



# **SOUTH FLORIDA EAST COAST CORRIDOR TRANSIT ANALYSIS STUDY**

**F.M. NO. 417031-1-22-01**

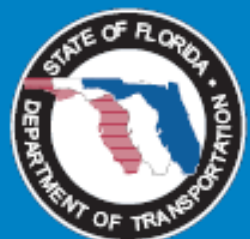
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## ***Phase 2 Initiation Package***

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## **INTRODUCTION**

In accordance with New/Small Starts policies and procedures, the Florida Department of Transportation (FDOT) has prepared this Initiation Package to inform the Federal Transit Administration (FTA) about Phase 2 of the South Florida East Coast Corridor Transit Analysis (SFECCTA) study.

This document provides an overview of the total project approach, efforts undertaken to date, and the efforts to be taken during Phase 2 to improve transit service in the South Florida East Coast Corridor. It describes the corridor and its specific transportation constraints and problems, and it identifies the purpose and need for assessing alternative improvements. To guide the assessment of those alternatives, an evaluation framework is described; including key measures that will be used to determine which alternatives best meet the purpose and needs of the corridor. Concepts for addressing corridor needs are also identified, building on work that has been accomplished in the previous study phase. These concepts include alignments and modes, as well as suggested station types and service needs, and will be further developed and refined in this current phase of work. Finally, the process for completing the work in the third study phase is described.

## **PROJECT BACKGROUND**

The Florida East Coast (FEC) Railway was and is a unique transportation asset that should be evaluated and developed in the context of regional transportation issues, priorities, and needs. Reintroducing passenger transit service on the FEC Railway has been of public interest since the late 1980's, and even more so since 2004 when the Florida East Coast Railway Board of Directors indicated willingness to consider utilization of the 85-mile continuous corridor for public use and called for a master plan to be developed.

The FDOT initiated the SFECCTA study in December 2005 as a multi-phased Alternatives Analysis (AA) employing a Tiered Programmatic Environmental Impact Statement (PEIS) approach to transportation and environmental matters. A number of decisions were reached in Tier 1 including selection of a preferred general alignment; however, a complete Locally Preferred Alternative (LPA) had not been identified since a broad range of modal alternatives remained under consideration. Consequently, FDOT and FTA agreed to discontinue the tiered process and instead move forward using the early scoping/alternatives analysis process contained in the National Environmental Policy Act (NEPA). Phase 2, was initiated following the early scoping-FDOT Efficient Transportation Decision Making (ETDM) process. Environmental data gathering and screening continues, but a NEPA Draft Environmental Impact Statement (DEIS) will be prepared in Phase 3 for

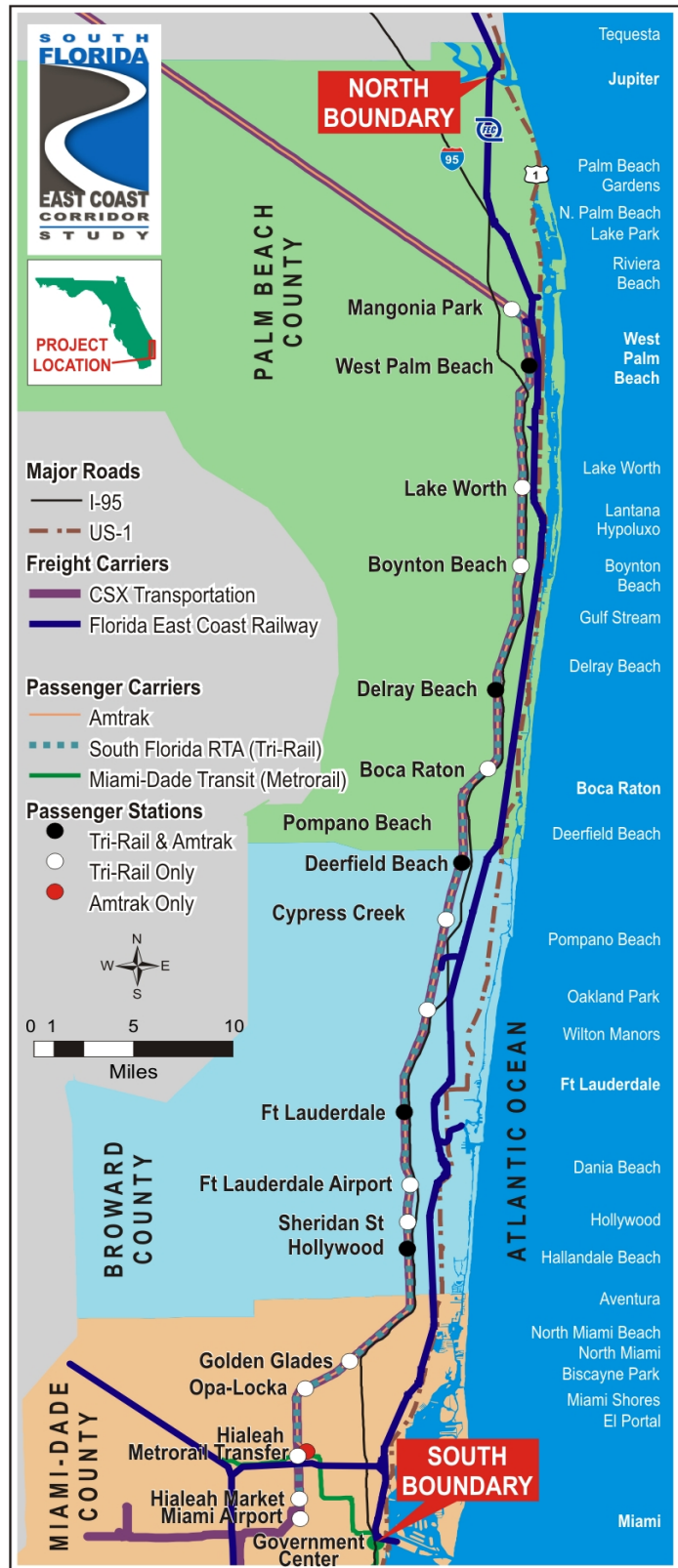
proposed actions defined at the conclusion of Phase 2.

This change in approach to project development resulted in the Tier 1 Final PEIS document becoming an interim planning report. This was renamed the Final Conceptual Alternatives Analysis/Environmental Screening Report (AA/ESR). An early scoping notice announcing the availability of the Final Conceptual AA/ESR and the initiation of Phase 2 was published in the Federal Register on January 13, 2009 and in the Florida Administrative Weekly on January 16, 2009.

### CORRIDOR OVERVIEW

The SFECCTA study area extends 85 miles along the FEC Railway corridor from Miami's Central Business District (CBD) in Miami-Dade County north to the Town of Jupiter in Palm Beach County (**Exhibit 1**). When combined with potential east/west connections to Tri-Rail, the project corridor exceeds 100 miles in length. This corridor traverses the highly urbanized eastern spine of the tri-county (Miami-Dade, Broward and Palm Beach Counties) area of Southeast Florida. This area includes three major cities (Miami, Fort Lauderdale and West Palm Beach) as well as 25 smaller municipalities.

**Exhibit 1. Project Study Area**



The study area, which is east of and parallel to Interstate-95 (I-95), is almost entirely developed for the full length of the corridor. Additional development outside of the project corridor is geographically constrained by the Atlantic Ocean to the east and the Everglades to the west. Until the economic downturn, this study area was experiencing dramatic levels of high-density redevelopment due to the age of the building stock and the high value of land. Redevelopment in the study area is expected to continue in compact, high-density land forms upon recovery of the economy.

## **PURPOSE OF THE PROJECT, TRANSPORTATION PROBLEMS, AND NEEDS**

The purpose of the SFECCTA Study is to evaluate alternatives to improve north-south mobility for the citizens of southeastern Florida along the US 1/FEC Railway corridor through the redeveloping coastal cities of Palm Beach, Broward and Miami-Dade Counties. The project emerging from this study will supplement highway capacity and improve the quality of transit services, especially for those who are dependent on transit. This project will also accommodate robust future growth in population and employment consistent with regional land use objectives. The project will consider high capacity, high-quality premium transit service designed to provide an alternative to driving congested roadways. The project will improve mobility by providing direct access to existing and planned development along the economic spine of South Florida.

Environmental goals are being achieved by concentrating development to the east of I-95, rather than between I-95 and the Everglades. High quality transit service along the FEC Railway corridor will support development activities in Community Redevelopment Areas (CRA) by providing travel choices.

### ***Need for the Project***

The project is needed to address:

- **Population and Employment Growth:** Southeast Florida has been growing rapidly due to in-migration and high birth rates. The region is expected to continue to grow in the near future. By 2030, the number of households within one mile of the SFECCTA corridor is projected to increase by 36 percent compared to 28 percent for the overall tri-county area. Similarly, employment along the SFECCTA corridor is projected to witness a 29 percent increase compared to 26 percent for the rest of the tri-county area. The SFECCTA corridor alone is projected to have more than a million residents and 750,000 employed within one-mile from the FEC Railway centerline. The present transportation system will not meet future needs.

- **Economic Development and Land Use:** Many of the developed areas east of I-95 have buildings that have reached the end of their useful life span.

Investment in premium transit along the SFECCTA corridor combined with new land use and zoning regulations, permitting increased density and mixed-use development, will provide an impetus to redevelopment interests of these areas. Such efforts will support regional policies, such as the state's "Eastward Ho!" initiative, that emphasizes redevelopment and greater density of development in coastal southeast Florida rather than continued sprawl to less developed areas in the west. Currently, all three counties have policies in place to focus future development within the study area. These policies anticipate a complementary increase in mobility for the redeveloping areas.

- **Travel Markets:** The SFECCTA corridor, unlike many transit corridors in the country, has multiple major destinations. The SFECCTA corridor traverses 28 municipalities including three major CBDs (Miami, Ft Lauderdale, and West Palm Beach) and smaller downtowns (Boca Raton, Boynton Beach, North Miami, Aventura, Hollywood, Lake Worth and Delray Beach). These municipalities and their respective downtowns serve as regional and local destinations and tend to attract a large number of trips. In 2030, 17 percent of all trip productions in the tri-county area will be within one mile of the SFECCTA corridor. Similarly, one in every five trips (20 percent) in the tri-county area will have destinations within one mile of the SFECCTA corridor.

- **Mobility and Underserved Markets:** Existing rail transit services do not provide for some mobility needs along the eastern spine of the tri-county region. This spine includes the CBDs of Fort Lauderdale and Miami that are the region's densest centers of employment. Tri-Rail, a commuter rail service that parallels I-95 and is located west of the FEC Railway, was designed to capture auto travelers from I-95 and its surrounding neighborhoods. Tri-Rail serves relatively long trips and provides good connections to the Miami International and Ft Lauderdale/Hollywood Airports and industrial employment centers. Average trip length by auto in the I-95 corridor is 13 miles, less than half the average trip length (28 miles) on Tri-Rail that parallels I-95. This difference in trip length indicates an unmet need to serve shorter trips by transit. A more eastern rail alignment and closer stations/stop spacing will provide such mobility. The SFECCTA corridor, which is projected to have more than a million residents within a reasonable walking and/or biking distance of the FEC alignment, could address the mobility need for shorter trips by transit if a new service with numerous stations were provided.

Proposals to use existing and new track connections between SFECCTA and Tri-Rail will permit Tri-Rail trains to operate over portions of the SFECCTA corridor and vice versa. An integrated system, offering “one-seat, no transfer rides”, could attract more riders than two parallel rail services and connecting buses. More origins and destinations will be served by such an integrated system.

- **Traffic Congestion:** The volume of traffic in the tri-county area is projected to increase by 35 percent between 2005 and 2030, but committed roadway improvements will only result in a 14 percent increase in capacity. Existing north-south highways in the tri-county area, such as I-95 and US 1, are severely congested today and as growth continues, congestion is expected to be more severe. The land in the region is close to built-out making the addition of capacity on existing highways extremely challenging, costly, and often with severe social and environmental impacts. Presently the volume of traffic in relation to the capacity on these facilities results in a high number of traffic accidents and incidents leading to delay and decreased safety. A new premium transit service along the SFECCTA corridor will allow for a safer and potentially faster option to traveling on congested roadways.
- **Transit Service Quality:** Presently most bus transit is slow because it is limited to traveling in mixed traffic on congested roads. Typical bus operating speeds of 11 to 16 mph are not competitive with automobile travel. In addition, bus service is sometimes indirect and infrequent limiting its attractiveness. Since each county operates its own bus system, passengers sometimes must transfer between buses at the county lines to continue trips. A Year 2006 on board survey found most bus riders do not have a car to make their trip.

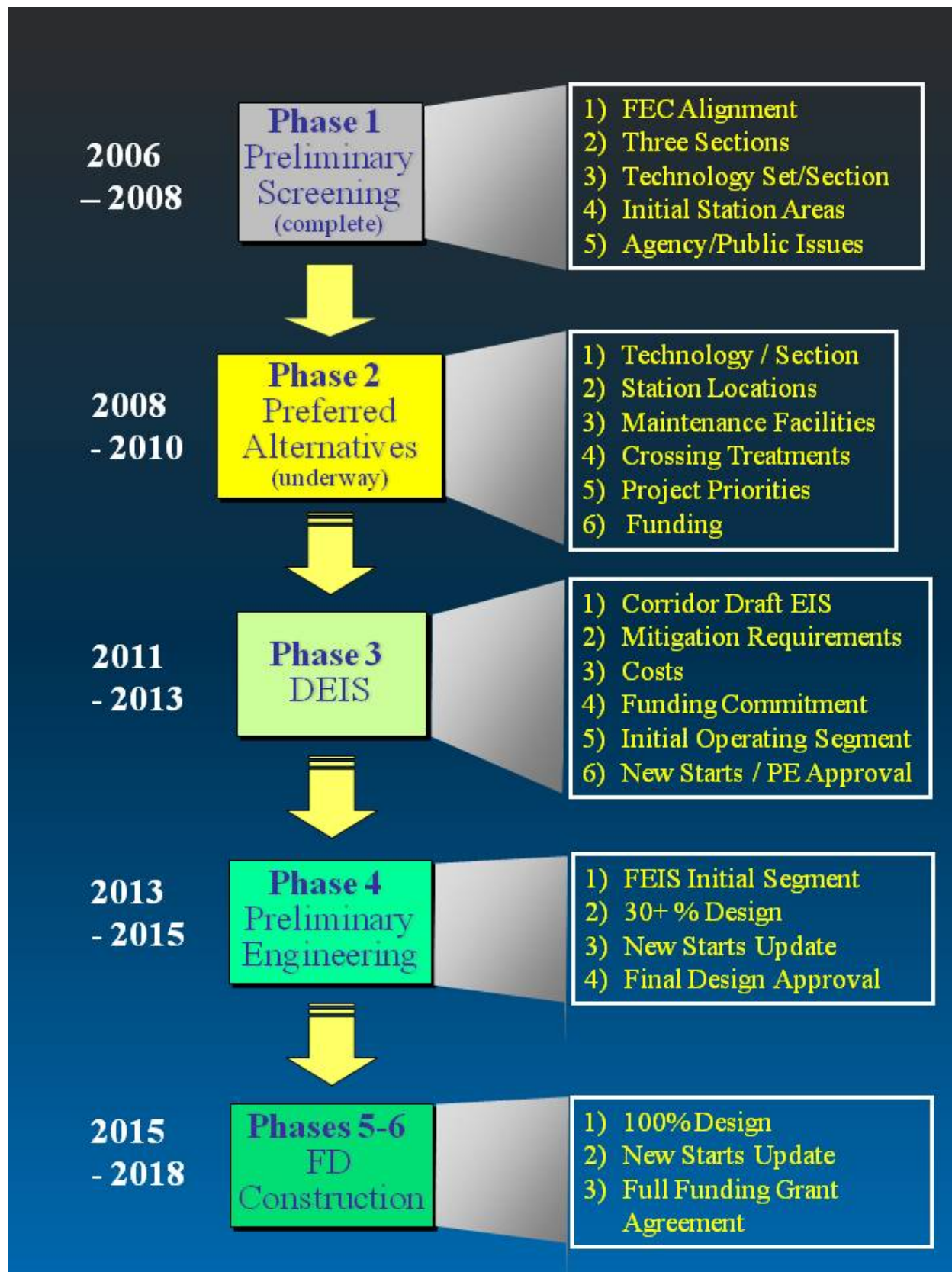
## TOTAL PROJECT APPROACH

Exhibit 2 presents the total project approach for developing proposed actions through the SFECCTA.

**Phase 1: Phase 1 completed.** Conducted consistent with early scoping/ETDM NEPA process. The project was federalized and funded through CMAQ funds by each of the three MPOs. *Phase 1 subdivided the corridor into three sections of independent utility, determined that the FEC Railway corridor is the preferred generalized alignment, and determined a short list of appropriate modes for each independent section and the corridor as a whole.*

**Phase 2:** Funded 20% with remaining Phase 1 funds and 80% state funds. **Phase 2 is underway.** Continues early scoping/ETDM NEPA process. Decisions to include selection of transit level of service in the corridor, preferred mode by section of independent utility, short list of maintenance facility sites, and short list of grade crossing treatments. Potential that the LPA could recommend

Exhibit 2. SFECCTA Total Project Approach



not one mode operating from end to end in the corridor but that alternate modes may be recommended such as extending Tri-Rail north of West Palm Beach, busway between West Palm Beach and Pompano and light rail transit from Pompano to Miami.

**Phase 3:** Objectives will be to conduct project NEPA analysis for a corridor-length Draft Environmental Impact Statement or Environmental Assessment, define the initial operating segment (IOS), develop New Starts application for the IOS, and seek FTA approval to proceed into Preliminary Engineering.

**Phase 4:** Conduct Preliminary Engineering, complete the Final EIS, refresh the New Starts evaluation, and seek approval to enter Final Design.

**Phase 5:** Conduct Final Design and complete the Full Funding Grant Agreement.

**Phase 6:** Construct the IOS.

## **PHASE 2 CONCEPTUAL ALTERNATIVES AND DECISIONS**

Key findings of the Phase 1 study are being carried forward for further evaluation in Phase 2. These findings form the basis for the Phase 2 conceptual alternatives, which consist of the FEC Railway for the length of the corridor and I-95 in the northern section, east/west connections; modal technology; transit stations, service plans, grade crossings, and maintenance facilities. The work performed in Phase 2 will result in a Master Plan for SFECCTA improvements, including an LPA that defines modes and services along the entire 85-mile FEC corridor.

### **No Build and TSM Alternatives**

In accordance with federal requirements, Phase 2 will consider both a No Build and Transportation System Management (TSM) alternative. The No Build alternative represents only the existing transportation system, plus any improvements that have been committed to in the long-range plan. The TSM option to be explored will include enhancements to existing transit, such as Tri-Rail and Metrorail, as well as introducing new bus services on roadways parallel to but not within the FEC Railway right-of-way. The TSM option will represent the best that can be done to solve corridor problems short of a major capital investment.

### **Build Alternatives**

A number of build alternatives will be examined in detail during Phase 2 of the study. These alternatives represent combinations of alignments sections and station locations, modal technologies, and service plans, as well as other decisions, such as the location of maintenance facilities. These major components

comprising the Phase 2 build alternatives are described below.

### ***Alignments***

The Phase 1 process identified the FEC Railway alignment as the preferred north-south corridor, and screened out other corridors such as US-1/Dixie Highway and I-95, except in northern Palm Beach County. The FEC Railway right-of-way is generally 100 feet wide throughout the study area however approximately 16 areas have been identified where the right-of-way falls short of 100 feet. Since the full right-of-way (e.g. 100 feet) will be needed to accommodate new transportation infrastructure, additional right-of-way may be need at these constrained areas. These constrained areas will be further evaluated in Phase 2.

### ***Modal Technology***

Four modal technologies proposed within the FEC Railway corridor: bus rapid transit (BRT); light rail transit (LRT); rail rapid transit (RRT); and regional rail (RGR).

These are in addition to the bus services that will be operated as part of the No Build and Transportation System Management (TSM) alternatives, and regional bus service that might be appropriate for a portion of I-95 in northern Palm Beach County.

### ***Transit Stations***

A preliminary list of station locations has been identified based on numerous meetings with Regional Planning Councils, the three counties and 28 municipalities along the FEC corridor to identify all possibilities for station locations.

Screening conducted during Phase 2 is expected to reduce the number of potential locations/sites from the initial 97 potential locations currently identified. Eighty-seven are along the FEC corridor between Jupiter and downtown Miami and ten are on potential connections between the FEC and SFRC (CSX) corridors. A technical analysis will be performed during Phase 2 of the study to determine which of these locations function best based on a number of factors including:

- Transit-oriented development potential
- Land availability for station and parking
- Environmental factors
- Economic development potential
- Accessibility

- Projected ridership
- Intermodal connectivity
- Community preference

The station evaluation will first identify "anchor stations", defined as fixed, high-ridership hubs of the system. The primary anchor stations will be the City Center Stations and Airport/Seaport Stations.

A secondary group of "key stations" will then be identified, which will include Town Center Stations and Regional Park-and-Ride Stations. These stations will likely have high ridership and will serve as secondary hubs of the system. Once the anchor stations and key stations are identified, intermediate stations will be considered, which will include employment centers, local park & rides, neighborhood stations and special event venue stations.

### ***Service Plan and Forecast of Ridership***

Service plans and forecast of ridership will be developed considering the number of stations, routes, vehicles, capacity, frequencies, speed and span of service. During Phase 2, focus will be placed on:

- Establishing services that match people's desired travel patterns
- Considering interconnectivity between the FEC Railway corridor and Tri-Rail for optimal use of existing infrastructure
- Creating an operating plan including express and local service to balance travel time and accessibility to adjacent communities
- Estimates of ridership for modally generic alternatives
- Estimates of ridership for modally specific alternatives
- Estimates of ridership for No Build and TSM alternatives

### ***Grade Crossings***

There are approximately 260 at-grade crossings along the FEC Railway and potential east-west connections within the study area. The primary issues surrounding the grade crossings include traffic delay, train horn noise, and increased risk of accidents. Traffic delays may increase as passenger service is introduced along the FEC Railway corridor.

Potential solutions to traffic delays include grade separation and/or closing certain crossings. However, closures will likely shift the congestion to other roadways. Another solution to be examined

during Phase 2 is the improvement of existing crossings to qualify for quiet zones. Such improvements will not only address noise concerns but will also improve safety features at crossings.

### ***Operations and Maintenance (O&M) Facilities***

The requirements for and location of O&M facilities are heavily dependent upon the choices eventually made concerning alignment and modal technology.

Generally, O&M facilities are best located at the ends of service alignments. However, other factors that come into play when deciding where to place O&M facilities include availability and cost of land, transit network design, environmental impacts and the surrounding land use.

Phase 1 identified two types of O&M facilities that will be needed to support transit operations in the corridor:

- **Central Facilities:** These are major facilities for maintenance, repair, overhauls, and overnight storage. A minimum of 20 acres is needed for this facility.
- **Satellite Facilities:** These are smaller facilities that provide overnight storage, routine vehicle servicing, and crew reporting activities.

Based on the LPAs that emerge during the Phase 2 process, appropriate locations for supporting O&M facilities will be identified.

### **EVALUATION MEASURES**

An evaluation framework has been established to measure the ability of potential alternatives to meet the SFECCTA goals and objectives (**Exhibit 3**). This framework considers the following:

- **Effectiveness** – how well each alternative satisfies the purpose and need and meets study goals and objectives;
- **Impacts** – the extent of impacts, both positive (such as increased ridership and reduced pollutant emissions) and negative (such as property takings) that are expected to occur to the human, natural, and built environments;
- **Cost effectiveness** – the anticipated benefits measured primarily in terms of increased mobility (ridership, travel time savings) as compared to the cost of each alternative; and
- **Equity** – the extent to which costs and benefits are distributed fairly across different population groups.

## Exhibit 3. Project Goals and Objectives

### **Goal 1: Improve mobility and access for personal travel and goods movement.**

- Expand transit options to accommodate future travel demand in the corridor and serve major transportation hubs, employment, medical, retail, educational, and entertainment centers, and residents in the region.
- Provide regional transit options that improve travel time reliability for people and goods and results in travel timesavings.
- Integrate the proposed transit options with existing and planned transit in the region.
- Integrate the proposed transit options with existing and planned freight transport and potentially intercity passenger transport located within or traversing the study area.
- Provide for seamless connections to all modes of transportation including bicycle and pedestrian facilities.
- Provide regional access and mobility improvements for minority, transportation disadvantaged and low-income groups.
- Support goods movement in the corridor with higher capacity and connectivity.

### **Goal 2: Coordinate corridor transportation investments to contribute to a seamless, integrated regional multi-modal transportation network.**

- Invest in infrastructure, facilities and services that improve connectivity, transfer and circulation in the region.
- Coordinate and integrate with other regional rail, mass transit, and roadway projects.
- Maintain working relationships with transportation partners, including the FTA, FDOT, Regional Transportation Authority, MPOs, Counties, Cities, Regional Planning Councils, Business Groups, Florida East Coast Industries, and other stakeholders.
- Avoid or minimize duplication of premium transportation services.
- Coordinate with other transportation and land use planning efforts that are supportive of transit options.
- Accommodate a proposed greenway along the corridor.

### **Goal 3: Encourage the implementation of transit supportive development.**

- Locate transit stations where higher density development exists or can readily be accommodated and near activity centers.
- Complement and support economic development/redevelopment and potential joint development activities that include a mix of uses and affordable housing, within the study area.
- Establish a transit improvement that will contribute, guide and support the urban, transit-oriented scale envisioned for the various downtowns, commercial corridors and abutting residential areas.
- Facilitate creation of transit-supportive and context sensitive development guidelines, zoning and policies.
- Provide transit that complements the scale and character of neighborhoods, housing, and business developments.

### **Goal 4: Minimize adverse impacts to the community and local businesses.**

- Minimize or mitigate adverse local traffic, parking and safety impacts.
- Minimize or mitigate adverse noise and vibration impacts.
- Avoid or minimize adverse impacts to minority and low income communities.
- Minimize adverse right-of-way and physical impacts to established communities and businesses.
- Optimize the use of existing infrastructure and transportation corridors for expansion of transit.

### **Goal 5: Preserve and enhance the environment.**

- Minimize or mitigate adverse impacts to existing environmental resources.
- Preserve historical and cultural resources.
- Provide transit options that reduce traffic congestion and energy consumption.
- Protect environmentally sensitive areas.
- Improve regional air quality by promoting alternative transportation modes and reducing auto emissions.

### **Goal 6: Provide a cost-effective transportation solution to meet identified travel needs consistent with the availability of implementation and operating funds.**

- Provide new transit service that is financially feasible with existing and new revenue sources.
- Meet FTA goals as they relate to cost effectiveness.
- Ensure that the investment strategy for the corridor will be eligible to receive federal funding.
- Optimize transportation funding resources and obtain local financial support.
- Explore lower technology cost solutions, where applicable, than can be upgraded over time to a higher transit technology solution based on changing needs.

### **Goal 7: Improve safety conditions for vehicular traffic and pedestrians.**

- Plan transit stations consistent with applicable FRA and FTA safety guidelines.
- Plan safe and effective corridor crossing locations for vehicles and pedestrians.
- Plan rail freight improvements consistent with applicable FRA regulations.

As described for each AA phase below, these evaluation categories are applied to help screen and narrow down the very broad range of alternatives considered for the study corridor.

### **Phase 1 Evaluation**

The scale and complexity of the corridor and the many potential solutions to address corridor problems has required a phased approach to identifying and screening alternatives that can address the study purpose and need. The first phase of study, now completed, focused on planning-level screening activities, consisting primarily of:

- Community outreach with planning coordination between local governments and key stakeholders;
- Conceptual engineering; and
- GIS-based environmental data collection, verification, and supplementation to inform the screening of alternatives based on potential for impacts to environmental resources.

Based on these activities, the Phase 1 effort identified three primary north/south alignments and a broad range of modal technologies that were screened through an iterative process to determine which were most suitable for providing premium transit service within the study area consistent with the project's goals and objectives. In addition, preliminary consideration was given to the location of stations and maintenance facilities as well as grade crossing treatments.

Evaluation measures applied during Phase 1 included ridership, projected cost, and environmental impacts. The preliminary AA and environmental screening was documented in a Tier 1 Draft PEIS that was made available for public and agency scrutiny during November 2006 in a public hearing held at three venues throughout the tri-county area (Miami-Dade, Broward, and Palm Beach Counties). Based on this evaluation and public input, the first phase of the study identified nine viable candidate modes and two viable alignments, the FEC Railway for the length of the corridor and 1-95 in the northern section only to be further refined in the second phase of the AA.

### **Phase 2 Evaluation**

Phase 2 of the SFECCTA will continue the AA initiated in the first phase of the study under the early scoping-ETDM process. It will result in a LPA that could consist of either one mode operating end to end in the corridor, or potentially with differing modes such as Tri-Rail north of West Palm Beach, bus rapid transit between West Palm Beach and Pompano Beach, and light rail transit south of Pompano Beach to Miami. The alternatives will continue to be evaluated,

refined, and developed through an iterative process using the evaluation framework summarized above and in a manner that seeks to avoid negative environmental and social impacts or minimize impacts where they cannot be avoided. Continued engagement with the public, stakeholders, and resource agencies will help vet the alternatives, to arrive at one or more LPAs for the corridor.