

2000 Florida Rail System Plan



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EXECUTIVE SUMMARY

The purpose of the *Florida Rail System Plan* is two-fold. First, it represents the rail component of the *Florida Transportation Plan* (Agency Functional Plan) which, through an annual series of policies, programs and projects, implements the Transportation element of the *State Comprehensive Plan*. Florida Statutes require the plan to be updated every two years. Simultaneously, it serves as Florida's "State Rail Plan", a document required by the Federal Railroad Administration should federal funds be used in support of eligible rail projects. From the federal perspective, the "Plan" must provide updated information on the State's rail system and identify the lines within the system that are eligible for financial assistance under the provisions of the Local Rail Service Reauthorizing Act of 1989.

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 2,887-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 the State's rail carriers to resolve common problems/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 source of federal financial participation has been the Local Rail Freight Assistance Program. It was devised originally as a means to assist in preventing abandonment of lightly used rail lines or to mitigate the impacts of abandonment. Florida has invested monetarily in maintaining rail service on light density rail lines in conjunction with the federal program (over \$10.1 million in rehabilitation projects). Since additional federal funds under this program are no longer available, the State is faced with providing its own funds for future assistance, or its railroads using funding from loan programs available under the Transportation Equity Act for the 21st Century (TEA-21).

Executive Summary

The State also makes investments that indirectly facilitate rail freight business through its various intermodal access programs, improving modal connections between Florida's public airports and seaports. The FDOT works with the ports on rail access matters as the amount of rail business associated with the ports and international trade represent significant freight traffic in terms of tonnage and value. As the seaport and airport businesses have 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, and operating practices) and has seen derailments reduced from over 200 per year to approximately 40 per year over the last 20 years. It also administers the State's rail-highway grade crossing program. While grade crossing accidents totaled between 200 and 250 per year through most of the 1980s, accidents have steadily declined since 1988, and for the first time fell below 100 in 1995. The FDOT has been involved in a number of initiatives, state and federal, to reduce grade crossing accidents during the above time frame as Chapter 4 of this document will attest. The FDOT 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 continue to be a need for public involvement in rail transportation. It is anticipated that the railroads will continue to rationalize their infrastructure in order to reduce expenses and increase returns. The demand for rail transportation by Florida's ports and other rail users will expand, and the need for alternative transportation will continue to grow as highway congestion and environmental concerns increase. The FDOT and the 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 on the following page.

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

4. A Transportation System that Enhances the Quality of Life in Florida

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.
- Improve the safety of non-highway modes by continuing to conduct annual safety inspections and increasing passenger safety through the safety certification process and any other methods.
- Continue to identify and implement practices that reduce the time and cost of preserving the state transportation system including efficiency measures.
- Conduct annual performance reviews of Florida's public transit systems.
- Implement a coordinated intermodal planning approach.
- Continue to identify port, airport, rail and transit infrastructure needs.
- Work with transportation authorities to implement improved regional transit and rail services.
- Progress the recently completed comprehensive analysis of need and implementation opportunities for intercity passenger rail service.
- Continue to implement the High Speed Rail program.
- Improve ground access routes to major intermodal facilities, freight distribution centers and military installations.
- Continue to support and improve the South Florida Rail Corridor.
- Promote modal alternatives and connections.
- Design multi-purpose corridors that use medians for intercity or regional rail lines, and have designated lanes for specific uses.
- Work with MPOs and local governments to fund transportation alternatives.

The Chapters that follow in the 2000 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. 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 on the following page.

Executive Summary

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 purpose of the *Florida Rail System Plan* is twofold. First, it is the rail component of the *Florida Transportation Plan* (Agency Functional Plan) which, through an annual series of policies, programs and projects, implements the Transportation element of the *State Comprehensive Plan*. Second, it serves as Florida's "State Rail Plan," a document required by the Federal Railroad Administration (FRA) if federal funds are to be used in eligible rail projects (49 CFR part 266). From the federal perspective, the "Plan" must provide annually updated information on the State's rail system and identify the lines within the system that are eligible for financial assistance under the provisions of the Railroad Revitalization and Regulatory Reform Act of 1976 (4R Act), including successive legislation and the Local Rail Service Reauthorizing Act of 1989.

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 requires 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

Introduction

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 are shown in more detail on Exhibit 1-2.

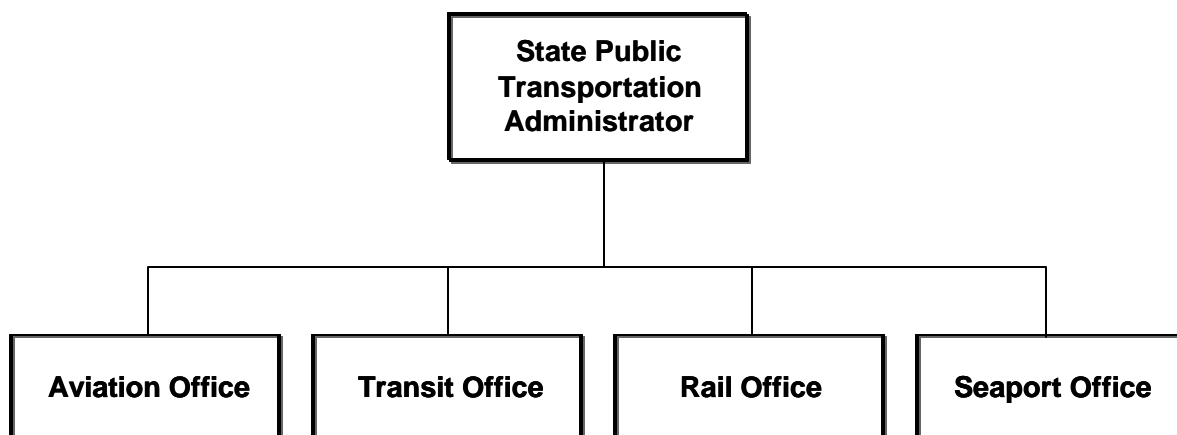
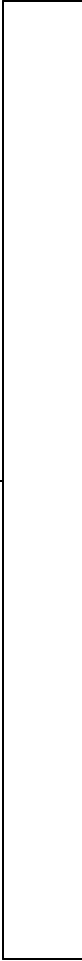


Exhibit 1-1

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.

Rail Office

Quality assurance
 Legislative review / liaison
 Policy Formulation
 Standards, rules, and procedures development
 Federal agency coordination



Standards and procedures development
 Rail manual development
 District rail programs support
 Rail programs quality assurance
 Rail/highway crossing agreements/negotiations/form revisions
 Rail/highway crossing opening and closing administration
 Rail Corridor Hazard Elimination Program coordination and support
 Rail/Highway Signal Safety Program management and support
 Annual Signal maintenance administration
 Local government/railroad closure liaison
 Technological Innovation administration & support
 Rail/Highway Characteristics/Inventory (RHCI) Support
 Rail corridor analysis
 Department design standard indices revisions
 Rail office computer application coordination
 Liaison on railroad/department issues and special projects
 Railroad quality products control and coordination
 Florida Operation Lifesaver Program coordination and support

Railroad rehabilitation
 Florida Rail System Plan
 Rail Safety Inspection Program Management
 Southeast Florida Rail Corridor
 - Contractual support and liaison
 - Technical support
 Tri-Rail operations liaison
 Intercity rail technical support
 Rail system development
 Rail-related policy development and maintenance
 Railway specifications and technology evaluation
 Evaluation and comment of federal rule making
 Support of ITS in potential rail corridors
 Evaluation of right-of-way for rail use
 Support of FTP development
 State-sponsored railway improvement project management
 Railroad close-clearance variances

Exhibit 1-2

Introduction

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.

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 FDOT's Mission Statement:

The Department will 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.

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.

Introduction

Rail Project Funding - An important component of the State's rail planning process is the development of the *Florida State Rail Plan* based on the requirements contained in CFR 266.17. This rail planning effort qualifies 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 \$6 million in rail rehabilitation projects have been financed with a combination of federal and railroad funding during that period. A list of projects contracted since the last rail system plan, along with a brief description of each, is the subject of Appendix B.

Carriers have extensively utilized the FDOT's rail program using 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 on a 70/30 basis. A subsequent restructuring of the LRFA Program 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 remaining funds.

Additional rehabilitation 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 have not yet been 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 have just been finalized by the FRA (49 CFR 260), effective September 5, 2000. 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.

Introduction

State funding now would be derived from FDOT's **Transportation Outreach Program** (TOP). The program was created by the 2000 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.

Virtually any transportation project which enhances the movement of people or cargo is eligible for funding. Projects are to be 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. Currently, for FY 2001, four railroad switching and storage capacity projects totaling \$5.4 million are being considered for funding under this program.

Public Involvement Process

Both formal and informal public participation is encouraged by 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 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.

Chapter 3--Passenger Rail/Intermodal - The highlights of Chapter 3 include an overview of present and future Amtrak services in Florida, rail-served intermodal passenger facilities, a discussion of existing and proposed regional rail services, and an overview of the Intercity Passenger Rail Service Vision Plan.

Chapter 4--Rail Safety - Chapter 4 contains an overview of the rail safety inspection program, including Florida's recent rail accident 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 Highway/Rail Crossing Corridor 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, 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*.

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.

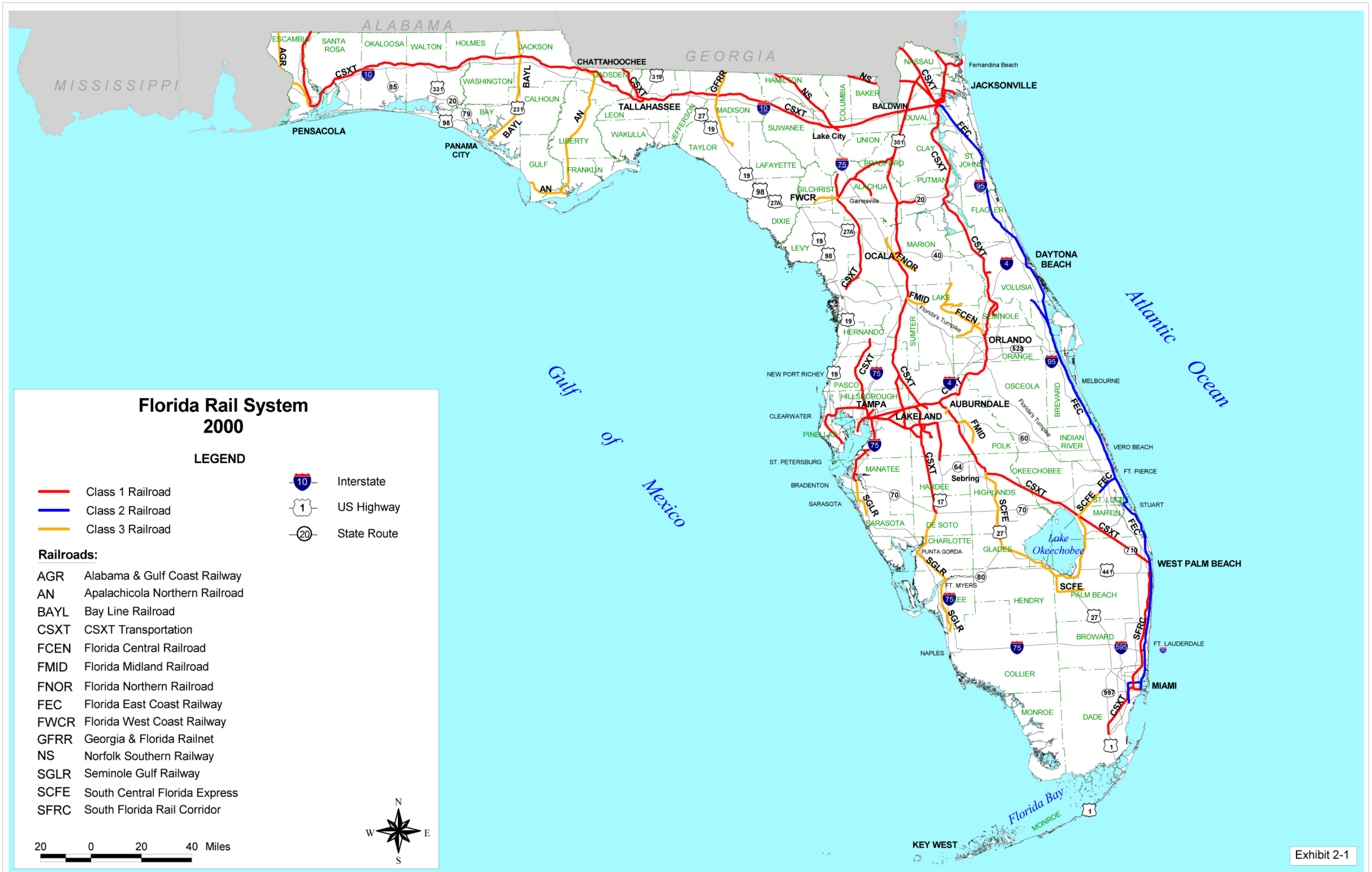
Rail System Components

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 2000 State rail system of about 2,900 miles. CSX Transportation's (CSXT) 1,619 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 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. The railroad is one of nine operated by States Rail organization of Dallas, Texas. The major commodities transported in Florida are lumber and wood products; and, pulp, paper, and allied products.

Apalachicola Northern Railroad Company (AN) - The Class III Apalachicola Northern 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 inactivity.

¹As of December 2000, Class I railroads have annual gross revenues of \$256.4 million or more. Class II railroads have annual gross revenues of more than \$20.5 million, but less than \$256.4 million. Class III carriers have annual gross revenues less than \$20.5 million. These limits are updated annually to reflect inflation.



Florida Rail System 2000

LEGEND

- Class 1 Railroad
- Class 2 Railroad
- Class 3 Railroad
- Interstate
- US Highway
- State Route

- Railroads:**
- AGR Alabama & Gulf Coast Railway
 - AN Apalachicola Northern Railroad
 - BAYL Bay Line Railroad
 - CSXT CSXT 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
 - SCFE South Central Florida Express
 - SFRC South Florida Rail Corridor



Freight Rail/Intermodal

**Exhibit 2-2
FLORIDA FREIGHT RAILROADS
2000**

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
Apalachicola Northern	96		3.3
Bay Line	63		2.2
CSX Transportation ¹	1,619	131	56.1
Florida Central	66	10	2.3
Florida East Coast	386		13.4
Florida Midland	40		1.4
Florida Northern	27		0.9
Florida West Coast	14		0.5
Georgia and Florida RailNet	48		1.7
Norfolk Southern ²	96	53	3.3
Seminole Gulf	119		4.1
South Central Florida Express	158		5.5
South Florida Rail Corridor ³	81		2.8
Terminal Companies	30		1.0
TOTALS	2,887	194	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) Shown in previous reports as two line items--Georgia Southern and Florida, and Live Oak Perry and South Georgia. These subsidiaries were merged into the parent company and some properties were subsequently spun off.
- (3) Not an operating carrier. See Note 1.

Freight Rail/Intermodal

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.

CSX Transportation (CSXT) - This Class I railroad 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 1,750 route miles in Florida, covering virtually every area of the State. In addition to the 1,619 miles it owns, it also operates over SFRC and over Georgia and Florida RailNet. Major Florida commodities are nonmetallic minerals, chemicals and allied products, and coal.

Florida Central Railroad (FCEN) - This short line, formed 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. 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 two 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).

Florida Midland Railroad (FMID) - Another member of the Pinsky group, formed after the Florida Central, this Class III carrier operates three disconnected lines, also CSXT spin-offs, in central Florida -- Wildwood to Leesburg, West Lake Wales to Frostproof and Winter Haven to Gordonville. The 40 miles of line are used to transport nonmetallic minerals, food and kindred products, lumber or wood products, and chemicals or allied products. An application has been filed to abandon the Wildwood to Leesburg line.

Freight Rail/Intermodal

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.

Norfolk Southern Railway (NS) - This Class I railroad operates a total of approximately 21,800 route miles and serves 22 states, the District of Columbia, and one Canadian province. In Florida, NS operates 96 route miles comprised of lines of two former subsidiaries--Georgia Southern and Florida (from Georgia into Jacksonville), and Live Oak Perry and South Georgia (from Georgia to Navair)--and trackage rights over CSXT from Jacksonville to Palatka. The railroad also has a haulage agreement with the FEC for Miami traffic. 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 two separate lines formerly operated by CSXT -- Oneco to Venice and Arcadia to Vanderbilt Beach. 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 (SCFE) - 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

Freight Rail/Intermodal

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 (commuter and 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.

Mergers and Other Changes

Conrail - Both of Florida's Class I railroads have implemented operation of their respective portions of Conrail. The Surface Transportation Board formally approved the acquisition and split-up on July 23, 1998, and CSXT and NS actually began operations June 1, 1999. The merger will provide each carrier with the ability to offer single-line north-south service over most of the east coast of the country. FDOT believes the merger will eventually further benefit Florida rail users through lower costs and more efficient intermodal service in the long run.

Abandonment Candidates – The Florida Midland Railroad filed (late 2000) a petition for exemption from the Surface Transportation Board's normal abandonment process pursuant to 49 USC § 10502 and 49 CFR 1121 for its Leesburg Branch running 13.2 miles from Wildwood to Leesburg. The filing is based on lack of rail traffic.

The Homestead Branch of CSXT from Sterling to Homestead, 13.5 miles, has been shown on that carrier's system diagram map as a potential abandonment candidate for several years. The line remains in service, however, for now.

Freight Rail/Intermodal

286,000-lb. Rail Car – For years the railroad industry’s standard weight limit has been 263,000 lbs., the nominal weight for the 100-ton capacity car. Now, in an efficiency move, the industry is raising the limit to 286,000 lbs. Many of the same concerns over bridge and track capability to handle the increased weights that accompanied introduction of the 100-ton car have surfaced again.

Railroad mainlines have been cleared or are being improved to handle the new cars which are currently being produced. The problem lies with the light density line system comprised principally of the state’s short line rail carriers. Maintenance on many of these lines was deferred by the previous Class I owners before they were spun off to short line operators, and with marginal traffic levels, infusion of the significant amounts of capital to upgrade them has not occurred.

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 ease of interconnection between modes can have a significant impact upon the economy of a company, industry, metropolitan area, state or region. From the perspective of the public, the provider, or the shipper, the mode should be irrelevant. What matters is the quality, cost, timeliness and safety of the 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. Congress recognized the importance of the intermodal approach to transportation decision-making and the transportation system in the 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 TEA-21. Railroads, through their connections with other modes, are involved in many intermodal traffic movements.

Freight Rail/Intermodal

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 60 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. See Appendix A for facility locations.

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 16 bulk transfer facilities located in Florida as shown in Appendix A.

Team Tracks - In the same vein, 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 commerce is currently Florida's number one trade industry. Over 60 percent (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

Freight Rail/Intermodal

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 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 1999 by commodity classification. Of the total 169 million tons originated or terminated, 111 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. In a distant second place is chemicals or allied products (12.2 percent), and the third-ranking commodity is coal (9.1 percent).

Commodities which terminate in the state from origins outside of the state (excluding intrastate traffic), 44.5 million tons, far outweigh those which originate in the state and are shipped out of it (13.7 million tons). Coal is the principal terminating commodity and intermodal traffic is a distant second. Chemicals and food products comprise the largest originating commodities.

Freight Rail/Intermodal

Exhibit 2-3 FLORIDA RAIL FREIGHT TRAFFIC 1999

STCC	COMMODITY DESCRIPTION	TONNAGE			Percent of Total
		Originated (1000 Tons)	Terminated (1000 Tons)	Totals (1000 Tons)	
11	Coal	w/d	w/d	15,301	9.1
14	Nonmetallic Minerals; Except Fuels	42,980	45,261	88,241	52.2
20	Food or Kindred Products	2,470	3,941	6,411	3.8
24	Lumber or Wood Products; Except Furniture	864	2,909	3,773	2.2
26	Pulp, Paper, or Allied Products	1,871	1,961	3,832	2.3
28	Chemicals or Allied Products	11,086	9,573	20,659	12.2
32	Clay, Concrete, Glass, or Stone Products	1,258	2,206	3,464	2.1
46	Miscellaneous Mixed Shipments	2,080	4,456	6,536	3.9
	All Others ¹	6,204	14,348	20,552	12.2
	Totals	68,979	99,790	168,769	100.0

(1) Includes all commodities comprising less than 2 percent of total.

w/d - withheld due to disclosure concerns.

SOURCE: 1999 STB Waybill Sample.

In addition, there were 2.7 million tons of rail traffic which passed through Florida without either origins or destinations in the state. Lumber, pulp/paper and chemical products along with intermodal traffic, the principal commodities, comprised about 60 percent of the total tonnage shipped.

Traffic by Railroad - Based on the same 1999 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 1999, CSXT accounted for 78 percent of the total; Florida East Coast, 15 percent; and the NS, 7 percent.

Freight Rail/Intermodal

Traffic Patterns - Terminations of freight tonnage originating in Florida are shown in Exhibit 2-4 based on 1999 Surface Transportation Board (STB) Waybill Sample statistics. Originations of freight tonnage terminating in Florida are also shown in Exhibit 2-4. A major portion of these tonnages moved entirely within Florida – 111 million tons (55.5 million originating tons and 55.5 million terminating tons) of the 168.8 million total of the State's 1999 originating and terminating traffic, or 66 percent of the total, were intrastate traffic. Major destinations of freight tonnage originating in Florida, other than Florida itself, included Georgia, Ohio and Illinois. Major origins of freight tonnage terminating in Florida included Kentucky, Georgia, Alabama, Illinois, Tennessee, Louisiana, Virginia, Texas, and Ohio. Eliminating the intrastate movements, freight tonnage terminating in Florida in 1999 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 over three-fourths (76.5 percent) of total tonnage.

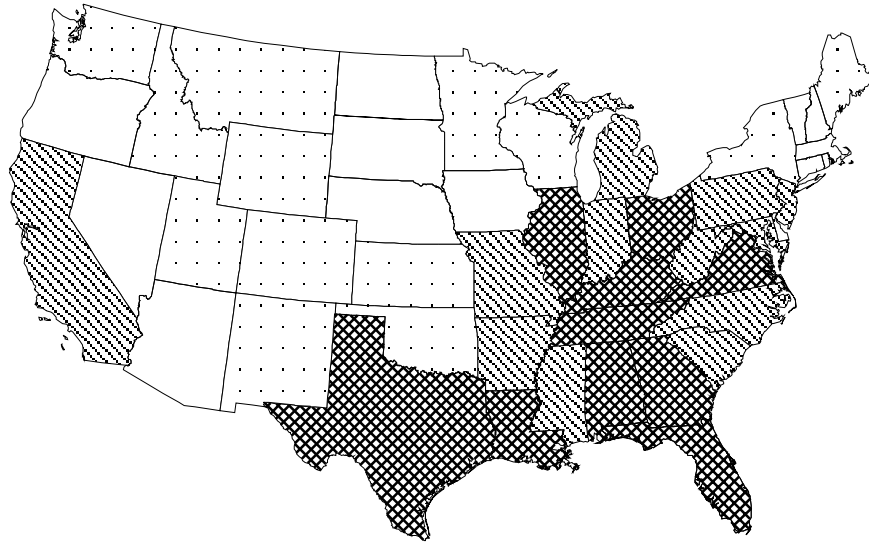
Nonmetallic Minerals - This classification includes a variety of commodities dominated in Florida by crushed stone and phosphate rock (99 percent of the total commodity classification tonnage). Origins and destinations of the commodities are spread over most areas of the country except for the Far West, Midwest and extreme Northeast, but as shown in Exhibit 2-5, most of the total tonnage is attributable to intrastate transport (92 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 9 percent of total Florida rail traffic, is coal. As evident from Exhibit 2-6, the principal source of coal moving to Florida by rail is Kentucky followed by Illinois (distant second). Virginia and West Virginia are the only other significant origins of coal shipped to Florida by rail.

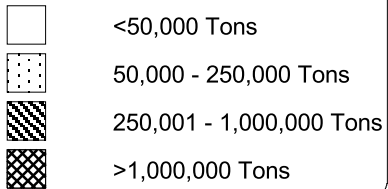
Chemicals or Allied Products - The third most significant commodity classification, chemicals or allied products, is another broad-based group, but again dominated in Florida by a single commodity, superphosphate (chemically treated phosphate rock). This single commodity accounts for 83 percent of the total commodity tonnage. Chemical origins and destinations are also largely intrastate as shown in Exhibit 2-7. The next largest origin/destination state is

RAIL TRAFFIC FLOWS

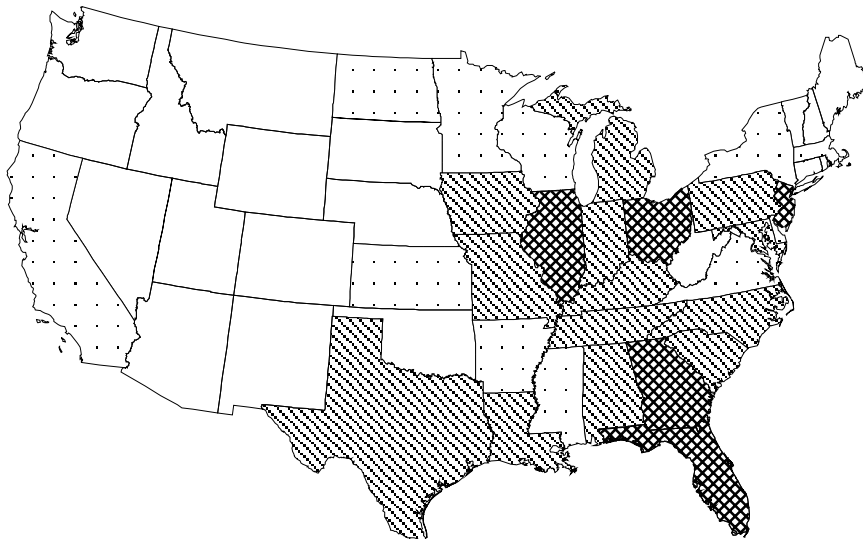
ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



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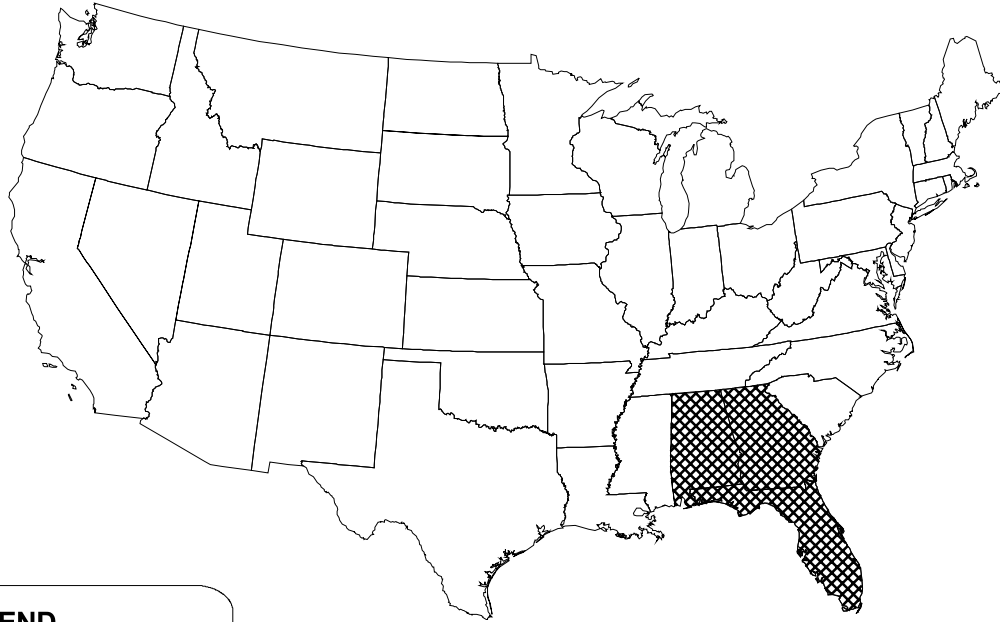


TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA

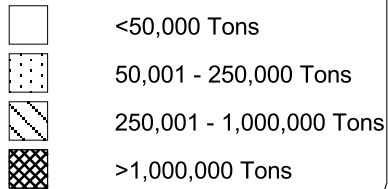


NONMETALLIC MINERALS

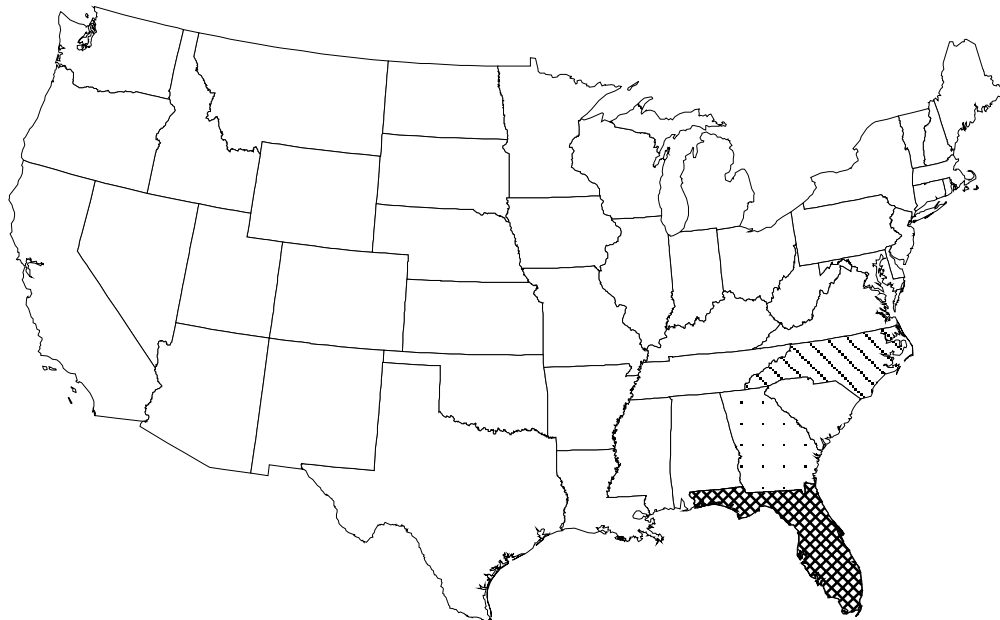
ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



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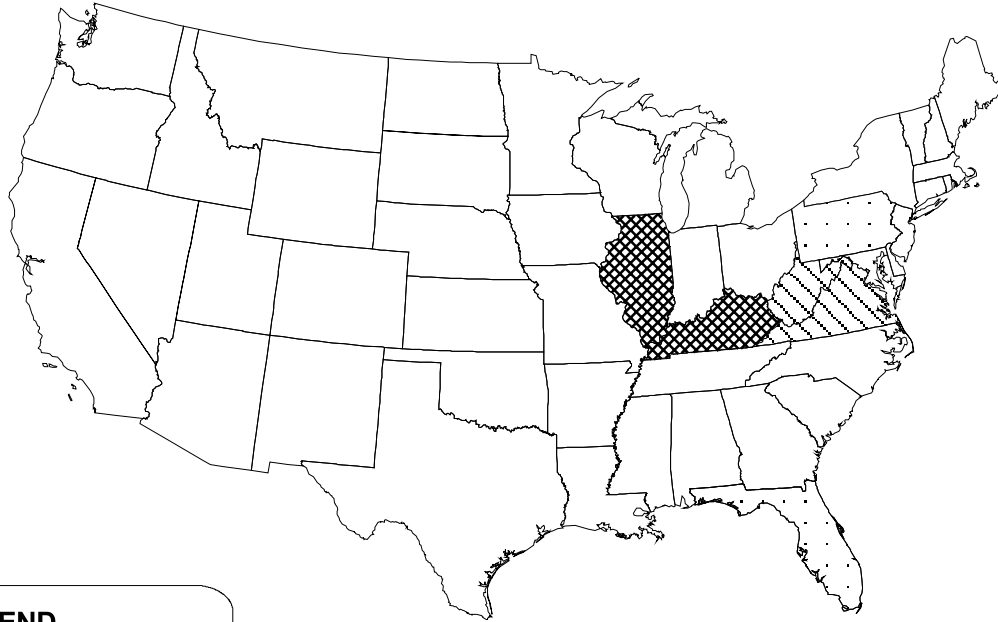


TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA

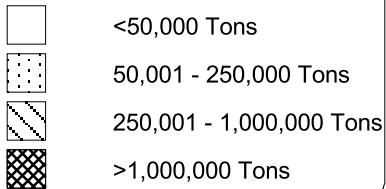


COAL

ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



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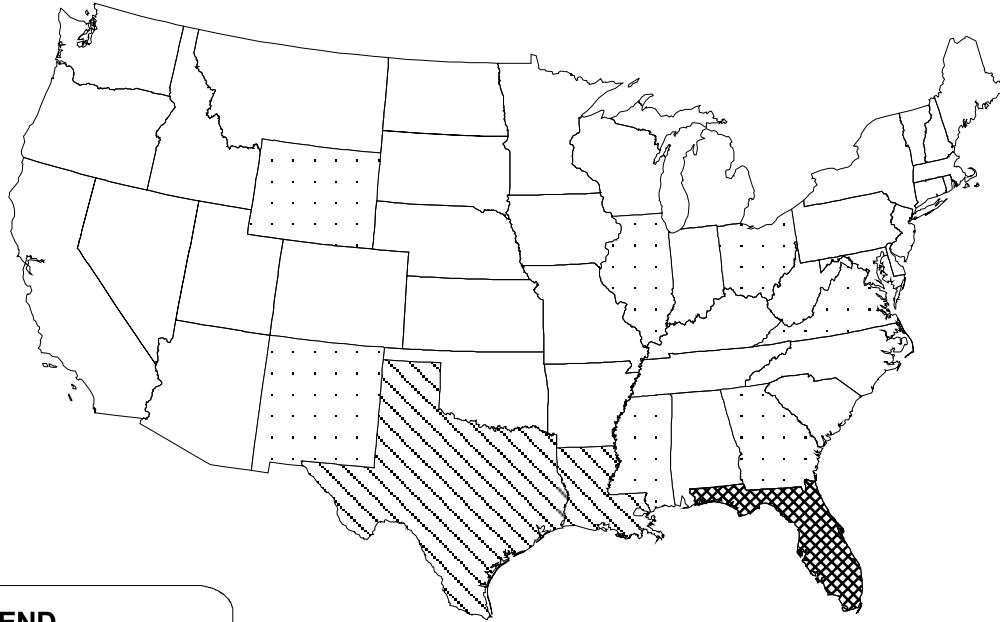


TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA

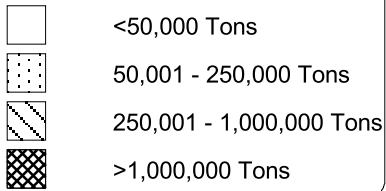


CHEMICAL PRODUCTS

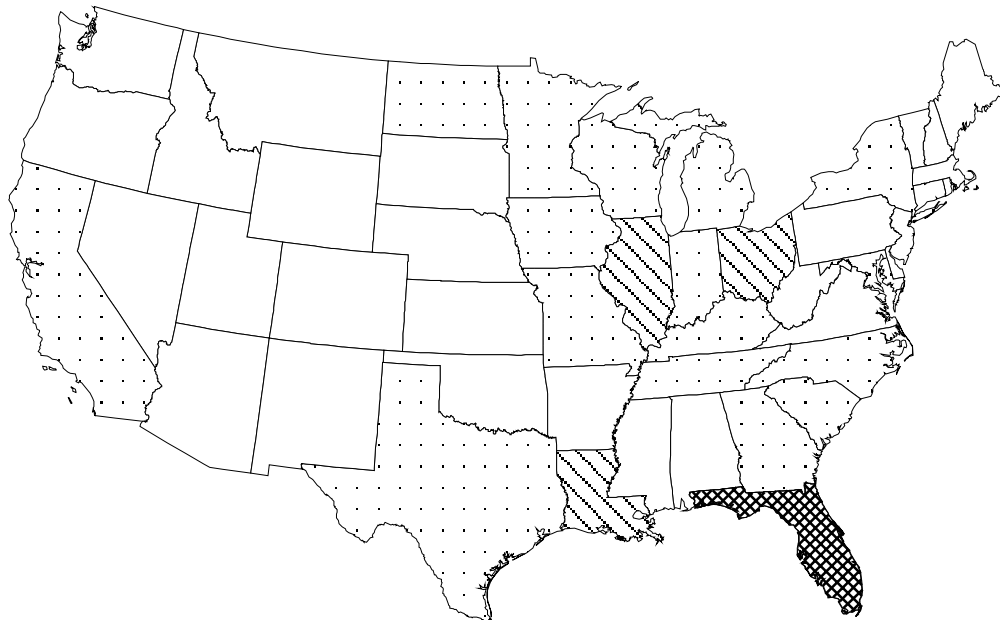
ORIGINATION OF RAIL FREIGHT TONNAGE TERMINATING IN FLORIDA



LEGEND



TERMINATION OF RAIL FREIGHT TONNAGE ORIGINATING IN FLORIDA



Freight Rail/Intermodal

Louisiana, followed by Georgia. Both, however, ship more into Florida than they receive from Florida.

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 (54 percent of totals); followed by District 6 (20 percent). The two Districts are the home of the Bone Valley phosphate district and many of Florida's major limerock mines. Traffic terminations, at 30 percent of totals, are highest in District 7, the export point for much of the phosphate. District 2 terminations are also heavy (27 percent) and are comprised predominately of receipts of coal, nonmetallic minerals, wood products and chemicals or allied products.

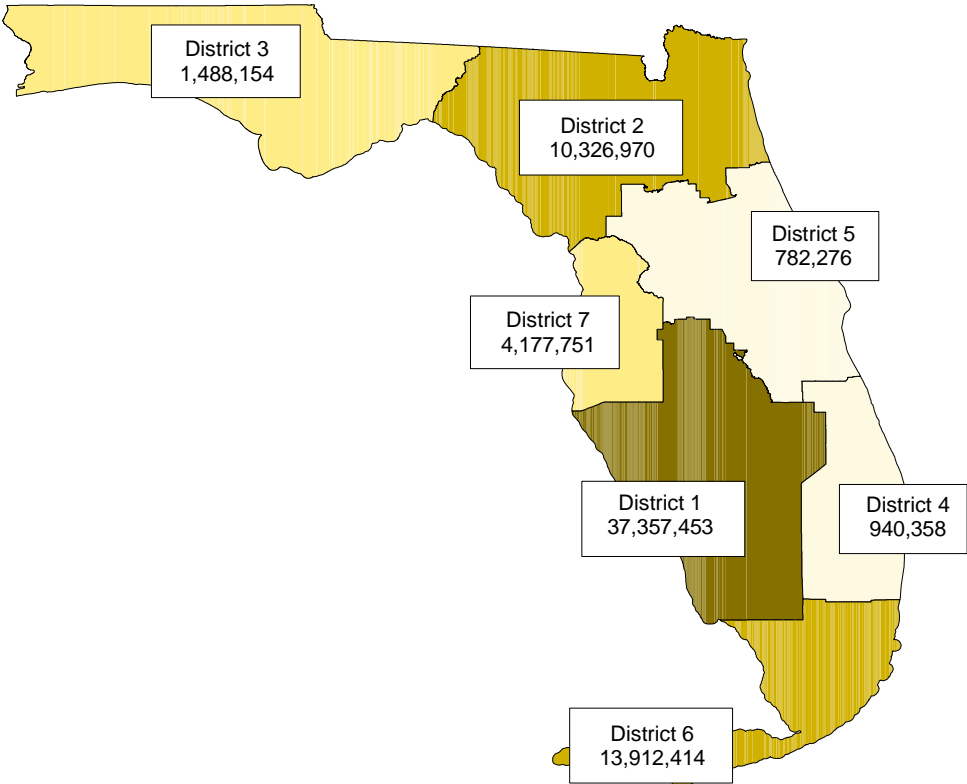
Traffic History – Exhibit 2-9 depicts a rail traffic history for the State based on selected years from prior rail reports and other on-hand data. The volumes have been varied, up and down, by as much as 62 million tons on an annual basis for the years depicted. Tonnage has basically increased from the 1980s through the 1990s peaking in 1998 at over 180,000. But, it dropped 7 percent in 1999 to near 1995 levels.

Traffic Density – Exhibit 2-10 shows the traffic density of each rail line of the Florida rail system in 1998. The measure used to depict traffic density 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 1998.

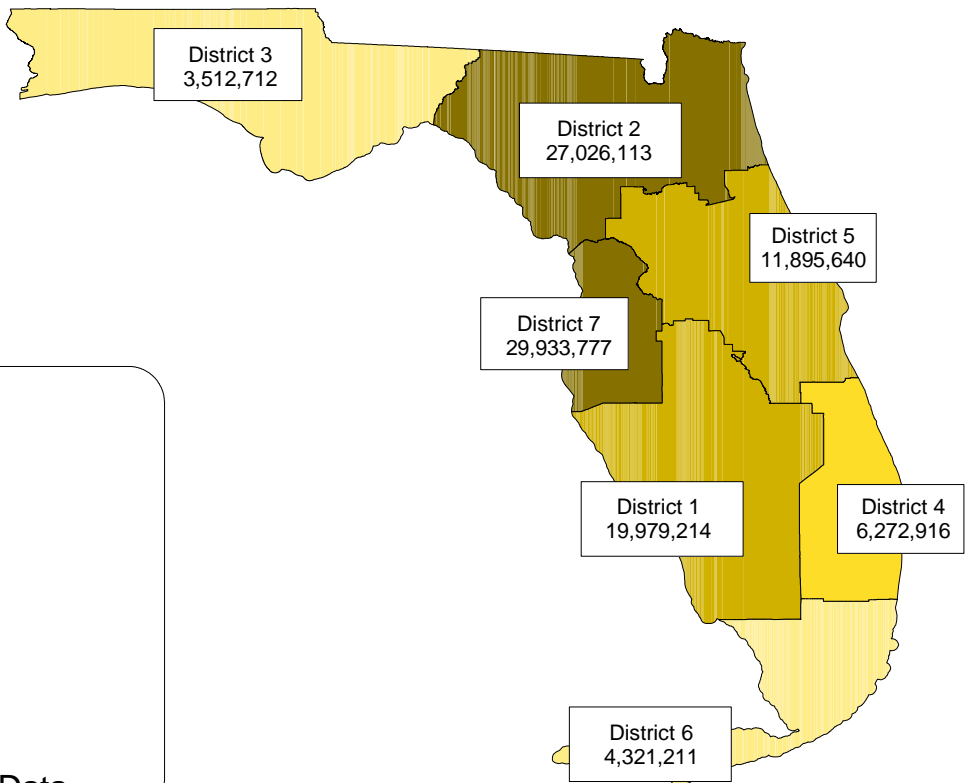
Examination of Exhibit 2-10 reveals the relative use of each component of the State's rail system. Some of the highest tonnages occur in west central Florida in the Bone Valley Phosphate area. Other high tonnage lines are the main lines of CSXT running east-west through the northern part of the State (portions) and north-south from Georgia to the central part of the State. The main line of the Florida East Coast from Miami to Jacksonville and the main track of the Norfolk Southern from Georgia to Jacksonville are also high tonnage lines.

RAIL TRAFFIC FLOWS BY FDOT DISTRICT

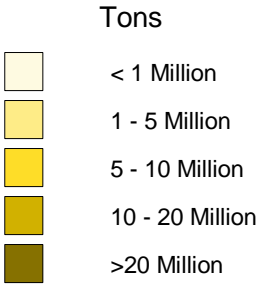
Origins of Rail Freight Tonnage



Terminations of Rail Freight Tonnage



LEGEND



Source: 1999 Waybill Data

Freight Rail/Intermodal

Exhibit 2-9
FLORIDA RAIL FREIGHT TRAFFIC HISTORY
Selected Years

<u>YEAR</u>	<u>TONNAGE</u> <u>(1,000 tons)</u>		
	<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

SOURCE: STB Waybill Sample unless otherwise noted

(1) R-1 and R-2 Annual Reports. Class III carriers not included.



Funding Needs

As part of the effort related to this update of the rail system plan, all short line operators were queried as to the ability to handle the new car weights and associated costs, as well as all long-term needs. Many had not investigated the problem thoroughly, however, especially as it relates to bridges.

An estimate for need and program purposes was desired by the rail office, however, and one was prepared using the estimates which were provided and the results of several studies on the 286,000-lb. issue (several more definitive studies are currently on-going).

Based on the miles of deficient short line and Class I railroad branch lines, a statewide estimate would approximate \$134 million. This estimate is based on replacement of lightweight rail and deficient crossties to reach an adequate level, and typical bridge deficiencies encountered in early national studies.

CHAPTER 3 PASSENGER RAIL/INTERMODAL

This chapter includes an overview of present and future intercity services in Florida, a discussion of existing and proposed commuter rail services, an overview of Florida's High Speed Transportation Program along with a discussion of Florida's intermodal facilities improvement program.

FDOT Role

The 1992 Florida Legislature expanded FDOT responsibilities by significantly altering conventional passenger services 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 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. It is unclear at this point what the Department's role might be in this latest effort.

Florida Amtrak Services

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 Formation and Future – Amtrak was created in 1970 to revitalize and operate the nation's rail passenger service after the private railroads had given up on their money-losing operations. Amtrak operates passenger trains in 44 states over a system of some 23,000 miles comprised principally of trackage owned by for-profit freight railroads. Since beginning operations in 1971, Amtrak has received over \$23 billion in federal funding and has never been profitable. The gap between Amtrak's revenues and expenses was \$900 million in 1999. Amtrak has addressed the

Passenger Rail/Intermodal

problem by assuming debt, deferring maintenance and reducing staff in the past, but still has not been able to overcome the problem although it lowered the gap to \$762 million in FY 1997.

Amtrak, due to its sizable and continuing dependency on federal subsidy, has always been a target of federal budget cutting. Projections that its deficit would continue to grow brought serious consideration to liquidating the railroad. In late 1997, the Amtrak Reform and Accountability Act of 1997 (the Amtrak reauthorization bill) settled the debate for the time being providing the carrier with \$2.3 billion in federal funds for capital projects immediately and authorizing \$5.2 billion for Amtrak capital and operations for FY 1998 through 2002. It also mandated that Amtrak be self-sufficient by FY 2004. A number of other provisions were also enacted. Amtrak strategies to meet the mandate consist of service reductions (poor performing trains and routes), additional mail and express service, and more state financial participation.

Early 1996 Service - As background, prior to the most recent restructuring, Amtrak Florida operations at the beginning of 1996 consisted of three distinct services. Two conventional Amtrak trains (down from three in 1995) were operated daily in either direction between Florida and the Northeast (*Silver Meteor* and *Silver Star*). Additionally, a third conventional passenger train (*Sunset Limited*) was operated tri-weekly between Los Angeles and Miami, and the *Auto Train* was operated by Amtrak between Lorton, Virginia and Sanford, Florida.

Florida's routes are among the most heavily used on the national Amtrak system. The two conventional passenger trains to/from the Northeast traversed the same route between New York, Washington, and Selma, North Carolina. From that point, however, the *Silver Meteor* followed a route taking it through Charleston, South Carolina and Savannah, Georgia, en route to Jacksonville, while the *Silver Star* took an inland route via Raleigh, North Carolina and Columbia, South Carolina to Savannah and Jacksonville. Once in Florida, the *Silver Meteor* followed a route through Orlando and turned south at Auburndale to Miami with Amtrak Thruway bus connections available to Tampa. The *Silver Star* split at Jacksonville with one section continuing south to Tampa via Palatka and Orlando with the other section continuing to Miami via Ocala. Both trains operated on a daily basis.

The *Sunset Limited* operated between Los Angeles and New Orleans onward to Miami via Jacksonville on a tri-weekly basis. It arrived in Miami on Monday, Wednesday and Friday and departed on Sunday, Tuesday and Friday serving the panhandle of Florida en route to Jacksonville. It followed

Passenger Rail/Intermodal

the route of the *Silver Meteor* to Miami. The *Auto Train* operated daily, but only stopped at its terminal stations in Lorton, Virginia and Sanford.

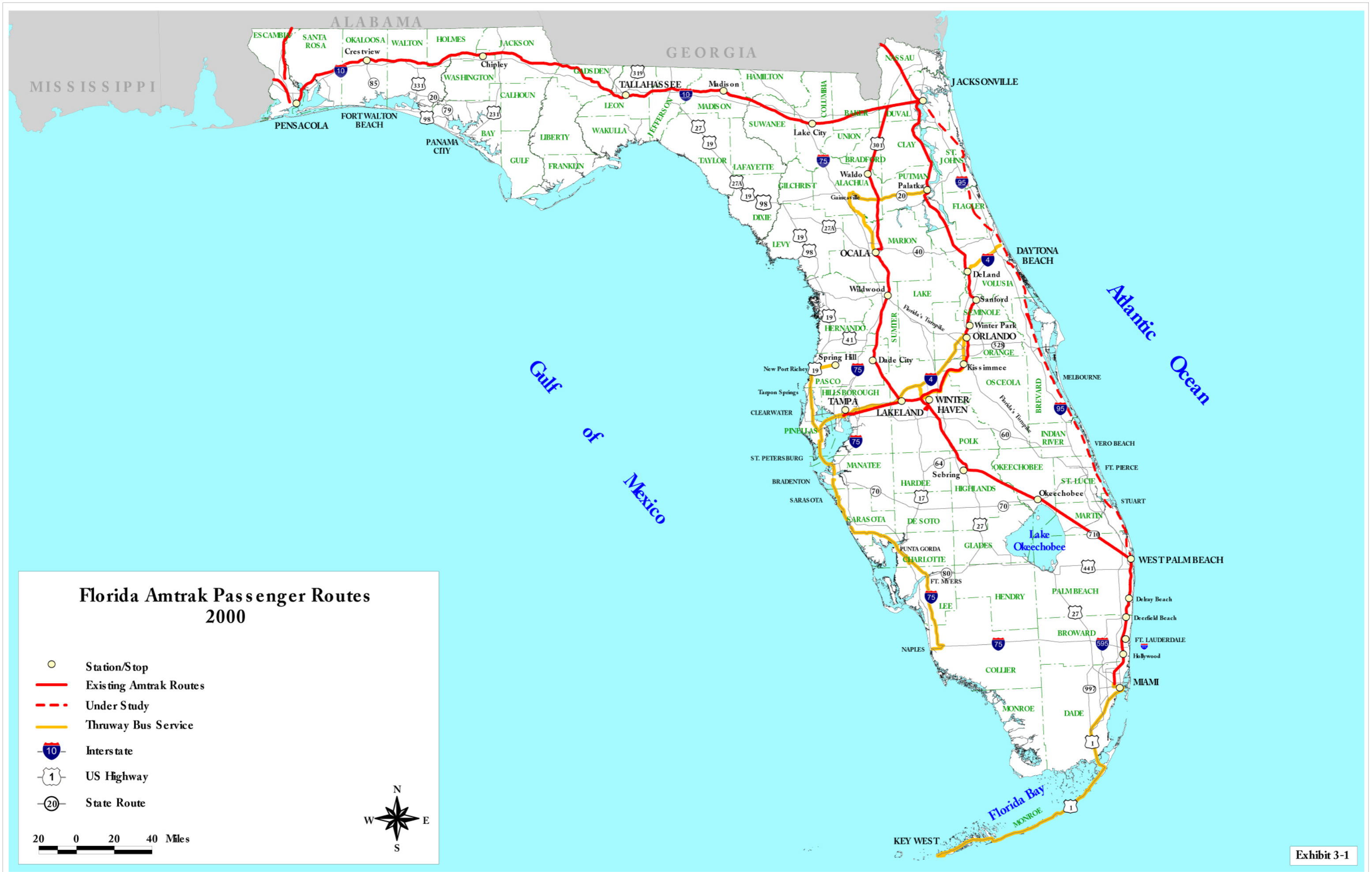
Current Service - Changes beginning in November 1996 were a mixture of service additions and curtailment. First, the *Silver Service* was increased by the addition of a third daily train, the *Silver Palm*, between New York City, Tampa and Miami. In addition to expanding the number of trains between Florida and the Northeast, the *Silver Palm* re-established direct Tampa-Miami service.

Other changes in the *Silver Service* eliminated the Tampa section of the *Silver Star* (Thruway bus connections are available); modified the schedule of the *Silver Meteor* to provide more daylight service for the Carolinas; and, adjusted schedules to provide Charlotte, North Carolina - Florida connecting service. The latter addition involves the *Carolinian* and *Silver Star*.

Florida's most significant service reduction came with the curtailment of the route of the *Sunset Limited* in Sanford, since restored south to Orlando. The tri-weekly train formerly used Miami as its terminus as stated earlier. The routes over which these trains operate in Florida are shown on Exhibit 3-1.

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) Ocala, Gainesville and Palatka; 3) Fort Myers, Port Charlotte, Sarasota, Bradenton, St. Petersburg, Tampa; Orlando, Lakeland and Tampa; 4) Orlando and Tampa; 5) Tampa, Clearwater, Tarpon Springs, New Port Ritchey and Spring Hill; and, 6) Miami and Key West as shown on Exhibit 3-1 and in Appendix A. The Gainesville – Palatka service also includes a bus pass/ticket for the Regional Transit System (Gainesville).

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, Deerfield Beach, Fort Lauderdale and Hollywood. Tri-Rail and the Miami Metrorail both have stations close to Amtrak's Miami station at Hialeah.



Passenger Rail/Intermodal

In addition to local connecting services, Amtrak trains serving Florida connect with Amtrak's national system (see Exhibit 3-2). Connections 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.

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 951,064 in FY 2000 (an increase of 52 percent). FY 2000 ridership was down 21 percent from the FY 1993 peak of over 1.2 million, but above the FY 1999 ridership of 917,346.

Service Potentials – As part of its self-sufficiency strategy, Amtrak announced its National Growth Strategy (NGS) in February of 2000. The strategy involves route and train expansion through service restructuring and equipment reassignment. Significant improvements in Florida service are included in this program.

Negotiations are underway with the FEC for use of its main track between Jacksonville and Miami for one of Amtrak's Silver Service trains. Rerouting one of the Silver Service trains over the FEC between Jacksonville and West Palm Beach has long been a desire of the FDOT, Amtrak, and local communities located on the East Coast along this 300-mile route.



200 0 200 400 Miles

As of October 2000

AMTRAK NATIONAL SYSTEM

Exhibit 3-2

FLORIDA AMTRAK RIDERSHIP

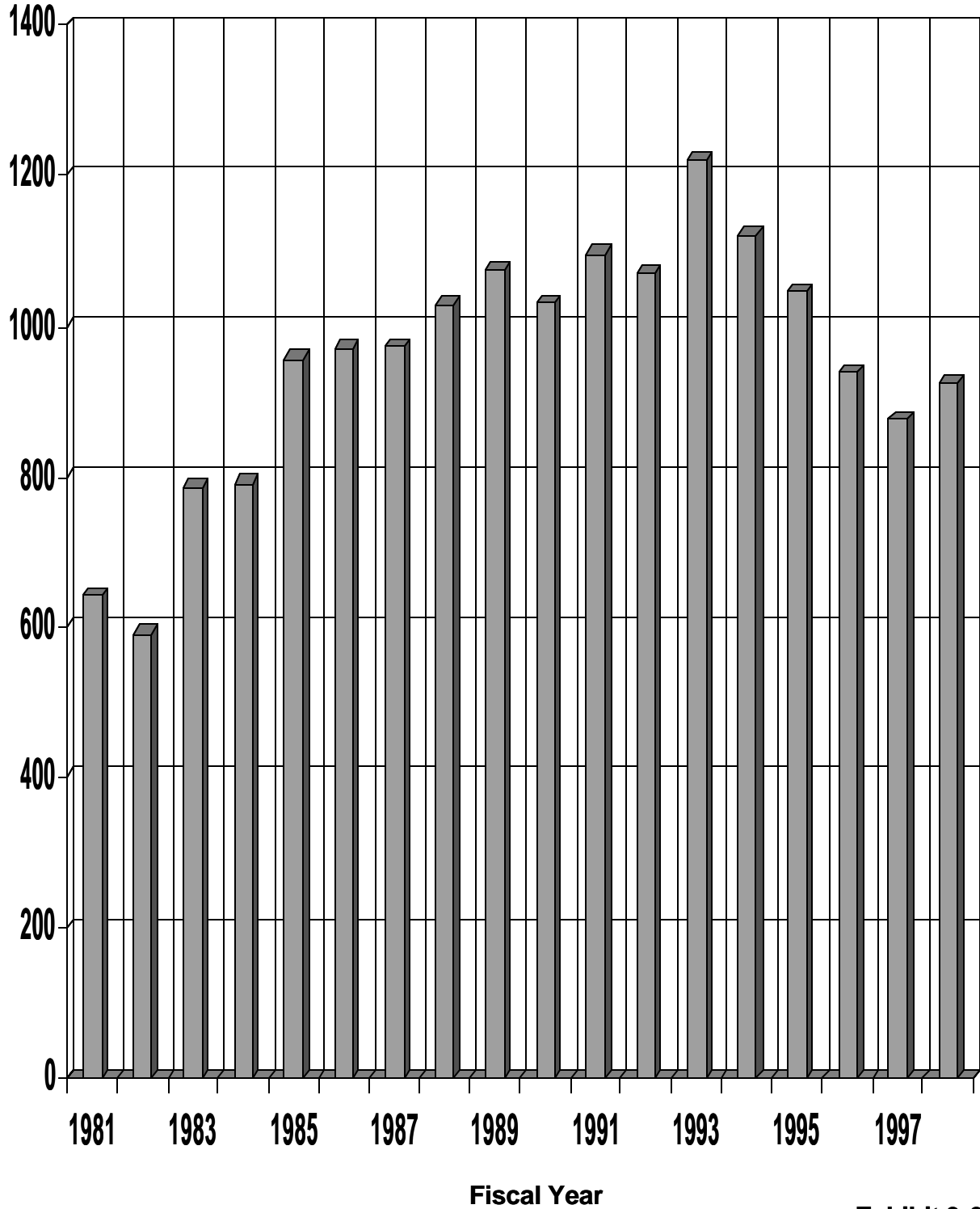


Exhibit 3-3

Passenger Rail/Intermodal

Improved service to Orlando and Tampa is also included in the NGS. These service improvements will be accomplished by dividing the existing Amtrak trains in Jacksonville into two sections – one to serve the east coast of Florida along the FEC, and the other to serve central Florida and the west coast on two CSXT lines.

The four Atlantic Southeastern states north of Florida 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 Corridor goal is to develop operations with a top speed of 110 mph. The Corridor, providing a Northeast-Florida connection, will serve to upgrade one of Amtrak's most successful services.

Florida High Speed Transportation Program

Florida has been considering a high speed ground transportation system to connect the state's major urban areas since 1984 as the core of its intercity passenger rail service. In that year, the Florida Legislature enacted the High Speed Rail Transportation Commission Act to establish a statewide high speed rail transportation system. In 1991, after an unsuccessful effort to award a franchise, the Commission was dissolved and the responsibilities for the State's high speed transportation program were officially transferred to FDOT.

A Request for Proposals (RFP) for a statewide high speed rail system connecting Southeast Florida, Orlando, Lakeland and Tampa Bay urban areas was issued on February 28, 1995. The applicants for the exclusive franchise to finance, build, and operate the high speed rail system were required to address specific critical elements identified by studies conducted between 1991 and 1995. These planning studies assessed route alternatives, passenger market potential, and high speed rail technologies. Significant features of this franchise effort included the forming of a public-private partnership between the franchisee and FDOT, and a commitment from the State to provide \$70 million per year over the life of the franchise for system development.

Five proposals were accepted on October 31, 1995. Following detailed reviews by various state, regional and local governments, and the Citizens' Planning and Environmental Advisory

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Committee (CPEAC), FDOT selected the proposal submitted by Florida Overland eXpress (FOX). Florida Overland eXpress was a consortium led by Fluor Daniel, GEC Alstom, and Bombardier. FOX's proposal was a 320-mile, dedicated high speed rail system, using existing corridors and rights-of-way for approximately 65 percent of its length. The 200-mph TGV high speed train was the proposed technology. The franchise award was granted to FOX on April 4, 1996.

Subsequently, however, the capital cost (\$6 billion) and debt which would have been incurred comprised a level of risk which the state decided was not acceptable, and the effort was terminated in 1999. The FDOT then began development of a plan to incrementally develop a higher speed passenger program with a more palatable risk level as described in the following discussion.

Florida Intercity Passenger Rail Service Vision Plan

The Florida Intercity Passenger Rail Service Vision Plan¹ 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. The Vision Plan is intended to achieve the following objectives:

- Deliver quality, corridor-focused rail service quickly, implementing initial service improvements by 2004;
- Provide continuous program improvement thereafter including improvements in service quality such as travel time, reliability of service, and safety as well as additional station locations and customer services; increased frequency of daily and weekly service; and additional routes;
- Implement the program cost-effectively and affordably while managing and minimizing financial, market, technological, environmental, and other risks; and
- Use a range of partnerships to maximize customer and stakeholder support.

The Vision Plan is structured around two major planning horizons used by the FDOT:

¹The Florida Intercity Passenger Rail Service Vision Plan, prepared for FDOT by Amtrak, May 2000, from which this discussion is taken.

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- Immediate Action Program – This program is based on a 5-year time horizon; and
- Long-Range Plan – This plan is based on a 20-year time horizon.

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 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.

**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.

This analysis indicates that the Miami-Orlando and Tampa - Orlando corridors have the greatest potential for initial implementation of a Florida-focused intercity passenger rail service for the following reasons:

- The corridor is served by an existing rail line in generally good condition for rail passenger service at 79 mph;
- The distance between the endpoint stations for the corridor is between 75 and 300 miles; and

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- The corridors have the largest current and projected Year 2010 travel markets.

Because all of the track needed for Tampa-Miami service coincides with the rail lines included in the Miami-Orlando and Tampa-Orlando corridors, the incremental cost to also serve the Tampa-Miami market is relatively small. Further, the Tampa-Miami intercity travel market is large and connects two of Florida's major commercial and visitor metropolitan areas. Therefore, the 5-year intercity passenger rail service program focuses on improving service in the Tampa-Orlando, Miami-Orlando, and Tampa-Miami intercity corridors.

The corridor between Tampa and Fort Myers is a large and rapidly growing travel market. Major intermediate cities in this corridor (e.g., Sarasota, Bradenton) could serve as temporary endpoints as the rail line is improved. However, no rail line exists for a segment of the route between Sarasota/Bradenton and Fort Myers, and right-of-way must be acquired and a new rail line constructed for this segment. The initial extension of the 5-year rail service improvement program should focus on extending to Sarasota/Bradenton with subsequent extension to Fort Myers.

The Orlando-Space Coast and Orlando-Daytona Beach travel markets are very large, although the relatively short distance between each location will increase the challenge of diverting automobile drivers. Further, no rail line exists between Orlando and the Space Coast. Consequently, implementation of an intercity rail service will require construction of a new line. Because these interchanges are dominated by tourist and visitor attractions, frequent, high-quality, high-speed ground transportation service among the major attractions, the urban centers in the corridor (e.g., Orlando, Tampa, Lakeland) and the major commercial airports (e.g., Orlando and Tampa) could generate significant ridership and revenue. This potential is currently being studied in the Legislature-mandated Coast to Coast Rail Feasibility Study (Port Canaveral to St. Petersburg).

Plan Implementation - Implementation of the Vision Plan includes three key elements which are listed 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).

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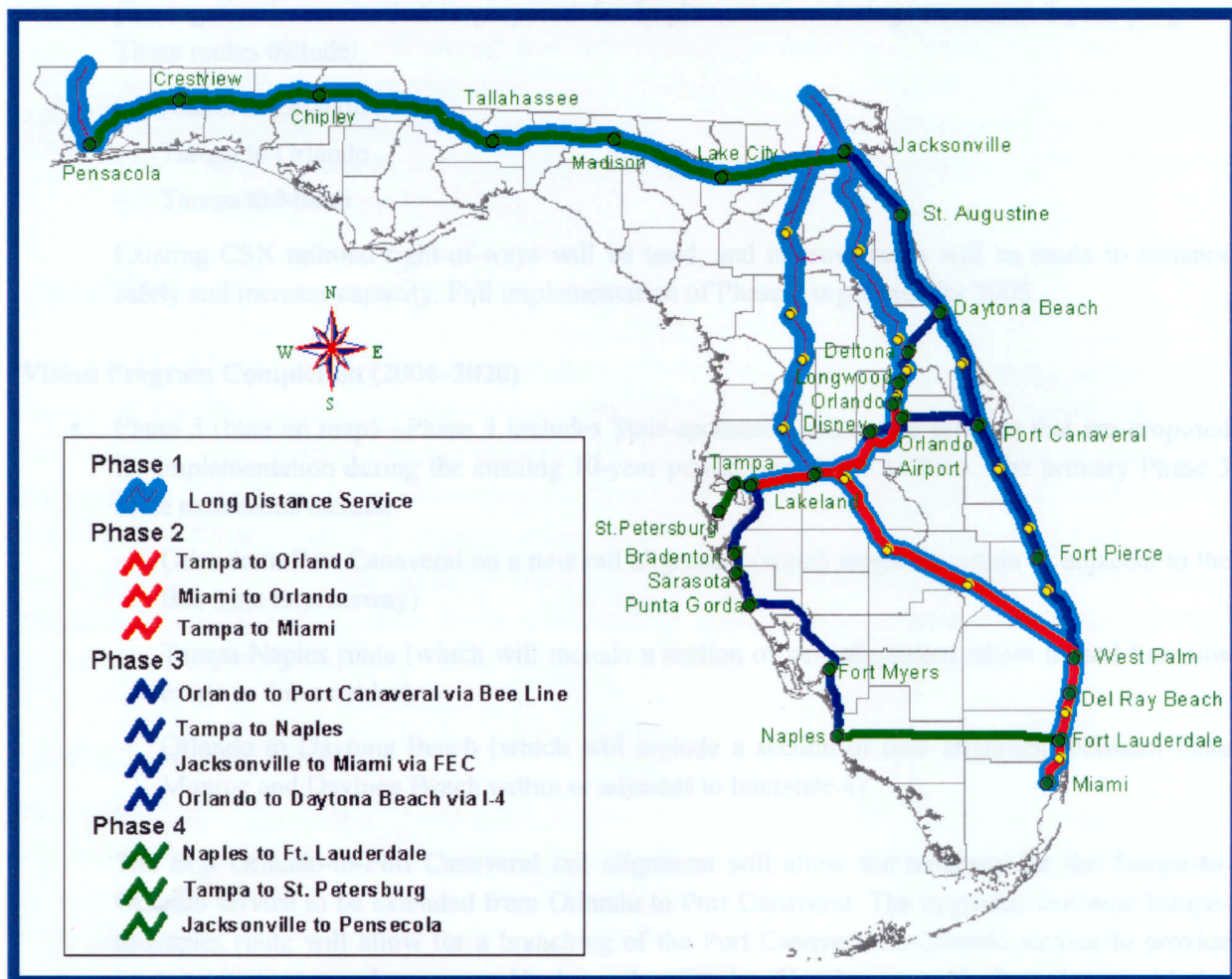
Although operations during the early phases will be limited to a maximum speed of 79 mph, the performance standard calls for trains that can support maximum speeds up to 110 mph with enough power to comfortably accelerate to 110 mph within a reasonable distance. The trains would provide a smooth ride 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.

Exhibit 3-5
VISION PLAN PHASES



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.

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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.

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.

Revenues and Costs – Ridership and associated revenues and costs were developed for the Phase 2 proposal. The estimates were based on a range of service frequency scenarios – two to six daily round trips. Ridership, revenues and operating costs estimated for 2005 are the subject of Exhibit 3-6.

Capital costs are comprised of both rail line improvements and rolling stock. For the Phase 2 analysis, capital costs were estimated for up to 4 additional round trips per day with a maximum speed of 79 miles per hour, with an alternate of up to 8 additional round trips per day. The cost estimates are contained in Exhibit 3-7. Improvements fall into four basic categories – speed, capacity, facilities and grade crossings. Rolling stock or equipment costs were based on service frequency on each of the routes as specified for the revenue and operating cost estimates.

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**Exhibit 3-6
2005 PHASE 2 ESTIMATED REVENUES AND COSTS**

Alignment	Daily Round Trips	Annual Ridership (000)	Annual Revenue¹ (millions)	Operating Expense² (millions)	Profit/(Loss) (millions)
Tampa-Orlando	6	415	\$7.3	\$7.8	(\$0.5)
Miami-Orlando	4	625	22.2	18.7	3.5
Tampa-Miami	2	419	14.0	11.3	2.7
TOTALS	12	1,459	\$43.5	\$37.8	\$5.7

Notes: 1. Includes food and beverage sales, 2000 dollars.
2. Excludes one-time start-up costs.

Source: Amtrak

**Exhibit 3-7
2005 PHASE 2 ESTIMATED CAPITAL COSTS**

Alignment	Round Trips¹	Improvements (millions)	Equipment² (millions)	Totals (millions)
Tampa-Orlando	6 (8)	\$60-\$82	\$19-\$23	\$79-\$105
Miami-Orlando	4 (10)	93-130	35-41	128-171
Tampa-Miami	2 (6)	125-181	23-28	148-209
TOTALS	12 (24)	\$278-\$393	\$76-\$92	\$354-\$485

Notes: 1. 6 (8) – First digit used for rolling stock needs, second for improvements.
2. Includes pro-rata share of spare consists.
3. Totals may not add due to rounding.

Source: Amtrak

Benefits – There are numerous public benefits which will be derived from implementation of the Vision Plan. They consist of travel time savings for rail users and those continuing to use highway or air travel due to a lessening of congestion as well as associated vehicle operating cost, accident and fatality, and vehicle emission reductions. These benefits are estimated to total \$90 million on an annual basis.

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Funding – Financing of the Plan through Phase 2 is envisioned to be a partnership between Amtrak and FDOT. Although operations are expected to provide a positive cash flow from revenues, the profit on operations is not sufficient to retire the estimated capital investment in route improvements and equipment needed for the service. Legislation is pending in the Congress to provide bonding authority for the development of intercity rail projects in federally designated corridors which includes Miami-Orlando-Tampa. The generation of public benefits should provide justification for public funding.

Coast to Coast Rail System

The Coast to Coast Rail System Feasibility Study² examines the potential for connecting the metropolitan areas of St. Petersburg, Tampa and Orlando; the airports of St. Petersburg/Clearwater, Tampa, and Orlando; and the Port of Tampa and Port Canaveral areas with a passenger rail system. This project was developed to address concern over increasing auto congestion on Interstate 4; lack of convenient alternatives for commuter, business and tourist markets; and pressure to develop increased capacity in a constrained transportation corridor. The corridor has also been subject to increasing growth and land use changes in the past twenty years that have exacerbated traffic congestion. Moreover, metropolitan, tourist attraction, and port connections foreseen by the communities along the corridor suggests a strong opportunity for an alternative transportation solution.

Study Content – The study examined route alternatives, capital and operating costs, ridership potential, a cost-benefit analysis, and a preliminary recommendation for a phased implementation of the project. Based on the recommendation, additional work is currently being undertaken to examine in detail the potential economic benefits of such a project and the potential structure of a financial plan that would allow for the phased implementation of the project.

Alternatives Evaluated – There were six potential route alternatives (combinations of alignments and corridor segmentation) considered in the planning study. The corridor runs from downtown St. Petersburg area, on the western end of the corridor, to Port Canaveral, on the eastern end of the corridor.

² *Coast to Coast Rail System Feasibility Study*, prepared for the Florida Department of Transportation by STV Incorporated, December 2000, from which this discussion is taken.

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Technology Options - There is a direct relationship between the corridors under consideration and the type of rail technology that might be most appropriate to meet the needs of the corridor. For example, due to the low-speed, low-technology nature of the existing operations on existing freight rail infrastructure, sophisticated high-speed technologies may not be appropriate in these rights-of-way. Therefore, only low speed (maximum 79 mph operations) technologies have been considered in the existing CSX freight rail corridor.

In addition a full range of technology options are considered from low-speed conventional diesel-powered trains to a magnetic levitation system. In between the two extremes are several “higher speed” technologies.

Estimated Costs and Revenues – Capital costs for combinations of routes and equipment ranged from a low of \$1.0 billion to a high of \$9.7 billion. Annual operating and maintenance costs ranged from \$26.2 million to \$184.3 million, and revenues from \$18.3 million to \$71.6 million.

Alternative Selection – A comparison of the alternatives suggests that the Route 2 Alternative, truncated Orlando International Airport to Tampa Airport utilizing the I-4 Beeline alternative with a non-electrified high speed technology, provides the most cost-effective option for Phase I development. This selection was made by comparing the capital costs, and operating and maintenance costs to projected ridership revenue in order to derive the most cost-effective utilization of resources.

2000 Constitutional Amendment

Amendment #1 to the Constitution of the State of Florida in the November 7, 2000 general election was approved by the state’s voters. The amendment was placed on the ballot through the petition process. The text of the amendment follows:

“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

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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.”

Until the matter is taken up by the Florida Legislature, it is unclear what the FDOT's role might be. For the time being, the Department is continuing with its current program, the Vision Plan, as previously discussed.

Magnetic Levitation

Magnetic levitation, or “maglev,” is a promising transportation mode. Suspended on a cushion of magnetic flux, maglev vehicles offer an unusually smooth ride with little energy absorbing friction.

FDOT is providing financial assistance to Maglev 2000 of Florida Corporation to facilitate a maglev demonstration project in Brevard County at the Titusville-Cocoa Airport. The demonstration project will test composite guideway and other technology components for its proposed maglev system.

Maglev 2000's super-conducting maglev technology is based on the concepts developed by Dr. Gordon Danby and Dr. James Powell of the Brookhaven National Laboratory in New York. After completion of the demonstration project, Maglev 2000 plans to build a 20-mile maglev system connecting Port Canaveral, Kennedy Space Center and the mainland at Interstate 95.

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. Several other states, including New York, North Carolina and Mississippi have also expressed interest in supporting this project.

Commuter Rail Services

The tremendous population growth which Florida has experienced has made the State a serious candidate not only for expanded intercity rail passenger service, but also for rail commuter service. One such service has been established and a number of other initiatives are under way.

Southeast Florida - Tri-Rail 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.

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. 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.

Presently 28 Tri-Rail trains 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). Each train consists of a locomotive, two passenger trailer cars and one passenger cab car. The trains are operated in a push-pull manner with the locomotive on the south end. Locomotive controls are located in the cab car allowing the locomotive to push the train in the northward direction.

Operation of the trains and maintenance of the passenger cars and locomotives are accomplished by TCRA through a contract operator, Herzog Transit Services. Under the operating

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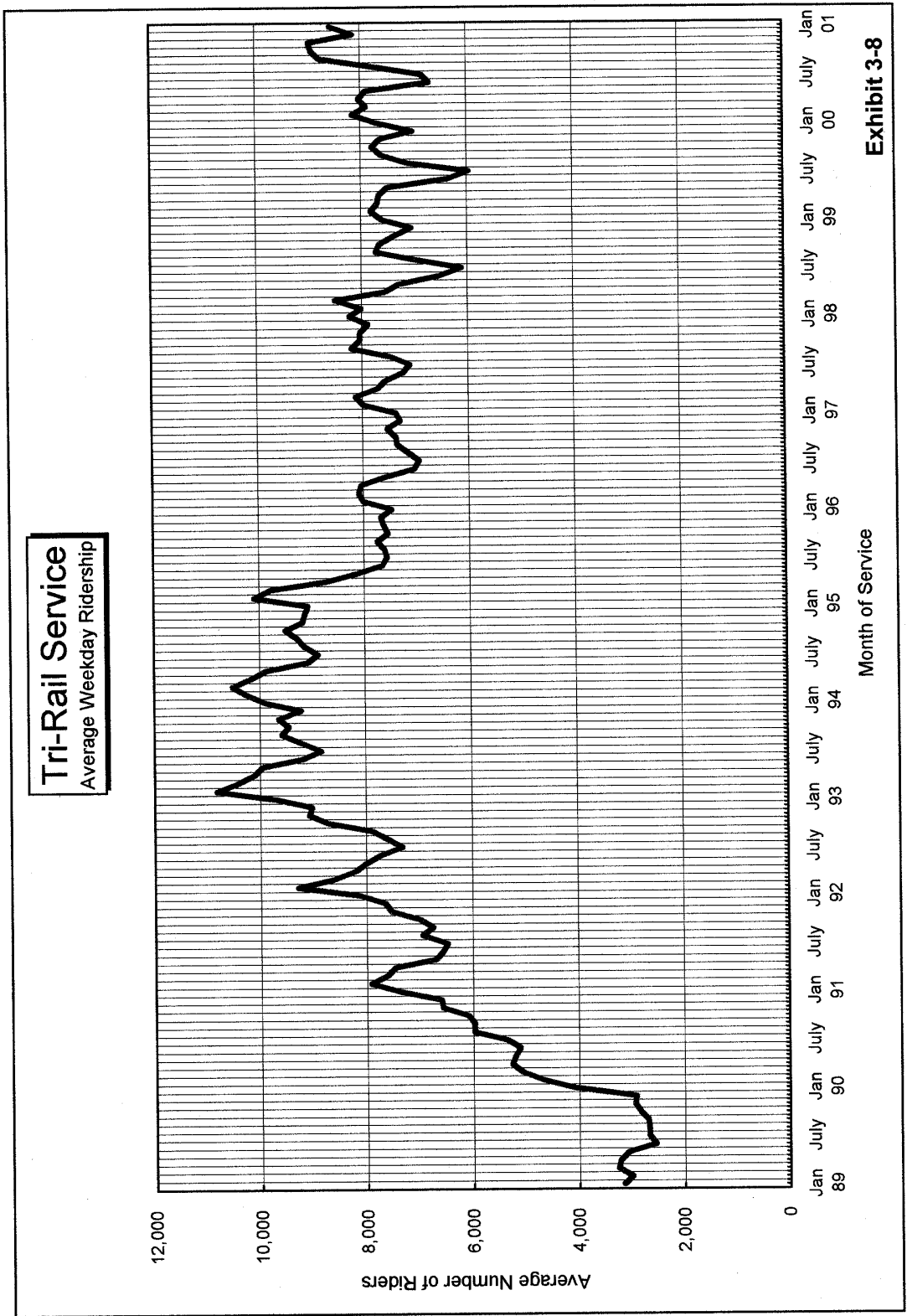
and management contract mentioned previously, CSXT provides maintenance of the track, bridges, buildings and signal system and dispatches all trains using the line -- including their own freight trains and long distance Amtrak trains. Contracts with private vendors also cover ticket sales by use of ticket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

Exhibit 3-8 depicts the Tri-Rail ridership over the 12 years to date. There had been a significant upward trend with seasonal variations until 1993 when it began to drop off and the trend continued, but has leveled off now. This 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.

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 3-9 lists the projects recently completed or presently under construction as part of the initiative to add capacity and increase reliability. 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. Completion of the work will be aided with a 2000 Federal Transit Administration grant of \$110.5 million.

One new station has been opened since the last Rail System Plan. A new Fort Lauderdale Airport Station opened in August of 2000. A number of other stations have been, or are being renovated to different degrees.

Orlando - The Central Florida Regional Transportation Authority d/b/a/ LYNX is currently undertaking two studies to look at the feasibility of commuter rail service in the Central Florida region. The first study is a capacity analysis to be performed on the CSXT line from Volusia to Osceola County. This study will be used by LYNX and CSXT to determine if freight and



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Exhibit 3-9 TRI-RAIL DOUBLE TRACKING STATUS

PROJECT	STATUS	CONSTRUCTION COST (Millions)
Phase I – Double tracking and signal improvements - Fort Lauderdale to Pompano Beach - 8.2 miles	Completed 7/97	\$36.0
Systemwide 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 – 79 th Street Station to Hialeah Station – 1.5 miles	Completed 3/00	\$3.8
Opa Locka Siding Extension - Northeast Hialeah Yard to 79 th 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 1/01 – 6/02	\$34.4
Segment 5 – Remaining 44.3 miles	Completion 3/05	\$230.0 (Estimated)
	ESTIMATED TOTAL COST	\$360.7

Source: FDOT

passenger service can operate within existing infrastructure and operating windows to meet the commuter needs of the region. The second study will be a feasibility and ridership analysis on the Florida Central Railroad from Eustis in Lake County to Downtown Orlando to determine if demand exists for this service.

LYNX has also completed the FEIS for a 24-mile initial light rail system from Altamonte Springs to Central Florida Parkway south of Orlando. However, the funding partners were unable to reach consensus on funding participation and a locally preferred alignment, and the project was terminated. At the current time, a restudy of the northern alignment is underway. This study will re-evaluate the socio-economic data used to predict ridership and revisit the alternative alignments.

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Tampa - In 1990, the Legislature authorized the Tampa Bay Commuter Rail Authority (TBCRA) to operate rail and ferry services in the Tampa Bay Area of Hernando, Pinellas, Hillsborough, Pasco and Polk Counties (TBCRA is no longer an active agency). Following the initial feasibility study in 1993 of all CSXT area rail lines, a ridership study was completed in 1995 for a potential commuter operation between Lakeland and Tampa. Subsequently, studies have examined the potential for rail transit services within the Hillsborough County region. The commuter rail and county rail transit systems would serve different markets but would complement each other. Currently the Hillsborough County Mobility Study (MIS) is being conducted. Rail, bus, pedestrian, bicycle and transportation demand strategies are being investigated.

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, 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 currently underway within the State of Florida utilizing differing approaches and combinations of financing to improve mobility and transferability between modes at key hub locations.

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.

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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 and extensive input from Amtrak, FEC and CSXT. The 80-year-old downtown train terminal had not been used by passenger trains since 1974, and in 1985, the City converted it to a convention center. One proposal is to utilize a portion of the convention center as a multimodal facility. This facility will directly serve Amtrak, Greyhound intercity bus services, 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 uses for joint development are included in the site plan such as parking areas for the convention center and terminal center operations, a heliport, commercial development over Greyhound's facility and within the proposed terminal, and spin-off development in the vicinity of the terminal site. The total cost for the terminal center is estimated to be approximately \$48 million.

Miami - The Dade County Metropolitan Planning Organization (MPO) completed a feasibility study for an Airport Area Multimodal Access Facility in June 1992. The purpose of this study was to identify benefits of improved intermodal connections and access to Miami International Airport and employment centers via convenient transfers and co-location of Metrorail, Tri-Rail, Metrobus, and other transportation providers. The concept of 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 evaluated alternative site locations and proposed a development plan.

The proposed 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 will 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 alignment for the Miami International Airport to MIC fixed guideway connector link. 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.

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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 the Regional Intermodal Center. The project is currently in the design phase with, construction anticipated to begin in 2002 and completed by 2003. The Intermodal Center will be used 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, Naples, 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.

Another phase of the project has been implemented. This phase will continue the rebuilding of several areas of the facility to further improve intermodal movement.

Ft. Lauderdale - The 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. The facility is to be developed in three phases as shown below:

- 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.

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Ocala – The City of Ocala and the Ocala/Marion County MPO, joined in partnership with FDOT – District 5, 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 1993, the City of Ocala submitted an ISTEA Enhancement application 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 in early in 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 - This facility will be developed in conjunction with the existing Amtrak station. Additional parking will be provided for Tri-Rail, and the Greyhound bus terminal will be relocated to the site. The necessary property adjacent to the Amtrak station was acquired in 1990, design of the facility has been progressed, and construction funding is being obtained.

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 (LAMTD) 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.

CHAPTER 4 RAIL SAFETY

This chapter contains an overview of the rail safety inspection program, including Florida's recent rail accident 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.

On March 17, 1993, a southbound 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 apparent cause, a fractured wheel on a passenger car caused the train to derail at a switch.

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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 accident, which occurred north of Jacksonville, resulted in injuries to eight people on the train.

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 accident-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 warning devices with flashing lights, gates, or combinations thereof. During the mid-1970s, there were an average of 13,000 accidents and 1,000 fatalities per year at these crossings. By the mid-1990s, these statistics had declined to an average of 4,700 accidents and 575 fatalities per year. That represents a 64-percent reduction in accidents 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 (2000) 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 accidents and 50 fatalities per year in the mid-1970s, the number of accidents and fatalities declined 75 percent and 60 percent, respectively, to 100 accidents 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.

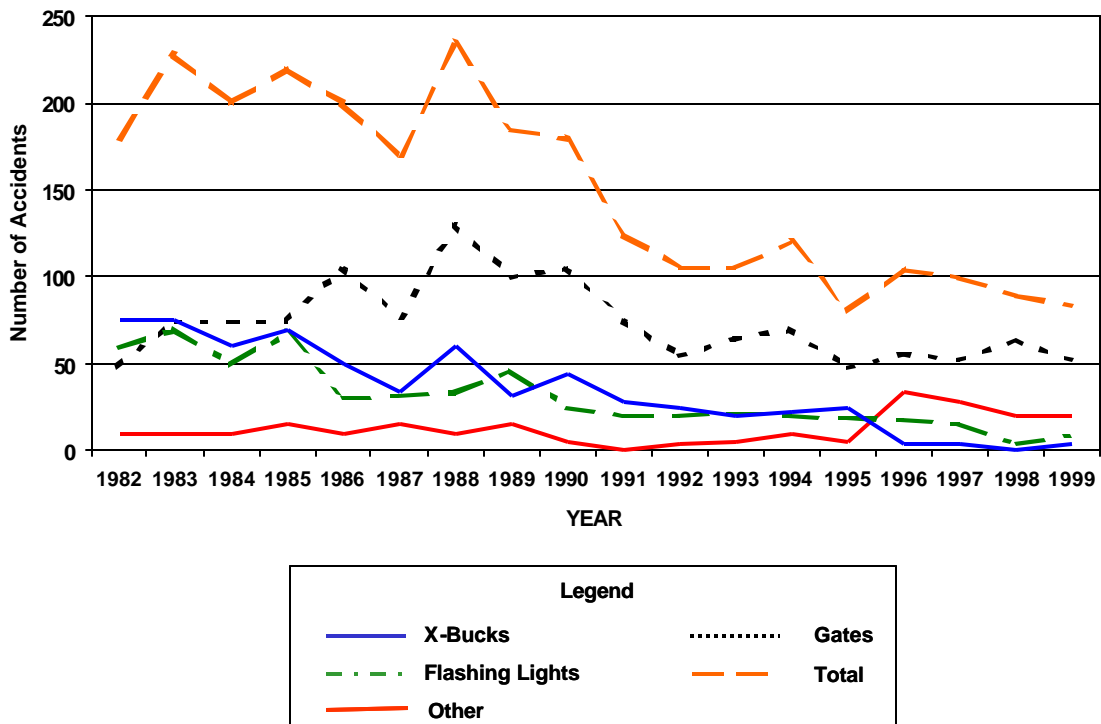
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A large part of this increased exposure is due to commencement of commuter rail service in the SFRC between West Palm Beach and Miami, and the addition of Amtrak's *Sunset Limited* across north Florida and south to Orlando. As discussed in Chapter 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 six Amtrak long-distance trains and eight local and long haul CSXT freight trains per day which operate on the SFRC.

Highway Grade Crossing Accident History

As shown in Exhibit 4-1, the number of grade crossing accidents in Florida has declined significantly since 1988. This improvement results primarily from FDOT's emphasis on providing state-of-the-art warning devices at high-volume crossings.

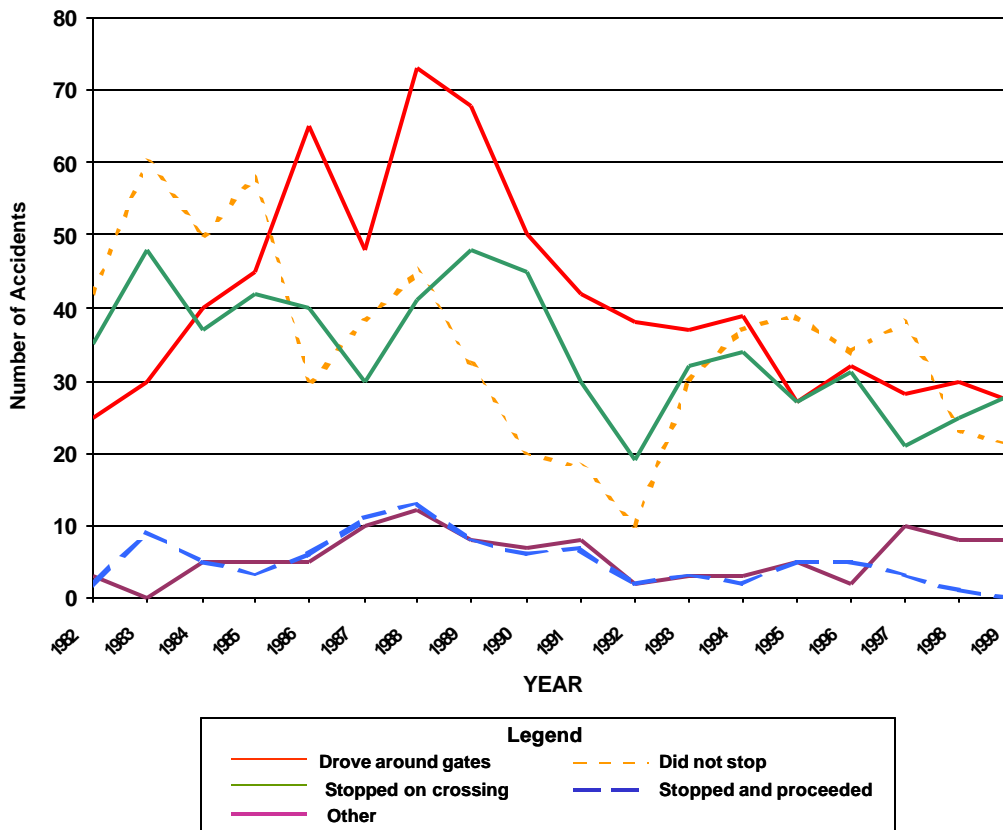
**Exhibit 4-1
CROSSING ACCIDENTS BY PROTECTION**



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Although active warning devices have reduced crossing accidents, over 50 percent of current grade crossing accidents occur at crossings equipped with flashing lights and gates. This is corroborated by Exhibit 4-2 which shows the number of accidents based on the actions of 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 accidents were caused by motorists driving around lowered crossing gates. As evident from Exhibit 4-2, there was a dramatic reduction in these violations. The FDOT, through its active participation in public awareness programs such as Operation Lifesaver and the Highway Safety Improvement Program, 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 private railroads and highway user groups in special promotions that encourage public awareness of highway-rail grade crossing safety issues.

**Exhibit 4-2
CROSSING ACCIDENTS BY MOTORIST ACTION**



Federal Railroad Administration Initiatives

The Federal Railroad Administration (FRA) has undertaken several national initiatives with the goal of reducing grade crossing accidents 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. It is unlikely, however, that Florida, not unlike other states, will be able to achieve the 25-percent goal as there is considerable public resistance to any inconvenience such as that involved in using alternate crossings.

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 from private to public ownership. The result is a crossing upgraded to current roadway standards and incorporation of new active warning devices.

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 accident 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 accident 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. In addition to the crossings identified by the

FDOT rail-highway crossing inventory priority safety index, FDOT is including 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. A study will be made to determine if the additional traffic from the closure of Camilla Street will result in vehicle storage problems at these crossings (Preemption Analysis Program). The results of this analysis may result in additional traffic signal units and turn signals.

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 the money originally programmed 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, over 50 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 involved parties have executed Stipulation of Parties Agreements for closure of some of the crossings, and are awaiting full completion of the closures. Additional highway-

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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.

TEA-21 Section 1103 (c) Program

The rail corridor linking Tampa, Orlando and Miami (which includes the South Florida Rail Corridor), has been designated as one of 18 potential high-speed rail corridors eligible to receive federal funding for safety enhancements under Section 1103(c) of TEA-21 (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.

The Rail Office's TEA-21 Section 1103(c) Plan 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. The plan focuses on eliminating highway-railroad grade crossing hazards which include providing full closure systems.

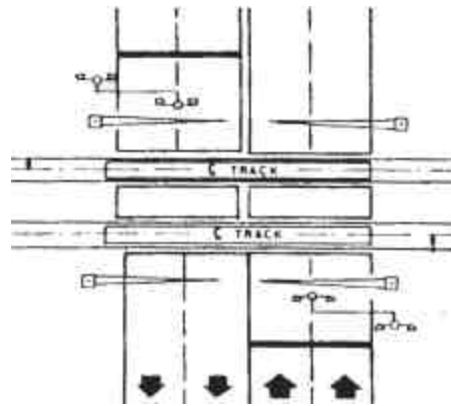
Funding – To date, the FDOT has received and programmed over \$5.5 million in funding from this source. A request was submitted for the 2001 Section 1103(c) Immediate Program in the amount of \$5.67 million. The funds requested are summarized below:

	Amount (millions)
2001 TEA-21 Yearly Allocation	\$1.19
<u>\$15 million Yearly Additional Congressional Appropriation</u>	<u>\$4.48</u>
Amount Requested	\$5.67

However, no funds were received for the years 2000 and 2001, and requests are being developed for 2002. A five-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 385 locations on the designated high-speed corridor.

Purpose - At-grade crossings are unavoidable in the densely populated SFRC because of the urban setting and prohibitive costs of grade separation. The FDOT plans to provide maximum crossing protection in the corridor using four-quadrant gate systems (see Exhibit 4-3) and/or median barrier systems. These two types of treatment will prevent vehicles from going around the crossing gates and intruding into the crossing area. The possibility of auto-train collisions should be dramatically reduced with these precautions, thus allowing for increased train speeds through the corridor while reducing risk to passengers.

**Exhibit 4-3
FOUR-QUADRANT GATE SYSTEM**



Four pilot projects using four-quadrant gate systems have been implemented, monitored and evaluated. The pilot project sites 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 included in the scope of each project. Data to determine the overall effectiveness and human behavior factors of the four-quadrant gate system installations were used to develop a process for determining gate timing. Gate timing will be customized for each location based on the specific characteristics of each crossing (i.e., number of tracks, skew angle, Average Daily Traffic, etc.).

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. This will also enhance the critical operating capacity of the entire corridor system thereby increasing driver confidence in the existing signal systems and help to maximize the safety potential of the signal systems currently deployed along the SFRC.

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

- Five median gate system improvements;
- Eighteen median barrier systems, using 6-inch barrier curbs;
- Five four-quadrant gate system locations; and
- Selection of four initial locations to implement a real time event recorder system which will utilize the SFRC's 900 MHZ system. The connecting computer monitoring system will be operational in the near future.

The current FDOT request for additional funding through TEA-21 Section 1103(c) is to address 385 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.

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 \$335 million grant will be used to complete the remaining 42 miles of double tracking in the corridor, 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.

A request to bid on a design/build contract will be announced in 2000. Award of the design/build contract will take place in March of 2001.

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 will include 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).

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 analyses, the project's time savings and cost estimates proved to offer little improvement over conventional bridge construction and the project was terminated.

Four locations have been selected to demonstrate the use of neural network-based video content extraction using the High Speed Ground Technology Demonstration Program (1036 Grant) at rail-highway grade crossings in the South Florida Rail Corridor. This demonstration project will provide state-of-the-art technology being developed as part of the National Research Council's Transportation Research Board (TRB) Innovations Deserving Exploratory Analysis (IDEA, Project HSR-IDEA Project 10) in highway railroad grade crossing surveillance to assist in data collection, enforcement, and presence detection. The demonstration is a cooperative effort between the FDOT and Federal Railroad Administration and will include a wide variety of test sites (i.e., four-lane facilities, six-lane facilities, four-quadrant gate systems, Tri-Rail station location, etc.).

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 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 will take effect upon receipt of the FY 1999 allotment of Section 130 funds. The program is anticipated to take approximately two years to complete and will begin the first year having a total of 710 crossings included in the replacement program.

Crossing Policy

The opening of new public grade crossings is discouraged by FDOT. 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.

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.

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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 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). Audio tapes 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 compliance with traffic laws relating to crossing signs and signals. Trespassing on railroad tracks and on

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railroad property is an ever-increasing problem in Florida. According to the FRA statistics, Florida is fifth in the nation in regard to trespasser fatalities.

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

The Rail Office of FDOT is providing a part-time OPS employee dedicated specifically to the management and coordination of Florida's Operation Lifesaver Program. This employee will manage the program from FDOT's Rail Office in Tallahassee and will have the support and guidance of FDOT's Rail Office and Public Information Office. Upon approval by the Florida Operation Lifesaver Board of Directors, the Rail Office's Administrator of Rail Operations will serve as Florida's Official Operation Lifesaver spokesperson.

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 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 were included in Fiscal Year 93/94, 94/95, 95/96, 96/97, 97/98, 98/99, and 99/00 Signal Safety Programs.

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- The effort to amend Section 14-46.003, F.A.C., 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 devices.** Installation of four-quadrant gates on the SFRC has occurred at four locations. Locations will be video monitored to evaluate specifications of the system and for human factor evaluation. The four locations will also use a real-time event recorder system tied to the SFRC 900 MHz system. 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 unless an engineering study determines otherwise.
 - **Increase public education and awareness.** FDOT has prepared and distributed brochures on humped crossings to owner/operators of commercial vehicles, prepared Public Service Announcements and distributed them 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. Fifty-four additional crossings are being reviewed under this program and 89 more have been identified for future assessment.
 - **Limit opening of new crossings.** Section 14-46.003, F.A.C. to be amended to place limits on new grade crossings.
 - **Review Florida's Driver's Manual** FDOT has reviewed the driver's manual and driving test, and made recommendations as to desired revisions concerning rail-highway at-grade crossing safety. These revisions were incorporated in the June 1995 edition of the manual.
 - **Identify "High Profile" Crossings** Four high profile or "humped" crossings in the Amtrak Panhandle Corridor have been scheduled for work through the Rail-Highway Grade Crossing Safety Improvement program. The FDOT developed and adopted advance

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warning signs for these crossings has been followed by a standard sign (W10-5) 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, was struck by a commuter train. Seven of 35 high school students on the bus died in the accident. Following this tragic grade crossing accident, 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 those in which gaps in knowledge 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, for the most part, has already addressed many of the Task Force's final recommendations, this 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 accident 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 clearing house 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, unless an engineering study should determine otherwise. A railroad preemption study was conducted at all state road crossings to accommodate crossings within 500 feet of intersections with traffic lights. The FDOT has included fifteen 200-foot to 500-foot locations in its 1998/99 Rail Highway Grade Crossing Safety Improvement Program using Section 130 funds to complete the work.

The Rail Office will coordinate with affected offices to address the storage area distance between railroad tracks and adjacent parallel roadways to ensure that existing storage space is adequate, and that sufficient storage space is a consideration early in the planning and design process of new facilities. Special emphasis will be given to locations with STOP sign control at highway-highway intersections.

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. All identified 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, operating equipment, hazardous materials and operating practices for compliance with appropriate safety regulations. The FDOT has adopted by rule the federal railroad safety regulations found in Title 49, Code of Federal Regulations, Parts 212 through 240.

Seven inspectors in four disciplines are employed by FDOT to inspect the Florida rail system. There are two track inspectors, two motive power and equipment inspectors, two operating practices inspectors, and one signal and train control inspector operating out of district offices around the state. All are certified by the FRA as inspectors in their respective disciplines. During the summer of 2000, there was an executive review decision toward smaller and more efficient government of many programs within FDOT. Therefore, upon resignation of the hazardous materials inspector in August 2000, a decision was made to reduce the scope of the program by eliminating these inspections and not to fill the vacant position. The process to rescind the statutory authority through Legislative action for rail hazardous materials inspections has been initiated.

Annually, these inspectors perform safety inspections on 5,000 miles of track, 3,000 turnouts, 14,000 freight cars and 500 locomotives, and observe 1,000 operating practices. Inspections of hazardous materials shipments were initiated in the spring of 1996. During 1999, inspections were made of over 1,600 shipments and almost 175 facilities that handle hazardous materials were visited. Signal inspection commenced in mid 2000 after the recently hired inspector was certified by the FRA. All inspections supplement those conducted by the railroads, which have the primary responsibility and liability for safe operations.

Each inspector records conditions not meeting the minimum safety standards (defects) for his discipline. Should the defect not be corrected in a timely manner, or should it present an

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immediate safety hazard, the inspector will recommend a violation which constitutes a civil penalty against the railroad. Violations are submitted to the FRA for review and, if acceptable, transmitted to the offending railroad for collection of the appropriate penalty. The FRA also employs its own inspectors who each cover a much larger area than the State of Florida.

Safety Assurance and Compliance Program

During 1994-95, FRA developed the Safety Assurance and Compliance Program (or SAC-P) approach to monitoring railroad safety industry-wide. Under this program, the FRA works in conjunction with labor unions, local railroad management and others using teams of inspectors to identify and eliminate the root causes of safety problems across an entire railroad. Previous routine isolated inspections did not reveal the root causes or extent of a problem. Under SAC-P, the teams of inspectors make more comprehensive inspections and analyses of problems, addressing safety issues that may not necessarily be covered by Federal Regulations. Depending upon what is discovered during a SAC-P, the results are shared with the highest management of the railroad and action plans are developed and committees are formed to address these more system-wide problems. Normal inspections are a routine part of a SAC-P on a particular railroad. However, concentrated inspections can reveal trends and wide-spread problems. Violations also continue to be documented and written. As home state to one of the now four super railroads (CSXT, NS, BNSF and UP) in this country, Florida's state inspectors have had an active role in a very extensive SAC-P being conducted on CSXT, primarily concerning track conditions and locomotive-related issues.

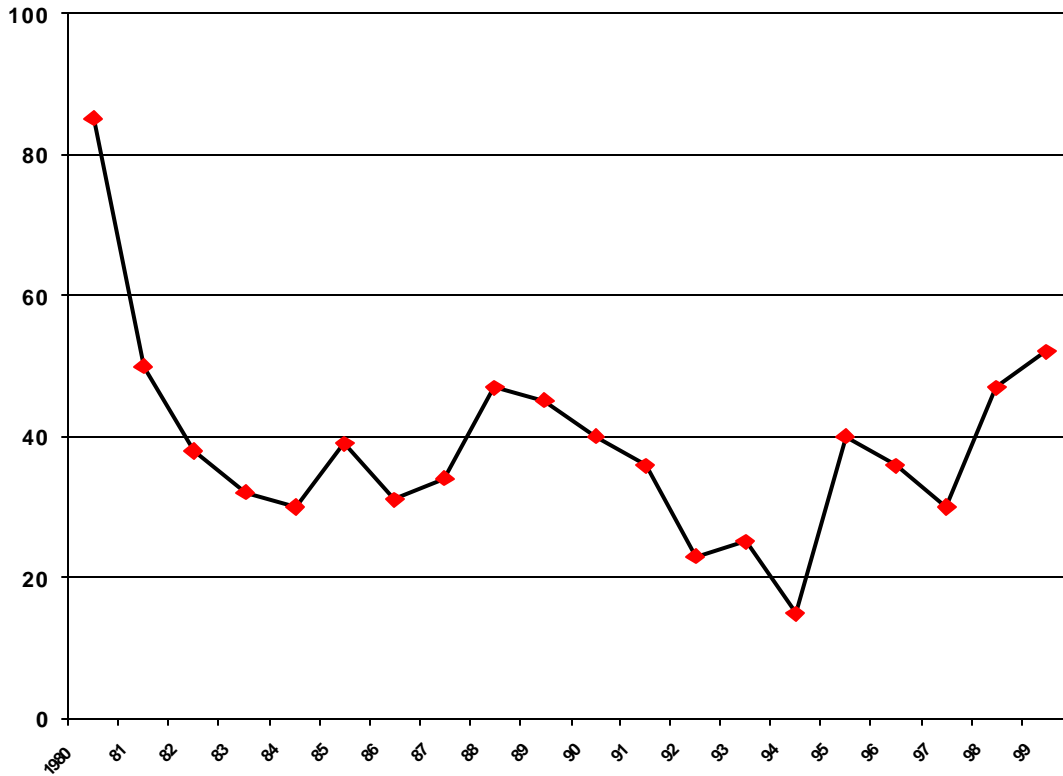
Also SAC-P's have been completed on the Florida East Coast Railway in 1995 and Tri-Rail in 1996-97. Follow-up mini-assessments are conducted as necessary focusing on specific issues. A more intensive SAC-P on the Florida East Coast Railway was initiated in Spring 2000. Since the FEC operates wholly within the State of Florida, all of Florida's inspectors are active in this SAC-P.

Exhibit 4-4 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

Rail Safety

**Exhibit 4-4
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

Rail Safety

average of 34 per year over the last 10 years, most of which occur in industrial yard tracks and result in little damage. Derailments have been on the increase, however, over the last couple of years.

CHAPTER 5 RAIL-SEAPORT/INTERMODAL

International trade is now Florida's leading industry, and the State's fourteen deepwater seaports, whose locations are shown in Exhibit 5-1, have been instrumental in that growth. This chapter discusses the significance of that 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.

International Trade

In 1999, Florida set a new international trade record of \$70.5 billion¹ and it is forecast to rise to \$146 billion by 2008. However, Florida imports exceeded exports for the first time in a decade.

Florida's global trade markets encompass the Far East, Europe, the Caribbean, Central America, and South America. The State's leading trading partners are Latin America, and the Caribbean. Of Florida's international trade, approximately two thirds of it moves through its seaports. In terms of tonnage, the ports handled approximately 100 million tons annually during the early 1990s. Seaport tonnage rose to around 110 million tons per year during the last five fiscal years and is forecast to increase to 140 million tons by FY 03/04.

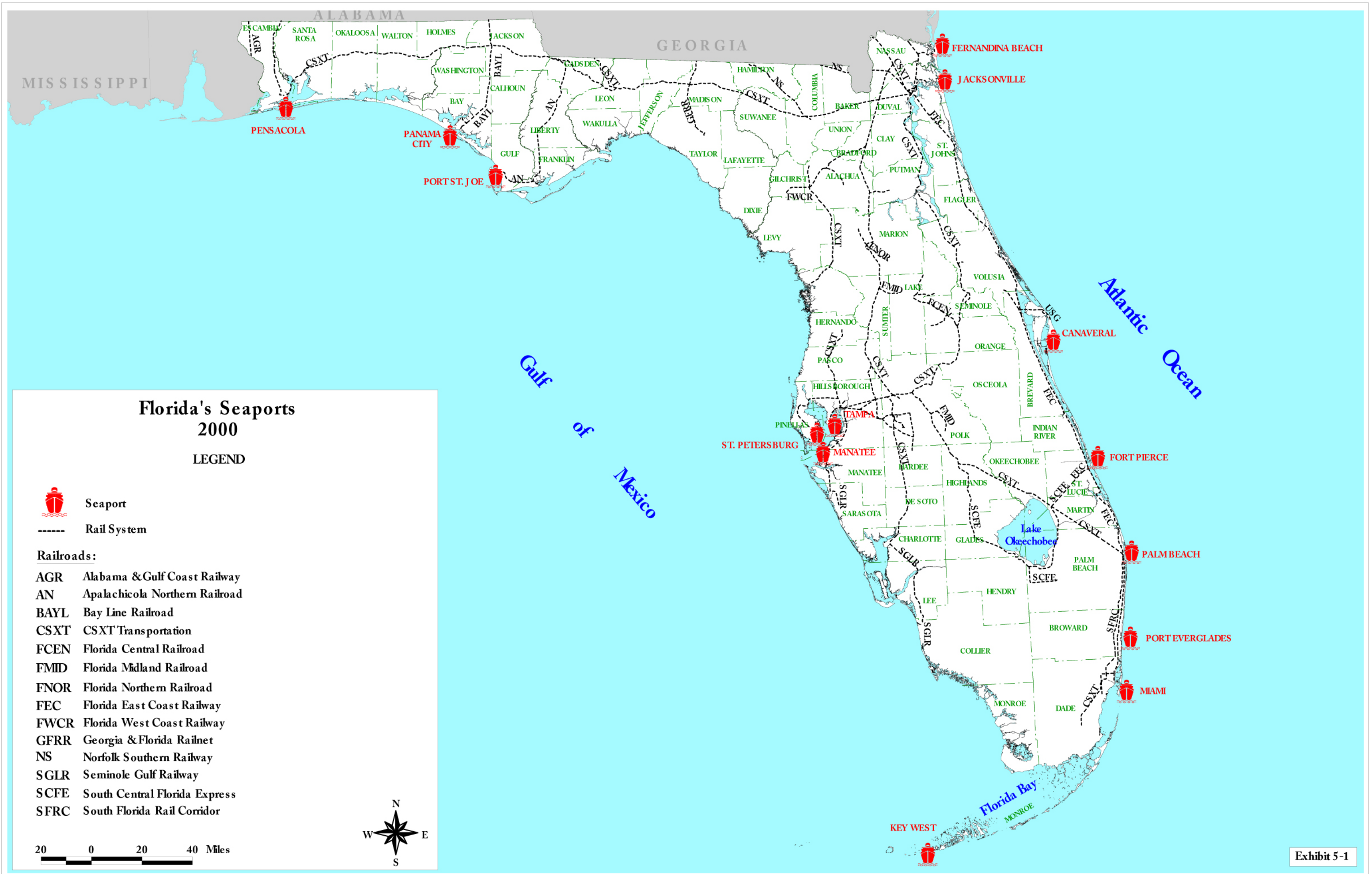
The growth in containers handled at Florida's seaports has been much more spectacular - from just under a million TEUs² in FY 89/90 to 2.5 million in FY 98/99, an increase of over 250 percent for the decade. The forecast for FY 03/04 is 3.6 million.

Florida's Long-Term Intermodal Role

Connected by the rail system as well as the roadway network, the state's seaports provide the distribution links for markets to the north, south, east, and west. To keep those

¹ Data in this discussion was taken from "A Five-Year Plan to Accomplish the Mission of Florida's Seaports" 1999/2000 – 2003/2004, Florida Seaport Transportation and Economic Development Council. (FSTED).

² Twenty-foot equivalent unit (container).



markets and capture new ones requires the seamless and integrated intermodal transportation system needed to move goods and people from north to south and south to north along an efficient distribution axis. As an added benefit, with the landside transportation infrastructure in place for international commerce, domestic economic development programs will also thrive as domestic industries typically require the very same intermodal transportation system essential to international trade.

Florida has a singular opportunity in the next several years to play an even larger part in expanding international trade by becoming the distribution axis for the hemispheric flow of goods, from Canada to Argentina, as the free access trade system initiated through NAFTA and envisioned at the 1994 Summit of the Americas becomes a reality. The characteristics of Florida's existing trading patterns support the feasibility of achieving this 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 the south in Central America and the Caribbean.

In the next several years,

- The free access market from Canada to Argentina is expected to become a reality;
- America's exporters will be looking to send products to the fastest growing regional market in the world -- the Americas;
- The reopening of Cuba to free-trade status is expected to become a reality.
- Manufacturing in the Americas will grow, using inexpensive labor and production resources.

- Florida's ports will continue to develop as transshipment markets for the new super port in Freeport.³

It then follows that Florida's transportation system -- with long-haul railroad service to complement on-port and near-port intermodal container transfer facilities and with adequate road access -- will be the essential core of a two-way delivery system for north-south and south-north trade. Both for Florida's bulk-oriented seaports, traditional users of rail, and for the rapidly expanding container seaports, rail transportation is expected to become more important than ever in determining Florida's competitiveness in global markets.

Railroads to transport passengers as well as freight is also expected to become increasingly important to Florida's seaports -- and to the entire State. Seven of Florida's fourteen seaports offer cruise services. Florida seaports had 9.9 million passenger embarkations and disembarkations in FY 98/99 with FY 03/04 totals forecast to be 17.1 million. The state's cruise ports remain the most popular with over 50 percent of the total capacity in the industry. With new large-capacity cruise ships coming on line in the next few years, many seaports are looking to rail connections to transport their growing numbers of cruise passengers to and from local airports.

Strategic Investment Plan

Recognizing the importance of preparing to meet the long-term landside access needs of the seaports throughout the state, FDOT partially funded the *Florida Seaports Landside Access Study*.⁴

The study identifies and prioritizes the integrated intermodal needs of Florida's seaports critical to commerce so better informed investment decisions can be made at the State and federal levels. While that document addresses all aspects of landside access to seaports, its

³ 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.

⁴ *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.

approach to the specific rail needs of the seaports is particularly relevant to this *Florida Rail System Plan*.

The *Landside Access Study* expands the information provided in the annually updated *Five-Year Plan to Accomplish the Mission of Florida's Seaports* (Florida's Seaport Mission Plan). It is also envisioned as complementary to the 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. The *Landside Access Study* is also intended to help link the implementation of the defined intermodal transportation improvement program to federal TEA-21 opportunities.

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 Apalachicola Northern, respectively) and the larger CSXT.

All of the seaports that depend on rail service experience to different degrees 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. Seaports such as New Orleans, Houston, Savannah and Charleston are all committed to improving their rail capabilities and can be expected to capture greater shares of Florida's markets if the State's rail system is not responsive to the realities of today's maritime climate. Some of the maritime factors to be considered are contained in the following paragraphs.

Container Ship Sizes - Container ships are getting larger. Some of the largest now carry 4,000 to 5,000 TEUs. The *Regina Maersk*, with a capacity of 6,000 + TEUs, called

Southeastern ports in 1998, and even larger ships are planned -- six container ships with capacity for 6,674 TEUs are on order. To accommodate these ships efficiently, the essential portside requirements are deeper water and faster-moving container cranes with a longer reach along with berths that can support them. But 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, they require unimpeded rail connections. In the latter case, this means on-dock or near-dock rail, as few as possible grade crossings and, increasingly, 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 these bigger 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.

Trading Patterns - Large railway eastbound-westbound intermodal flows of traffic from expanded West Coast ports and the creation of intermodal landbridges have resulted from increased trade with Pacific Rim countries. The expansion of economies in Central and South America is expected to make sizeable volumes of goods flow from north to south and south to north. The soon-to-be-released *Latin American Trade and Transportation Study* (LATTS)⁵ will provide more insight into trade flows. The recently released *Florida Multimodal Trade Corridor Assessment Study – Phase I* reveals major truck flows from international trade to lie in the I95 corridor (its full length in Florida), I75 from Tampa north; the Florida Turnpike, and I10 (its full length, but more heavily concentrated west of the Florida Turnpike). Major rail flows exhibit much the same pattern.

⁵ Being prepared for the Southeastern Transportation Alliance in cooperation with the Federal Highway Administration by Wilbur Smith Associates in association with DRI, VZM/TranSystems, et. al.

⁶ Prepared for FDOT by Wilbur Smith Associates and Gee & Jenson with assistance from Kaiser/Earthtech, February 2001.

Seaport Intermodal Improvements

Significant strides have been made in the effort to link the seaports not only with the statewide road and rail system, but also with other modes of transportation such as air and high speed rail.

South Florida - As noted above, all of the South Florida seaports -- the Port of Miami, Port Everglades and the Port of Palm Beach -- are expanding their container-handling capabilities to supply Florida's markets to the south with consumer goods coming from Europe and Asia. These seaports are developing the infrastructure needed to receive some of the larger container ships now crossing the Atlantic and Pacific Oceans.

The Port of Miami's latest facility expansion includes four new large reach container cranes, 450 additional linear feet of berthing and 75 acres of container yard capacity, three rubber-tired gantry cranes, and dredging of the south channel to accommodate the arrival of megaships currently under construction. Anticipated facility upgrades include the development of an off-site intermodal container transfer yard for long-haul rail service with improvements in both rail and truck connections between the port and the facility, and the development and construction of a state-of-the-art gateway complex with technologically-advanced hardware and software capabilities. Seaport access improvement projects planned for construction in the near future include safety and traffic operational improvements to truck, vehicular, and pedestrian access routes to the Port.

Port Everglades handled 715,163 TEUs of containerized cargo in FY 1998/1999. Facility upgrades to accommodate new tenants and market growth at Port Everglades include the expansion of the Southport container terminal and plans for improved container rail service to an expanded intermodal container facility. Broward County and the port have acquired 271 acres of property adjacent to the Southport terminal for container terminal expansion.

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 on smaller ships able to access and discharge goods in ports with less developed infrastructure. Opening of the

Freeport offshore transshipment hub in the Bahamas is expected to intensify this role. In this capacity, the Port of Palm Beach is anticipating an increased dependence on the regional intermodal transportation network, and also on long-haul rail service. The elevation of 2,400 feet of U.S. 1 as it traverses the Port ("Skypass" project) has been completed and not only provides an increase in contiguous yard space, but facilitates rail movements as a major at-grade crossing is eliminated. In anticipation of this opportunity, the Port's rail system, both on- and off-port, is being upgraded.

Mid Florida - Port Canaveral, one of the few seaports in Florida not served by rail, is nevertheless affected by the growth in the cruise industry and the potential impact on cruise tourism of the various ground transportation proposals. With the completion of a megaterminal capable of handling the latest generation of megaships and the signing of a lease terminal agreement with the new Disney cruise line as well as the anticipated reactivation of the World City project to build a "mega-megaship," the Phoenix, Port Canaveral will continue to be a significant player in the development of statewide cruise tourism.

Another mid-Florida port, the Port of Fort Pierce, is rail served by the FEC. Currently it is focused on highway improvements to accommodate anticipated future expansion at the port.

Northeast Florida - With three line-haul railroads, the Port of Jacksonville is the Florida seaport with the best rail service. Nevertheless, it cannot always rely on this diversity of service to compete effectively with its neighbors to the north. As the Port is experiencing record cargo growth, efficient and cost-competitive rail service is more important than ever. This service must be adequate to handle Jacksonville's growing volumes of container cargo (772,000 in FY 1998-1999) as well as the increasing numbers of automobiles. JAXPORT rail improvements are occurring at both the Talleyrand and Blount Island Terminals. JAXPORT also plans to be a major participant in the Freeport transshipment trade.

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 35,000 TEUs, needs rail and gate improvements 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 container storage, facilities for refrigerated containers, and cold storage. Additional property has been acquired for both cruise and cargo operations including an intermodal container yard as part of a long-range plan.

The Port of Tampa, Florida's largest bulk port based on volume, handles 52 million tons of cargo annually, anticipates a variety of rail improvements extending on-dock rail to several of its berths, and to develop a full-service container yard. These improvements are planned to attract more of the high-value general cargo business that provides a diversified revenue base complementing the Port's traditional bulk cargo.

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 Apalachicola Northern Railroad and Panama City by the Bay Line. Both connect with CSXT which 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 would like to extend existing on-site trackage to create loop tracks.

The Seaport Intermodal Planning Process

Since 1990, when the Florida Seaport Transportation and Economic Development Program (FSTED), and its implementing body, the FSTED Council, were created, the seaports, have worked with the Florida Legislature and agencies to obtain adequate funding for on-port capital improvement projects and intermodal transportation system development consistent with Port Master Plans and appropriate local government comprehensive plans.

Current Programs - 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-FY1999 has contributed over \$150 million in STTF funds (matched 50/50 by the seaports) for over 100 seaport improvement projects.

More recently, in June 1996, under Florida Statutes Section 320.20 (3), the original FSTED annual allocation to the seaports of \$10 million (an additional \$2 million annually 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, is now being implemented through the newly created Florida Ports Financing Commission.

In 1999, another \$10 million annual allocation (matched 75-25) was bonded for 50+ port access projects under FS 320.20(4). This program has generated approximately \$160 million for seaport access project purposes.

The State has also programmed \$11.6 million in port access funds (FY1993-FY1999) targeted to priority rail and other access projects that will improve transport efficiencies should the embargo of Cuban trade be lifted. Another \$100+ million has been budgeted over that five-year work program to improve transportation access to and between the State's airports and seaports through the FDOT's Intermodal Development Program.

Additional funding is available from the newly created Transportation Outreach Program (TOP) discussed earlier which has replaced the Intermodal Development Program. Seaport projects which improve cargo and passenger movements are eligible as are landside rail and highway projects which might be associated with or part of the overall improvement.

Future Approaches - With respect to the essential development of an intermodal infrastructure to speed the landside movement of goods and passengers crossing Florida's docks, the FSTED Council is continuing to promote the priority funding of seaport needs. The reauthorization of ISTEA, TEA-21, offers several funding programs to address these needs. At the State level, FDOT, as part of its continuing efforts to establish the most productive ways of integrating the seaports into the statewide transportation system, has identified and mapped the critical components of the National Highway System and its key connectors on which seaports depend. This effort is continuing with the development of performance

indicators at the District level to determine priority improvement needs, and is being taken one step further in the *Landside Access Study* through the identification of constraints to local and regional freight activity patterns.

The railroad access needs of Florida's seaports are being addressed on several levels. First, at the State level, objectives such as those suggested in the *2020 Florida Transportation Plan* and identified in 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* which promotes the achievement of "a statewide interconnected transportation system that enhances Florida's economic competitiveness."

Second, at the individual seaport level, the specific rail infrastructure needs of each port, which are now being assessed as part of the FDOT's Intermodal Planning Process and the *Landside Access Study*, are being integrated into an overall rail improvement program. The importance of efficient intermodal access to each port warrants the inclusion of priority projects in the State planning process, for funding independent of FSTED matching allocations for on-port expansion and development projects. These priority projects are identified in the *Landside Access Study* and the FDOT is actively considering how to fast track implementation of the identified priority projects.

Accelerating Demand - Reflecting forecasts that container demand in the Americas will double or even triple into the next century, it is expected that the number of containers passing through Florida's seaports will also double by 2003, approaching 3.6 million TEUs approximating the current volumes being handled at the top three US ports. This potential volume underscores the urgency of expanding the capacity at the State's seaports and improving landside transportation, particularly railroad capacity.

As part of its comprehensive intermodal transportation system planning process, FDOT, with the assistance of the seaports, has assessed the regional origins and destinations of cargo moved by truck and rail through the ports. The 1995 assessment of regional origins and destinations of cargo moved by truck and rail through several of Florida's seaports showed significant patterns that will be useful in that analysis, and will help the State better serve its seaports in developing the required intermodal infrastructure. The *Florida*

Multimodal Trade Corridor Assessment Study – Phase I has confirmed and updated these needs.

Funding Needs

As discussed in the *Landside Access Study*, and updated in the *Seaport Mission Plan*⁷, the intermodal rail improvement needs identified by the seaports over the five-year period total approximately \$85 million, as summarized in Exhibit 5-2. Representative projects range from the previously described development of major intermodal container transfer facilities to track improvements, railroad realignments and railroad extensions. Seaports with significant cruise activities are also studying the feasibility of developing airport/seaport passenger rail links, as discussed earlier in this Chapter, and in Chapter 3. Many of these projects have not yet been incorporated into the FDOT work program as they represent identified needs rather than contractual commitments.

Exhibit 5-2 SUMMARY OF INTERMODAL RAIL NEEDS FY 1998/99 - 2002/03 (In Thousands of Dollars)	
PORT	FIVE-YEAR PROGRAM COSTS
Fernandina	\$2,100
Jacksonville	2,500
Manatee	16,250
Miami	40,220
Palm Beach	13,956
Pensacola	2,000
Tampa	8,000
TOTAL	\$85,026

Source: *Seaport Mission Plan, 1999/2000 – 2003/2004, Table B-3.*

⁷ *A Five-Year Plan to Accomplish the Mission of Florida's Seaports, 1999/2000-2003/2004*, Florida Seaport Transportation and Economic Development Council.

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 the automobile 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), 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. ISTEA established a rigorous set of planning requirements to ensure that national as well as local objectives were met in developing long-range plans and transportation improvement programs. These planning requirements were reemphasized within TEA-21.

Future Directions

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.

Most 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 were charged with developing an action plan addressing freight, operational, institutional, and infrastructure issues for inclusion into Florida’s first ever *FY2020 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, while enhancing economic competitiveness and the quality of the environment.

Future Directions

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 Quality of Life in Florida

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 rail planning are contained in Exhibit 6-1. It also contains strategies adopted by the Rail Office.

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 2000 Short Range Component of the FTP, however, had not been adopted at the time this document was printed.

Rail Office Strategies and Initiatives

While the FDOT Rail Office embraces the long-range objectives of the FTP, it has 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.

Rail Office Strategies - In addition to the strategies depicted in Exhibit 6-1, 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.

Future Directions

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

Goal	Objectives	
	Long Range	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. • Improve the safety of non-highway modes by continuing to conduct annual safety inspections and increasing passenger safety through the safety certification process and any other methods.
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 and other techniques. 	<ul style="list-style-type: none"> • Continue to identify and implement practices that reduce the time and cost of preserving the state transportation system including efficiency measures. • Conduct annual performance reviews of Florida's public transit systems.
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. • Continue to identify port, airport, rail and transit needs. • Work with transportation authorities to implement improved regional transit and rail services. • Progress the recently completed comprehensive analysis of need and implementation opportunities for intercity passenger rail services. • Improve ground access routes to major intermodal facilities, freight distribution centers and military installations.
4 A Transportation System that Enhances the Quality of Life in Florida	<ul style="list-style-type: none"> • Design the transportation system in a way that sustains human and natural environments and conserves non-renewable re-sources. • Increase access to and use of alternatives to the single-occupant vehicle. 	<ul style="list-style-type: none"> • Continue to support and improve the South Florida Rail Corridor. • Promote modal alternatives and connections • Design multi-purpose corridors that use medians for intercity or regional rail lines, and have designated lanes for specific uses. • Work with MPOs and local governments to fund transportation alternatives.

Source:

1. 2020 Florida Transportation Plan
2. FDOT Rail Office.

Future Directions

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;

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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. 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 railroad companies 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.

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 Intermodal System of Statewide Significance and to private

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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 quality of life in Florida.

Strategy: Continue efforts to expand rail passenger service by supporting local efforts to establish local and regional passenger transportation, supporting and working with Amtrak 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.

State Initiatives

The State of Florida had taken the lead in meeting these goals even prior to enactment of federal intermodal legislation by developing state-funded programs addressing a majority of the above referenced strategies. Extensive public outreach efforts have been undertaken to solicit citizen input for developing the *2020 Transportation Plan* (Florida's transportation element of the *State Comprehensive Plan*), annual development of the FTP Short Range Component, and the FDOT Five Year Work Program. Additionally, the Commission to Study the Safety and Security of Railroad-Highway Grade Crossings sought public input and documented those recommendations for improving the rail-highway interface conflict. Input and assistance were also provided to the Florida Freight Stakeholders Task Force which continues with the processes and program it developed. Through these outreach efforts and given existing statutory program mandates, the FDOT has already begun targeting resources for intermodal passenger and freight priorities, port-rail access, rail-highway grade crossing safety and intermodal terminal planning and construction.

Safety - Due to ever increasing highway vehicular volumes, more frequent rail passenger and rail freight traffic, and increasing train speeds made possible by industry technological improvements,

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the rail-highway grade crossing and other rail-related safety issues have become and will continue to be a focal point for the FDOT. Emphasis will continue to be placed on protecting and/or eliminating at-grade crossings where feasible. This effort will be accomplished through FDOT's Highway/Rail Crossing Corridor Safety Improvement Program, implementing the recommendations of the Commission to Study the Safety and Security of Railroad-Highway Grade Crossings, continued participation in the TEA-21 1103 High Speed Corridor Improvement Program, maintaining the Railroad Safety Inspection Program, and the other initiatives described in Chapter 5.

Public Investment – Florida's Transportation Outreach Program, rail-related seaport capital improvements funding and the Department's *FY 2020 Intermodal System Plan*, are the key programs to meet the rail objectives associated with this goal. The state programs are discussed in Chapters 3 and 5. Exhibit 6-2 contains a summary of known capital needs contained and discussed in more detail in preceding Chapters. There are many needs in other areas such as rail commuter and safety yet to be fully quantified.

Exhibit 6-2 RAIL-RELATED CAPITAL NEEDS

<u>Need Category</u>	<u>Estimated Amount (millions)</u>
Short Line & Branch Line Rehabilitation/Upgrading	\$134
Intercity Rail Passenger ¹	354-485
Seaport Rail Intermodal	85
TOTAL	\$573-\$704

1) Phase 2 of Vision Plan

Interconnected Transportation System - With the exception of the high-speed initiative, the objectives are similar and would be met through the same programs as those of the second goal -- protecting the public's investment in transportation. The high-speed initiative is discussed in detail in Chapter 4. As has been the case in other such initiatives throughout the U.S., the level of public funding vis-a-vis funding needs has been the central issue. The FDOT, through the action plan developed by the Freight Stakeholders Task Force, will improve and enhance freight intermodal development for both the private and public sectors.

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Travel Choices - The FDOT has been actively pursuing this goal's objective as discussed in Chapters 3 and 4. Chapter 3 also describes a number of on-going efforts for new rail-service starts.

APPENDIX A

**Note: Map Not
Included**

**Request hardcopy from
FDOT**

APPENDIX B

APPENDIX B

RAIL ASSISTANCE PROJECTS

As part of its rail planning function, the FDOT responds to requests for rail project evaluations from District offices, local communities and the state's railroads. The projects are screened by the Rail Office and those eligible for assistance under the various programs available are pursued until it is determined if they are viable projects in that they serve a public purpose and that the benefits to be generated are likely to exceed the probable costs.

One program which has been used extensively in the past is the federal Local Rail Freight Assistance (LRFA) Program. It was devised originally as a means to assist in preventing abandonment of lightly used rail lines or to mitigate the impacts of abandonment. The FDOT has participated in this federal program since its inception in 1978 and approximately \$6 million in federal funds have been used in Florida rail rehabilitation projects.

This federal funding source has been used as "seed" capital, primarily to assist small rail carriers on essential light density lines. The funds have previously been loaned and matched by recipient carriers on a 70/30 basis. A subsequent restructuring of the LRFA Program 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 is presently in the process of completing projects which will use the last of its remaining LRFA funds.

Exhibit B-1 lists \$4.3 million in project requests submitted by seven of the state's short line/regional railroads. The projects were analyzed during preparation of the 1995 Amendment to the *1992 State Rail Plan Update* and the *1998 Florida Rail System Plan*, and determined to have benefit-cost ratios in excess of 1.0 making them eligible for LRFA funding. The exhibit depicts the proposed distribution of the State's remaining \$1.6 million in LRFA funds.

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**Exhibit B-1
FINAL FLORIDA LRFA PROJECT FUNDING**

<u>RAILROAD</u>	<u>ORIGINAL PROJECT COST ESTIMATE⁽¹⁾</u>	<u>ALLOWABLE PROJECT COST</u>	<u>LRFA FUNDING</u>
Florida West Coast	\$438,804	\$438,804	\$219,402
Florida Central	\$870,774	\$470,774	\$235,387
Alabama & Gulf	\$91,700	\$91,700	\$45,850
Florida Midland	\$590,000	\$590,000	\$295,000
South Central Florida Express	\$1,280,000	\$900,00	\$450,000
Bay Line	\$1,044,185	\$635,580	\$317,790
TOTALS	\$4,315,463	\$3,126,858	\$1,563,429

Note: LRFA Funds Available = \$1,563,429

1) Amount for funding may be less than costs used in analysis.

Source: FDOT Rail Office

The projects are described in the following paragraphs.

Newberry to Trenton

The Florida West Coast Railroad (FWCR) was formed from lines spun off by CSX Transportation (CSXT) in 1987. At one time it was 45 miles long and ran from Newberry to Wilcox where the line split with branches to Cross City and Shamrock to the north, and Chiefland to the south. The carrier has now retrenched to a line running from Newberry in Alachua County, 13.4 miles to Trenton in Gilchrist County where it now terminates.

Rail Use – Approximately 1,000 cars per year are handled over the line for four rail users.

Project Description – It is proposed to rehabilitate eight miles of the line between Mile Post (MP) 724 and MP 732 by replacing approximately 1,000 ties per mile, adding ballast, reworking grade crossings and surfacing the track. A small amount of rail would also be replaced and rail anchors added throughout. The work effort will result in approximately four miles of Class 2 track and four miles in stable Class 1 condition.

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Project Cost – The total cost of the rehabilitation effort is estimated to be \$438,804 which includes an allowance (credit) for materials released. The estimated net liquidation value of the line is \$63,369 which must be added to the project cost as it represents an asset which will be tied up if operations are continued over the line. Thus, the total project cost is \$502,173.

Toronto to Winter Garden

The 12-mile line from Toronto to Winter Garden is a branch of the Florida Central Railroad (FCEN) which was created from a CSXT spin-off in 1986. The line segment is located entirely in Orange County and serves the communities of Clarcona and Ocoee as well as the terminal points.

Rail Use – There are six rail users located on the line segment. The principal commodities are citrus products, fertilizers and fertilizer materials, and scrap paper. Traffic volumes are just over 800 carloads per year which has been fairly consistent over the last three years although significant increases are beginning this year and are anticipated to continue in the future. The increases are due to the location of a new customer and a plant expansion by another.

Project Description – Timbering and surfacing of 11 miles of the line (MP F-3 to MP F-14) comprises the proposed project. Twelve rail-highway at-grade crossing surfaces will be reworked in the process. The rehabilitation project will increase the operating speed over the improved segment from 10 mph to 25 mph.

Project Costs – The estimated cost of rehabilitation is \$870,774 which covers cross ties, ballast, surfacing and crossing work for 11 miles of the line. There will not be any salvage materials to credit against the cost. The remainder of the line is in adequate condition for its use as industrial switching tracks. The net liquidation value of the property estimated for this analysis, including track and right-of-way, is \$5.8 million. Thus, total project costs are \$6.7 million.

Clewiston to Lake Harbor

Of the 158 miles operated by South Central Florida Express (SCFE), 103 miles of it were spun off by CSX Transportation in 1990 running from Sebring to the sugar cane fields and refineries south of Lake Okeechobee. The remainder was recently leased from the FEC -- 56 miles of its "K" Line from Lake Harbor to MP 15 near Cana. The railroad splits at Keela Wye with one leg connecting to the Florida East Coast Railway at Cana and the other continuing to a terminus near Okeelanta. That portion of the through route from Clewiston to Lake Harbor, nine miles is the subject of this project.

Rail Use - The line segment is used for traffic of five local businesses plus SCFE and FEC interchange. Annually 2,400 cars move over the branch which will grow to 7,000 in two years due to the development of new business and a change in the routing of some existing traffic.

Proposed Project - The line segment was the subject of a 1997 rehabilitation project in which an average of 950 ties per mile were replaced. The rail on the line is 85-lb., most rolled between 1913 and 1916, which is worn, bent and subject to frequent breaks. A new business is considering location on the line and will ship a substantial amount of traffic if the line is capable of transporting 286,000-lb. loads. It is proposed to relay the track segment with heavier rail both to correct the existing problems and to attract the new traffic movement. Additional selective cross tie replacement will be part of the project as will aligning and surfacing the track.

Project Costs - The cost of line rehabilitation is estimated as \$1,980,501. The cost includes nine miles of rail replacement and timbering and surfacing as described earlier.

West Lake Wales to Lake Wales

The Florida Midland Railroad operates several disconnected CSXT line spin-offs totaling 40 miles in length. One of the segments runs 19.0 miles from its CSXT mainline connection at West Lake Wales to Frostproof. The line passes through Floritan, Lake Wales, and Highland

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Park, all in Polk County. Three and eight tenths miles of the line between West Lake Wales and Lake Wales are the subject of this project.

Rail Use - Five businesses located on the line make use of the rail service provided. Virtually all of the rail traffic on the line is related to the citrus industry. One of the principal shippers is expanding and will increase its rail business significantly.

Proposed Project - Maintenance had been deferred on the line under its former owner and the physical condition had continued to deteriorate. A long-range rehabilitation program was formulated and the initial phase commenced in 1992/1993. A benefit-cost analysis of that effort was contained in the 1992 Amendment to the *1992 State Rail Plan Update*. A component of the long-range rehabilitation plan was to relay the 75-lb. rail between West Lake Wales and Lake Wales to accommodate modern day carloadings. It is this component of the plan which is being proposed now as Phase 2 of the project. The project will consist of replacement of the existing rail with 100-lb. jointed track plus selected cross tie replacement, tie plates, rail anchors, and other track material as needed. The track will also be surfaced throughout the project area.

Project Costs – To the cost of the total rehabilitation effort (including the 1992/1993 timbering and surfacing) is added the net liquidation value (NLV) of the railroad, track and right-of-way. Addition of the NLV increases total project costs to \$4,463,607.

Alford to State Line

The Bay Line Railroad (BAYL) is a Class III carrier which operates a 110-mile main line between Panama City, Florida and Abbeville, Alabama. The railroad connects and interchanges traffic with CSXT in Cottdale, Florida, and with CSXT, Norfolk Southern, the H&S Railroad in Dothan, Alabama. That portion of the railroad running from MP 45.0 near Alford to MP 65.5 at the Florida – Alabama State Line is the subject of this assistance project.

Proposed Project - The track is a single main track laid with 115-lb. rail, basically in good condition, which is welded in some areas and jointed in others. The rail was laid and most ties renewed between 1962 and 1969. The ties, however, are now in poor condition. Many of the ties are left from the original rebuild project and have reached their effective service life.

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The subgrade in locations has springs and water pockets that have contributed to pumping and extremely fouled ballast. The track speed has been reduced from 49 mph to 35/25 mph (varies by segment) and is in danger of being further reduced to 10 mph. One short segment now operates at 10 mph and could shortly be reduced to 5 mph.

A rehabilitation project, actually two different segments, was performed in 1996. By implementing the current proposal, overall operating speeds can be increased over an entire 20.5-mile segment.

Project Cost – The entire project as proposed is estimated to cost \$1,044,185. To this cost is added the cost of those improvements made earlier within the overall project limits - - \$398,612.

Goulding Spur

The Goulding Spur of the Alabama and Gulf Coast Railway is two and a half miles long and is located in the Pensacola Urban area. The Spur is shown in Exhibit 7-7. The Alabama and Gulf Coast operate the former BNSF line, which runs between Kimbrough, Alabama and Pensacola, with trackage rights between Kimbrough and Magnolia, Alabama.

Rail Use - There are currently four active rail users located on the Spur. In total they ship/receive approximately 600 carloads per year.

Proposed Project - The Spur is in poor condition and in need of cross ties. If the condition of the line continues to deteriorate, it will be embargoed.

Project Costs – The cost of line rehabilitation is estimated as \$91,700. The cost includes 1,800 cross ties and 2.5 miles of surfacing. To the rehabilitation costs are added the NLV of the line.

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.

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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.

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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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