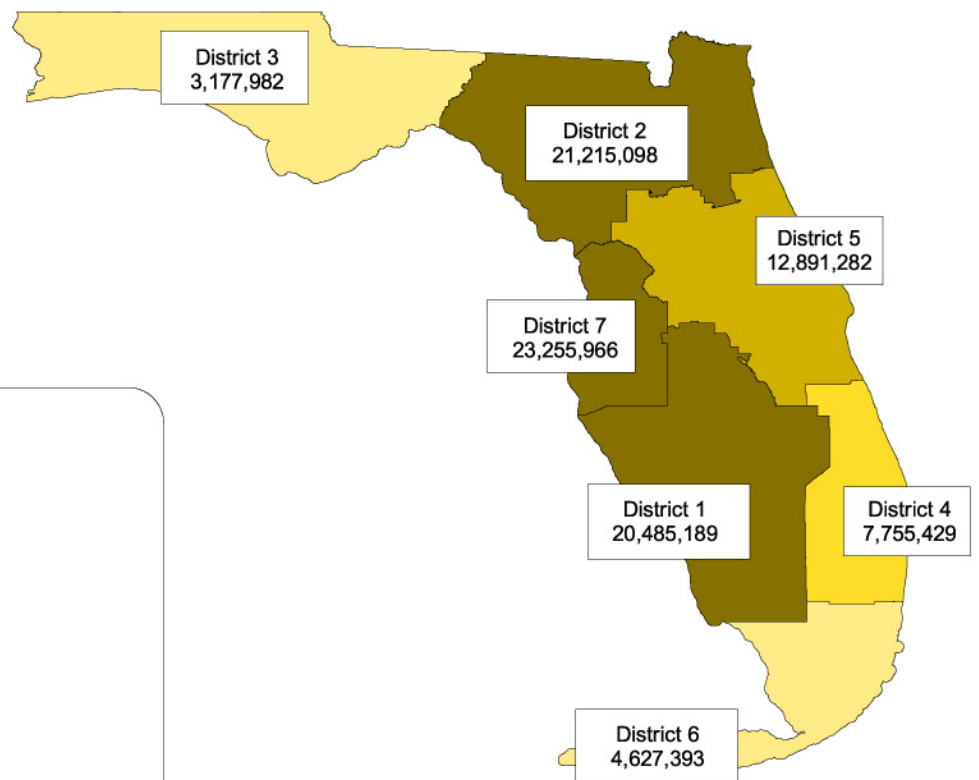


RAIL TRAFFIC FLOWS BY FDOT DISTRICT

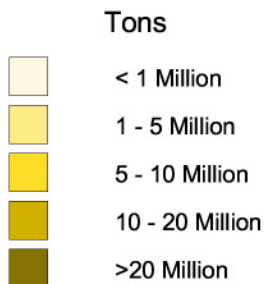
Origins of Rail Freight Tonnage



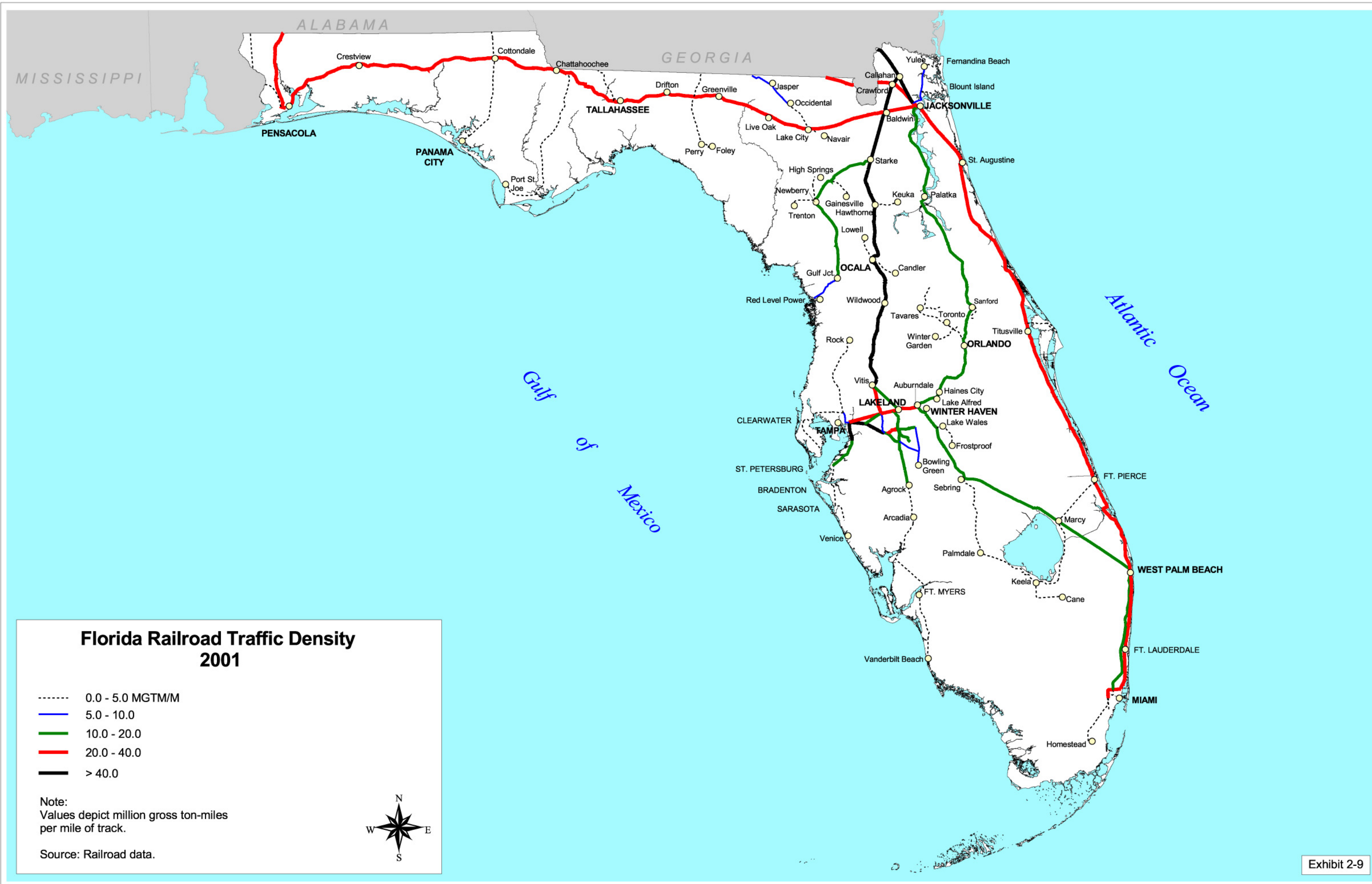
Terminations of Rail Freight Tonnage



LEGEND



Source: 2001 Waybill Data



Rail Traffic Considerations

The Florida freight rail system functions somewhat differently than that of many of its neighboring states due to its geographic circumstances. Basically, the system operates with very little overhead traffic, i.e., Florida's rail traffic originates/terminates within the state for the most part rather than passing through on its way to other locations.

Traffic History – Exhibit 2-10 depicts a rail traffic history for the State based on selected years from prior rail reports and other on-hand data. The volumes have been varied, up and

**Exhibit 2-10
FLORIDA RAIL FREIGHT TRAFFIC HISTORY
Selected Years**

<u>YEAR</u>	TONNAGE (1,000 tons)		
	<u>Originating</u>	<u>Terminating</u>	<u>Total</u>
1972	57,038	62,830	119,868
1975	57,581	63,227	120,808
1979	75,032 ⁽¹⁾	87,101 ⁽¹⁾	162,133
1982	55,912 ⁽¹⁾	68,717 ⁽¹⁾	124,629
1986	60,196	78,305	138,501
1990	65,933	89,573	155,506
1991	59,915	83,587	143,502
1992	59,116	83,454	142,570
1993	58,859	82,616	141,475
1994	64,478	91,750	156,228
1995	68,514	97,228	165,742
1996	71,707	102,243	173,950
1997	71,337	101,608	172,945
1998	75,634	106,640	182,274
1999	68,979	99,790	168,769
2000	68,741	98,041	166,782
2001	64,417	93,408	157,825

SOURCE: STB Waybill Sample unless otherwise noted
 (1) R-1 and R-2 Annual Reports. Class III carriers not included.

down, by as much as 62 million tons on an annual basis for the years depicted. Tonnage has basically increased from the 1980s through the 1990s peaking in 1998 at just over 180 million.

But, it has been on the decline since then dropping below 160 million tons in 2001, a 13.4 percent decrease from the peak. Weak market conditions for Florida phosphate and the economy in general are contributing factors.

Origin/Destination Mix – Commodities moving entirely within Florida, intrastate traffic, generate the most tonnage, 50.5 million tons², followed by traffic which originates outside of the state with Florida destinations, 42.9 million tons. Very little rail traffic is generated within the state for destinations outside of the state, 13.9 million tons.

Commodity Mix – Intrastate traffic is largely non-metallic minerals (phosphate rock and crushed stone), almost 80 percent of totals. Chemicals and intermodal traffic comprise most of the rest. Terminating tonnage from out of the state is dominated by coal (37 percent) followed by a wide variety of commodities. Traffic originating but destined for out- of-state locations is also varied but largely comprised of food products and chemicals (combined almost half of totals).

Intermodal Traffic – While total rail traffic volumes have been off in tune with the downturn of the economy, some commodities have shown increases over the 1999 data contained in the 2000 Rail System Plan. Although most are small and do not represent significant changes, miscellaneous mixed traffic, intermodal, did increase a significant amount, 19.2 percent (7.7 million tons as compared to 6.5 million tons).

While the tonnage looks small in comparison to other commodities, the number of units, containers and trailers, as compared to carloads for other commodities is significant. The 7.7 million tons were transported in 528,600 containers/trailers or 22 percent of the 2.4 million total Florida carloads/units. In addition, intermodal traffic is not limited to the one commodity classification. Some trailer/container movements are contained in other commodity groups, a total of 221,600 in 2001. Thus on a per-unit basis, some 30 percent of totals are comprised of trailers/containers.

Future Implications – Florida's rail traffic primarily originates and terminates in the state with little just passing through. Therefore, Florida's rail system is more important to it than other states where the rail system is dominated by through traffic. On the other hand, there is little overhead traffic to help keep

the system viable. Its viability is dependent on a few significant commodities/traffic types, i.e., phosphate and related chemicals, crushed stone, coal, and intermodal traffic, the latter the only one showing growth over the last few years. While specific forecasts of Florida principal rail commodities are not available, some insights can be gained by examining other factors.

According to the Florida Phosphate Council³, Florida provides about three-fourths of the nation's **phosphate** supply and about 25 percent of the world supply. The annual amount of phosphate rock mined in Florida has fluctuated between 1989 and 2001 from a high of just under 40 million metric tons to just over 20 million. Although the domestic market for phosphate has remained relatively stable during this 13-year period, the foreign market has been weak and is expected to remain that way for the near term.

The picture for **crushed stone**, however, is much better. Production has almost doubled over the last decade.⁴ Because most crushed stone is used in the construction industry, growth is directly related to construction activity. According to long-term economic forecasts for the State of Florida⁵, the value of construction contracts (expressed in 1997 dollars) is projected to increase by 33.5 percent between 2000 and 2015, while the population increases by 27 percent.⁶ Therefore, it is reasonable to expect that the amounts of crushed stone mined in Florida will see a similar increase.

Coal is consumed in Florida principally in the generation of electricity (95 percent) and just over half of it (53 percent) is delivered by rail. The rest moves principally by water⁷. According to the most recent set of forecasts released by the U.S. Department of Energy,⁸ the use of coal to generate electricity in Florida will increase at an annual rate of about 1 percent from 2000 through 2020. Given the predicted increase in population, this forecast would appear to be reasonable barring environmental restrictions on coal use.

Rail **intermodal traffic** is a combination of international (port-related) and domestic. It has shown double-digit growth in the past although slowed by current economic conditions. Florida's port traffic is forecast to continue to grow (see Chapter 5) and domestic growth will be dependent on how successful

² All Volumes are for 2001.

³ *2001 Florida Phosphate Facts*, Florida Phosphate Council, Tallahassee, FL.

⁴ *The Mineral Industry of Florida* chapter of the USGS Survey Minerals Yearbooks for 1994 through 2001.

⁵ *Florida Long-term Economic Forecast 2002*, Bureau of Economic and Business Research, University of Florida, Gainesville, FL, August 2002.

⁶ Bureau of Economic and Business Research, University of Florida, Sept. 2002.

⁷ *Coal Industry Annual 2000*, Energy Information Administration, U.S. Department of Energy, Washington, DC.

⁸ *Annual Energy Outlook 2002 with Projections to 2020*, Energy Information Administration, U.S. Department of Energy, Washington, DC.

the railroads are in providing the service necessary to attract traffic that otherwise would move by truck. The outcome could also be impacted by changes in truck weight and size policies.

RAIL PROGRAM IMPLICATIONS

Historic trends and current issues regarding Florida's rail system provide insights for the future of both its operation and its needs.

Rail System Historic Perspective

Florida's rail system has changed over the last two decades in both size, composition and use. As will be evident, the system is smaller, has more operators, and undergoes more intense usage.

System Size – Since 1982, the system has been reduced in size by almost 1,000 miles (from 3,820 to 2,871) and is now three-quarters of its size at that time (as measured by route miles). The largest proportion of reduction occurred in the first decade when 832 of the 949 miles were lost through abandonment. That activity has virtually ceased today as the railroads have now eliminated the bulk of the unprofitable lines. Significant future reductions are not anticipated.

System Composition – The 1982 rail system was comprised of seven line-haul railroads – three Class Is, one Class II, and two Class IIIs. One of the Class III carriers was actually a subsidiary of a Class I carrier. By 1992, there were 13 line-haul railroads including six new Class IIIs, or short line railroads. These new carriers were formed from Class I branch lines spun off by their owner to new operators. The spin-off phenomenon was nationwide made possible by a provision of the Staggers Act.

Currently, the total number of railroads is the same, but through mergers, additional spin-offs, and changes in STB revenue classifications, there are only two Class Is, still one Class II (but a different railroad), and ten Class III or short lines. The latter category encompasses 773 route-miles or 27 percent of the statewide system. The 1982 Class III mileage of 220 represented only 6 percent of the rail system at that time. The increase in Class III mileage is due to Class I carriers spinning off branch lines to short line operators as mentioned above.

System Commodity Traffic – Rail system traffic has increased by 33.2 million tons (27 percent) over the 20 years although current traffic levels are slightly down from the peak reached a few years ago.

The largest commodities over the entire period have been non-metallic minerals and chemicals. Coal has become the third largest commodity in just the last decade. It did not even rate a mention in the composition of rail traffic in 1982.

System Density – Although total commodity tonnage has not significantly changed in the last two years, the traffic density as measured in gross ton-miles per mile has. On the state's principal rail lines, density, as shown on Exhibit 2-9 is close to or in excess of double what it was in 1982. The reasons for the disproportional change lie in a reduction in the number of mainlines which has consolidated traffic on some of the remaining lines, and differential traffic growth by geographic region.

Current Rail Issues

There are a number of rail issues both of a national or industry-wide nature and a Florida-specific nature. These issues provide additional insight into Florida's rail system, and its needs.

Heavy Carloadings – The industry move from 263,000-lb. gross weight cars to 286,000-lbs. is a problem for most non-main line track, especially short line railroads formed from Class I branch spin-offs. A statewide estimate of needs was made for and was contained in the *2000 Rail System Plan* for replacement of lightweight rail and deficient crossties to reach an adequate level, and to overcome typical bridge deficiencies. The estimate was updated for this plan.

Track Capacity – With freight volumes anticipated to double nationally in 20 years, increasing demand for additional rail passenger service (see Chapter 3), and the desire by many parties to develop transportation alternatives to more highways, some of Florida's principal rail routes will need capacity expansions. Freight railroads have expressed concern in recent years in regards to the ability to fund major capital improvements.

Rail Assistance Funding – With the demise of the federal Local Rail Freight Assistance (LRFA) Act, funding for rail projects in Florida has had to depend on the Transportation Outreach Program which now appears to have an uncertain future. TEA-21's Railroad Rehabilitation and Improvement Finance (RRIF) program which was to take LRFA's place has not proven to be very popular with smaller railroads as it is a loan program and requires an often large credit-risk premium be paid up front.

Security – The terrorist attacks of September 11, 2001 introduced a security concern to the general public and transportation providers in particular, including the railroads. Recent (Fall '02) rail-specific warnings heightened concern. The extensive length of rail routes and number of bridges make it a particularly hard infrastructure to protect and will undoubtedly require use of scarce resources.

Public Interface – Safety and congestion issues surround the state's at-grade rail-highway crossings which will only be intensified with increasing vehicular use and rail traffic volumes. These concerns are expressed in more detail in Chapter 4. Safety and noise concerns have led some communities to consider urban rail relocations (Orlando), quiet zones (South Florida), and other mitigation measures.

Infrastructure Needs

A representative view of freight rail needs can be constructed from rail system changes over time, current rail issues and FDOT's bi-annual solicitation of project candidates. Some are clearly defined, others known only within general parameters at this time.

Project Requests – As has been the practice in past Rail System Plans, the state's railroads were requested to submit project candidates for public funding. With the exception of a couple of traffic-generating projects (specifically transload facility/service), the nominated candidates consisted principally of tie and rail replacements with some bridge repair. These projects fall within the bounds of those efforts included in the 286,000-lb. needs assessment made for the *2000 Rail System Plan* and updated for this plan (\$142 million in 2002 dollars).

Mainline Capacity – Mainline capacity needs have surfaced in two forms of late, related to the establishment or expansion of rail passenger service, or in the form of setout, storage or yard trackage to free up the use of mainline trackage and thus increase capacity. For the purposes of illustrating order-of-magnitude needs, capacity expansion for addition of passenger service on the FEC was estimated to cost \$55.5 million between Jacksonville and West Palm Beach. Capacity expansion on CSXT's "S" Line between Callahan and Lakeland (120 miles) to handle trains now operating over the "A" Line through Orlando, was estimated at \$93 to \$101 million in 1999. Storage, yard trackage, etc., typically ran between \$1 and \$3 million per project.

Grade Separations – There are several MPOs which are becoming active in the freight arena and one has identified its largest rail problem to be related to grade crossings and in particular to three or four involving major area roadways. The preferred solution would be grade separation of track and road. Typical urban grade separations can cost \$5-10 million each. Many such situations exist statewide.

Funding Needs – Based on the foregoing, statewide rail freight needs of \$200 million can easily be visualized within the short-term and growing to \$500 million over the next 15 years.

FDOT Role

Of the rail system needs implicated above, some, such as grade crossings/separations, clearly fall into the public domain, and others such as local rail service preservation have become accepted roles. The need for continuation of these roles has been or will be stated in forthcoming pages of this document. Others, such as mainline capacity, may not be so clear given concerns and prohibitions regarding public finance of private business ventures. The unique use of Florida's rail system for virtually only Florida rail traffic (very little through movement), and the growing interest in use of that system for alternative transport for both people and freight now using the state's congested highway system suggest several areas of mutual interest that provide opportunities for joint public-private approaches.

CHAPTER 3 PASSENGER RAIL/INTERMODAL

This chapter includes an overview of present and future intercity rail passenger services in Florida, including high speed rail, a discussion of existing and proposed commuter rail services, along with a summary of Florida's functional and planned intermodal facilities which include rail passengers.

FDOT ROLE

The 1992 Florida Legislature significantly altered conventional passenger service and commuter rail legislative authority requiring, among other things, that the FDOT provide an updated rail system plan every two years (including both freight and passenger elements); authorizing FDOT participation in implementing the transcontinental Los Angeles-Miami Amtrak Sunset Limited service; and expanding and further defining FDOT funding and technical assistance participation in future regional and high speed rail service development.

The FDOT had assumed responsibility for Florida's high speed transportation program in 1991. A program of study to identify options for future rail system development was completed and a franchise awarded in 1996, but the program was subsequently terminated in 1999. However, voters approved a constitutional amendment in the November 2000 election requiring the state to develop and operate high speed ground transportation. The Florida High Speed Rail Authority (FHSRA) was subsequently created by the Legislature (2001) to initiate and manage the effort. The Department provides administrative services and support and the staff director of the FHSRA is a FDOT employee. In addition, the Secretary of the Department serves as an ex-officio member of the Authority's Board.

CONVENTIONAL INTERCITY SERVICE

Conventional intercity rail passenger service in Florida continues to be operated by the National Railroad Passenger Corporation (Amtrak). Florida is fortunate as it has a variety of Amtrak services linking it with the Northeast and the West.

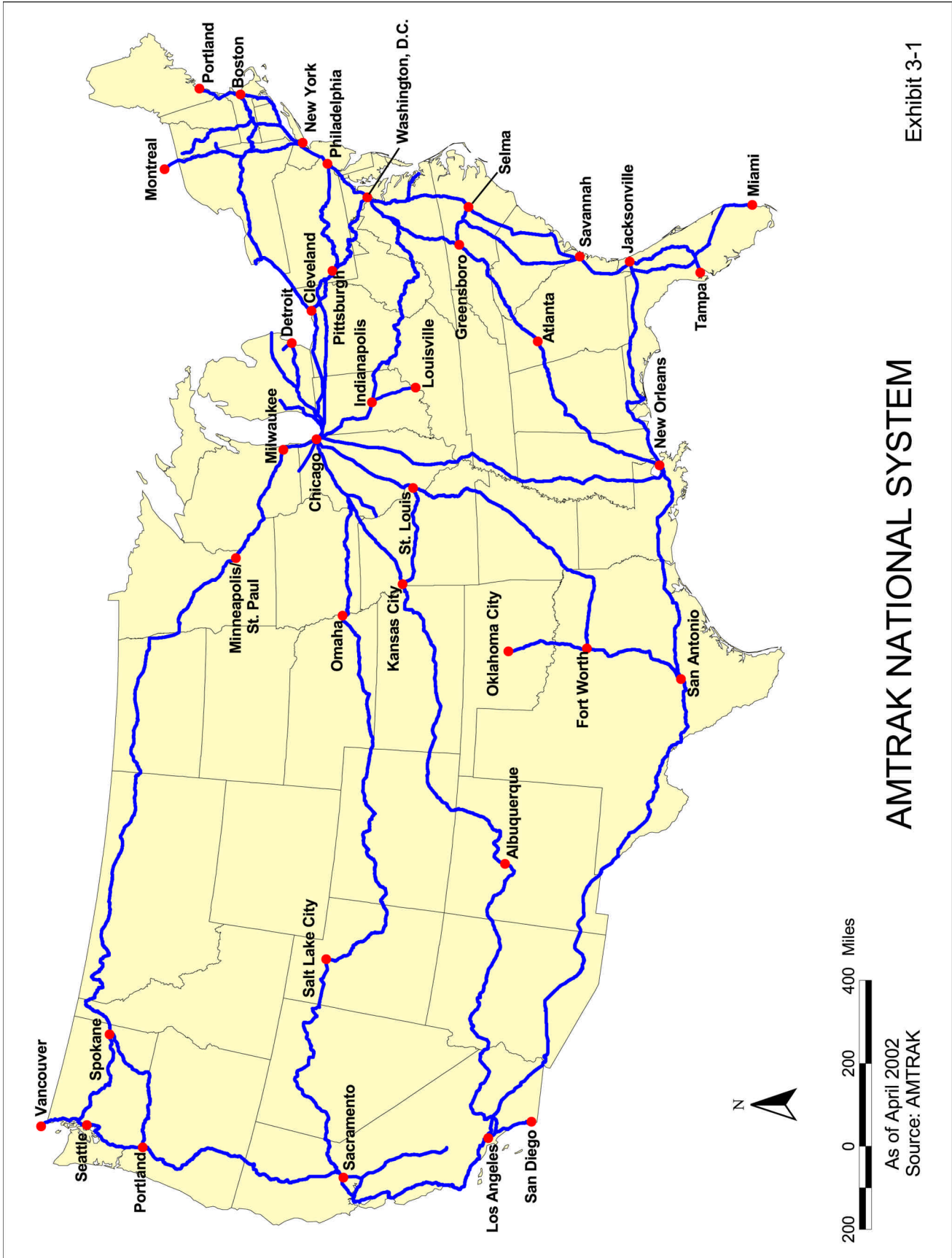
Amtrak History

In 1970, the National Railroad Passenger Corporation (Amtrak) was created by Congress to relieve the freight railroads of the burden of money-losing passenger operations and to preserve rail passenger service over a national system of designated routes. Amtrak was created as a for-profit government corporation that was granted the right of access to the tracks owned by the freight railroads at incremental cost and with operating priority over freight trains. Amtrak was also granted a monopoly to provide intercity rail transportation over its route system and was to receive federal subsidies for the first few years, but then it was expected to make a profit.

Amtrak currently operates passenger trains over 43 routes on a system of some 22,000 miles (see Exhibit 3-1) comprised principally of trackage owned by for-profit freight railroads although Amtrak owns 650 miles of track (primarily comprised of the Northeast Corridor). Amtrak has had financial problems, however, throughout its existence. Since beginning operations in 1971, Amtrak has received over \$25 billion in federal funding. The gap between Amtrak's revenues and expenses was about \$1 billion in FY 2001, the largest in its history.

Amtrak Reform and Accountability Act of 1997 - In 1997, Congress debated the viability of continuing to fund Amtrak knowing that Amtrak would cease operations without federal assistance. The Senate reached a compromise by passing by unanimous consent the Amtrak Reform and Accountability Act of 1997 (which became law on December 2, 1997). This Act provided that Amtrak (a) would no longer be a government corporation or hold a rail passenger monopoly; (b) would be allowed to add new routes and close money-losing routes; (c) would receive approximately \$2.2 billion in Taxpayer Relief Act funds; and (d) would have to achieve operational self-sufficiency (i.e., no longer receive federal operating grants) five years after the enactment of the Act.

Amtrak Reform Council - The Act also created the Amtrak Reform Council (ARC), an independent commission whose statutory mandate was to make recommendations to Amtrak to help it reach operational self-sufficiency and report annually to Congress on Amtrak's performance in several areas. If the Council were to find that Amtrak would be unable to achieve its goal of operational self-sufficiency by December 2, 2002, then it would be required to submit to Congress a plan for a rationalized and restructured national rail passenger system. In addition, if such a finding



AMTRAK NATIONAL SYSTEM

Exhibit 3-1

were to be made by the Council, Amtrak would be required to submit a plan for its liquidation to the Congress.

Amtrak Future

On November 8, 2001, the ARC adopted a resolution formally finding that Amtrak's business performance would prevent it from meeting the goal of operational self-sufficiency by December 2, 2002. This action triggered the requirement that Amtrak submit a plan for its liquidation to Congress. Before this could be done, Congress prohibited Amtrak from doing so, effectively negating the operational self-sufficiency requirement.¹

U.S. DOT Findings - On January 24, 2002, the U.S DOT's Office of the Inspector General (OIG) issued its *2001 Assessment of Amtrak's Financial Performance and Requirements*. The OIG found that:

- Amtrak is no closer to operational self-sufficiency than it was in 1997.
- There is insufficient time for Amtrak to become self-sufficient by the December 2, 2002 deadline.
- Amtrak will likely need additional funding this year to continue operating.
- Additional borrowing against assets—such as the 2001 mortgaging of Penn Station—would adversely affect the long-term prospects for the railroad.
- Even if Amtrak becomes operationally self-sufficient this year, it will still need substantial Federal funds for capital improvements.
- Deferral of routine maintenance is starting to catch up with Amtrak.

Restructuring Plans - On February 7, 2002, the ARC submitted an *Action Plan for the Restructuring and Rationalization of the National Intercity Rail Passenger System to Congress*. The plan calls for a fundamental restructuring of the way that a national passenger rail service program is organized, operated, and funded. Implement a fundamental reorganization of our nation's rail passenger program. The ARC's plan calls for a new business model for Amtrak and the introduction of competition in train operations. The current corporation, National Rail Passenger Corporation (Amtrak), would be restructured into three entities: a federal oversight agency, a government-owned and operated corporation to control the infrastructure between Washington and Boston (Northeast Corridor) that Amtrak currently owns, and a

¹ An amendment to the Defense Appropriations Act of 2002 (P.L. 107-117) prohibited Amtrak from using federal funds to prepare a liquidation plan. The amendment was adopted and signed into law in December 2001.

train operating company. In addition, the Council is proposing that the federal oversight agency, after a transition period, have the ability to allow private companies to bid to operate some of the train routes that Amtrak currently runs.

One day after the ARC action, Amtrak issued a statement that concluded:

“The practical effect of the ARC’s decision is to limit Congress’ role in making critical policy choices about the future of passenger rail. Amtrak intends to work at the earliest opportunity with Congress and the Administration to address the ARC’s decision and to fashion an appropriate policy for the nation’s passenger rail system. In the meantime, Amtrak intends to continue serving its customers.”

Amtrak also stated that the ARC had failed to take into account the heightened public role that Amtrak has assumed since the September 11, 2001 attacks. Amtrak also asserted that the ARC had not adequately considered whether Amtrak had received adequate capital funding.

After serving as Amtrak President and CEO since December 1998, George Warrington announced on March 7, 2002 that he would be stepping down. The Amtrak Board subsequently announced the appointment of David Gunn as President and CEO of the National Railroad Passenger Corporation (Amtrak) effective May 15, 2002. Gunn subsequently instituted a number of measures, including reorganizing Amtrak’s structure, designed to cut costs and to maintain reliable service where it already existed. Gunn also announced that Amtrak would need an emergency loan of \$200 million to make it through the fiscal year ending September 30, 2002. In late June, Amtrak and the U.S. DOT reached agreement on the terms and conditions for the issuance of the requested loan by the FRA. As discussed later, certain of the terms had a significant impact on plans to expand and enhance Amtrak train service to and within the State of Florida.

On June 20, 2002, the U.S. DOT released its plan for creating a viable intercity passenger rail system in the United States. The plan includes Five Principles for Reform that will position intercity passenger rail for a successful future. These principles are:

1. Create a system driven by sound economics where prices and passengers drive service.
2. Require that Amtrak transition to a pure operating company where passenger service operations and infrastructure ownership are separated.
3. Introduce carefully managed competition to provide higher quality rail services at reasonable prices.

4. Establish a long-term partnership between states and the federal government to support intercity passenger rail service.
5. Create an effective public partnership, after a reasonable transition, to manage the capital assets of the Northeast Corridor.

In the meantime, Amtrak's budget problems persist. Current federal budget (FY 04) posturing has the administration proposing a \$900 million subsidy for Amtrak, while Amtrak is requesting \$1.5 to 2.0 billion. In addition, FY 03 (which began October 1, 2002) funding has yet to be approved and appropriated. Regardless of federal actions, if Amtrak survives, it will be requesting more participation from the states for state-supported trains and new services.

Existing Amtrak Florida Service

Amtrak provides a variety of service in Florida. Florida's routes are among the most heavily used on the national Amtrak system.

Train Service - Amtrak's Florida operations consist of three distinct train services which serve 28 stations throughout the state. Three conventional Amtrak trains operate daily in both directions between Florida and the Northeast (*Silver Meteor*, *Palmetto*, and *Silver Star*). Additionally, a fourth conventional passenger train (*Sunset Limited*) operates tri-weekly between Los Angeles and Orlando, and the *Auto Train* operates between Lorton, Virginia and Sanford, Florida.

The three conventional passenger trains to/from the Northeast traverse the same route between New York, Washington, and Selma, North Carolina. From that point, however, the *Silver Meteor* and the *Palmetto* follow a route through Charleston, South Carolina and Savannah, Georgia, en route to Jacksonville, while the *Silver Star* takes an inland route via Raleigh, North Carolina and Columbia, South Carolina to Savannah and Jacksonville. Once in Florida, (see Exhibit 3-2 and Appendix A) the *Silver Meteor* and *Silver Star* follow a route through Orlando and turn south at Auburndale to Miami with Amtrak Thruway bus connections available to Tampa and Ft. Myers at Lakeland. The *Palmetto* runs from Jacksonville to Miami via Ocala and Tampa. This train provides a "cross Florida" service connecting both coasts. All three trains operate on a daily basis.



The *Sunset Limited* operates between Los Angeles and New Orleans onward to Orlando via Jacksonville on a tri-weekly basis. It arrives in Orlando on Wednesday, Saturday and Monday and departs on Sunday, Tuesday and Thursday serving the panhandle of Florida en route to Jacksonville. It follows the route of the *Silver Meteor* to Orlando. The *Auto Train* operates daily, but only stops at its terminal stations in Lorton, Virginia and Sanford, Florida.

Connecting Service - In addition to the trains serving Florida, Amtrak operates its Thruway bus service to provide connections to points not served by rail. The service provides coordinated train-bus service with guaranteed connections and through fares and ticketing. Thruway bus service is available between 1) Deland and Daytona Beach; 2) Fort Myers, Port Charlotte, Sarasota, Bradenton, Pinellas Park-St. Petersburg, Tampa, Lakeland and Orlando, and 3) Miami and Key West as shown on Exhibit 3-2. This service has been reduced since the 2000 Rail System Plan was prepared with Ocala–Palatka, Tampa-Spring Hill, and Winter Haven/Kissimmee connections eliminated.

Connections with commuter rail and transit are available between West Palm Beach and Miami. Tri-Rail commuter trains are available at Amtrak stops (same station) at West Palm Beach, Delray Beach, Deerfield Beach, Fort Lauderdale and Hollywood. Tri-Rail and the Miami Metrorail both have stations close to Amtrak's Miami station at Hialeah.

In addition to local connecting services, Amtrak trains serving Florida connect with other trains in Amtrak's national system (see Exhibit 3-1). Connections for other service are available to the north at Raleigh and Rocky Mount, North Carolina; Richmond, Virginia, and Washington, D.C., and to the west, at New Orleans, Louisiana and San Antonio, Texas.

Ridership - Amtrak ridership in Florida, as shown in Exhibit 3-3, has increased significantly since 1980. In 1980 Amtrak served 626,115 riders in Florida compared to 934,069 in FY 2001 (an increase of 49 percent). FY 2001 ridership was down 22 percent from the FY 1993 peak of over 1.2 million. Previous service cuts hurt patronage.

FLORIDA AMTRAK RIDERSHIP

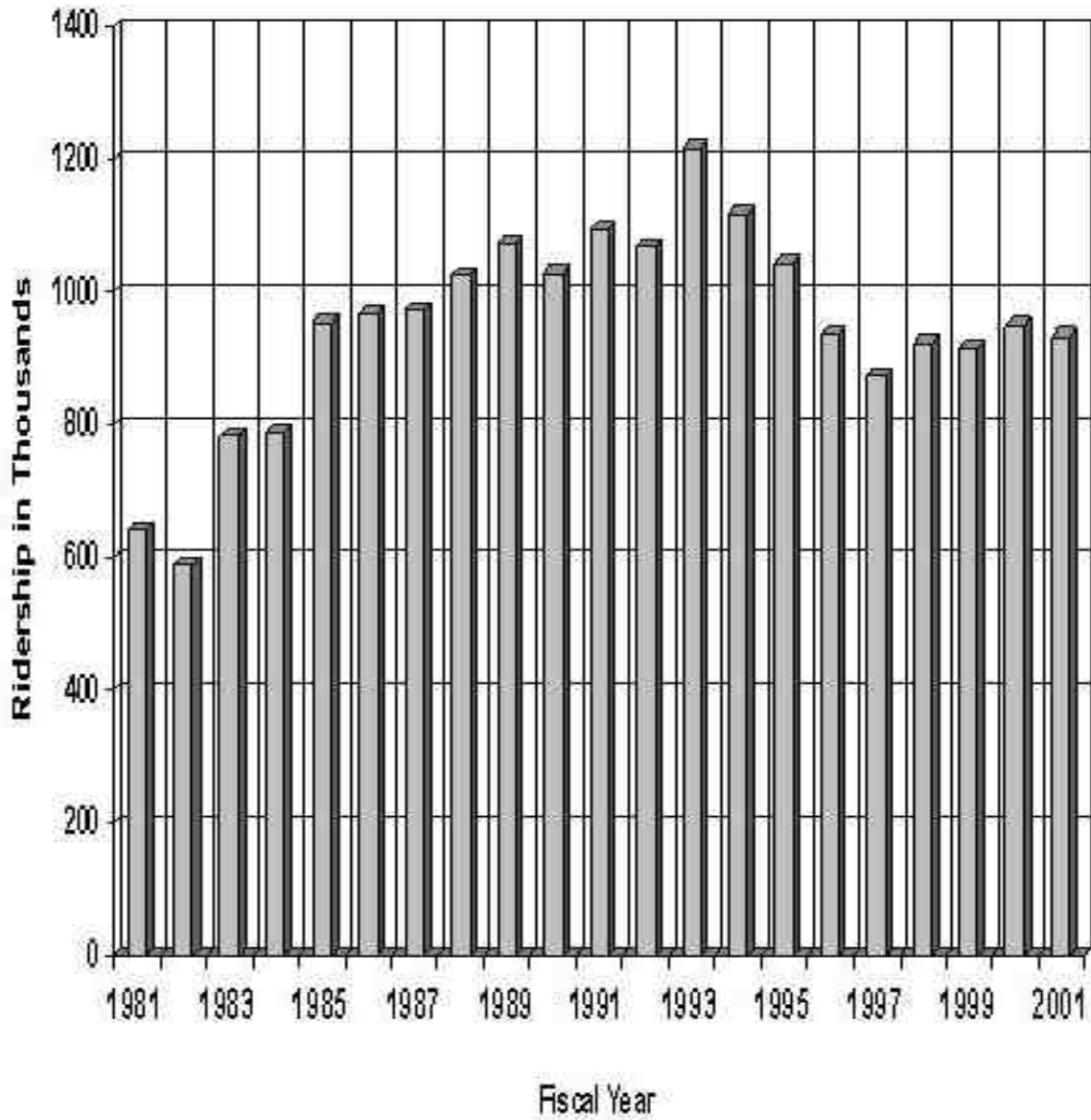


Exhibit 3-3

Proposed East Coast Service

As part of its efforts to achieve operational self-sufficiency, Amtrak announced a National Growth Strategy (NGS) in February of 2000. The NGS proposed route and train expansion through service restructuring and equipment reassignment. A major restructuring of the *Silver Service* was included. The centerpiece would be rerouting one of the *Silver Service* trains over the FEC between Jacksonville and West Palm Beach (also shown on Exhibit 3-2) – a long-time goal of the FDOT and local communities located along this 300-mile route. Improved service to Orlando and Tampa was also included in the NGS. Under Amtrak’s plan, two round-trips would operate between Jacksonville and Miami along the FEC coastline route from Jacksonville to West Palm Beach and on the South Florida Rail Corridor from West Palm Beach to Miami.

Agreement Reached - In May 2001, Amtrak announced an agreement with the FEC to add two daily round-trips on FEC’s track between Jacksonville and West Palm Beach with new stops in eight communities: St. Augustine, Daytona Beach, Titusville, Cocoa/Port Canaveral, Melbourne, Vero Beach, Fort Pierce and Stuart, and continuing on to Miami. The two companies had jointly developed a plan for the capacity improvements that would be necessary to accommodate both freight and passenger rail services. In order to implement the agreement, funding for station construction and infrastructure improvements including signal work, and track and siding installation would need to be secured.

In December 2001, the Governor of Florida announced that he had instructed FDOT to fully fund the state’s share of the first phase of the Amtrak-FEC project. Under the agreement reached, Amtrak would contribute \$4.0 million for employee training, equipment modification and construction of maintenance facilities. The FEC would provide \$3 million for joint capacity improvements. FDOT’s total contribution would be \$23.3 million and local governments would provide \$1.6 million. The first phase project would allow Amtrak to operate a single round-trip daily between Jacksonville and West Palm Beach. To complete the project, another \$40 million in state funding would be needed for additional improvements to accommodate the operation of a second round-trip daily. The Department included these funds in its five-year work program.

Implementation Postponed - In February 2002, Amtrak announced a \$285-million package of spending cuts and capital investment deferrals. As a result, the first phase of the Amtrak-FEC project was “put on hold.” In August 2002, Amtrak informed FDOT that the FEC project would be temporarily deferred because of certain restrictions that were placed on Amtrak under the provisions of the emergency loan of

\$200 million from the FRA cited earlier. Amtrak was required to “suspend use of any of its funds for actual expansion or planning for expansion of rail service, including high speed rail service through FY 2003.”

Florida Intercity Passenger Rail Service Vision Plan

The Florida Intercity Passenger Rail Service Vision Plan² is based on use of corridors which connect the state’s major urban centers, world-class tourist attractions, and intermodal transportation centers. It proposes incremental investments in existing and new rail infrastructure that will result in higher quality and higher speed rail operations tailored to Florida’s unique intercity travel markets.

Market Analysis – Exhibit 3-4 presents the results of a preliminary market analysis conducted to identify potential routes for intercity passenger rail service focused on intra-Florida markets. The estimates were developed using a travel demand model developed for FDOT in 1992 and updated with data collected in 1997 as part of the Florida Overland Express (FOX) program. This analysis was also used in development of implementation phases of the plan. Estimates are provided for the total number of person-trips by all modes (primarily automobile and airplane trips) within each of these markets for the base year (2000) and for the Year 2010.

Plan Implementation - Implementation of the Vision Plan includes the three key elements discussed below.

- **Improving existing railroad facilities and rolling stock in intercity corridors** – The goal of the improvement program is to provide faster and more reliable intercity rail passenger service in 75- to 300-mile corridors. The initial program will incrementally upgrade existing rail facilities and equipment to create a competitive travel alternative to intercity highway (for greater than 75-mile trips) and commercial air service (less than 300-mile trips).

²The Florida Intercity Passenger Rail Service Vision Plan, prepared for FDOT by Amtrak, May 2000, from which this discussion is taken.

**Exhibit 3-4
POTENTIAL TRAVEL MARKETS FOR INTERCITY PASSENGER RAIL SERVICE**

Intercity Travel Markets	Existing Rail Corridor	Distance (miles)	Year 2000 Person-Trips (millions)	Year 2010 Person-Trips (millions)
Orlando-Space Coast	No	45	13.77	17.71
Tampa-Orlando	CSXT	90	12.95	16.12
Orlando-Daytona Beach	No	60	12.64	16.07
Southeast (Miami)-Orlando	CSXT	230	11.55	15.20
Tampa-Southwest (Fort Myers)	No	130	7.52	9.51
Southeast (Miami)-Southwest (Fort Myers)	No	150	5.10	6.97
Tampa-Southeast (Miami)	CSXT	270	4.30	5.20
Jacksonville-Orlando	CSXT	135	3.47	4.73
Jacksonville-Daytona Beach	FEC	90	2.91	3.62
Orlando-Sarasota	CSXT	140	2.21	2.80
Southeast (Miami)-Space Coast	FEC	210	2.20	2.65
Jacksonville-Pensacola	CSXT	360	1.88	2.35
Tampa-Jacksonville	CSXT	200	1.45	1.78
Southeast (Miami)-Jacksonville	FEC/CSXT	340	1.08	1.36
Jacksonville-Space Coast	FEC	130	0.95	1.21
Southeast (Miami)-Daytona Beach	FEC	255	0.89	1.10

Source: Florida Department of Transportation.

Although operations during the early phases will be limited to a maximum speed of 79 mph, the performance standard calls for trains that can support maximum speeds up to 110 mph with enough power to comfortably accelerate to 110 mph within a reasonable distance. The trains would provide a smooth ride and high-quality amenities such as large, comfortable seats, food service, power for laptop computers, and at-seat entertainment.

- **Partnering with Amtrak, the host railroad, and the communities served** – Partnering with Amtrak provides access to matching federal capital funds, the right of access to a rail line generally not owned by the state, and proven operating and marketing capabilities. The partnership with the host railroad ensures that all parties will work to provide quality service to passenger and freight customers. The partnerships with the communities served are focused on improvements in station facilities, grade crossing protection, and changes in municipal speed restrictions.
- **Incremental program development to manage risk** – The focus on an incremental development program effectively manages the market and financial risks. The initial focus

would be on improvement of existing rail lines, followed by new routes. Improvements in service in terms of decreased travel time, increased frequency and improved facilities and equipment. Service improvements would be combined with market additions, i.e., corridors and stops. As benefits of the improvements are demonstrated, and additional funding is available, improvements would be expanded.

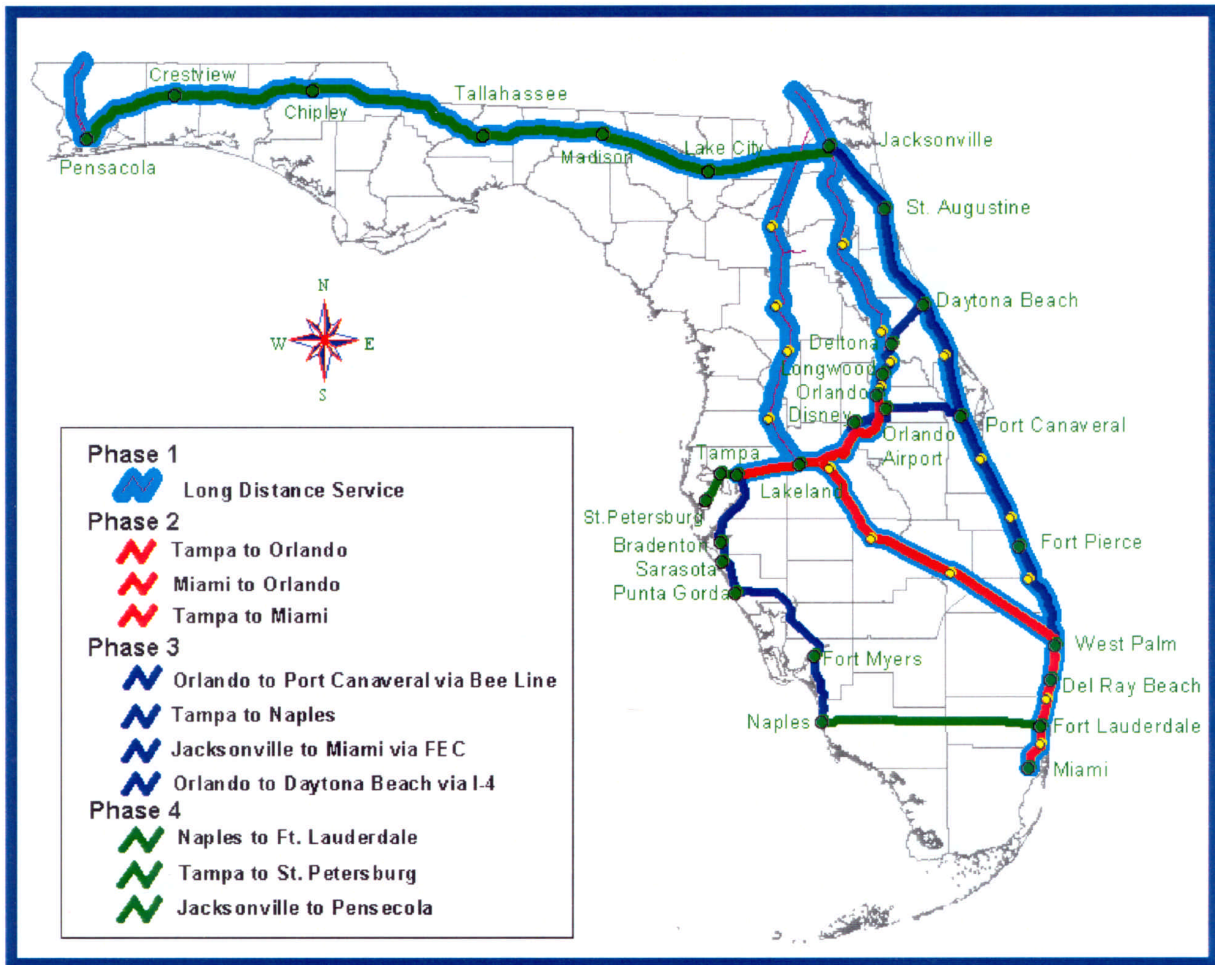
Implementation Phases - The plan as proposed envisions development in four phases. The first two phases would comprise the Initial 5-Year Program (2000-2005), and the last two the long-range or Vision Program Completion (2006-2020). The four phases are depicted graphically on Exhibit 3-5. As evident from the following discussion, each phase increases in complexity and cost.

Phase 1 – Phase 1 consists of route changes that are included in Amtrak’s Network Growth Strategy (discussed earlier) and shown in blue on Exhibit 3-5. This phase is proposed for full implementation in 2002.

Phase 2 – Phase 2 consists of new state-sponsored routes that are proposed for implementation during the initial 5-year program. These routes include Miami to Orlando, Tampa to Orlando, and Tampa to Miami and are shown in red on Exhibit 3-5. Existing CSXT rights-of-way will be used, and improvements will be made to enhance safety and eliminate bottlenecks. Full implementation is proposed for 2005.

Phase 3 – Phase 3 includes three new routes, all of them requiring at least some new construction, that are proposed for implementation during the 10-year period from 2006 to 2015 following completion of Phase 2. These Phase 3 routes (see Exhibit 3-5) include Orlando to Port Canaveral, Tampa to Naples and Orlando to Daytona Beach. In addition to the new construction, improvements are to be made to existing rail line segments on the routes. Service improvements on the Phase 1 and 2 routes will also be implemented.

**Exhibit 3-5
CONVENTIONAL SERVICE
VISION PLAN PHASES**



Source: Florida Department of Transportation

Phase 4 – Phase 4 includes additional service between Jacksonville, Tallahassee, and Pensacola, a new alignment between Naples and Fort Lauderdale, and service on a direct route across Tampa Bay between Tampa and St. Petersburg. Service enhancements will continue on all three prior phases. This phase is proposed to be completed by 2020.

Plan Status – The plan is currently on hold due to the state’s high speed rail development charge (discussed next) and the current state of Amtrak finances.

HIGH SPEED GROUND TRANSPORTATION

Formal consideration of the merits of high-speed ground transportation within Florida began in 1976 when the Florida Legislature mandated a study of the feasibility of such service between Daytona Beach and St. Petersburg. Since then, a variety of studies and activities have been pursued by both the public and the private sectors. In the process the State of Florida invested just over \$28 million, and the private sector \$39 million for the planning and development of high speed ground transportation projects in Florida from 1984 through 2001³.

High Speed Rail History

The history of high speed rail efforts in Florida is summarized in chronological order in the following paragraphs.⁴

Corridor Transit Study - In 1976, the Florida Legislature mandated a study of the feasibility of high-speed ground transportation service between Daytona Beach and St. Petersburg. The resultant *Florida Corridor Transit Study* concluded that implementation of high speed passenger rail service (150 mph) in the corridor would be feasible. The capital costs of a phased development were estimated to be \$585 million. Implementation of the proposed system was not pursued.

High Speed Rail Committee - In 1982, the Governor of Florida created the Florida High Speed Rail Committee. The committee was directed to examine the adequacy of Florida's transportation infrastructure to handle future travel demands. In 1984, the committee concluded that implementation of an advanced high-speed rail system was critical to meeting Florida's long-range mobility needs. The committee proposed that the system be implemented through public/private partnerships.

Florida High Speed Rail Commission – In 1984, the Florida High Speed Rail Commission (FHSRC) was created by state statute. It was charged with the responsibility for implementing high-speed rail service through a franchise process. The authorizing statute also specified that real estate development rights be extensively relied upon to fund the system. A provision contained in the State Comprehensive Plan Act of 1985 subsequently mandated the Commission implement a high-speed rail system that would link the Tampa Bay area, Orlando, and Miami. A 1986 consultant study concluded the system could be funded through a combination of joint land developments, benefit assessment districts,

³ 2002 Report to the Legislature, Florida High Speed Rail Authority, prepared by HNTB Corporation, et al, January 2002

⁴ Paraphrased from "History of High Speed Rail in Florida," My Florida.com.

and tax increment financing. A subsequent Request for Proposals (1986) resulted in two responses. One respondent asserted that public sector funding would be required in addition to private sector financing, and when the concept of public financing was not endorsed, the proposal was withdrawn in 1989.

The other respondent proposed financing be derived exclusively from real estate development rights. After a detailed review of the company's proposal, the Commission staff concluded that the extensive development rights would be unacceptable. In response, a revised proposal was submitted that called for financing the system through a combination of benefit assessment districts, tax increment financing, impact fees and a new state gas tax. In 1991, the Governor rejected the revised proposal and the company withdrew it from further consideration.

Transfer of Responsibility - The High Speed Rail Act of 1992 dissolved the FHSRC and transferred the responsibility for implementing high-speed ground transportation to FDOT. It also streamlined the franchise and certification process and limited the use of real estate development rights as a financing mechanism. FDOT subsequently commissioned a series of studies to assess route alternatives, market potential, and high-speed rail technologies.

Florida Overland Express (FOX) – In early 1995, FDOT issued an RFP to implement a statewide high-speed rail system to connect the metropolitan areas of Southeast Florida, Orlando, Lakeland and Tampa Bay. Significant features of the franchise concept included the formation of a public-private partnership between the franchisee and FDOT and a commitment by FDOT to provide \$70 million per year over the life of the franchise for system development. After an extensive review of the five proposals received, FDOT selected the proposal submitted by Florida Overland Express (FOX).

FOX proposed to build a 320-mile, dedicated high-speed rail system connecting Miami, Orlando, and Tampa with TGV trains operating at up to 200 mph. The capital cost of the system was estimated to be \$6.1 billion. The system was to be financed through an equity contribution of \$350 million and bonds to be repaid from a combination of system revenues and an annual contribution from FDOT of \$70 million per year. It was subsequently concluded that the financial risks associated with the FOX project were unacceptable to the state and the initiative was terminated in 1999.

Coast-to-Coast Rail Corridor – In 2000, the Florida Legislature authorized FDOT to undertake a feasibility study of high-speed rail technology (including Maglev) and route options between the St. Petersburg, Tampa, Orlando, and Port Canaveral. The *Cross-State Rail Feasibility Study*, completed in June 2001, concluded that non-electrified, steel wheel train service between Tampa Union Station and Orlando International Airport should be pursued as the initial phase of the corridor service. The capital cost of the “starter” system was estimated to be \$1.05 billion.

Maglev 2000 Demonstration Project - FDOT has provided financial assistance to Maglev 2000 of Florida Corporation to facilitate the testing of composite guideway and other technology components for its proposed maglev system.⁵ The site of the test facility is at the Titusville Regional Airport in Brevard County. Maglev 2000’s super-conducting maglev technology is based on the concepts and inventions of Dr. Gordon Danby and Dr. James Powell of New York. Funding support for the Maglev 2000 demonstration project is provided pursuant to Chapter 341.501 F.S., which authorizes the FDOT to match federal funds made available for maglev technology transportation system development.

In May 1999, the Federal Railroad Administration (FRA) announced that it had selected the MAGLEV 2000 technology for a study of the feasibility of a connection from the Titusville Regional Airport to Port Canaveral via the Kennedy Space Center Visitors Center as one of seven candidate projects under the Magnetic Levitation Transportation Technology Deployment Program created as part of TEA-21. The initial grant paid up to two-thirds the cost of the preliminary engineering, market studies, environmental assessments, and financial planning needed to determine the feasibility of deploying the project.

In January 2001, the FRA announced the next round of funding for the Magnetic Levitation Transportation Technology Deployment Program. Although the Maglev 2000 project was not one of the two projects selected to advance to the next round of competition to build and demonstrate the country’s first maglev train in revenue service, it did receive a \$1 million federal grant to further define its proposed project. Maglev 2000 is scheduled to submit its final report on its accomplishments under the Magnetic Levitation Transportation Technology Deployment Program to the FRA by mid 2003.

In 2001, the Federal Transit Administration announced a \$1 million grant to Maglev 2000 to demonstrate how its technology could be adapted to operate in the urban setting. A demonstration of levitation and propulsion forces is scheduled for early 2003.

⁵ Maglev 2000 is an advanced technology which uses superconducting magnets on the vehicle to react with coils in the guideway to levitate vehicles. Other magnetic forces, propel, and guide a vehicle over a guideway without contact or friction to speeds of over 300 mph.

Florida High Speed Rail Authority

In November of 2000, an amendment to the Constitution of the State of Florida was approved by Florida voters. Article X, Section 19 of the Constitution of the State of Florida now reads:

“To reduce traffic congestion and provide alternatives to the traveling public, it is hereby declared to be in the public interest that a high speed ground transportation system consisting of a monorail, fixed guideway or magnetic levitation system, capable of speeds in excess of 120 miles per hour, be developed and operated in the State of Florida to provide high speed ground transportation by innovative, efficient and effective technologies consisting of dedicated rails or guideways separated from motor vehicular traffic that will link the five largest urban areas of the State as determined by the Legislature and provide for access to existing air and ground transportation facilities and services. The Legislature, the Cabinet and the Governor are hereby directed to proceed with the development of such a system by the State and/or by a private entity pursuant to state approval and authorization, including the acquisition of right-of-way, the financing of design and construction of the system, and the operation of the system, as provided by specific appropriation and by law, with construction to begin on or before November 1,2003.”

In June of 2001, in response to the Amendment, the Florida Legislature created the Florida High Speed Rail Authority (FHSRA). The FHSRA is charged with responsibility for planning, administering and management of preliminary engineering and a preliminary assessment of a high-speed rail system in the State of Florida.

System Criteria - Chapter 341.822 of the Florida Statutes sets forth the following criteria for the system.

- “(a) The system shall be capable of traveling speeds in excess of 120 miles per hour consisting of dedicated rails or guideways separated from motor vehicle traffic;
- (b) The initial segments of the system will be developed and operated between St. Petersburg, Tampa, and Orlando, with future service to Miami;
- (c) The authority is to develop a model that uses, to the maximum extent feasible, nongovernmental sources of funding for the design, construction, and operation of the system;”

System Status - Since its first meeting in July 2001, the FHSRA has focused its efforts on the initial segments of the system between St. Petersburg, Tampa and Orlando with future service to Miami as defined in the High Speed Rail Act. The Authority has considered the initial segments in the context of a statewide vision plan that ultimately could connect to a national high-speed ground transportation network.

In November 2001, the FHSRA adopted a long-term vision for high-speed ground transportation in the State of Florida. The Authority's *Vision Plan* anticipates a high-speed ground transportation network that closely parallels the Florida Intrastate Highway System (FIHS) and serves communities, cities, airports and seaports throughout the state. As prescribed by the Legislature, the *Vision Plan* ensures that the five major urban areas as specified in the Constitutional amendment will be linked by the high-speed rail system (see Exhibit 3-6).

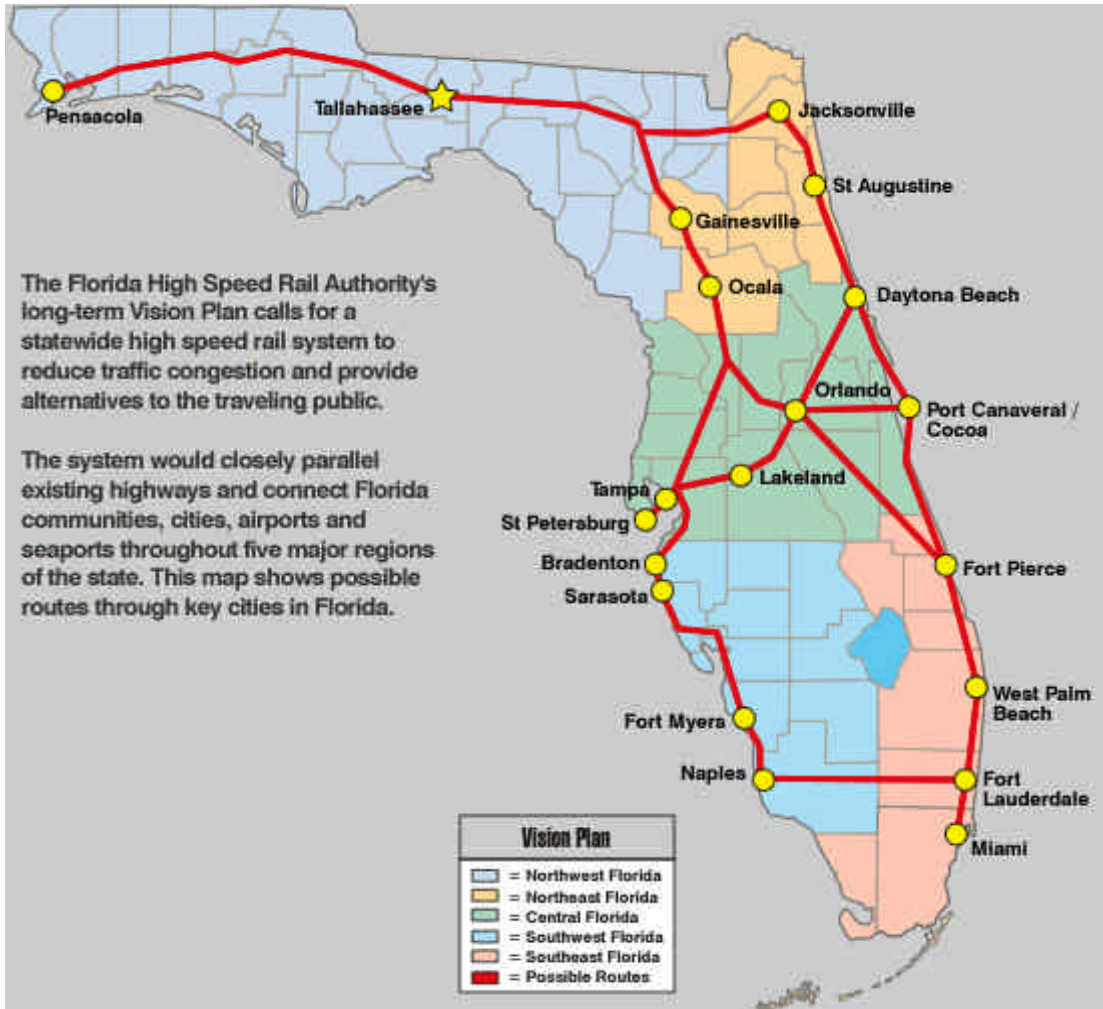
In its first report to the Governor and the Legislature issued in January 2002, the FHSRA proposed a schedule that addressed implementation of the first two Phases of the statewide high speed rail system: St. Petersburg to Orlando (Phase 1) and Orlando to Miami (Phase 2). Phase 1 would begin in November of 2003 and consists of two parts. Part 1 is from Tampa to Orlando, and Part 2 is from St. Petersburg to Tampa. For the purposes of this schedule, the Authority defined the start of construction to be when the Authority executes a contract for construction of any portion of the initial segment.

The FHSRA's initial report also contained recommendations for providing additional powers and responsibilities to the Authority. Many of the recommendations, including granting the FHSRA the authority to implement high-speed rail service in Florida, were subsequently enacted into law as part of HB 261.

In February 2002, the FHSRA issued an *Invitation to Pre-qualify* (ITP) to gauge private sector interest in partnering with the state in developing high-speed rail systems in Florida. Eleven responses to the ITP were received, indicating significant private sector interest in the project.

HB 261 also authorized the FHSRA to issue and solicit responses to a detailed *Request for Proposals* (RFP) and the Authority issued an RFP for Phase 1 – Part 1 (Tampa to Orlando) in October 2002. Responses are due in February 2003. The current status of the process can be obtained on the Florida High Speed Rail Authority Website (www.floridahighspeedrail.org).

Exhibit 3-6
HIGH SPEED RAIL ROUTES
VISION PLAN



Source: www.floridahighspeedrail.org

Connecting High Speed Rail Corridors

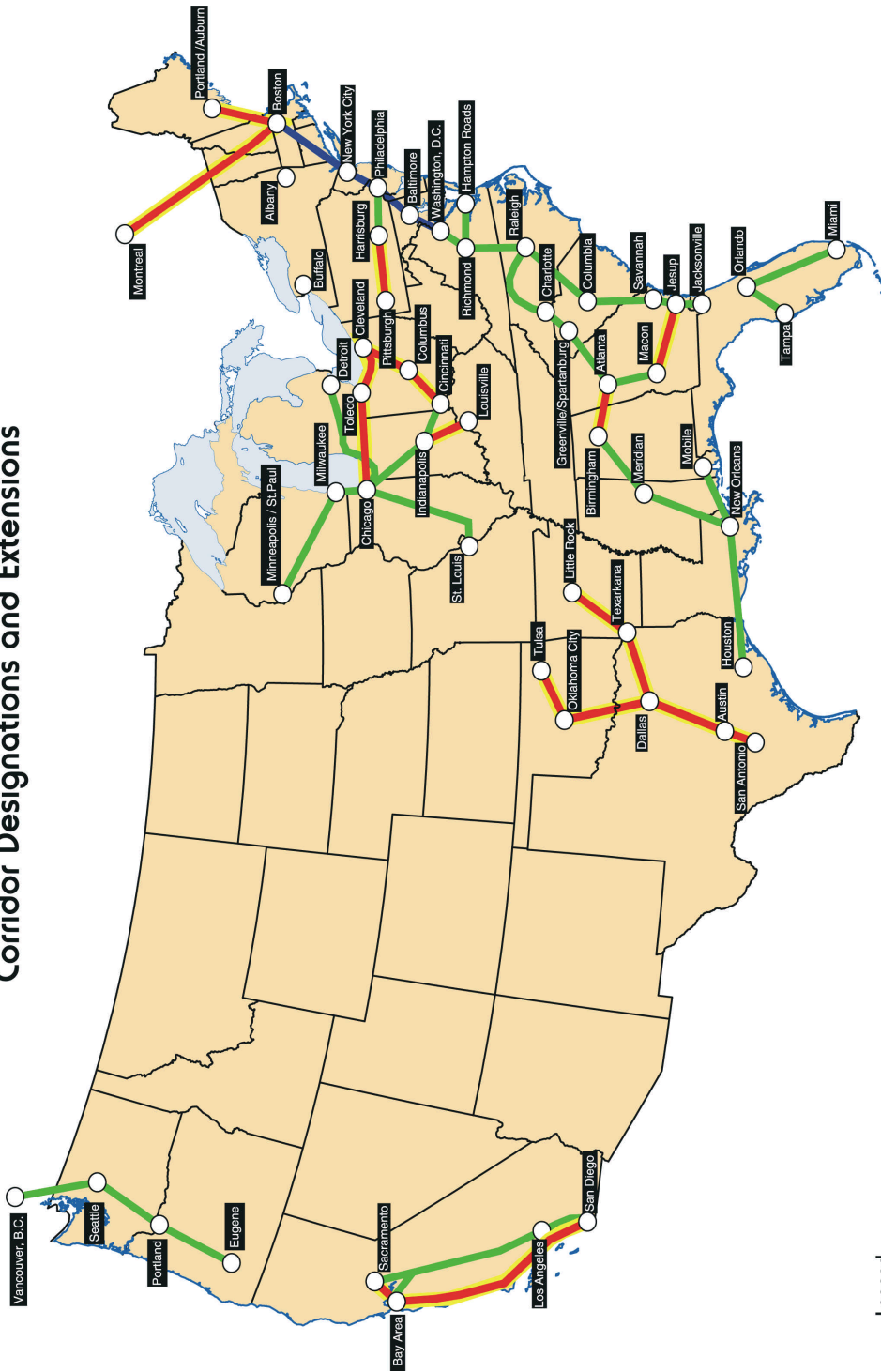
There have been a series of rail corridors through the United States designated as high speed corridors by the USDOT (see Exhibit 3-7). Two of these corridors would connect with Florida's proposed corridors.

Southeast High-Speed Rail Corridor - The states of Virginia, North Carolina, South Carolina and Virginia have formed a coalition to develop the federally designated Southeast High-Speed Rail Corridor. The Corridor runs south from a connection with the Northeast Corridor at Washington, DC through Richmond to Raleigh. At Raleigh it splits into two branches, one continuing south to Columbia, Savannah and Jacksonville. The other leg makes a westerly loop through the Carolina Piedmont cities of Greensboro, Charlotte, Spartanburg, and Greenville to Atlanta, and then south through Macon to Jesup where it connects with the first branch. The goal is to develop the corridor to allow passenger trains to operate at speeds up to 110 mph. If fully implemented, the SEHSR Corridor, will provide a Northeast-Florida connection by upgrading one of Amtrak's most successful services.

However, implementation of the SEHSR Corridor project is dependent on securing federal funds to help develop the route. Congress is considering several pieces of legislation that would provide dedicated funding for development of high-speed rail corridors. If funding were to be approved, the Washington to Charlotte corridor could be completed as early as 2010.

Gulf Coast Corridor - The Southern Rapid Rail Transportation Commission (consisting of representatives from Alabama, Mississippi, Louisiana and Texas) has taken the lead in planning for the federally designated Gulf Coast High Speed Rail Corridor. The first phase of the corridor will span the Gulf coast states from Houston, Texas through New Orleans and Mobile to Pensacola, Florida. Planned expansions will extend service from New Orleans to Atlanta and from Pensacola to Jacksonville. Ongoing corridor development activities are focused on the New Orleans to Atlanta segment.

High-Speed Rail Corridor Designations and Extensions



Legend

- Existing Designated Corridor
- New Designations and Extensions
- Northeast Corridor

Source: Federal Railroad Administration

Exhibit 1-2

COMMUTER RAIL SERVICES

The tremendous population growth, which Florida has experienced, has made the state a serious candidate not only for expanded and enhanced intercity passenger rail service, but also for commuter rail services within its major metropolitan regions. One such service has been established and other proposals for such service have been, or are continuing to be, evaluated and progressed at local levels.

Southeast Florida (Tri-Rail)

Tri-Rail commuter service is operated in Southeast Florida between West Palm Beach and Miami by the Tri-County Commuter Rail Authority (TCRA). Operations began on January 9, 1989 as a demonstration project to provide an alternative means of transportation in the corridor during the widening of I-95 which parallels the rail line.

Formation - Preparations for commuter rail service in this heavily traveled corridor began in earnest in 1985 following the release of a final planning study in December 1984. In early 1986, the Tri-County Commuter Rail Organization (TCRO) was formed by an interlocal agreement between three counties -- Dade, Broward and Palm Beach -- as the local body to eventually oversee and manage the operation of the commuter service. In 1989, the Tri-County Commuter Rail Authority (TCRA) was created by Florida Statutes replacing the TCRO. The TCRA Board is comprised of three elected officials and four citizen appointees from the three counties, one citizen appointee of the Governor, and an FDOT District Secretary.

The Tri-Rail service is operated on the SFRC. Although ownership of the rail line by the State of Florida was not essential to the operation of the Tri-Rail service, ownership insured the availability of an 81-mile corridor to address the existing and future rail transportation needs in Southeast Florida, both regional and interstate. At the time of the purchase, FDOT and CSXT entered into a contract for CSXT to maintain the rail line for FDOT and to dispatch the trains using the corridor.

Current Service – Twenty-eight Tri-Rail trains (14 round trips) are operated each weekday, 14 trains on Saturdays, and 12 trains on Sundays and all holidays. All trains cover a 72-mile route between West Palm Beach (Mangonia Park) and Miami (Miami Airport). The trains are operated in a push-pull manner with a locomotive on one end and a passenger car with a cab and controls on the other.

Passenger Rail/Intermodal

Operation of the trains and maintenance of the passenger cars and locomotives are accomplished by TCRA through a contract operator. Under the operating and management contract mentioned previously, CSXT provides maintenance of the track, bridges, buildings and signal system and dispatches all trains using the line -- including their own freight trains and long distance Amtrak trains. Contracts with private vendors also cover ticket sales by use of ticket vending machines, revenue accounting and security services. All marketing, advertising and customer information services are provided by TCRA.

Double Tracking - The commuter service is expected to remain a key part of the transportation network in this densely populated, heavily traveled corridor, and the ridership is expected to increase with planned improvements. Beginning in late 1990, FDOT began planning for the construction of a second main track along the route and an entirely new signal system. Exhibit 3-8 lists the projects recently completed or presently under construction as part of the initiative to add capacity and increase reliability under the *Double Track Corridor Improvement Program*.

**Exhibit 3-8
DOUBLE TRACK CORRIDOR IMPROVEMENT PROGRAM**

PROJECT	STATUS	COST (Millions)
Phase I: Double tracking and signal improvements - Fort Lauderdale to Pompano Beach -- 8.2 miles	Completed 7/97	\$36.0
System-wide Signal Improvements (Electrocode): West Palm Beach to Miami -- 77.7 miles	Completed 12/97	5.5
900 MHz Radio Communications: West Palm Beach to Miami – 77.7 miles	Completed 12/97	1.1
Phase II: Miami International Airport Extension Hialeah to Miami – 0.7 miles	Completed 4/98	14.5
East Rail: 79th Street Station to Hialeah Station – 1.5 miles	Completed 3/00	3.8
Opa Locka Siding Extension: Northeast Hialeah Yard to 79th Street Station – 2.2 miles	Completed 7/00	4.2
Phase III: Double tracking and signal improvements Pompano to Boca Raton – 7.2 miles	Completed 9/00	31.2
Phase IV-S: Double tracking and signal improvements Hialeah to Plantation – 6.9 miles	Completion 3/03	34.4
Segment 5 – Double tracking the remaining 44.3 miles of the corridor and making other improvements.	Completion 11/05	465.5
ESTIMATED TOTAL INVESTMENT		\$596.2

Source: FDOT/Tri-Rail

Project phasing is graphically depicted on Exhibit 3-9. The additional capacity will not only improve train operations, but provide more flexibility in the corridor for other required functions such as maintenance of way.

In July 2002, Tri-Rail announced it had embarked on the “final phase” of the *Corridor Improvement Program*. When completed, the Segment 5 project will allow Tri-Rail to expand commuter rail service by running morning and afternoon rush-hour trains at 20-minute headways.

The total cost of the Project is estimated at \$456.5 million. The construction phase of the Segment 5 Project began in July 2002, and is anticipated to span a period of 39 months. Other project improvements will include: upgrades to existing track; construction and rehabilitation of bridges over 12 canal crossings; renovation of 9 existing stations; construction of a new Boca Raton Station and closing/demolition of the existing Boca Raton Station; acquisition of new locomotives/cab cars and upgrades to passenger information systems.

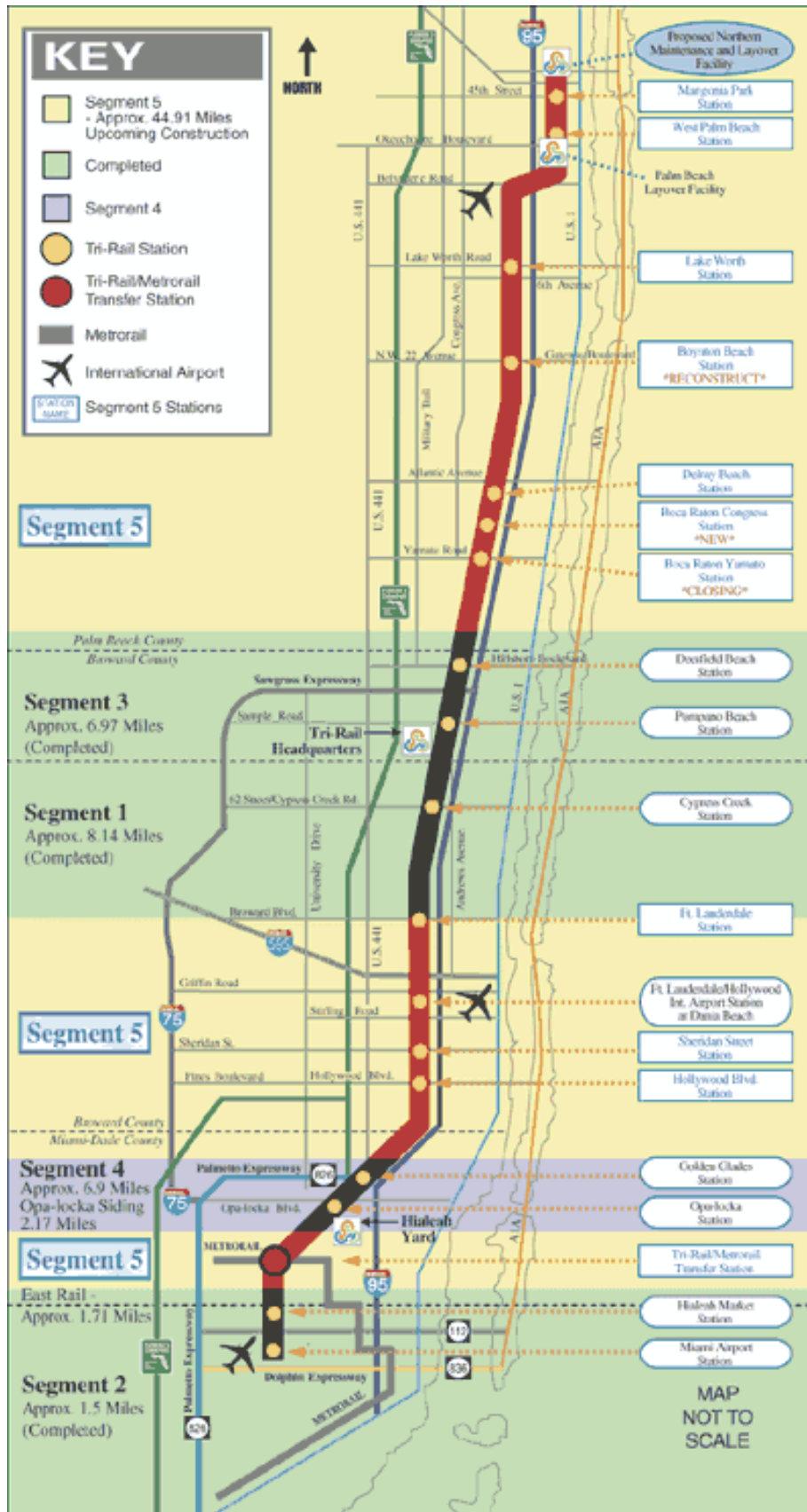
Additionally, a major element of the work includes enhancements to grade crossings/upgrades to signal-safety systems. Advanced design and automated grade crossing warning devices are to be installed at all crossings, providing full-closure along the entire 72-mile corridor. These improvements will provide a greater opportunity for communities to petition for whistle ban/quiet zones from the Federal Railroad Administration.

Funding for Segment 5 is covered by the Full Funding Grant Agreement executed between the Federal Transit Administration and Tri-Rail in June 2000. To pay for the \$456.5 million project, \$228.6 million is to be derived from the federal government, \$127.9 million from the state, and \$100.0 million to be generated from the issuance of revenue bonds. To date, state funding has totaled \$62.2 million.

Other Projects - Tri-Rail will soon initiate two other improvements. The first is for the construction of a new high-level, fixed-span rail bridge adjacent to the existing drawbridge over the South Fork of the New River. The second contract will include construction of a new northern maintenance and layover facility to allow for northern expansion of the commuter rail service.

Ridership - Exhibit 3-10 depicts the Tri-Rail ridership over the 14 years to date. There had been a significant upward trend with seasonal variations until 1993 when it began to drop off and stabilized in 1996. The 1993-1996 decline appeared to be related to fare increases, scheduling and dependability problems. Prior to that point, each significant service enhancement (added evening service and added midday service) resulted in a corresponding growth in ridership.

Passenger Rail/Intermodal



Source: Tri-Rail

Exhibit 3-9

TRI-RAIL DOUBLE TRACK

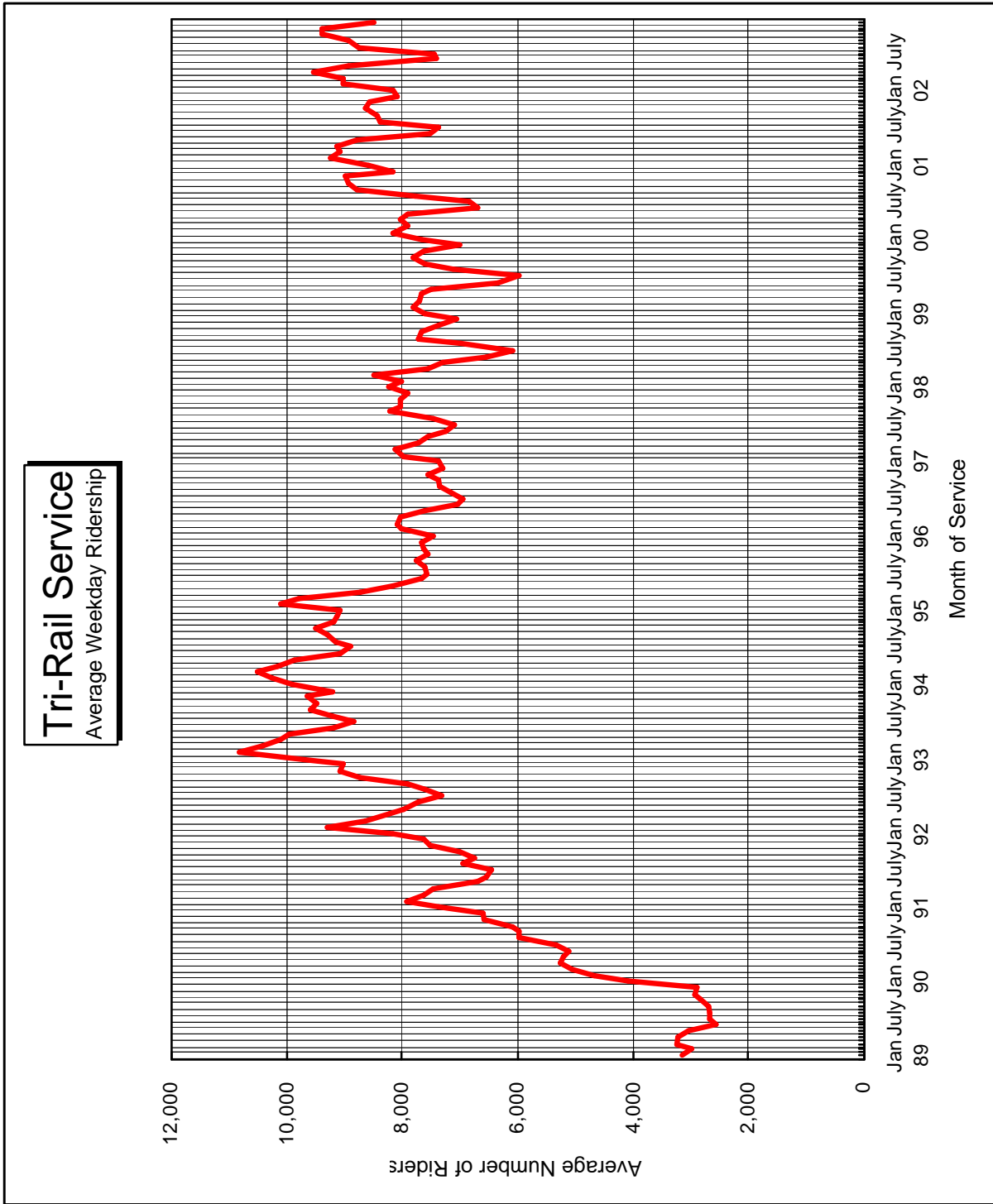


Exhibit 3-10

Long Range Plan – Tri-Rail’s 20-year long-range plan, which assumes the double-track project including the New River bridge project is complete, consists of five principal components.

- 1) Dolphin Extension – Comprised of a westward extension from the Miami Airport station along CSXT right-of-way to the Dolphin Mall.
- 2) Jupiter Extension – A northern extension from West Palm Beach to Jupiter along the FEC right-of-way.
- 3) Broward East-West Line – A connecting light rail transit line running from the Fort Lauderdale-Hollywood International Airport to the Sawgrass Mills Mall/National Car Rental Arena locale via downtown Fort Lauderdale.
- 4) FEC Corridor – A southward extension of service from Atlantic Boulevard (Broward County) to the Miami Arena along the FEC.
- 5) Kendall Extension – Another southerly extension which is planned to run from the Miami Airport Station to the Metro Zoo along CSXT right-of-way (Homestead Branch).

The extension of Tri-Rail service north from West Palm Beach to Martin County is an element of the *2025 Long Range Transportation Plan* adopted by the Palm Beach Metropolitan Planning Organization in November 2001. The 2025 Long Range Transportation Plan for Broward County contains two of the extensions -- the east-west rail corridor in mid-County paralleling the I-595 corridor and commuter service in the FEC corridor which would link Ft. Lauderdale’s historical downtown areas.

Central Florida (Orlando)

The Central Florida Regional Transportation Authority, doing business as LYNX, provides public transportation services in Orange, Seminole and Osceola Counties; an area of approximately 2,500 square miles with a resident population of more than 1.3 million people.

North/South Corridor - LYNX recently contracted for an alternatives analysis of commuter rail service using an existing CSXT corridor between Deland, Orlando and Kissimmee. The study will document the demand for such service, its operating requirements, and its estimated capital and operating costs. The study of this 55-mile *North/South Corridor* is scheduled to be completed in June 2003. CSX Transportation completed a capacity analysis of the corridor in 2002 which concluded that it would use all currently available track capacity in the corridor for its freight train operations, and that additional tracks and signaling systems would be needed to accommodate commuter rail operations.

Northwest Corridor - LYNX has also been involved in the evaluation of a proposal to implement commuter rail service in a 33-mile *NorthWest Corridor* between Eustis and Orlando. The initial plan for the service was proposed by the Florida Central Railroad (FCEN) 1999. FDOT subsequently sponsored a feasibility study of the FCEN proposal that analyzed the operating plan and its requirements, the demand for the service, and its projected operating and maintenance costs. The analysis concluded that the project would not be competitive for federal funding at this time.

Light Rail Transit - LYNX is also engaged in the preparation of a Supplemental Draft Environmental Impact Statement (SDEIS) of a potential light rail transit project in a 20-mile corridor extending from Altamonte Springs to Sea World. The SDEIS is designed to augment the EIS completed for the proposed Central Florida Light Rail Transit System North/South Corridor project in November 1998. The SDEIS is slated for completion in July 2003.

West Central Florida (Tampa)

In December 1995, the Hillsborough County Metropolitan Planning Organization (MPO) adopted the *2015 Long Range Transportation Plan*, which included a regional rail system. In April 1998, officials from a variety of federal, state and local agencies in Hillsborough and Polk Counties completed the *Tampa-Hillsborough-Lakeland-Polk Alternatives for Mobility Enhancement Major Investment Study*, referred to as the *Mobility Study*. It refined the recommendations contained in the adopted *Long Range Transportation Plan*.

The *Mobility Study* resulted in the selection of a 2015 Locally Preferred Strategy consisting of roadway improvements, transportation management strategies, bus service improvements, enhancement of bicycle and pedestrian facilities and the introduction of rail transit service. Some of these improvements were identified as “early action” projects for implementation by 2008. An approximately 30-mile portion of the rail transit element from the Locally Preferred Strategy was included in the “Early Action Plan.” The Early Action Plan rail segment was recommended for advancement to the Preliminary Engineering/Environmental Impact Statement (PE/EIS) step in the project development process. The results of the Locally Preferred Strategy Report were incorporated into the Hillsborough County MPO’s *2020 Long Range Transportation Plan*, adopted in November 1998.

In March 1999, the Federal Transit Administration (FTA) approved the PE/EIS project. The Hillsborough Area Regional Transit Authority (HART) served as the local lead agency. The PE/EIS, completed in July 2001, analyzed and compared the potential application of two rail transit technologies in the 30-mile rail corridor – Light Rail Transit (LRT) and Diesel Multiple Unit (DMU). The corridor connects Downtown Tampa with the University of South Florida (USF), the Port Tampa and Westshore business district and Stadium areas. Alternative alignments were also evaluated. The portion of the rail system from downtown to Westshore would be constructed in the street and/or new right-of-way. The segments serving the north, east and south Tampa areas would mostly be located within existing CSXT right-of-way.

INTERMODAL FACILITIES

Since passage of state legislation in 1990 elevating intermodal issues to priority status in transportation planning (CS/SB 1316 codified in 339.155 (2)(e) F.S.), and enactment of the federal ISTEA and its successor programs, the FDOT, jointly with its local and federal partners, has initiated several high profile intermodal facility projects of national and statewide significance. The following intermodal facility profiles provide an overview of projects recently completed and currently underway within the State of Florida to improve mobility and transferability between modes.

Amtrak Stations

There are 28 Amtrak stations located throughout Florida. The number of trains stopping at each station and the services/connections available at each station are quite variable. Services available are generally in proportion to the number of trains.

The stations in the Panhandle see an average of only one train each day. Stations on the Jacksonville – Tampa/Miami routes, however, see up to six trains per day (three daily trains in each direction). Station services, appropriately, are more plentiful along these routes. Connecting public transportation, almost non-existent in the Panhandle with the exception of on-call taxis, is also available to a much larger extent along the routes to South Florida. Public transportation at stations in the South Florida Rail Corridor is boosted by the presence of Tri-Rail commuter operations.

In terms of handicapped accessibility, 13 of the 28 stations and all facilities are fully accessible to persons using wheelchairs. The trains are accessible in another seven stations, but all facilities may not be, and eight stations have some barrier between the street and the trains.

Jacksonville

Support for creating a multimodal transportation facility in Jacksonville has been building for over 10 years. Efforts began in earnest in 1992 through an organized effort between the Chamber of Commerce and the Mayor's Office to locate a transportation center downtown. Two sites were initially identified through a feasibility study that was completed with extensive input from Amtrak, FEC and CSXT.

One of the sites was the 80-year-old downtown train terminal that had not been used by passenger trains since 1974, and had been converted into a convention center by the City in 1985. One proposal was to use a portion of the convention center as a multimodal facility. The proposed facility would directly serve Amtrak, Greyhound, the Jacksonville Transportation Authority's (JTA) Automated Skyway Express, JTA local bus service, future high speed rail, potential commuter rail, taxi, limousine, auto rental, and helicopter/rotocraft. Various joint development projects were included in the site plan such as parking areas for the convention center and terminal center operations, a heliport, commercial development within the proposed terminal, and spin-off development in the vicinity of the terminal site. The total cost for the terminal center was estimated to be approximately \$48 million. The Conceptual Plan continues to be refined in order to better accommodate Greyhound's needs. Whether or not the project moves forward is dependent on the future of Amtrak service in the State of Florida.

Miami

The Dade County Metropolitan Planning Organization (MPO) completed a feasibility study for an Airport Area Multimodal Access Facility in June 1992. The study identified the benefits of improved intermodal connections and access to Miami International Airport and employment centers. A Miami Intermodal Center (MIC) was conceived to link Metrorail, Tri-Rail, the Port of Miami cruise facilities, Greyhound intercity bus, future high speed rail, and local Metrobus. The study also evaluated alternative site locations and proposed a development plan.

The recommended site configuration is a facility housing transit platforms, passenger rail and bus services, and operations areas. Travel between the facility and the Miami International Airport passenger terminal would be accomplished by a fixed guideway connector link. The Draft Environmental Impact Statement/Major Investment Study was completed and signed by FHWA in October 1995. The MPO approved the recommended MIC site, location of the highway interconnector, and the alignment for the fixed guideway connector link between the facility and the airport.. FDOT's Preliminary Engineering/Final Environmental Impact Statement (PE/FEI) process for the project has been completed and the Record of Decision, which grants Location and Design Concept Approval, was received on May 5, 1998. A contract was let on May 8, 1998 to proceed with the right-of-way acquisition and final design phases of the project.

The first phase of the MIC program is scheduled for completion within the next five years and is estimated to cost \$1.3 billion. An investment strategy was developed to pool the revenue contributions of numerous funding partners. Phase I implementation is being fast- tracked as a result of the U.S. Department of Transportation's approval of a loan under the federal *Transportation Infrastructure Finance and Innovation Act (TIFIA)* program. The Miami-Dade Aviation Department will invest approximately \$240 million for the construction of a people- mover system. A contribution in the amount of \$86 million from the Miami-Dade Expressway Authority will facilitate completion of a series of high priority roadway improvements intended to alleviate congestion at Miami International Airport and to improve connectivity for the regional highway system.

Orlando

LYNX, with assistance from FDOT, the Federal Transit Administration and the City of Orlando, purchased a 4.38-acre parcel in downtown Orlando to be developed as LYNX Central Station. Preliminary design and engineering was completed in mid-2002. A construction contract has been executed and construction is to be completed in 2004-5. Plans for the Intermodal Center are to accommodate the expansion of bus service, Amtrak connections, and allow for the future addition of new modes of transportation such as intercity, commuter or light rail systems. The facility will also provide opportunities for other joint uses.

Tampa

The renovated 1917 Tampa Union Station (TUS) reopened in May, 1998. Amtrak had vacated the CSXT-owned facility in 1982 due to advanced deterioration and existence of hazardous asbestos

materials. Amtrak used the station's platforms in the interim and has now reoccupied the terminal as part of an \$1.8 million multimodal facility improvement. The railroad has a long-term lease with the City of Tampa, the building's owner.

A large percentage of passengers arrive on Amtrak Thruway buses connecting Ft. Myers and St. Petersburg. Buses operating from TUS also link Gulf Coast residents with service to Miami. In future plans, the terminal facility could accommodate potential commuter rail, local circulator service within the downtown area, intercounty bus service, HARTline bus service, planned downtown trolley service, passenger baggage, mail and express services, commercial development and a restaurant. The renovation of the baggage building on the south side of the terminal began in 2001 and is scheduled for completion by the end of 2002.

Hollywood

The proposed Hollywood Boulevard Intermodal Transportation Facility, located at the Hollywood Boulevard-Interstate 95 interchange, consists of the existing Amtrak/Tri-Rail Station and a proposed new bus transfer facility. In accordance with a conceptual plan published in 1996, the facility is to be developed in three phases:

- Phase I: Restoration and rehabilitation of the existing Amtrak station.
- Phase II: Design and renovation of Tri-Rail facilities including parking.
- Phase III: Acquisition of property and construction of additional parking and a bus transfer facility on the opposite side of Hollywood Boulevard from the station with a connecting pedestrian bridge.

Phase I and II have been completed. The third phase was analyzed in more detail in the Hollywood Boulevard Intermodal Station PD&E Feasibility Study completed in December 2001. The objective of the study was to develop both a regional transportation facility and a neighborhood transit hub to serve the commuters, residents, and visitors of Hollywood and to serve as a catalyst for the continued economic development/redevelopment of the Hollywood Boulevard corridor. The study evaluated the following:

- A transit hub/parking garage on the northeast corner of I-95 and Hollywood Boulevard;
- A surface parking lot on the southwest corner of I-95 and Hollywood Boulevard; and,

- A pedestrian connection between the existing Tri-Rail/Amtrak Station and the new parking facility including a pedestrian bridge, a shuttle service, a tunnel or sidewalk improvements.

Further development of the proposed regional facility is “on hold” pending resolution of a number of issues including how such a facility might be financed.

Ocala

In 1993, the City of Ocala and the Ocala/Marion County MPO joined in the partnership with FDOT to purchase and rehabilitate the historic Ocala Union Train Station. This landmark station, originally constructed in 1914, is located in the heart of downtown Ocala and was known to many northern travelers as the elegant gateway to the City of Ocala. In 1995, the City of Ocala received a federal grant under the Transportation Enhancement Program to purchase and rehabilitate all four buildings on the 2.9-acre site, and to provide landscaping and additional parking areas. Reconstruction began in January 1998 and was completed in 1999. The initial tenants, Amtrak and Greyhound, moved into the new facility in early 1999. The complex serves as the main transfer point for SUNTRAN (the city’s new fixed-route bus system), and has a city-designated taxi stand. It also acts as the main headquarters for the City of Ocala’s police bicycle and horse patrol units.

West Palm Beach

The historic Seaboard Railway Station currently serves as an intermodal facility for Tri-Rail, Amtrak and Greyhound as well as Palm Tran fixed-route buses and downtown shuttle circulators. A project to improve circulation within the station area and adjacent roadways, and provide for bus transfers is under design and will be constructed in 2003 by the City of West Palm Beach. Palm Beach County owns 6.2 acres immediately west of the existing station and is preparing a Request for Proposal for developing the property by the private sector with transit parking and office spaces to be included. The West Palm Beach City Center Master Plan will allow a mix of five-and fifteen-story buildings on the site. The RFP is scheduled for distribution in November 2002 to be received by April 2003. Following review and negotiations by the County and the Federal Transit Administration, construction is anticipated in early 2005.

Lakeland

A new multimodal terminal for passenger trains and buses was constructed east of the intersection of the CSXT north-south and east-west lines. The terminal's location in downtown Lakeland permits all Amtrak trains passing through the city to make a station stop. The original Amtrak station, now abandoned, was located to the west of the intersection of the CSXT north-south and east-west lines so that only trains to/from Tampa actually passed the station. The Lakeland Area Mass Transit District services the terminal with one-half-hour frequencies Monday through Saturday.

Venice

Sarasota County has received a grant from the Department to restore the Venice train depot. The facility has been vacant for many years and is beginning to deteriorate. It will be restored to its original appearance. Upon completion of the restoration, the facility will be used by Sarasota County Area Transit as a transfer facility. Other future uses for the site include a park-and-ride lot, and a connection for two recreational trails in Venice. The depot could also serve future regional rail service.

SUMMARY

As evident from the preceding discussion, improvement of rail passenger service is actively being pursued in Florida both on the local level (commuter) as well as statewide. The Amtrak financial crisis, however, is stymieing expansion of conventional intercity service and may impact existing service. Although conventional service improvements are experiencing problems, the current state mandate is to develop a high-speed rail system with minimum speeds in excess of 120 mph. While conventional service can be developed on existing rail lines, the mandated speed requirements will require construction of new fully grade-separated alignments.

Intrastate Routes

The vision plans for both improved conventional and new high speed service calls for connecting the state's major population centers. Both plans also contain route segments which do not new exist in the current rail system – South Florida West Coast to East Coast (Naples – Ft. Lauderdale); Central Florida to East Coast (Orlando to Port Canaveral/Cocoa, and Orlando to Daytona Beach); and a West Coast Connection (Sarasota to Fort Myers). The high speed plan envisions additional new route segments

between Fort Pierce and Orlando, a more direct route between Tampa and St. Petersburg, and a new route north from Tampa through Ocala and Gainesville to a connection near Lake City with the Pensacola-Jacksonville alignment across the Panhandle. This route is significant because it provides for a direct entry to the state's interior from the west without having to pass through Jacksonville as is the case now.

Funding

The largest obstacle to improving rail passenger service in Florida is funding. The current Amtrak financial crisis has placed conventional service improvements on hold. Amtrak has also made it clear that it expects the states to provide more funding for both capital and operating needs. High-speed costs and funding sources are as yet unknown as the renewed program is still in its infancy. It is apparent, however, that a variety of funding mechanisms and sources will be required to advance rail passenger services in Florida.

CHAPTER 4 RAIL SAFETY

This chapter contains an overview of the rail safety inspection program, including Florida's recent rail incident history, the status of implementing recommendations resulting from the Commission on the Safety and Security of Railroad-Highway Grade Crossings, and an explanation of Florida's Highway/Rail Crossing Corridor Safety Improvement Program. Actions taken after the FDOT's participation in a Blue Ribbon Working Group formed by a federal grade crossing Task Force are discussed as are the FDOT's continuing efforts to improve railroad operating and rail-highway crossing safety.

BACKGROUND

Past events in Florida have brought rail safety and its implications to the forefront of public awareness. Several high-profile rail-related incidents have occurred over the past several years prompting extensive attention to the rail safety issue.

Derailments and Collisions

On March 17, 1993, an Amtrak passenger train collided with a loaded gasoline truck at the Cypress Creek Road crossing in Fort Lauderdale. The ensuing explosion and fire killed the truck driver and five motorists stopped at the crossing. No one on the train was seriously injured.

On November 30, 1993, the northbound Amtrak *Silver Meteor* near Kissimmee, Florida collided with a lowboy truck transporting a steam turbine to the Kissimmee Utility Authority at a private crossing. The truck had lowered its load to adjust a lifting device to clear the crest in the roadway surface at the crossing; approximately 60 people were taken to area hospitals for treatment, including the truck driver, train engineer, and assistant conductor. No fatalities occurred.

On January 13, 1994, an eastbound Ringling Brothers, Barnum and Bailey Circus train with over 160 passengers aboard derailed four miles east of Lakeland, Florida resulting in two

fatalities and five injuries. The derailment was due to a fractured wheel on a passenger car which caused the train to derail at a switch.

On February 5, 1997 the northbound Silver Meteor derailed when it hit a semi trailer that got hung up on the tracks when the driver attempted to make a U-turn on the crossing. The incident, which occurred north of Jacksonville, resulted in injuries to eight people on the train.

In April 2002, the northbound *Auto Train* derailed near Crescent City, about one hour after departing its Sanford terminal, resulting in four fatalities and 159 injuries.

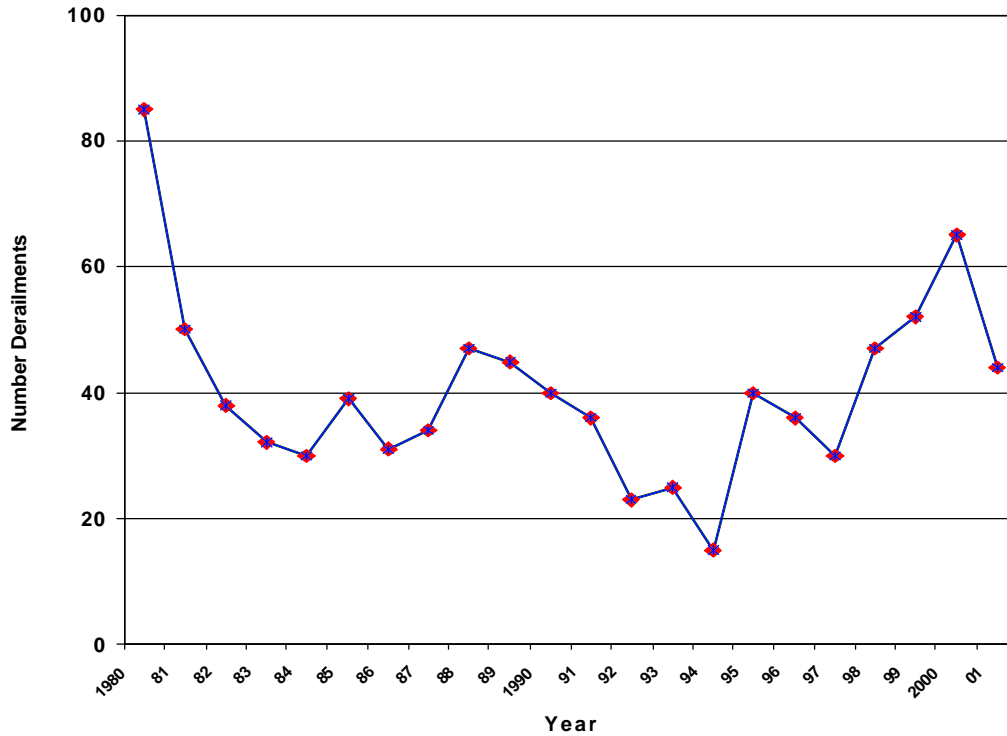
Exhibit 4-1 illustrates the history of and the reasons for train derailments in Florida over the last decade. From 274 train derailments in 1977, the year before the FDOT began its railroad safety inspection program, the number of derailments in Florida has declined to an average of 39 per year over the last 10 years. Most derailments occur in industrial yard tracks that result in little damage. Derailments have been on the increase, however, over the last couple of years.

In spite of these accident/incidents, the National Safety Council indicates rail passenger travel remains the safest means of surface transportation as demonstrated by an incident-death rate of 0.04/100,000,000 passenger miles (33 times safer than travel by the automobile).

National and State Trends

The total United States rail system is comprised of 170,000 miles of track. This system in 1998 was crossed at grade by an estimated 261,000 streets, roads, highways, alleys, driveways, unimproved trails, and other thoroughfares (equivalent to 1.5 crossings per route mile of track) intended for the passage of motor vehicles, bicycles, and/or pedestrians. Nationally, only about 25 percent of these grade crossings have active warning devices with flashing lights, gates, or combinations thereof. During the mid-1970s, there were an average of 13,000 incidents and 1,000 fatalities per year at these crossings. By the mid-1990s, these statistics had declined to an average of 4,700 incidents and 575 fatalities per year. That

**Exhibit 4-1
DERAILMENT HISTORY
Derailment Frequency**



REASON FOR DERAILMENT

<u>Year</u>	<u>Total</u>	<u>Track</u>	<u>Equipment</u>	<u>Operating Practices</u>	<u>Other</u>
1984	30	7	2	18	3
1985	39	11	5	19	4
1986	31	12	6	6	7
1987	34	13	3	15	3
1988	47	20	3	17	7
1989	45	23	9	7	6
1990	40	17	10	9	4
1991	36	18	6	9	3
1992	23	17	1	3	2
1993	25	16	0	4	5
1994	15	6	0	4	5
1995	40	16	1	18	5
1996	36	18	0	13	5
1997	30	9	3	11	7
1998	47	23	3	16	4
1999	52	30	3	14	5
2000	65	29	4	23	9
2001	44	20	5	13	6

represents a 64-percent reduction in incidents and a 42-percent decline in fatalities over the 20-year period attributed mainly to the installation of active warning devices.

In 2000, Florida's rail system was comprised of 2,887 route miles of track with 5,261 public and private grade crossings (almost two crossings per route mile). Approximately 52 percent of these crossings are equipped with active warning devices, or over twice the national average. The effect of these warning devices is apparent when compared to the national averages. From 400 incidents and 50 fatalities per year in the mid-1970s, the number of incidents and fatalities declined 75 percent and 60 percent, respectively, to 100 incidents and 20 fatalities per year by the mid-1990s. This trend has occurred despite an increase in exposure due to increased vehicular traffic and operational changes that have resulted in more trains on fewer rail lines.

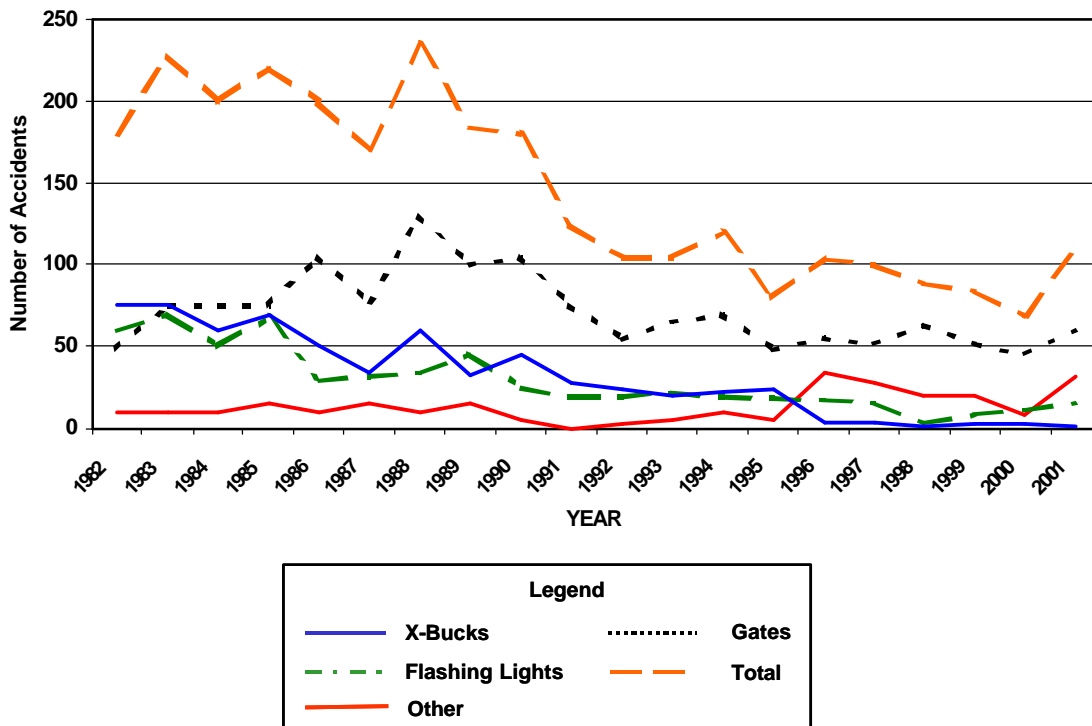
A large part of this increased exposure is due to commencement of commuter rail service in the South Florida Rail Corridor (SFRC) between West Palm Beach and Miami, and the addition of Amtrak's *Sunset Limited* across north Florida and south to Orlando. As discussed in Chapter 3, Tri-Rail operates 28 trains on weekdays, with 14 on Saturdays and 12 on Sundays. This level of commuter rail service is in addition to the six Amtrak long-distance trains and eight local and long haul CSXT freight trains per day which operate on the SFRC.

Rail-Highway Grade Crossing Incident History

As shown in Exhibit 4-2, the number of grade crossing incidents in Florida has declined significantly since 1988. This improvement is the result of FDOT's emphasis on providing state-of-the-art warning devices at high risk crossings (risk is a function of ADT, number of trains, roadway design speed, train speed, rail line use, etc.), and success in crossing closures through the consolidation process.

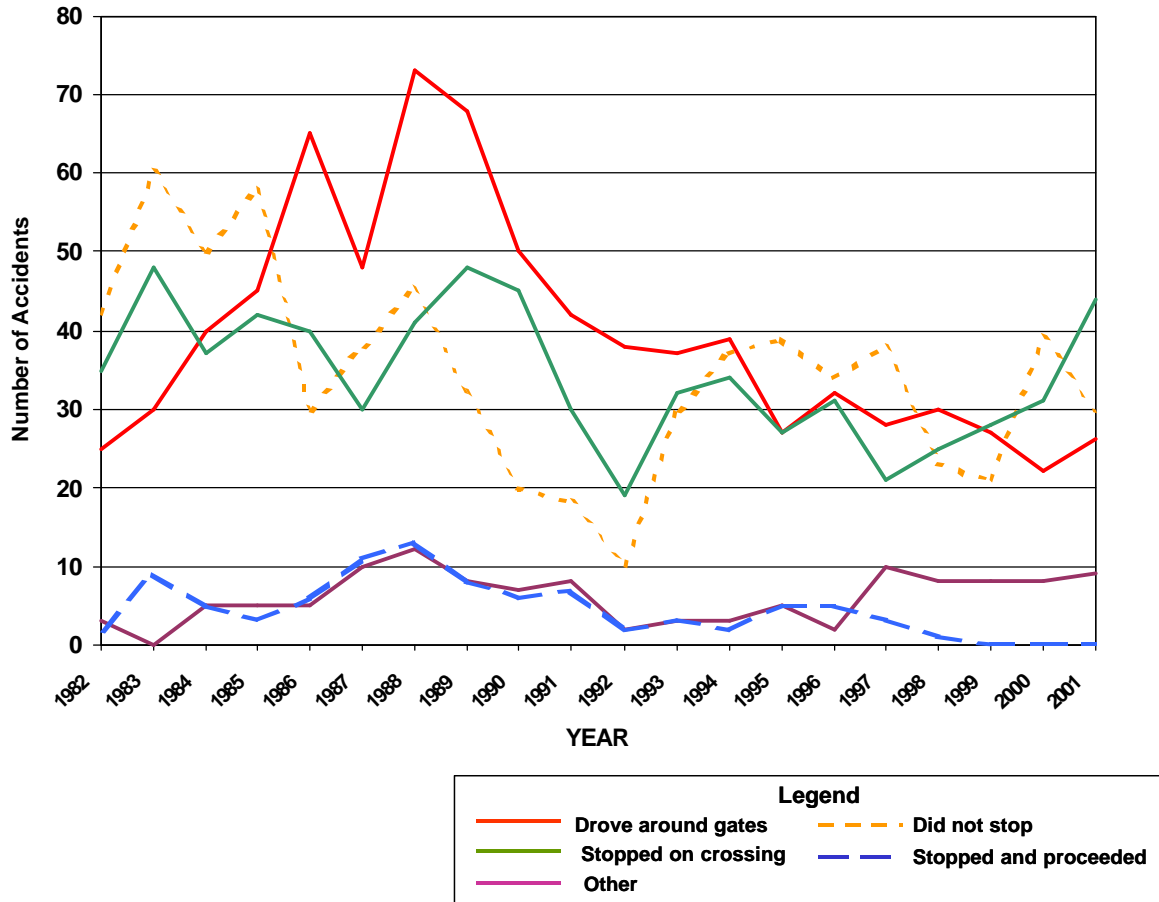
Although active warning devices have reduced crossing incidents, over 50 percent of current grade crossing incidents occur at crossings equipped with flashing lights and gates. This is corroborated by Exhibit 4-3 which shows the number of incidents based on the actions of

Exhibit 4-2
CROSSING INCIDENTS BY PROTECTION



the vehicle driver. This relationship is not as improbable as it might seem as the crossings equipped with active warning devices are also the ones with the most vehicular and rail traffic. Between 1982 and 1999, the greatest number of incidents were caused by motorists driving around lowered crossing gates. As evident from Exhibit 4-3, there was a dramatic reduction in these violations. The FDOT, through its active participation in public awareness programs such as Operation Lifesaver, the Highway Safety Improvement Program, and working through public information groups, strives to educate the motoring public of the dangers associated with rail-highway grade crossings. The FDOT will continue to emphasize these dangers through the above-mentioned program efforts and by supporting the railroads and highway user groups in special promotions that encourage public awareness of highway-rail grade crossing safety issues.

Exhibit 4-3
CROSSING INCIDENTS BY MOTORIST ACTION



FEDERAL AND STATE CROSSING INITIATIVES

ISTEA Section 1036

In 1993, the FDOT applied for and received federal funding under the ISTEA Section 1036 to demonstrate the feasibility of a low-cost grade separation technology. Alternate U.S. 27 at Frostproof in Polk County on the CSXT line between Auburndale and Miami was selected as the site for the project. Based on preliminary design and analysis, the project’s time savings and cost estimates proved to offer little improvement over conventional bridge construction and the

project was terminated. Funding for this project was directed at exploring new technologies that were not as intrusive but could provide a high level of protection.

Four locations (five rail-highway grade crossings) were selected to demonstrate the use of a neural network-based video content extraction technology (computer vision) using the High Speed Ground Technology Demonstration Program (1036 Grant) at rail-highway grade crossings on the South Florida Rail Corridor (Powerline Road, Prospect Road, Commercial Boulevard, Cypress Creek Road and McNab Road). This demonstration project provided state-of-the-art technology developed as part of the National Research Council's Transportation Research Board (TRB) Innovations Deserving Exploratory Analysis (IDEA), Project HSR-IDEA Project 10 for highway-railroad grade crossing surveillance to assist in data collection, enforcement, and presence detection. The demonstration is a cooperative effort between the FHWA and Federal Railroad Administration and includes a wide variety of test sites (i.e., four-lane facilities, six-lane facilities, four-quadrant gate systems, Tri-Rail station location, complex roadway geometry, intrastate access, etc.).

TEA-21 Section 1103 (c) Program

The Rail Office's TEA-21 Section 1103(c) Program is an incremental step in the state's long-range comprehensive plan to provide an adequate level of rail-highway grade crossing safety necessary to support and facilitate an increase in rail passenger operating speeds in the Florida High Speed Rail Corridor (received federal high-speed rail corridor designation originally under ISTEA). The plan focuses on eliminating highway-railroad grade crossing hazards which include providing full closure systems and other safety measures.

The rail corridor linking Tampa, Orlando and Miami (which includes the South Florida Rail Corridor), is one of 18 designated high-speed rail corridors eligible to receive federal funding for hazard elimination under TEA-21's Section 1103(c) program (formerly Section 1010 of ISTEA). Funding from these programs will be used for advanced warning devices or other safety improvements in the corridor to increase the speed on the high-speed rail corridor.

Rail Safety

Funding – To date, the FDOT has received and programmed over \$5.5 million in funding from this source (all expended on the South Florida Rail Corridor). A request was submitted for Year 2003 Section 1103(c) Immediate Program in the amount of \$5.985 million. The funds requested are summarized below:

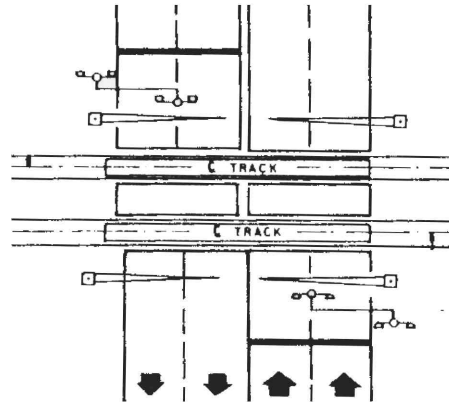
	Amount (millions)
2003 TEA-21 Yearly Allocation	\$1.425
<u>\$15 million Yearly Additional Congressional Appropriation</u>	<u>\$4.560</u>
Amount Requested	\$5.985

However, no funds were received for the years 2000, 2001 nor 2002, and requests are being developed for 2004. None of the \$15 million additional appropriation has been approved since the inception of the program. A six-year plan will include requests for future TEA-21 yearly allocations for approximately \$1.4 million. This funding will be used for event recorders, median improvements, and four-quadrant gate systems at 383 locations on the federal designated high-speed corridor.

Purpose - At-grade crossings are unavoidable because of the corridor's location in a dense urban setting, prohibitive costs of grade separation, and local impact. The FDOT plans to provide maximum crossing protection in the corridor using four-quadrant gate systems (see Exhibit 4-4) and/or 9" non-mountable median barrier curb systems. These two types of treatment will prevent vehicles from going around the crossing gates and driving into the crossing area. The possibility of auto-train collisions should be dramatically reduced if not eliminated with these precautions, thus allowing for increased train speeds through the corridor while reducing risk to passengers.

Four rail-highway grade crossing four-quadrant gate systems have been installed, monitored and evaluated. The project sites (Taft Street, North 17th Avenue, Summit Boulevard, and NW 54th Street) were selected to represent various traffic scenarios, including a heavy industrial traffic route, a state highway, a typical urban street, and a reference location utilizing median separators/standard gate installation. Video monitoring was provided at each site. Data to determine the overall effectiveness and human factor analysis of the four-quadrant gate system installations was provided along with a process for determining gate timing. Gate timing was customized for each location based on the specific characteristics of each crossing (i.e.,

**Exhibit 4-4
FOUR-QUADRANT GATE SYSTEM**



number of tracks, skew angle, Average Daily Traffic, etc.). A fifth four-quadrant gate system location was provided by Broward County for development of a quiet zone (McNab Road).

A radio link system to link event recorders at each signalized rail-highway grade crossing and track control point was added to the overall plan to improve safety in the SFRC. This will facilitate a quicker response time for signal repairs in the event of a malfunction and potentially detect broken gates. The critical operating capacity of the entire corridor system will be enhanced thereby increasing driver confidence in the existing signal systems and help to maximize the safety potential of the signal systems currently deployed.

To date, improvements that have been made to the SFRC include the following:

- Eight median improvements using six-inch barrier curb and gate extensions;
- Seven median improvements using six-inch barrier curb and median gate system additions.
- Two median gate system improvements;
- Eight median barrier systems, using 6-inch barrier curbs;
- Five four-quadrant gate system locations; and
- Four locations with real time event recorder systems which utilize the SFRC's 900 MHZ system.

The current FDOT request for additional funding through TEA-21 Section 1103(c) is to address 311 crossings outside of the SFRC. Additional safety measures are also being pursued outside of the Section 1103(c) funding to improve the overall effectiveness of the system.

Federal Railroad Administration Initiatives

The Federal Railroad Administration (FRA) has undertaken several national initiatives with the goal of reducing grade crossing incidents and fatalities by 50 percent by the year 2004. One of these initiatives is to reduce the number of grade crossings by 25 percent nationwide through grade separation or crossing closure. This is an ambitious target. In Florida, opportunities exist to eliminate crossings with little adverse affect on the general public. Florida, not unlike other states, will find the 25-percent goal a challenge. Closure efforts are often thwarted by a community's desire to retain all crossings regardless of alternate routes. While the need to eliminate redundant crossings in urban areas is real, the opportunity to close crossings in rural areas may not be as great.

Regarding crossing elimination, the FRA has recently begun to address the issue of private grade crossings (i.e., those crossings that are constructed and maintained by other than a public entity). The FDOT has no statutory authority to regulate private crossings other than to require a railroad to erect crossbucks at all such crossings. The FRA has submitted guidelines for closing or retaining existing private crossings to the rail industry. These guidelines encourage railroads to examine private crossings on their systems for the type of warning devices present, the type of agreements that are in place with the users and to close those with inadequate protection. Very few private crossings are equipped with active warning devices. Only 53 of the approximately 1,450 private grade crossings in Florida (3 percent) have some form of active warning device. The Department, whenever possible, encourages conversion of the crossing from private to public ownership. The result is a crossing upgraded to current roadway standards and incorporation of new active warning devices.

Commission to Study the Safety and Security of Railroad-Highway Grade Crossings

Due to the high-profile rail-highway grade crossing incidents mentioned at the beginning of this chapter, the 1993 Florida Legislature created the Commission to Study the Safety and

Rail Safety

Security of Railroad-Highway Grade Crossings to include, but not limited to, work zone safety standards, traffic control devices, and public education relating to hazardous intersections. The Commission made a number of recommendations which validated the approach FDOT had taken in addressing the problem. The Commission's key recommendations, along with the status of the implementation plan formulated by the FDOT, comprise the following discussion.

- **Expedite implementation of enhanced crossing warning device program.**

Diagnostic Review Teams assessed and recommended improvements (including full-closure gate systems) along with crossing closures as part of the rail corridor crossing enhancement program. The Corridor improvements have been included in every fiscal year between 93/94, and 01/02.

Section 14-46.003, F.A.C. was amended to require flashing lights and gates at all new crossing openings unless train and vehicle traffic and speeds are minimal is in the draft stage.
- **Investigate and demonstrate feasibility of alternatives to conventional warning de-vices.**

Installation of four-quadrant gates on the SFRC has occurred at five locations. All locations were video monitored to evaluate specifications of the system and for human factor evaluation.

Four other locations were tested for the use of a real-time event recorder system tied to the SFRC 900 MHZ system. Deployment to the remaining 68 crossings is being programmed. Eighteen median barrier systems have also been installed.
- **Extend traffic signal pre-emption to 500 feet.**

Based on an FDOT survey, all signalized intersections within 200 feet of an at-grade crossing were found to be pre-empted and working accurately. FDOT has extended pre-emption to 500 feet when warranted by an engineering study.
- **Increase public education and awareness.**

FDOT has prepared and distributed brochures on humped crossings to owner/operators of commercial vehicles, prepared Public Service Announcements for distribution throughout the state for group

presentations and broadcasting, and continued its involvement in Operation Lifesaver dedicating an employee full-time to the effort.

- **Close unnecessary grade crossings.** FDOT's Crossing Consolidation Program uses a systematic corridor approach to evaluate and determine possible closure locations. Two current examples of the process will eliminate one humped crossing and seven others with associated upgrades of the remaining crossings with the concurrence of all involved. Additional crossings are being reviewed under this program and more have been identified for future assessment.
- **Limit opening of new crossings.** Section 14-46.003, F.A.C. is being amended to place limitations on new grade crossings.
- **Review Florida's Driver's Manual** FDOT has reviewed the driver's manual and driving test, and made recommendations on revisions concerning rail-highway at-grade crossing safety. These revisions were incorporated in the June 1995 edition of the manual.
- **Identify "High Profile" Crossings** Several high profile or humped crossings in the Amtrak corridors were identified for improvements through the Rail-Highway Grade Crossing Safety Improvement program. The FDOT developed and adopted advance warning signs for this type of crossing which was adopted by the National Committee on Uniform Traffic Control Devices. It is designated as a low ground clearance sign.

Federal Task Force

On October 25, 1995, a school bus in Fox River Grove, Illinois, stopped at a highway traffic signal with the rear end of the bus encroaching on a highway-rail crossing. The school bus was struck by a commuter train resulting in the fatality of 7 of 35 high school students on the bus. Following this tragic grade crossing incident, a USDOT Task Force was formed to review the decision-making processes for designing, constructing, and operating the Nation's

highway-rail grade crossings. The Task Force decided that its areas of focus would be on those crossings in which gaps existed and were not addressed in the 1994 Rail-Highway Crossing Safety Action Plan. The Task Force examined five potential problem areas relating to highway-rail grade crossing safety. These five problem areas are as follows:

1. Interconnected Highway Traffic Signals and Highway-Rail Crossing Warning Devices;
2. Available Storage Space for Motor Vehicles between Highway-Rail Crossings and Adjacent Highway-Highway Intersections;
3. High Profile Crossings and Low-Clearance Vehicles;
4. Light Rail Transit Crossings; and,
5. Special Vehicle Operating Permits and Information.

The FDOT Rail Office participated as a member of the Blue Ribbon Working Group formed by the Task Force to provide technical and operational experience in highway-rail crossing issues. As a result, comprehensive reviews were conducted with several of the affected offices within FDOT and included in the report's findings. Florida has already addressed many of the Task Force's final recommendations. This action can be attributed to the Report to the Governor and the 1994 Florida Legislature on the Safety and Security of Railroad-Highway Grade Crossings and FDOT's Action Plan to implement the Florida commission's recommendations. The following paragraphs provide a general summary of each of the potential problem areas along with recommendations and FDOT actions relative to the report's recommendations.

Interconnected Signals and Storage - As the Fox River Grove incident involved interconnected grade crossing and traffic control signals with insufficient space between the signals and the tracks, the issue became top priority. The Rail Office is already established as the FDOT's primary focal point in the coordination between highway authorities and railroads concerning rail issues and serves as a clearinghouse for collecting and disseminating all pertinent information involving other offices as necessary. In cooperation with FDOT's Rail Office, the FDOT Traffic Engineering Office has essentially completed its "Railroad Signal Preemption Study Status Report" on rail-highway grade crossings.

Railroad Signal Preemption Study – FDOT has completed a statewide Florida Railroad Crossing Inventory Study which identifies all intersections within 65 feet, 200 feet, and

500 feet of a public rail-highway grade crossing. From this detailed review, it was determined that all signalized intersections within 200 feet of a public grade crossing were preempted and working accurately. The Department has revised its existing procedure to extend traffic signal preemption from 200 feet to 500 feet, when warranted by an engineering study. A railroad preemption study was conducted at all state road crossings to accommodate crossings within 500 feet of intersections with traffic lights. The FDOT will include 200-foot to 500-foot locations in its on-going Rail Highway Grade Crossing Safety Improvement Program using Section 130 funds when warranted at the crossing.

The Rail Office coordinates with Central and District offices to determine the storage distance required between railroad tracks and adjacent parallel roadways. Design of sufficient storage space is recommended early in the design and planning process of new facilities. Special emphasis is given to locations with STOP sign control at highway-highway intersections.

Rail-Highway Grade Crossing Safety Improvement Program

FDOT has revised its Guidelines for Florida's Rail-Highway Grade Crossing Safety Improvement Program to include the upgrade of grade crossing surfaces if incident history indicates a rough crossing, the elimination of high profile crossings (Hump Crossings), facilitating corridor closure projects with upgrades and closures, roadway median barrier projects when incident history indicates motorist drive around down warning gates, and the initiation of a passive crossbuck program which will replace the existing crossbucks throughout the state with highly reflectorized sheeting material for the sign and a reflective strip down both sides of the support post. In addition to the crossings identified by the FDOT rail-highway crossing inventory priority safety index, FDOT includes high priority crossings for improvements that are identified and recommended by cities, counties and others as safety hazards.

Rail-Highway Grade Crossing Consolidation Program

The FDOT has an active Crossing Consolidation Program which reviews potential rail-highway grade crossing candidates for possible closure. A systematic corridor approach to evaluate and determine possible closure locations is used. Within a specified corridor segment, several crossings are evaluated together so that all available resources can be used effectively

for crossing consolidation. This corridor approach results in additional safety and roadway improvements to the surrounding areas. The FDOT's Crossing Closure Program prioritizes those crossings with a lower ranking (higher severity) which will produce a greater benefit where there are significant traffic volumes.

Part of the process involving consolidation of crossings is to integrate other programs, if possible, to enhance other crossings and the surrounding area while pursuing closure of the rail-highway grade crossing candidate. Such programs include: FDOT's Work Program, Signal Safety Program, Humped Crossing Identification Program, Preemption Analysis Program, Community Enhancements Projects, and Livable Communities Program.

Following are examples of the FDOT's philosophy on the crossing consolidation process.

Camilla Street Closure – Quincy, located on North Florida's Amtrak Corridor, was identified as a candidate in a rail corridor program to include closures and provision of high level protection at remaining crossings in the area such as flashing lights and gates (Safety Signal Program). Camilla Street was designated a closure candidate. Improvements were made to the crossing south of the Camilla Street closure to remove a humped condition (Humped Crossing Identification Program) with additional improvements to include better turning radius, drainage, curbs, gutters, pavement markings, and signage (Work Program). To the north of the Camilla Street closure, additional pavement materials were provided to improve the vertical profile over the crossing. Both the crossings to the north and south are located within close proximity to a signalized intersection.

Church Street Crossing Closure – The Church Street crossing in the Town of Greenville is located on north Florida's Amtrak Corridor. As a part of the Safety Improvement Program, a project was funded using 23 USC, Section 130 funds to install flashing lights and gates at the crossing. During the process to develop and execute a maintenance agreement, the crossing's closure was negotiated. Through cooperation with CSXT, the Town of Greenville and the Department, the project was changed to a crossing consolidation and downtown beautification project. In exchange for the Town agreeing to closure of the crossing, the railroad

allowed the Town to park vehicles, build sidewalks and place decorative benches, trashcans and light poles in designated areas on its right-of-way. The Department modified the scope of the project to fund the beautification elements using a mixture of state and federal funds for the warning devices. The revised project resulted in a win-win situation for everyone by providing a safer environment while enhancing the beauty of the Town of Greenville.

Homer J. Smith, San Pedro, Lafayette and Faulkner Street Crossing Closures –

The subject crossings are located on the Georgia and Florida Railnet mainline in Perry. Using the systematic corridor approach, a diagnostic team comprised of representatives from the City, railroad and FDOT nominated a total of eight redundant crossings as candidates for closure. The railroad filed applications with the Department to close the eight crossing and as a bonus, offered surplus property to the City. The land offered doubled the size of an adjacent City Park. Through negotiations with the City, railroad and the Department, four of the eight crossings were closed by voluntary agreement, and the railroad withdrew its application to close the other four. The project is a good example of how the Department coordinates with local communities for the mutual benefit for all parties.

Program Status – Currently, approximately 20 rail-highway at-grade crossing closures statewide are in the process of being reviewed and negotiated as part of Florida's Crossing Consolidation Program. The crossings will be resolved through an executed Stipulation of Parties Agreement or through a Final Order executed by the Department. Additional highway-railroad at-grade crossings have been identified as potential closure candidates, and some have been field verified. Some of these are also involved in rail corridor analyses to determine what improvements need to be made.

South Florida Rail Corridor

The State of Florida has received a grant from the Federal Transit Administration (FTA) to fully develop the SFRC into a highly efficient and safe rail transportation corridor. The \$327 million grant is being used to complete the remaining 44.9 miles of double tracking in the corridor (including bridge and station improvements and construction), full closure of the remaining 72 rail-highway at-grade crossings, and other safety and operating enhancements to include, but not limited to, grade crossing and train monitoring.

Intercity Passenger Rail Service

FDOT continues to believe that instituting a statewide interconnected transportation system that includes intercity passenger rail service is paramount to ensuring the mobility of the State's residents and visitors and enhancing Florida's economic competitiveness. The FDOT has developed a plan with Amtrak for implementation of new intrastate intercity passenger rail service in Florida as discussed in Chapter 3. This effort has included corridor studies to examine improvements needed to obtain higher speeds at rail-highway grade crossings, track structure, and alignment, communication, and Intelligent Transportation Systems (ITS).

Passive Warning Program

Pursuant to Section 203 of the Highway Act of 1973, FDOT will undertake a statewide program to install high intensity reflectorized crossbucks (R15-1) and track signs (R15-2) at all passive public rail-highway at-grade crossing locations without train-activated warning devices. New installations and replacement of existing crossbucks will be comprised of a high intensity reflectorized sign with a 2-in. strip on the back of the sign to have reflection on both sides. Also, there will be a 3-in. x 72-in. strip of reflective material to be attached on both sides of the crossbuck support pole. When a train is crossing the roadway at night, the spaces between the rail cars will provide a flicker effect view of the back of the sign and post on the far side of the track. This flicker effect looks very much like warning lights to the motorist and alerts them to the presence of a passing train. This program took effect upon receipt of the FY 1999 allotment of Section 130 funds. The program was anticipated to take approximately two years to complete and began the first year having a total of 710 crossings included in the replacement program and is still on-going.

New Crossing Policy

The opening of new public grade crossings must meet statutory requirements. In the SFRC, the Secretary of Transportation adopted a policy in 1990 placing a moratorium on new at-grade crossings. All new crossings in this corridor will be grade separated. The FDOT oversees requests for opening new crossings through the administrative process defined in Chapter 14-46.003, Florida Administrative Code.

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At FDOT's urging, the Florida Department of Community Affairs (DCA) has promulgated rules which include consideration of railroad-highway grade crossings in the planning process. Both the Local Government Comprehensive Plan (LGCP) and the Development of Regional Impact (DRI) program are affected. The LGCP transportation element (9J-5.019) of the rule provides that local governments will consider policies which address the development of strategies to promote railroad-highway-crossing safety. The DRI process guides the planning of large-scale developments. The transportation section (9J-2.045) of the rule specifically allows DCA to require the proposed DRI to address issues such as railroad crossing safety. As a follow-up to these provisions in DCA's rules, FDOT will assist DCA and local governments in identifying strategies that can be used to implement crossing safety.

The rail industry in Florida is working with FDOT to facilitate the closing of unnecessary grade crossings. CSX Transportation, which operates 56 percent of the rail route mileage in Florida, has agreed to be the applicant on crossing closures on their system, pay 100 percent of the cost of closure and may share the costs associated with roadway improvements required as a result of the crossing closure.

Public Awareness Initiatives

Low Clearance Brochures – To promote rail safety throughout the trucking industry/community in Florida, a “Low Clearance Brochure” was developed and distributed to 75,000 plus owners/drivers of vehicles with the potential to become stuck on at-grade crossings. The target audience included owners and drivers of long and short haul trucking organizations, the American Automobile Association (AAA), 410 commercial and government campgrounds, Department of Agriculture inspection stations, Office of Motor Carrier Compliance vehicle enforcement stations, the Florida Highway Patrol, toll facilities, and the FDOT’s Public Information Offices.

Rail-Highway At-Grade Crossing Safety Video – Over 150 VCR tapes of Public Service Announcements on “Railroad Highway Grade Crossing Safety” (four versions total with one in Spanish) were distributed throughout the state. Targeted groups included Community Safety Coordinators, Driver Education Groups, County School Media Broadcast Facilities and

others (twenty plus Super Beta tapes supplied to television stations statewide). Audiotapes of Public Service Announcements on “Railroad Highway Grade Crossing Safety” were provided to the statewide driver public information stations.

Florida’s Operation Lifesaver Program – Florida Operation Lifesaver is a non-profit organization dedicated to reduce the number of collisions, deaths, and injuries at rail-highway intersections and on railroad rights-of-way through public awareness campaigns and programs emphasizing improved engineering, education and enforcement. The program seeks to improve driver and pedestrian behavior at rail-highway intersections by encouraging driver awareness and compliance with traffic laws relating to crossing signs and signals. Operation Lifesaver actively campaigns to reduce trespassing on railroad tracks and on railroad property. Trespassing is becoming an ever-increasing problem in Florida. According to 2000 FRA statistics, Florida is fourth in the nation in regard to trespasser fatalities.

Florida Operation Lifesaver has many successful campaigns which emphasize awareness and enforcement of existing traffic and railroad right-of-way trespassing laws. These campaigns are conducted in conjunction with community volunteers and law enforcement agencies. In addition, Florida Operation Lifesaver supports consolidation and closure of redundant at-grade crossings and signal and engineering improvements to increase rail safety.

The Rail Office of FDOT provides a part-time OPS employee to Florida’s Operation Lifesaver Program. This employee will support the program from FDOT’s Rail Office in Tallahassee by maintaining reports and Operation Lifesaver presenter materials, and coordinating presentations aided by the resources and guidance of FDOT’s Rail Office and Public Information Office. The Rail Office’s Administrator of Rail Operations serves as Florida’s Official Operation Lifesaver spokesperson and State Coordinator. Additionally, the Department provides web-design services for the Florida Operation Lifesaver website.

High-Profile Crossings

The FDOT has also developed a standard advance warning sign for high profile (humped) grade crossings. The Rail Office has requested from the Districts a list of field

reviewed potential high profile crossings to be verified through crossing profile measurements and evaluations, and has determined that there are no hump crossings on the state-maintained highway system. All identified crossings off the state system with problematic crossing profiles for low-clearance vehicles will be either addressed by correcting the approach grades or signed accordingly. Four crossings within the Amtrak corridor from Jacksonville to Pensacola were identified as high profile crossings and included the 1998 rail-highway grade crossing safety improvement program. The National Committee on Uniform Traffic Control Devices has adopted a Low Ground Crossing Sign (W10-5) which is similar to FDOT's High Profile sign.

RAILROAD SAFETY INSPECTION PROGRAM

Section 351.36, Florida Statutes, directs FDOT to conduct regular inspections of railroad track, equipment, signals, operating practices and shipments of hazardous materials for compliance with appropriate safety regulations. FDOT has adopted by Florida Administrative Code Rule 14-57 the federal railroad safety regulations found in Title 49, Code of Federal Regulations, Parts 171 through 180 covering the packaging, labeling and shipment of hazardous materials, and Parts 213 through 240 covering railroad track, equipment, train signals, grade crossing warning devices and operating requirements.

Safety Inspectors

Seven inspectors in the five recognized disciplines are employed by FDOT to inspect railroad operations and the railroad system in Florida. There are two track inspectors, two operating practices inspectors and one train signal and grade crossing warning devices inspector certified by the Federal Rail Administration to conduct independent inspections. The motive power and equipment inspector and the hazardous materials inspector were only recently hired and have not yet been certified to conduct independent inspections.

In addition to the seven railroad safety inspectors employed by FDOT, there are ten FRA inspectors headquartered in Jacksonville and Lakeland whose inspection territories are primarily the State of Florida and another four in Mobile whose inspection territories include the panhandle area west of Tallahassee.

Rail Safety

Staffing Changes - During the summer of 2002 it was decided to administratively centralize control of the rail safety inspection program. Previously the seven inspectors reported to an FDOT District manager with overall program oversight by the Central Office rail staff. Now the seven inspectors are part of the Central Office and report to the Administrator of Rail Planning and Safety. As part of the centralization, the program manager and FRA liaison, previously headquartered in FDOT's central office in Tallahassee was transferred to FDOT's local office in Jacksonville where three of the seven inspectors are headquartered.

Inspection Activity - In previous years, when there was a full compliment of eight inspectors, annually they would inspect approximately 5,000 miles of railroad track 3,000 track turnouts, 14,000 freight cars, 500 locomotives, 1,600 hazardous materials shipments, 175 shippers or receivers of hazardous materials, and 1,000 active grade crossing warning devices and observe 1,000 operating practices. With the reductions in the number of freight cars, hazardous material shipments were reduced in 2001 and will be less in future years. All the inspections and observations supplement those conducted by the railroads, which have primary responsibility for regular inspections and record keeping of such inspections.

Each inspector records conditions not meeting the minimum Federal safety standards (defect) for his respective discipline. Should the defect not be corrected in a timely manner, should it present safety hazard or if it is part of a consistent pattern, the inspector may recommend that a violation be processed, which could result in a civil penalty against the railroad. Violations are submitted to the FRA for review and, if acceptable and justifiable, transmitted to the offending railroad for collection of the appropriate penalty. The applicable penalties are specified in the federal regulations.

Safety Assurance and Compliance Program

During the mid-90s, FRA developed the Safety Assurance and Compliance Program (or SAC-P) approach to monitoring and enhancing railroad safety industry-wide. Under this program, the FRA works in conjunction with labor unions, local railroad management and others using teams consisting of inspectors and railroad workers and local managers to identify the root causes of safety problems and to recommend and implement solutions. Such safety

problems could extend across an entire railroad. Previous routine isolated inspections did not reveal the root cause or extent of a problem.

SAC-P Process - Under SAC-P, the teams make more comprehensive inspections and analyses of problems. As the development of the SAC-P evolved safety issues beyond those covered by federal regulation were identified, analyzed and solutions recommended and implemented. The FRA has assigned a Project Manager for the SAC-P on each of the five major carriers -- Burlington Northern and Santa Fe Railway, Union Pacific Railroad, Norfolk Southern Railway, CSX Transportation and National Railroad Passenger Corporation (Amtrak).

Depending upon what was discovered during a SAC-P, the findings, results and recommendations are shared with the executive management of the railroad. Broader committees are then formed to address these more system wide issues and to develop more comprehensive action plans. Routine inspections continue to be a part of the SAC-P on a particular railroad. However, concentrated inspections can reveal trends and wide-spread problems. Violations also continue to be documented and submitted.

Again, as the SAC-P process has evolved, these efforts have becoming continuing programs as old issues are resolved and new ones identified, particularly on the five major carriers. As home state to CSX Transportation, FDOT's inspectors have had an active role in issues concerning track conditions and locomotives (prior to the resignation in 2001 of the two state motive power and equipment inspectors).

Florida Efforts - Specific to Florida, an initial SAC-P on the Florida East Coast Railway was completed in 1995. A more intensive SAC-P was initiated in Spring 2000. Since FEC operates wholly within the state, all of FDOT's inspectors were active in this SAC-P. However, this effort came to a halt early in 2002 when FEC management and the rail unions reached an impasse over certain non-regulatory issues.

An initial SAC-P on the Tri-Rail commuter passenger service in Southeast Florida was completed in 1996-97. As a result of some major issues subsequently identified, and a major construction project to install a second main track along the South Florida Rail Corridor, there

Rail Safety

have been a continuing series of high level meetings involving all the affected entities – FDOT District Four (responsible for overall management of the corridor), the Tri-County Commuter Rail Authority (providers of the commuter service), Herzog Transit Services (contract operator for the commuter service), CSX Transportation (provider of freight service and responsible for train dispatching and maintenance on the corridor), Amtrak (operator of long distance passenger service along and beyond the corridor limits) and Florida East Coast Railway (whose rail line crosses the corridor at a key point in the Miami area). These meetings also involve the FRA (regulatory) and Federal Transit Authority – FTA (providing operating and capital funding to the Tri-Rail Commuter Rail Authority).

CHAPTER 5 RAIL-SEAPORT/INTERMODAL

International trade is now Florida's leading industry, and the State's fourteen public deepwater seaports, whose locations are shown in Exhibit 5-1, have been instrumental in that growth. This chapter discusses the significance of waterborne trade and addresses the critical rail needs of Florida's seaports to maintain the flow of commerce. The long-term role of the state's ports and their landside connections, with emphasis on rail access, is explored as is the seaport intermodal planning process. Seaport intermodal needs are identified and funding requirements defined.

SEAPORT ACTIVITY

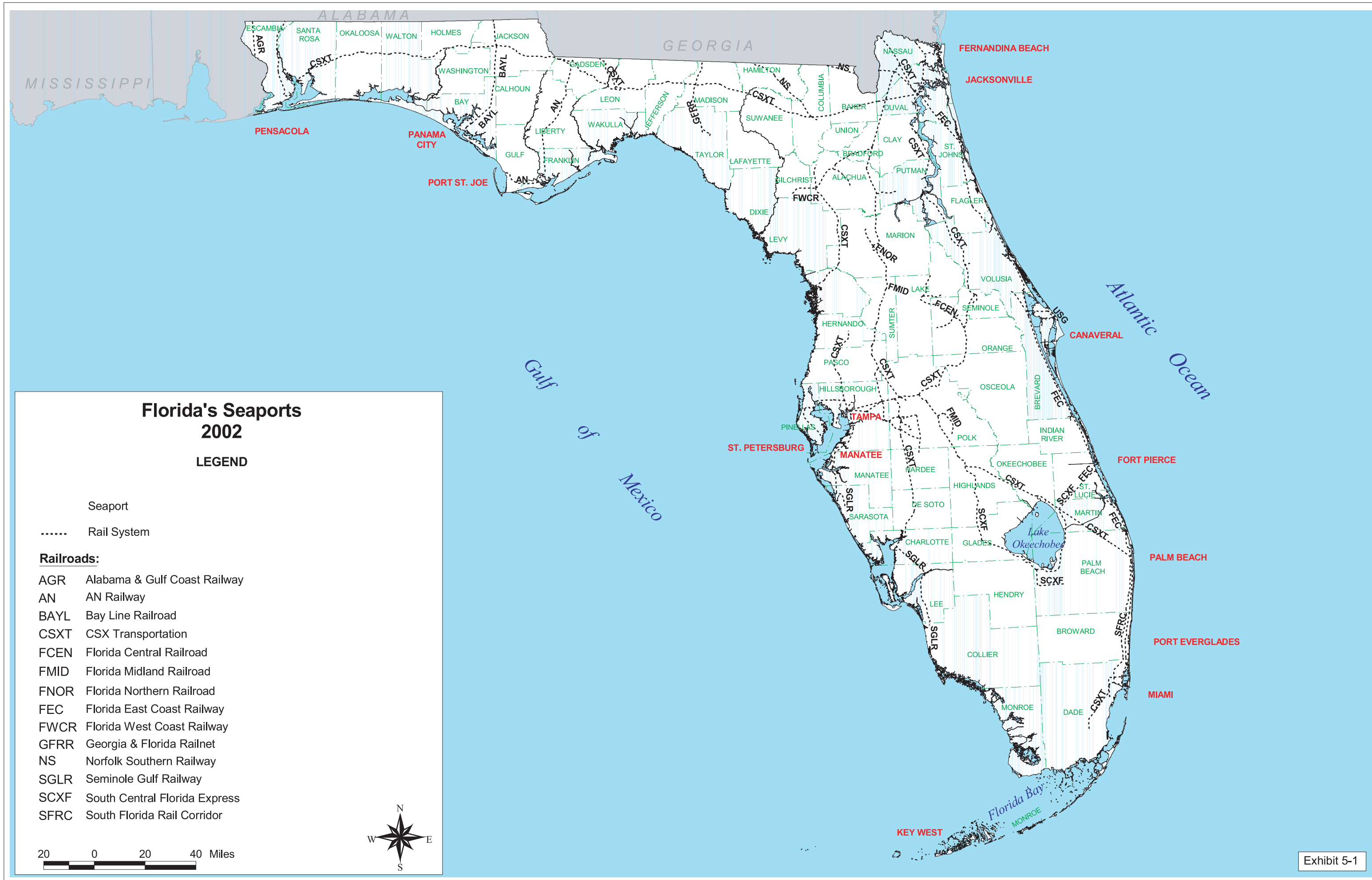
Port activity can be described by several measures, each providing a different focus. The tonnage crossing each seaport's docks, the number of containers moved, the dollar value of cargo, and the number of cruise passengers embarked and disembarked characterize the individual seaports and provide a measure of their accomplishments from year to year. Another important measure of trade's impact is the jobs it creates.

Tonnage

Port cargos typically fall into three general categories – bulk, breakbulk and containerized. Bulk cargos such as minerals, grains and petroleum are usually handled in large volumes and therefore generate large tonnages. Breakbulk cargos consist of semi-finished or finished goods such as lumber, machinery, and paper products move in smaller lots, but can also significantly add to a port's tonnage. Containerized cargo on the other hand, tends to weigh less on a per unit basis and ports which predominately handle containers do not generate significant tonnages when compared to ports that are bulk commodity oriented.

Over the last decade, Florida's seaport tonnage has ranged between 92.4 and 115.8 million tons per year with an annual average of 107.2 million¹. In the last five years, the yearly average has been 112.3 million tons with very little annual variation. The total is forecast to

¹ Data presented in this section is taken from *A Five-Year Plan to Accomplish the Mission of Florida's Seaports 2001-2002 / 2005-2006*, Executive Summary, Florida Seaport Transportation and Economic Development Council.



Florida's Seaports 2002

LEGEND

- Seaport
- Rail System

Railroads:

- AGR Alabama & Gulf Coast Railway
- AN AN Railway
- BAYL Bay Line Railroad
- CSXT CSX Transportation
- FCEN Florida Central Railroad
- FMID Florida Midland Railroad
- FNOR Florida Northern Railroad
- FEC Florida East Coast Railway
- FWCR Florida West Coast Railway
- GFRR Georgia & Florida Railnet
- NS Norfolk Southern Railway
- SGLR Seminole Gulf Railway
- SCXF South Central Florida Express
- SFRC South Florida Rail Corridor

20 0 20 40 Miles



Rail-Seaport/Intermodal

increase to 138.7 million tons in FY 04/05. Almost 50 percent of total annual tonnage is classified as domestic cargo (cargo transported in coastwise trade between two or more states or between the U.S. and Puerto Rico) and just over half is classified as international trade moving through Florida ports to or from foreign countries.

Exhibit 5-2 depicts tonnage by seaport for FY 00/01, the last fiscal year of record. The Port of Tampa accounted for 41 percent of FY 00/01 tonnage followed by Port Everglades and the Port of Jacksonville with 21 and 16 percent, respectively. The remaining 22 percent is derived largely from ports Canaveral, Manatee, Miami, and Palm Beach.

**Exhibit 5-2
TONNAGE OF FLORIDA WATERBORNE TRADE
FY 00/01
(million tons)**

Port	International		Domestic	Total
	Export	Import		
Canaveral	1.1	3.5	0	4.6
Everglades	6.2	5.3	12.2	23.7
Fernandina	0.4	0.1	0	0.5
Fort Pierce	0.005	0.06	0.02	0.08
Jacksonville	0.9	7.0	10.1	18.0
Manatee	1.0	4.2	0	5.2
Miami	3.6	4.6	0	8.2
Palm Beach	1.2	0.4	1.8	3.3
Panama City	0.4	0.5	0.05	0.9
Pensacola	0.2	0.1	0.3	0.6
Tampa	7.6	7.9	30.6	46.1
TOTALS	22.6	33.7	55.1	111.4

Note: Totals may not add due to rounding
Source: 2001/2002 – 2005/2006 Seaport Mission Plan.

Containers

Cargo packed and sealed in a container can be transported with protection from repeated product handling, weather, and pilferage. Therefore, higher value goods such as merchandise, processed food products and those needing temperature control, which move in small lots, are typical containerized cargo. Use of the container also permits an efficient

transfer of cargo between modes, both water and landside, as well as between landside modes (rail and highway). More than 60 percent of deep-sea general cargo (non-bulk) worldwide moves in containers with even higher proportions in some trade lanes. For example, virtually all general cargo in transatlantic trade moves in container or roll-on/roll-off vessels².

While Florida seaport tonnage has remained fairly constant over the decade, the number of containers has shown a significant increase (113 percent) from 1.18 to 2.51 million TEUs.³ However, even container handling has flattened out over the past four years at just over 2.5 million TEUs. That volume is expected to increase in FY 04/05 to 3.4 million TEUs.

Exhibit 5-3 reflects container movements by individual port. This measure of activity is dominated by three ports - Miami, Jacksonville and Everglades – accounting for 91 percent of statewide totals. The Port of Palm Beach is another significant player, but at a different level, as discussed later.

**Exhibit 5-3
FLORIDA SEAPORT CONTAINER MOVEMENTS
FY 00/01**

Port	TEUs
Canaveral	915
Everglades	621,421
Fernandina	26,000
Jacksonville	698,903
Manatee	6,952
Miami	955,671
Palm Beach	197,541
Pensacola	287
Tampa	<u>4,120</u>
TOTAL	2,511,810

Source: 2001/2002 – 2005/2006 Seaport Mission Plan.

² *Intermodal Freight Transportation*, 4th Edition, Gerhardt Muller, Eno Transportation Foundation and Intermodal Association of North America, 1999, pp 31 and 36.

³ Twenty-foot equivalent unit (container).

International Trade

In 2000, Florida set a new international trade record of \$73.8 billion, accounting for 3.8 percent of the U.S. \$2 trillion total. It is forecast to rise to \$146 billion by 2008. In 2000, Florida imports exceeded exports for the second consecutive year (33.8 million tons vs. 22.6 million). Approximately two-thirds of Florida's international trade as measured by dollar value (\$47.6 billion of \$73.8 billion) moves through its seaports. The balance is by air.

The measures of seaport productivity have all been impacted by the slowing national and global economy. In order to remain competitive, keep existing markets, and capture new ones, a seamless and integrated intermodal transportation system is needed. Goods must be moved along an efficient distribution axis. As landside transportation infrastructure is enhanced to accommodate international commerce, domestic economic development programs will also benefit because domestic industries require the same intermodal transportation system essential to international trade.

Trade Commodities - Major Florida exports include computers, computer parts, telephones and related equipment, fertilizers and parts for heavy equipment and machinery. Major imports include motor vehicles, aircraft, refined petroleum products, finished dress wares and clothing, and shellfish.

Trade Partners - Florida's primary global trade markets encompass the Far East, Europe, the Caribbean, Central America, and South America. The state's leading trading partners are Latin America, South America and the Caribbean. These regions represent nearly two-thirds of Florida's annual international trade value. When combined, other major trading partners in Western Europe and east Asia – Japan, German, and South Korea – account for about 29 percent of Florida's trade. This market diversification is critically important in times of economic fluctuations.

Florida has a singular opportunity in the next several years to play an even larger part in expanding international trade. As the free access trade system initiated through the North American Free Trade Agreement (NAFTA) and envisioned at the 1994 Summit of the Americas becomes a reality, Florida is poised to become the distribution axis for the hemispheric flow of goods, from Canada to Argentina. Also, the reopening of Cuba to free-

trade status is expected to become a reality. These characteristics of Florida's existing trading patterns support the feasibility of achieving such a goal:

- Florida's major export and import markets lie to the south;
- As manufacturing shifts southward from the developing countries in the Far East, new trading partners are emerging that are even more favorable to national trade movements through Florida's ports; and,
- Transshipment markets converge on Florida from Europe and the Far East, with goods destined for Central America and the Caribbean. Florida's ports will continue to develop as transshipment markets for the new super port in Freeport⁴ and others being discussed in the Caribbean.

Cruise Activity

Florida is the international center of the cruise industry and home to 15 different cruise lines. In fact, Florida's cruise ports remain the most popular, with over 50 percent of the total capacity in the industry. The records of the last decade show an increase from 6.7 million in 1990 to 11.7 million embarkations and disembarkations in FY 00/01, with the record year being 11.8 million in FY 99/00. This activity maintained levels of 7 to 8 million through the mid to late 1990s before jumping almost 2 million passengers between FY 98/99 to FY 00/01. The FY 05/06 forecast is 17.0 million embarkations and disembarkations.

Eight of Florida's 14 seaports offer cruise services, but during the last fiscal year, 86 percent of the total passengers embarked and disembarked at three ports – Canaveral, Miami and Everglades. Each of the three seaports accounted for over 3 million passengers. Key West, Manatee and Tampa accounted for just over 0.5 million each.

SEAPORT INTERMODAL PLANNING AND FINANCING PROCESS

Since 1990, when the Florida Seaport Transportation Economic Development (FSTED) Program, and its implementing body, the FSTED Council, were created in Chapter 311 of the

⁴ The Freeport Container Port, Freeport, Grand Bahamas Island, is just 65 miles from the Florida east coast and has one of the deepest harbors in the region. The port is establishing itself as a major container transshipment hub. Phase I of the development opened in 1997 and Phase II in October 2000.

Florida Statutes, the seaports have been working in partnership with the Florida Legislature and state agencies to obtain matching funds for on-port capital improvement projects and intermodal transportation system development. Funded projects must be consistent with port master plans and appropriate local government comprehensive plans.

Background

Seaport planning on a statewide basis is accomplished through the FSTED Council and its annual “seaport mission plan.”⁵ Seaport planning from an intermodal perspective has also been incorporated in the biennial *Florida Rail System Plan* since 1988. Statewide seaport planning received added emphasis under the last two federal transportation bills, ISTEA and TEA-21, which required intermodal approaches to transportation planning that have been reflected in the *Florida Transportation Plan* and its various components.

Landside Access Study – Both statewide and regional seaport planning gained new emphasis in the late 1990s beginning with the landmark “Landside Access Study.”⁶ Recognizing the importance of preparing to meet the long-term landside access needs of the seaports throughout the state, the study commissioned by the FDOT and the FSTED Council, was completed in 1998. It identified and prioritized the integrated intermodal needs of Florida’s seaports so more informed investment decisions could be made at the state and federal levels.

The *Landside Access Study* expanded the information provided in the annually updated *Five-Year Plan to Accomplish the Mission of Florida’s Seaports* (Florida’s Seaport Mission Plan). It also complemented FDOT’s *2020 Transportation Plan*, whose objectives include strengthening Florida’s global competitiveness through improvements to major airports, seaports, railroads, and trucking facilities, and providing for the efficient interregional movement of people and goods by improving connections between them. These goals are cited in Chapter 6. It was also intended to help link the implementation of the defined intermodal transportation improvement program to federal TEA-21 opportunities.

⁵ *A Five-Year Plan to Accomplish the Mission of Florida’s Seaports*.

⁶ *Strategic Investment Plan to Implement the Intermodal Access Needs of Florida’s Seaports (Landside Access Study)*, prepared for FDOT and FSTED by Post, Buckley, Schuh & Jernigan, Inc., in Association with J. D. Sanchez Consulting, Inc., March 1998.

Other Statewide Efforts – A different approach to statewide needs was used in the 2001 *Florida Multimodal Trade Corridor Assessment Study – Phase I*.⁷ The study identified major trade corridors and highlighted needed improvements to intermodal facilities and services in the corridors. It represents an initial system-based multimodal approach to freight planning and the programming of resources.

As an offspring of this effort, the Florida Department of Transportation Seaport Office, in support of the Office of Policy Planning's Strategic Intermodal System (SIS) initiative, began in early 2002 an effort to support the freight element of the SIS project through development of a *Florida Freight Network and Modal Linkages Systems Report*. This effort is focused on further refinement of the initial undertakings by the Department in Phase 1. The SIS formally outlines the concept of a systems-based planning approach for both passenger and freight.

Regional Planning - The *Southeast Florida Ports Regional Intermodal Program*⁸ was completed in November of 2000. It represented an approach to regional connectivity and served as an application for six intermodal projects by the three South Florida ports for TOP funding. The projects included both rail and vehicular off-port access and on-port improvements.

This heavily used South Florida corridor continues to be examined as the subject of an on-going three-part study. The *Florida Atlantic Coast Intermodal Transportation Systems Assessment*⁹ is being undertaken by FDOT District 4 in conjunction with the three South Florida seaports and the two railroads serving the area. The study is designed to examine current and projected freight demand, including international and domestic movements, by highway and rail along Florida's I-95 Corridor. This study will focus on identifying logistical patterns along the corridor and related intermodal infrastructure improvement needs. The study will also provide a multi-tiered financial action plan to position Florida to seek federal funding for needed intermodal infrastructure projects. An immediate objective is to develop a plan for consideration in the reauthorization process of TEA-21. A second objective is to work with FDOT to develop a regional action plan that will result in designation of the I-95 Corridor as a corridor of national significance.

⁷Prepared for FDOT by Wilbur Smith Associates and Gee & Jenson with assistance from Kaiser/Earthtech, February 2001.

⁸ Prepared jointly by the Ports of Miami-Dade, Everglades and Palm Beach.

⁹ Ch2M Hill/Gee & Jenson in association with Sanchez Consulting, Inc.

Seaport Issues

Rail Access to Florida's Seaports - Florida's freight rail system is described in detail in Chapter 2. Most of Florida's seaports rely on this system for the transport of cargo crossing their docks. Several seaports -- Port Manatee, the Port of Palm Beach, and the Port of Jacksonville -- operate their own terminal railroads. Others, such as the Port of Panama City and Port St. Joe, depend on connections between the Class III railroads that serve their facilities (the Bay Line and the AN, respectively) and the larger Class I carriers.

To differing degrees, all of the rail-dependant seaports experience the constraints of one-railroad service. These and other physical and policy constraints, such as lack of on-dock rail facilities, grade crossing conflicts, service and scheduling problems, severely hamper the ability of Florida's seaports to compete with out-of-state rail-oriented load centers such as New Orleans, Houston, Savannah and Charleston.

Container Ship Sizes - Container ships are getting larger. Some of the largest routinely carry 4,000 to 5,000 TEUs. The *Regina Maersk*, with a capacity of 6,000+ TEUs, called on Southeastern ports in 1998, and even larger ships have been ordered. To accommodate these ships efficiently, essential portside requirements include deeper water and faster-moving container cranes with longer reaches. In addition, ports must have berths that can accommodate such large ships and their cargos. These ships also impose significant landside access requirements. If the containers they carry are to be moved by truck, then uncongested roadway connections must be provided. If they are to be moved by rail, access with unimpeded rail connections are needed. In the latter case, this means on-dock or near-dock rail, fewer grade crossings and provisions for double-stack trains. Efficient intermodal container transfer yards are also required to maximize port throughput.

To achieve transport economies, shippers are consolidating activities at ports able to handle bigger container ships. This trend affects Florida's seaports and related landside access requirements in two ways, as demonstrated particularly by the South Florida ports. First, the volume of containerized cargo flowing through rapidly expanding container ports such as the Port of Miami and Port Everglades is increasing dramatically. Second, a feeder port, such as the Port of Palm Beach which frequently transships cargo arriving at the other

two South Florida ports on the larger ships, depends on the landside transportation system to maintain its service commitments to its customers in the Caribbean and Central America.

Seaport Security - In the current U.S. Congressional Session, the House and Senate passed legislation to make ports less vulnerable to terrorist attack. They have worked out most differences, with the exception of how to pay the \$1.2 billion price tag. Known as the “Port and Maritime Security Act,” the bill requires the creation of a Port Security Task Force. It also requires federal (Department of Transportation, Coast Guard and Maritime Administration) and local port officials to coordinate seaport safety and to fund security measures, including cargo scanning equipment and transponders which track ship movements in and around port facilities.

Measures at the state level to address security have moved ahead of federal timelines and schedules. House Bill 811 was passed by the Florida Legislature during the 2002 Regular Session and signed by the Governor on April 25, 2002. The legislation provides for funding of sworn law enforcement and private security operational measures from Chapter 311 funding resources (50/50 matching basis) through June 2002 and for two additional fiscal years (FY02/03 and FY03/04). It also provides for the funding of security capital infrastructure projects from Section 320.20(3) and (4) bond program funds and Chapter 311 grant program funds at 100 percent of cost or as provided by the FSTED Council for the same two-year period. The Governor’s Office of Drug Control and the Florida Department of Law Enforcement must approve both security operational and security infrastructure projects. Utilization of Section 320.20(4) Intermodal bond program funds for specific security projects also must be approved by the FDOT and ultimately by the FSTED Council. Use of funds from seaport programs for security will delay planned capital improvements (see following Grant and Bonding Program discussions).

Landside Transportation Patterns – As the result of increased trade between North America and Pacific Rim countries, North America has experienced large railway eastbound-westbound flows of intermodal traffic from expanded West Coast ports and the creation of intermodal land bridges. In a similar fashion, the expansion of economies in Central and South America is causing sizeable volumes of goods to flow between south and north along the east coast. The *Latin American Trade and Transportation Study* (LATTTS) completed in 2001, confirmed this occurrence and projected substantial continued growth in north-south trade.

The LATTs revealed that Latin American cargo is expected to almost quadruple (372 percent increase) between the base year of 1996 and 2020. Rail traffic is expected to grow by 4.9 million tons during this period, to a total of 65.1 million. The forecast rail traffic represents a 100% increase over base year volumes.

The *Florida Multimodal Trade Corridor Assessment Study – Phase I*¹⁰ revealed that major truck flows from international trade were concentrated in the I-95 corridor (its full length in Florida), I-75 from Tampa north; the Florida Turnpike; and, I-10 (its full length, but more heavily concentrated west of I-75). Major rail flows exhibited much the same pattern. It is incumbent upon the FDOT to address needed landside capacity and alternative transportation opportunities.

Funding Programs

Public funding at the state level is derived from a number of initiatives begun in 1990. In recent years, \$35 million per year has been available from these sources. Revenue is derived from motor vehicle registration, gas taxes and license fees.

Grant Program - In June of 1990, under Chapter 311, Florida Statutes, the seaports were allocated a minimum of \$8 million annually, on a 50-50 matching basis, "...to finance port transportation or port facilities projects that will improve the movement and intermodal transportation of cargo and passengers in commerce and trade and that will support the interests, purposes, and requirements of ports located in [Florida]." The FDOT's FSTED Grant Program for FY1990-FY2001 has contributed over \$112 million in STTF funds (matched 50/50 by the seaports) for over 150 seaport improvement projects.

Bonding Program - In June 1996, the original FSTED Program annual allocation to the seaports of \$10 million (includes \$2 million annually which was added at the discretion of the FDOT secretary) was supplemented by a \$15 million annual allocation, also on a 50-50 matching basis, which the seaports have bonded to maximize their funding capabilities for on-port capital improvement projects. This bonding program [F.S. 320.20(3)] has generated over \$440 million (including the seaport match) for 75 projects, and is being implemented by the

¹⁰ Prepared for FDOT by Wilbur Smith Associates and Gee & Jenson with assistance from Kaiser/Earthtech, February 2001.

Florida Ports Financing Commission, an entity created exclusively to administer the bond program on behalf of Florida's ten participating seaports. In 1999, another \$10 million annual allocation was bonded to fund more than 50 port intermodal access projects under F.S. 320.20(4).

Security Impacts - At its most recent meeting held in Key West, Florida in May 2002, the Florida Ports Financing Commission (FPFC) provided a forum for discussion regarding the total scope of public funds needed to meet security mandates for projects required for minimum statewide standards. The first review process required an understanding of the law enforcement and security operational cost demands on available Chapter 311 funds. Under this source of funding, a total of \$10 million annually is available to fund security operations, security infrastructure, and commercial trade enhancement infrastructure. Funds for FY02/03 have already been allocated to commerce infrastructure projects the previous year (prior to 9/11/01). Bond funds under the Section 320.20(3) and (4) programs were also shifted to security measures, rather than commercial trade infrastructure projects. Economic development funding initiatives have been essentially halted as a result of mandated security measures, thus severely impacting Florida ports' abilities to react to global commercial market demands. Future security impacts on funding available for trade and economic development at Florida seaports remains unclear at this time.

SEAPORT INTERMODAL IMPROVEMENTS

All of Florida's seaports are trying to improve their service models; some are also trying to develop new capabilities. A brief discussion of the seaport improvements by geographic region with emphasis on rail transportation follows.

South Florida

The three South Florida seaports -- the Port of Miami, Port Everglades and the Port of Palm Beach -- are container ports, although Port Everglades also handles a large amount of bulk petroleum products, and are expanding their container-handling capabilities. These seaports are developing the infrastructure needed to receive some of the larger container ships now crossing the Atlantic and Pacific Oceans. Consideration is also being given to rail

ferry/barge facilities for water movement of rail cars to Cuba. All three are also very active in the cruise business.

The **Port of Miami** handled almost a million TEUs of containerized cargo in FY 00/01, with some 60 percent representing international cargoes. Latest facility expansions include four new long reach “super post-panamex” container cranes, and dredging of the south channel and turning basin initially to 42 feet and eventually to 50 feet. Berths will also be extended to accommodate the new generation of container ships.

The Port has a severe access problem related to truck movements both in and out of the port and to and from the FEC’s Hialeah Yard intermodal facility due to roadway traffic congestion. The port is approaching the problem by considering the following short- and long-term solutions:

- On-dock rail improvements and on-and off-dock road improvements;
- An off-dock intermodal facility;
- Creation of a truck route from the port to SR 836 (Dolphin Expressway) over local streets; and
- A tunnel under Biscayne Bay.

Container cargo and cruise business improvements are planned at **Port Everglades** which handled 621,421 TEUs of containerized cargo in FY 00/01. Facility upgrades focus on the expansion of the Southport container terminal and direct rail service to the expanded facility in an effort to accommodate new tenants and attract growth. Broward County and the port have acquired 271 acres of property adjacent to the Southport terminal for container handling capacity expansion, including a rail-served Intermodal Container Transfer Facility (ICTF). An overpass for Eller Drive, the port’s entrance roadway, is a key component not only for vehicular access, but for efficient rail access to the ICTF.

The port is also planning to improve its Northport parking situation and construct an internal rail shuttle system. The rail system would eventually connect with the Ft. Lauderdale/Hollywood International Airport.

The **Port of Palm Beach** is preparing itself for an expanded role as a niche feeder port. Reflecting this growing role, goods brought into other ports on large container ships are frequently transported to Palm Beach by road or rail for transshipment. Smaller ships are then able to access and discharge goods in ports with less developed infrastructure. The elevation of 2,400 feet of U.S. 1 as it traverses the Port (“Skypass” project) has been completed and provides an increase in contiguous yard space. It also facilitates more efficient rail movements. The port has plans to take full advantage of this major project by continuing rail improvements both on and off the port.

Mid Florida

Port Canaveral, one of the few seaports in Florida not directly served by rail, is nevertheless affected by growth in the cruise industry and by “lightening” potentials presented by developments such as the Freeport, Bahamas transshipment hub.

The other mid-Florida port, the **Port of Fort Pierce**, is directly served by the FEC. The port is currently focusing on acquiring land and dredging to create future opportunities.

Northeast Florida

With access to three line-haul railroads, the **Port of Jacksonville** (JAXPORT) has the greatest rail service options. The Port is experiencing record cargo growth and must have adequate rail service to handle its growing volumes of container cargo (698,903 TEUs in FY 00/01) and its increasing numbers of automobiles. JAXPORT continues to improve rail connectivity and off-terminal staging tracks at its three marine terminals -- Talleyrand, Blount Island, and Dames Point.

Further to the north, the **Port of Fernandina** continues to serve as a niche port for independent carriers in the South American and Caribbean trade. Its container business, currently at 26,000 TEUs (FY 00/01), needs rail and gate improvements in order to grow.

Tampa Bay

Port Manatee, traditionally a bulk-oriented port, is served by CSXT, with on-port switching performed by its own terminal company. The Port has diversified its operations by adding an intermodal container yard, facilities for refrigerated containers, and cold storage. Additional property has been acquired for both cruise and cargo operations. The port is pursuing two transportation initiatives, one relating to a truck-highway connection with Tampa and the other, a new effort, the *Florida Regional Intermodal Freight Mobility Study*, involving the Port of Manatee and attraction of truck traffic to rail.

The **Port of Tampa**, Florida's largest bulk cargo port, has undertaken a variety of rail improvements that include extending on-dock rail to several of its berths and developing a full-service container yard. These improvements are planned to attract the high-value, general cargo business that will provide a diversified revenue base to complement the port's traditional bulk cargo. The port is also focused on highway access identifying several needed grade-separated highway intersections and rail-highway crossings.

Northwest Florida

The three seaports in the Panhandle -- the **Port of Pensacola**, the **Port of Panama City**, and **Port St. Joe** -- are focused on supporting local industrial development. This development is dependent on rail as well as road, for both raw materials and finished product transportation. Two of the ports are served by short line railroads: Port St. Joe by the AN Railway and Panama City by the Bay Line. Both connect with CSXT that serves the Port of Pensacola directly. The Alabama and Gulf Coast Railway also serves the Port of Pensacola through a reciprocal switching arrangement. Two of the ports, Pensacola and Panama City, have planned on-site trackage improvements.

Capital Needs

The railroad access needs of Florida's seaports are being addressed on several levels. At the state level, objectives such as those contained in the *2020 Florida Transportation Plan* (see Chapter 6), are being implemented to ensure the preservation of this vital service. These objectives, which have also been incorporated into seaport planning, are part of the forward-

looking goal in the *2020 Florida Transportation Plan*. They are designed to promote the achievement of "a statewide interconnected transportation system that enhances Florida's economic competitiveness." At the individual seaport level, specific rail infrastructure needs are being integrated into an overall rail improvement program in accordance with the priorities established in the *Landside Access Study* and its successors.

Exhibit 5-4 depicts port railroad and/or rail-related projects that currently appear in the respective 2001/2002-2005/2006 Capital Improvement Programs for Florida's seaports. All costs are reported in millions of dollars.

Rail-Seaport/Intermodal

**Exhibit 5-4
FIVE-YEAR SEAPORT RAIL CAPITAL NEEDS
(FY 01/02- FY 05/06)**

<u>Seaport</u>	<u>Project</u>	<u>Estimated Cost</u> (millions)	
Everglades	Eller Drive Overpass	\$13.00	
	FPL Canal Bridge	\$1.75	
	ICTF	\$13.50	
	Airport-seaport multimodal connector	\$32.00	
Fernandina	Intermodal yard: 3000 feet siding	\$0.71	
Jacksonville	Dames Point rail design and construction	\$2.50	
	Talleyrand rail holding yard	\$3.00	
	Rail loop at CFS Corporation	\$0.28	
	East loop of rail area Container Way	\$0.78	
	Oil terminal rail yard	\$1.85	
Manatee	Rail and rail holding tracks	\$11.20	(inc. road crossings)
Miami	ICTF	\$45.30	
Palm Beach	Intermodal rail improvements	\$4.90	
	Off-port rail improvements	\$12.00	
Panama City	Rail track improvements	\$2.45	(inc. road crossings)
Pensacola	Rail track improvements	\$0.50	
Port St. Joe	Rail extensions	\$ 0.70	
Tampa	Intermodal yard	\$4.50	
	Road and rail improvements	<u>\$3.00</u>	(inc. road crossings)
	Total Rail and Rail-Related Projects	\$153.92	

Notes: 1) No relevant projects for Canaveral, Key West, St. Petersburg or Fort Pierce.
2) Identified rail and rail-related projects equal about 10 percent of the total CIP of \$1.5 billion.

Source: Individual Seaport Capital Improvement Plans – 2001/2002-2005/2006

CHAPTER 6 FUTURE DIRECTIONS

This chapter presents a discussion of how the State of Florida intends to address rail and intermodal transportation needs in the future, including goals and objectives, with emphasis on implementing the policy direction of the *2020 Florida Transportation Plan*.

Alternatives to Highways

Given Florida's diverse population and ever increasing mobility needs, rail has become a viable transportation alternative for Florida's citizens and businesses to be pursued by the Florida Department of Transportation (FDOT). Recent transportation legislation, both state and federal, reflects public sentiment and desire to pursue viable alternatives to automobiles and trucks in meeting Florida's, and the nation's, future transportation challenges.

Passage of the Intermodal Surface Transportation Efficiency Act of 1991 (ISTEA) and its successor, the Transportation Equity Act for the 21st Century (TEA-21), combined with the creation of Florida Seaport Transportation and Economic Development program (FSTED), and commencement of definition of the Strategic Intermodal System have changed the direction of statewide transportation planning and programming. The federal government and the state now require that other alternatives to increasing highway capacity be evaluated and considered in transportation project selection. This includes equal consideration of public transportation alternatives for both freight and passenger movement, including railroads. Further, the project selection and decision-making process has been decentralized by congressional and legislative action with authority to fund projects now shared and coordinated with the State's MPOs.

MPO Participation

In Florida, Metropolitan Planning Organizations (MPOs) composed of representatives of local governments, citizen's advisory groups and transportation providers are charged by state and federal law to plan for transportation facilities and services within their metropolitan areas. Florida's 25 MPOs prepare long-range plans for transportation facilities and services within their metropolitan areas. are now giving consideration to freight movement as well as people movement. ISTEA established a rigorous set of planning requirements to ensure that national as well as local objectives were met in developing long-

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range plans and transportation improvement programs. These planning requirements were reemphasized within TEA-21 and are expected to be continued in the upcoming reauthorization of the federal transportation bill.

Until recently, and directly resulting from passage of ISTEA, metropolitan planning did not adequately address goods movement issues including the “needs” of railroads and other freight interests. ISTEA, complemented by passage of state legislation one year prior (CS/SB 1316 Omnibus Transportation Bill of 1990) establishing an Intermodal Development Program funded exclusively with state revenues, provided the synergy for this cooperative process between the Florida Department of Transportation, each Metropolitan Planning Organization, and the private sector. The process involves the development and adoption of a long-range metropolitan area transportation plan and the determination of highest priority transportation projects in the plan that can be funded with available revenues. These priority projects are contained in the Transportation Improvement Program (TIP) adopted by each MPO.

More recently, the importance of freight/goods movement was brought to the forefront of state, regional and local transportation planning. In 1999, a “Freight Stakeholders Task Force” of 50 private and public sector individuals, including MPO representatives, were charged with developing an action plan addressing freight, operational, institutional, and infrastructure issues for inclusion into Florida’s first ever *FY 2020 Florida Intermodal System Plan*. Recommendations made by the task force were considered by the FDOT Secretary for “fast track” implementation in the next work programming cycle. The “fast track” effort has now been replaced with the Transportation Outreach Program (TOP).

All programs and projects utilizing federal funds must be included in each MPO’s Transportation Improvement Program (TIP) and the State Transportation Improvement Program (STIP) that covers the ensuing three years. Presently, 100-percent-state-funded projects are also included in the TIP and some have interpreted that their inclusion is for informational purposes only. All MPO Transportation Improvement Programs and the STIP in Florida, however, must be consistent with adopted long-range plans.

Goals and Objectives

The *2020 Transportation Plan*, contains four major goals established to accomplish the Department’s mission to “provide a safe transportation system that ensures the mobility of people and goods, enhances economic prosperity and preserves the quality of our environment and communities.”

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Goal 1: Safe Transportation for Residents, Visitors, and Commerce

Goal 2: Preservation and Management of Florida's Transportation System

Goal 3: A Transportation System that Enhances Florida's Economic Competitiveness

Goal 4: A Transportation System that Enhances Florida's Quality of Life.

Long-Range Objectives - Long-range objectives were also established for each goal. Some of the objectives are applicable to the rail system, others are not. Both the four major goals and the long-range objectives applicable to the functions of the Rail Office are contained in Exhibit 6-1.

Short-Range Objectives - While the FTP provides long-range direction, the FDOT is also guided by a Short-Range Component of the plan which provides more specific short-range objectives and strategies, or action steps, within a ten-year horizon to achieve the long-range objectives. The Short-Range Component also serves as the Department's Agency Strategic Plan. *The 2002 Short-Range Component* of the FTP, addresses implementation of the 2020 STP through three strategic goals:

1. Preserve and manage a safe, efficient transportation system.
2. Enhance Florida's economic competitiveness, quality of life and transportation safety.
3. Pursue organizational excellence as we carry out our responsibilities. Our focus is on improving our performance in satisfying our customers, delivering the work program and strengthening the effectiveness of the Department.

The strategic goals are approached through a series of Focus Areas and related short-term objectives with accompanying strategies. The strategies contained in the short-range component adopted by the Rail Office are also contained in Exhibit 6-1.

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Exhibit 6-1 RAIL-RELATED 2020 FTP GOALS AND OBJECTIVES

Goal	Long Range Objectives	Key Strategies
1 Safe Transportation for Residents, Visitors, and Commerce	<ul style="list-style-type: none"> • Improve the safety of highway-railroad crossings and other locations where modes intersect. • Improve the safety of seaport, rail and public airport facilities 	<ul style="list-style-type: none"> • Continue to conduct public education campaigns for awareness of rail-highway crossing safety. • Conduct research into innovative highway safety devices, including those which prohibit motorists from driving around rail-highway crossing systems and work with appropriate agencies to incorporate research results into program development. • Identify hazardous roadway locations and features, including those at rail-highway crossings, and establish priorities to correct them.
2 Preservation and Management of Florida's Transportation System	<ul style="list-style-type: none"> • Adequately maintain all elements of the transportation system to protect the public's investment for the future. • Increase the efficiency of the transportation system using appropriate technologies. 	<ul style="list-style-type: none"> • Continue to provide financial and technical assistance to local governments and transit agencies to maximize transit ridership improvements.
3 A Transportation System that Enhances Florida's Economic Competitiveness	<ul style="list-style-type: none"> • Establish, construct and manage Florida's Strategic Intermodal System. • Provide for smooth and efficient transfers for both passengers and freight between seaports, airports, railroads, highways and other elements of the Strategic Intermodal System. • Reduce delay for people and goods movement through increased system efficiency and multimodal capacity. 	<ul style="list-style-type: none"> • Implement a coordinated intermodal planning approach to better support Florida's economy while continuing to identify port, airport, rail, and transit infrastructure needs. • Improve ground access routes to major intermodal facilities, freight distribution centers and military installations. • Designate a Strategic Intermodal System and implement a strategic plan for funding, managing and operating the system. • Continue to improve intermodal connections and access through allocation of TOPs funds.
4 A Transportation System that Enhances Florida's Quality of Life	<ul style="list-style-type: none"> • Design the transportation system to support communities' visions, compatible with corridors of regional and statewide significance. • Increase access to and use of alternatives to the single-occupant vehicle. 	<ul style="list-style-type: none"> • Work with transportation authorities on the implementation and improvement of regional transit and rail services while continuing to support and improve the South Florida Rail Corridor. • Coordinate the area's land use and urban design in the development of transportation facilities. • Design multipurpose corridors that use medians for rail lines, and designated lanes for high occupancy and local vehicles. • Work with MPOs and local governments to develop strategies to fund transportation alternatives.

Source: 2020 Florida Transportation Plan, 2002 Short-Range Component, and FDOT Rail Office.

Rail Office Strategies and Initiatives

While the FDOT Rail Office embraces the long-range objectives of the FTP and the short-range strategies, it has also developed a number of strategies and taken a number of initiatives which are not specifically mentioned in either component, but which are an integral part of, or are steps toward, reaching those objectives. Specific rail-related action steps have been developed by the Rail Office based not only on the FDOT's overall goals, but also on railroad industry trends in Florida and experience gained in implementing the rail program. These strategies are listed by FTP goal.

GOAL # 1: Safe transportation for residents, visitors and commerce.

Strategy: Continue to emphasize public education and comprehensive community traffic safety programs involving rail-highway at-grade crossings including Operation Lifesaver and the Florida Highway Safety Improvement Program.

Strategy: Continue to work with local communities and private sector railroad/intermodal transportation companies to ensure safe and efficient movement of people and goods through participation in partnership with federal and rail carrier safety inspection programs within the disciplines of track, operating practices, equipment, signal and train control systems, and grade crossing warning devices.

Strategy: Continue to improve safety at highway-railroad grade crossings through enhanced warning device installation, innovative technology improvements, enforcement, and crossing elimination through grade separation or closure.

Strategy: Continue FDOT's participation in the federal rail safety program and enhance its own rail-highway grade crossing program based on the recommendations of the Commission to Study the Safety and Security of Railroad-Highway Grade Crossings.

GOAL # 2: Preservation and management of Florida’s transportation system.

Strategy: Where public benefits exceed costs, continue to assist private rail freight carriers in maintaining services on light density lines through the State-funded Transportation Outreach Program (TOP) and TEA-21 opportunities.

Strategy: Continue development of rail access enhancement programs targeted to the state's airports and seaports through the Seaport Bonding Program, [Section 320.20(3) & (4)], Florida Statutes; Seaport Grant Program (Section 311.07, Florida Statutes); and, federal TEA-21 initiatives.

Strategy: Continue efforts to preserve the Florida rail system through various methods of line and service retention or if that fails, corridor acquisition (right-of-way) where warranted.

Strategy: Institute a program to create a local awareness of rail issues and the benefits of rail service. Translate these efforts to the progression and favorable consideration of rail-related projects by MPOs and other bodies.

Strategy: Explore and develop a program of alternate means to fund rail projects including federal programs and programs of other state agencies.

GOAL # 3: A transportation system that enhances Florida's economic competitiveness.

Strategy: Continue to cooperate with private and public railroad operators to expand rail passenger and rail freight services where appropriate.

Strategy: Continue to promote rail facilities, rail linkages, and other rail-related intermodal improvements to Florida's public deepwater seaports and commercial airports that will increase trade with Central and South America, the Caribbean, Mexico, and upon normalization of relations, Cuba.

Future Directions

- Strategy: Continue to promote improved rail and roadway access to and the use of other rail-served intermodal facilities.
- Strategy: Assist local entities in the identification and implementation of appropriate connecting services to/from rail passenger stations.
- Strategy: Target state resources towards improving linkages and access to Florida's Strategic Intermodal System and to private intermodal rail facilities where public benefits can be justified.
- Strategy: Institute a public involvement program to assure that users of rail service have adequate rail program input.

Goal #4: A transportation system that enhances Florida's quality of life.

- Strategy: Continue efforts to expand rail passenger service by supporting local efforts to establish local and regional passenger transportation, supporting and working with Amtrak and the Florida High Speed Rail Authority to improve intercity service, and developing public-private partnerships where public benefits exceed costs.

By addressing this agenda of rail-related policy goals and objectives, the FDOT, through its various strategies, initiatives and programs, will be well positioned to meet public demands for railroad transportation well into the 21st Century.

Rail Program Elements

The Rail Office has adopted a multi-faceted program based on the strategies developed in pursuit of the goals and objectives of the Florida Transportation Plan (FTP). The program is comprised of both existing elements and new approaches and is described by FTP goal.

Safety – The rail program's safety focus is on grade crossings and its inspection program. Both program components were described in some detail in Chapter 4 and are to be continued as funding permits. Given expectations of continued population growth and related highway travel (forecast 44 percent increase in vehicle-miles traveled by 2020) along with the increase in both rail passenger and freight demand, the need to expand both is evident.

Preservation – Addressing light density line problems to avoid abandonment has always been a major component of the rail program. Preservation efforts over the last 25 years have been based largely on the processes and funding of the federal program. Federal funds available for preservation have declined in recent years despite increasing needs. New funding sources need to be identified for the Department’s program and the Department should maximize its support of railroads seeking to use the federal RRIF program. This can be accomplished through guarantees or assistance with credit risk premiums.

Economic Competitiveness and Quality of Life – These two goals are addressed jointly because, at least from a rail perspective, they are approached in a similar manner – through mobility and alternative enhancements, or multimodal and intermodal initiatives such as expansion of rail passenger services and promotion of rail freight intermodal service. Specific efforts are on-going on several passenger fronts – local or commuter service, conventional intercity (Amtrak), and the new high speed rail mandate, all discussed in Chapter 3. The Department’s freight intermodal efforts in the past have been related largely to seaports (see Chapter 5) which is to be continued, and an extensive look at other potentials is being taken in a companion task to the update of this rail system plan.

Action Plan

The rail program for the short term is to be continued and progressed through a number of specific actions based principally on the previously mentioned strategies.

1. Continue participation in existing federal grade crossing safety programs and Operation Lifesaver.
2. Continue to work with and strengthen relationships with the state’s 25 MPOs and local transportation authorities. Provide technical assistance in rail matters and funding pursuits.
3. Continue to work with other offices within FDOT, for example:
 - Planning and roadway design where rights-of-way may be of mutual interest;
 - Transit in pursuit of expanded local rail service;
 - The Strategic Intermodal System initiative to improve ground access to rail-served intermodal facilities, and identification of highway congestion problems where rail might provide viable alternatives.

Future Directions

4. Continue efforts to expand intercity rail passenger service by working with Amtrak and the High Speed Rail Authority.

5. Maintain and strengthen relationships with the state's rail carriers – Class I, regional and short line – and continue to identify issues, problems and opportunities.

6. Aggressively pursue funding sources and methods to enhance program performance and implement rail projects. Specifically, identify:
 - applicable provisions of TEA-21 and remaining availability of funds, and fully participate in the reauthorization process;
 - applicable programs of other state and federal agencies, e.g., economic development, transit;
 - potential public-private partnerships; and
 - projects with the potential to recoup public investment.

The latter two approaches are especially important as public budget constraints are limiting available funding. This is also the approach that federal initiatives are taking as most programs related specifically to rail are loan programs with the ability to repay a major selection criterion.

APPENDIX A

Appendix A – Public Transportation Facilities Map

(Not available in .pdf format)

GLOSSARY

GLOSSARY

Abandonment - Elimination of a line segment from a rail network. Abandonments must be approved by the Surface Transportation Board.

Access Price - The cost to access a particular mode. The access price for an automobile is the average parking cost for an automobile. The access price for transit is zero.

Access Time - The time it takes to access a particular mode. For example, the access time for an automobile can be assumed to be 0. The access time for transit is the walk time plus the wait time for that mode.

ADT/AADT - Average Daily Traffic/Average Annual 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 365.

Advanced Traveler Information Systems (ATIS) – A system that attempts to improve transportation system efficiency by providing users with information about the transportation network.

Association of American Railroads (AAR) - An association of private rail carriers which was founded to promote cooperation among the rail carriers; headquartered in Washington, D.C.

Attribute Table - A database table that contains characteristics of map features such as highways. These tables are directly associated with spatial coverages.

Automatic Train Control Systems (ATC) - Using technology to monitor and control the movements of trains eliminating the risk of human error thus reducing collisions.

AVO - Average Vehicle Occupancy. The number of persons per vehicle.

Ballast - Selected material placed on the roadbed for the purposes of distributing weight, providing drainage and holding the track line and surface.

Barge - A non-motorized water vessel. Usually flat-bottomed and towed or pushed by other craft, used for transporting freight.

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.

Branch Line - A secondary line of a railway, typically stub-ended.

Glossary

Breakbulk Cargo - General cargo conventionally stevedored and stowed as opposed to bulk or containerized cargo.

Bridge Traffic - A railroad's traffic which originates and terminates on other railroads, or off-line. Also known as overhead traffic.

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 off-rail shippers and receivers of varied commodities to combine rail's long-haul efficiencies with truck's convenient door-to-door delivery.

Carload - Shipment of freight required to fill a rail car.

Changeable Message Sign - An ATIS device that attempts to provide drivers with real-time information concerning driving condition. These signs can advise motorists of congestion, road or ramp closures, accidents or alternate routes.

CNG - Compressed Natural Gas. This is 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 - A policy that attempts to reduce congestion by applying a price to use a roadway 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.

Containerized Cargo - Cargo which is practical to transport in a container, and result in a more economical shipment than could be effected by shipping the cargo in some other form of unitization.

Continuous Welded Rail (CWR) - A number of rails welded together to form a continuous string in lengths typically of 1,400 feet.

Coverage - A set of thematically associated GIS data considered to be a unit. Coverages represent map layers such as highways, tank terminals, or counties.

Cross Ties - The wooden, concrete, or steel crosspieces that keep the two rails in gage. Also see tie.

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 condition that restricts use or operations.

Glossary

Double-Stack Containers - Containers that can be stacked atop one another on a flatcar.

Dray - A local move of a trailer, truck or container.

Elasticity Factor - The effect on demand for one mode induced by the change in price of a competing mode.

Electronic Toll Collection (ETC) - Using technological advances in communications to assess a toll on a vehicle without the use of a toll booth. Often used in congestion pricing strategies.

Embargo - A means of controlling or stopping rail traffic when accumulations, congestion or other problems, such as poor track conditions, normally of a temporary nature, interfere with normal operations.

FEU - Forty-foot container equivalent. This is a common measure for freight movements.

Federal Railroad Administration (FRA) - The FRA is a division within the USDOT that is responsible for conducting and monitoring research regarding high-speed rail passenger operations, and enforcing federal programs for railroad safety. It is generally responsible for administering all federal programs related to rail transportation.

Federal Railroad Administration (FRA) Track Classes - The FRA limits operating speeds on track based on physical condition. The classes which have been established and maximum speeds are:

Class	1	Max. Freight Train Speed	10 MPH
	2		25 MPH
	3		40 MPH
	4		60 MPH
	5		80 MPH
	6		110 MPH

Exempt track does not meet Class 1 standards and can be operated only with written approval of the FRA and with certain restrictions.

Freight - Any commodity being transported.

Gage (of track) - The distance between the gage face of the rails, measured at right angles thereto. (Standard gage is 4 feet, 8 inches.)

GIS - Geographic Information System. The use of computers, software, and geographic data to display, manipulate, and analyze information.

Glossary

Global Positioning Systems (GPS) - Using satellites and advanced communications technology to accurately locate oneself 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.

Gross State Product (GSP) - The total value of all products and services produced in that state.

Gross Ton-Mile - The movement of the combined weight of transportation equipment and its contents a distance of one mile.

GUI - Graphical user interface.

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 or less."

HOV - High Occupancy Vehicle. An HOV lane on a highway is also known as a carpool or "diamond" lane.

IFR - Instrument Flight Rules. These Federal Aviation Administration rules determine procedures for pilots during inclement weather. These rules affect the number of flights that can safely land or take-off from an airport in bad weather.

Intelligent Transportation Systems (ITS) - Using technology to improve the efficiency of the transportation system.

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 - 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. Also refers to the movement of an intermodal container.

Intermodal Development Program - Provides for major capital investments in fixed-guideway transportation systems, access to seaports, airports and other transportation terminals, providing for the construction of intermodal or multimodal terminals; and to otherwise facilitate the intermodal or multimodal movement of people and goods.

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.

Glossary

Intermodal System - The transportation network consisting of public and private infrastructure for moving people and goods using various combinations of transportation modes.

Intermodal Transportation - Transportation movement involving more than one mode (e.g. rail/motor, motor/air, or rail/water). It has been defined as a process of addressing the linkages, interactions and movements between modes of transportation.

Interstate - Traffic that originates in one state and terminates in another. Foreign and domestic port (import and export) traffic is also considered to be interstate in nature.

Interstate Commerce Commission (ICC) - Former transportation regulating authority, eliminated by the ICC Termination Act of 1995. Replaced by the Surface Transportation Board (STB).

Intrastate Carrier - A carrier operating solely within the boundaries of a single state, e.g., the Florida East Coast Railway.

ISTEA - Intermodal Surface Transportation Efficiency Act of 1991.

Lading - Freight or cargo making up a shipment.

LCV - Longer combination vehicle. Any combination of truck tractor and two or more trailers or semitrailers which operates on the Interstate System at a gross vehicle weight greater than 80,000 lbs.

Less-than-truckload (LTL) - The quantity of freight that is less than that required for application of a trailerload rate.

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 - Liquid Natural Gas. This is often used as a fuel for transit or fleet vehicles.

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.

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 signalling systems and better maintenance than branch lines. 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.

Main Track - See main line.

MGTM/M - Million Gross Ton-Miles per Mile.

Glossary

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. A person may shift modes when the relative cost in terms of time, money, and convenience between modes changes. For example, if transit fares are reduced people who once drove alone to work may decide to take the bus instead. That is, these individuals shift from the automobile mode to the bus mode.

MPO - Metropolitan Planning Organization. A forum for cooperative decision making for a metropolitan planning area.

Multimodal Transportation - More than one mode to serve transportation needs in a given area and is sometimes included within the meaning of intermodal.

National Ambient Air Quality Standard - Federal air quality standards established pursuant to s.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 (PM-10), and sulphur dioxide (SO₂).

Net Ton-mile - The movement of a ton of freight one mile.

Operating Revenue - All revenue generated by transportation services.

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 which has the highest volume of traffic in a day. For example, the peak period for urban highways is generally between 6:00 and 9:00 AM.

Piggyback - The transportation of highway trailers (TOFC) or removable trailer bodies (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 times miles traveled per trip.

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.

Glossary

Railroad Classifications - Railroad classifications as defined by the Interstate Commerce Commission, now the STB, are based on average annual operating income adjusted each year.

Class I: Railroads with average annual operating income of \$255.9 million or more (1996, the latest year).

Class II: Railroads with average annual operating income of at least \$20.5 million.

Class III: Railroads with average annual operating income of less than \$20.5 million.

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) (Four R Act) - Federal legislation which 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 (created Conrail) (Three R Act) - Passed by Congress to finance and restructure eight Eastern bankrupt railroads and preserve essential transportation services in the Northeast and Midwest.

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.

ROW - Right-of-Way as defined above.

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.

Short Range Objectives - One or more statements, for each long range objective, of the specific, measurable, intermediate end that is achievable and marks progress toward a goal. Specific objectives may be associated with more than one goal and/or long range objective.

Glossary

Side-Track - A short track extending alongside and often connecting at both ends with main track.

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 semi-permanent restrictions due to deteriorated track conditions.

South Florida Rail Corridor - An operating rail corridor owned by 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.

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 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 in the timetable by name.

STCC - Standard Transportation Commodity Code, a standard 7-digit collapsible coding structure. The first 5 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, which was developed for use in the Census of Transportation and adopted by the Interstate Commerce Commission 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.

Strategy – Grouping of Actions into a comprehensive plan.

Subdivision - A portion of a division designated by timetable.

Surface Transportation Board (STB) - Replaced the ICC as the federal transportation regulatory body, but with reduced responsibilities and powers.

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.

Glossary

TEU - Twenty-foot-equivalent-unit. The 8'x8'x20' intermodal container is used as a basic measure in many statistics.

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.

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 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.

Glossary

Travel Price – The travel cost per mile for a particular mode. For example, the average cost for automobile travel on a per mile basis which includes the cost of operating, maintaining, and insuring the vehicle.

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 under 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 which 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 which is between two geographic points and which area 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.

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.

Glossary

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.

VFR – Visual Flight Rules. These Federal Aviation Administration rules determine procedures for pilots during clear weather. These rules affect the number of flights that can safely land or take-off from an airport in clear weather.

VMT - Vehicle Miles Traveled. The total number of miles traveled for a mode during a given time period.

Weigh-In-Motion (WIM) - Technology that weighs vehicles while they are moving down a road. Generally, used to weigh heavy trucks 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, as adjusted for the legislatively approved budget for the first year of the program.

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