

## 2 ALTERNATIVES

This chapter discusses changes made to the Central Florida Commuter Rail Transit (CFCRT) Full Build Alternative since the approval of the EA on April 27, 2007. Preliminary Concept Plans for the Full Build Alignment are included in a separately bound Appendix K of the approved EA.

As indicated in Chapter 1 of this document, further coordination with local funding partners and Amtrak since the EA was approved has led to some changes in the CRT Full Build Alternative. The limits of the Full Build Alternative alignment have not changed from the original approved EA. However, the number of stations has changed from 16 to 17 stations. The revisions include a new station at Fort Florida Road; minor changes to the configuration of the park-and-ride lot at the Longwood Station; and a new station in the City of Maitland. Although the CRT Project had proposed relocating the Vehicle Storage and Maintenance Facility (VSMF) from Rand Yard to a location adjacent to the Amtrak Auto Train Facility, the Rand Yard site was ultimately selected as the site for the Project's requirements. The Rand Yard site was evaluated as part of the approved EA. In addition, the station and park-and-ride lot located at the DeBary/Saxon Boulevard Extension has been dropped and will be excluded from any further analysis related to this project. Preliminary Concept Plans for these above referenced changes are included as Appendix A of this document.

The "Full Build" in this document is defined as the Full Build alignment from DeLand to Poinciana with all 17 stations, and a service frequency of 15 minute peak hour headways. This supplement to the approved EA will address the Project scope changes and discuss impacts of those Project scope changes to the CRT Full Build Alternative.

### 2.1 Alternatives Analysis

#### 2.1.1 Alternatives Previously Considered

Transportation alternatives previously considered for the CRT Project include a wide range of alternatives identified in the Central Florida North/South Commuter Corridor Alternatives Analysis Final Report<sup>4</sup> (AA) completed in May 2004. This AA provided the starting point of the alternatives definition in the approved EA. The AA was completed in accordance with FTA requirements for program planning and evaluation. A complete discussion of the AA is found in Section 2.1.1, page 2-2 of the approved EA.

An intensive local government coordination effort and public outreach process during the EA resulted in modification and further definition of the alternatives to improve their ability to address Project purpose and need. Chapter 2, Alternatives, of the approved EA defines and summarizes the development of the No-Build, Transportation System Management (TSM), and Build Alternatives. These alternatives are defined in conformance with the requirements of the National Environmental Policy Act (NEPA), and the Federal Transit Administration (FTA) New Starts process. Figure 2-1 depicts the CRT Build Alternative as approved in the EA.

<sup>4</sup> "Central Florida North/South Commuter Corridor Alternatives Analysis – Final Report," Central Florida Regional Transportation Authority (LYNX), Florida Department of Transportation, Volusia County MPO, METROPLAN ORLANDO, May 2004.

Chapter 2, Alternatives, of the approved EA also documented:

- Federal Agency Coordination
- State and Regional Agency Coordination
- County and Municipal Agency Coordination
- Definition of EA Alternatives
- Technologies Considered
- No-Build Alternative
- TSM/Baseline Alternative
- Operating Plans
- Grade Crossings
- Ridership and Revenues
- Capital Costs
- Operating Costs

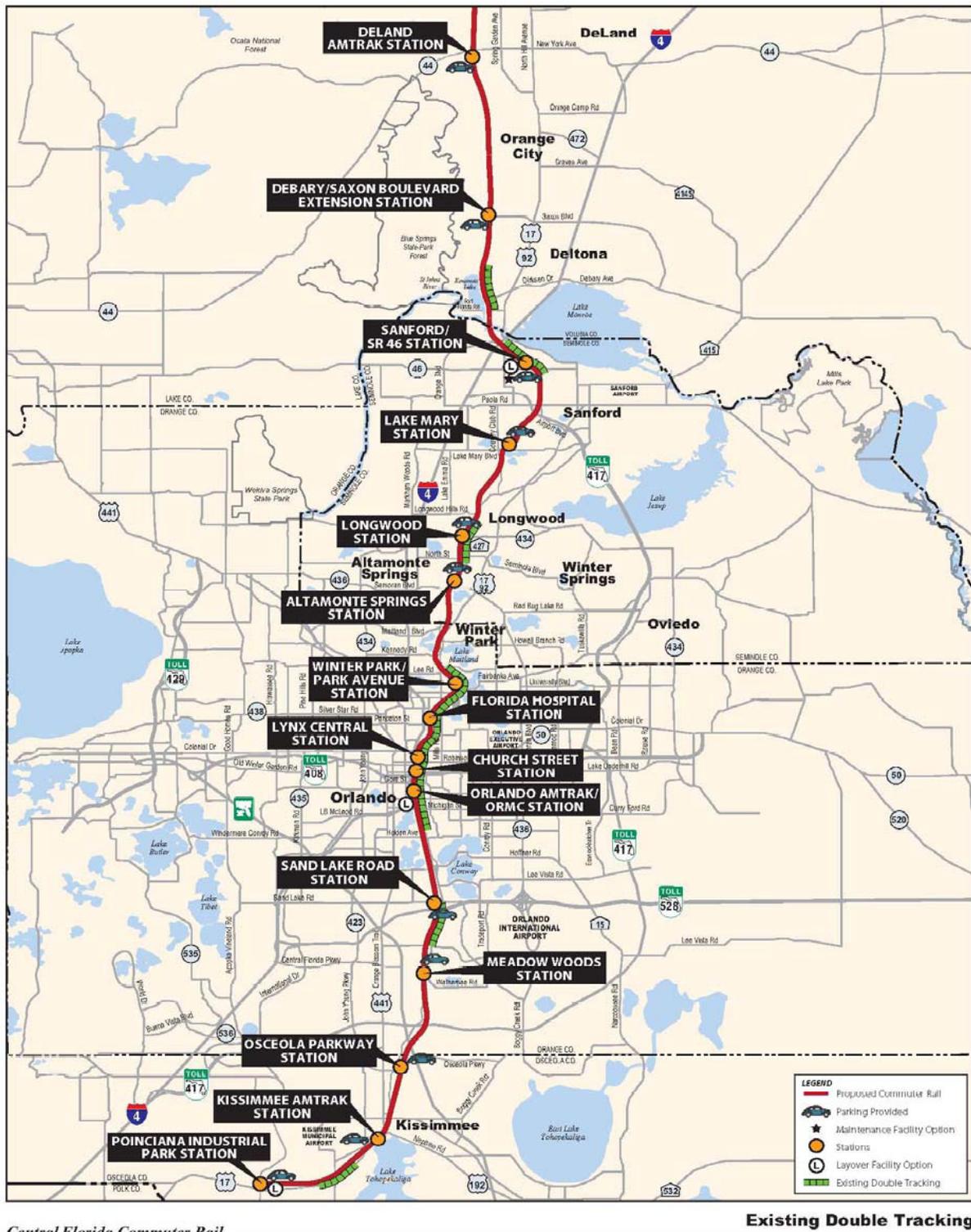


Figure 2-1 Approved EA CRT Alignment and Stations

### 2.1.2 New Starts Evaluation Process

The Section 5309 “New Starts” program is the Federal government’s primary program for providing financial support to locally-planned, implemented, and operated fixed guideway transit major capital investments. The New Starts evaluation process is used in conjunction with the evaluation process under the National Environmental Policy Act (NEPA), for which this supplemental Environmental Assessment is being prepared. This section describes the how FTA evaluates projects for its New Starts funding recommendations. The Central Florida Commuter Rail Transit Project is seeking New Starts funding and, therefore, will be subject to this evaluation and rating process.

Each year FTA submits its Annual Report on Funding Recommendations to Congress as a companion document to the annual budget submitted by the President. The report provides recommendations for the allocation of New Starts funds under Section 5309 of Title 49 of the United States Code. As required by the Safe Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU), FTA uses the following project justification criteria to evaluate New Starts projects: mobility improvements; environmental benefits; cost effectiveness; operating efficiencies; transit-supportive existing land use, policies and future patterns; and other factors. FTA must also consider the local financial commitment for the proposed project. In total, the criteria are intended to measure the overall merits of the project and the sponsor’s ability to build and operate it.

FTA reviews the project justification and local financial commitment criteria for each candidate project and assigns a rating for each criterion. For some of the project justification criteria, the proposed project is compared against a New Starts “baseline alternative.” The New Starts baseline alternative consists of improvements to the transit system that are relatively low in cost and represent the “best that can be done” to improve transit without major capital investment in new guideway infrastructure. As such, it is usually different than the baseline (represented by the no-build condition) against which environmental impacts are measured in the NEPA document.

A candidate project is given an overall rating of “High”, “Medium-High”, “Medium”, “Medium-Low” or “Low”, based on ratings assigned by FTA to each of the project justification and local financial commitment criteria described above. These ratings are important, as FTA considers them in its decision to recommend projects for New Starts funding. Specifically, FTA will not recommend funding for projects which are rated “Medium-Low” or “Low.” It is important to note, moreover, that a “High”, “Medium-High” or “Medium” rating does not automatically translate into a funding recommendation, although the potential for receiving New Starts funding is much greater.

Project evaluation is an on-going process. FTA evaluation and rating occurs annually in support of budget recommendations presented in the Annual Report on Funding Recommendations and when projects request FTA approval to enter into preliminary engineering or final design. Consequently, as proposed New Starts projects proceed through the project development process, information concerning costs, benefits, and impacts is refined and the ratings are updated to reflect new information.

Current Rating for Central Florida Commuter Rail Transit Project Initial Operating Segment (IOS).

Overall Rating: **Medium - High**

FY 2009 Project Justification

Rating: **Medium**

Mobility Improvements

Rating: **Medium - Low**

In its evaluation of the mobility improvements that would be realized by implementation of a proposed project, FTA evaluates four measures:

- User Benefits per Passenger Mile on the Project
- Number of Transit Dependents Using the Project
- Transit Dependent User Benefits per Passenger Mile on the Project
- Share of User Benefits Received by Transit Dependents Compared to Share of Transit Dependents in the Region

User benefits essentially represent all the travel time savings to transit riders in the forecast year that result from the New Starts project as compared to not building the project (the baseline alternative). They include reductions in walk times, wait times, transfers, and, most importantly, in-vehicle times. In order to rate projects in comparison to other proposed New Starts, this measure is normalized by the annual passenger miles traveled on the New Starts project in the forecast year. The result is a measure of the intensity of the user benefits.

Number of Transit Dependent Individuals Using the Project and Transit Dependent User Benefits per Passenger Mile on the Project These two measures represent the number of transit dependents affected by the project and the intensity of the benefit per passenger. The first is self explanatory while the second is defined identically to the user benefits per passenger mile measure above but for transit dependent passengers.

Share of User Benefits Received by Transit Dependents Compared to Share of Transit Dependents in the Region This measure represents the extent to which the project benefits transit dependents compared to their regional representation. For example, if 10 percent of the user benefits for the project accrued to transit dependents, but they represented 20 percent of the region's population, the measure would be 0.5, indicating that the project did not benefit transit dependents compared to their share of the region's population.

Environmental Benefits

Rating: **Medium**

In its evaluation of environmental benefits that would be realized through the implementation of a proposed project, FTA considers the current air quality designation by EPA. This measure is defined for each of the transportation-related pollutants (ozone, CO, and PM-10) as the current air quality designation by EPA for the metropolitan region in which the proposed project is located, indicating the severity of the metropolitan area's noncompliance with the health-based EPA standard (NAAQS) for the pollutant, or its

compliance with that standard. FTA has found that information submitted in support of the environmental benefits criterion does not distinguish with any meaning the merits of competing New Starts projects. While FTA reports the information submitted by project sponsors on environmental benefits to Congress in the Annual Report on Funding Recommendations, it does not formally incorporate this measure in its evaluation of New Starts projects.

### Operating Efficiencies

Based upon its prior experience in evaluating New Starts projects, FTA has previously determined that locally-generated and reported information in support of the operating efficiencies criterion does not distinguish in any meaningful way differences between competing major transit capital investments. FTA further believes that the anticipated operating efficiencies of proposed New Starts projects are adequately captured under its measure for evaluating project cost effectiveness.

### Cost Effectiveness

Rating: **Medium - Low**

Significant among the project justification criteria is cost effectiveness, which is the annualized capital and operating cost per hour of user benefits for the forecast year. It captures the additional costs of the New Start project compared to the transportation benefits to transit riders. User benefits are defined identical to the measure used in the mobility improvements criterion.

New Starts projects must be rated "Medium" for cost effectiveness, in addition to receiving an overall "Medium" rating, in order to be considered by the Federal Transit Administration for New Starts funding. The CRT Project currently has a cost-effectiveness rating of Medium-Low, making it ineligible at this time to receive a recommendation for funding from FTA. However, FDOT sought a legislative exemption from FTA's requirement for a medium cost-effectiveness rating so that it may receive funding for construction. This exemption was granted by Congress and approved in the 2008 legislative session.

### Transit-Supportive Land Use and Future Patterns

Rating: **Medium**

This criterion addresses the extent that transit-oriented development is likely to occur in the New Start project's corridor. FTA explicitly considers the following transit supportive land use categories and factors:

1. Existing Land Use
2. Transit Supportive Plans and Policies, including the following factors:
  - Growth management;
  - Transit supportive corridor policies;
  - Supportive zoning regulations near transit stations; and
  - Tools to implement land use policies.

3. Performance and Impacts of Policies, including the following factors:
- Performance of land use policies; and
  - Potential impact of transit project on regional land use.

Other Factors

Consistent with SAFETEA-LU Section 5309(d) and (e), FTA also includes a variety of other factors when evaluating project justification, including:

- Effect of the project on economic development;
- The nature and extent of the transportation problem or opportunity in the project corridor as described in the “Making the Case” document;
- If the project is a principle element of a congestion management strategy, in general, and an auto pricing strategy, in particular; and
- Any other factor which the project sponsor believes articulates the benefits of the proposed major transit capital investment but which is not captured within the other project justification criteria.

Local Financial Commitment

Rating: **Medium - High**

Proposed New Starts projects must be supported by evidence of stable and dependable financing sources to construct, operate and maintain the transit system. The measures FTA uses to evaluate local financial commitment are:

Local Share

Rating: **Medium**

FTA examines the proposed share of total project costs from sources other than Section 5309 New Starts, including Federal formula and flexible funds, the local match required by federal law, and any additional capital funding.

Strength of Capital Financing Plan

Rating: **Medium - High**

FTA looks at the stability and reliability of the proposed capital financing plan, including the current capital condition of the project sponsor, the level of commitment of capital funds to the project, the financial capacity of the project sponsor to withstand cost overruns or funding shortfalls, and the reliability of the capital cost estimates and planning assumptions.

Strength of Operating Financing Plan

Rating: **Medium - High**

FTA looks at the ability of the sponsoring agency to fund operation and maintenance of the entire system (including existing service) as planned, once the guideway project is built. This includes: an examination of the current operating condition of the project sponsor; the level of commitment of operating funds for the transit system; the financial capacity of the project sponsor to operate and maintain all proposed, existing and

planned transit services; and the reliability of the operating cost estimates and planning assumptions.

The quantitative measures listed below represent some of what FTA relies on in rating a project's local financial commitment. The data listed in Table 2-1 below are for the Central Florida Commuter Rail Transit Project.

**Table 2-1 Central Florida Commuter Rail Transit Project Funding – Phase 1**

<b>Measure (in Year of Expenditure Dollars)</b>	<b>Cost</b>
Total Capital Cost	\$416.67 M
Proposed Federal Section 5309 New Starts Share of Capital Costs	\$208.34 M (50%)
Proposed State Sources of Capital Funding	\$104.17M (25%)
Proposed Local Sources of Capital Funding	\$104.17M (25%)
Estimated Annual Incremental Operating Costs in the Forecast Year (2030)	\$51.29 M

Additional information on the financial plan for this project can be found in Chapter 2.4, p.2-50 of the Approved EA.

### 2.1.3 Modifications to CRT Build Alternative

The Build Alternative features all of the transit services and projects included in the No-Build Alternative with the addition of commuter rail services along the CSXT A-Line and are fully discussed in Section 2.3.4 of the approved EA. The project scope changes relating to the Full Build Alternative of the CRT is the subject of this supplement to the Approved EA.

#### Full Build CRT Alternative

The Full Build Alternative would extend from the DeLand Amtrak station to Poinciana Industrial Park, a distance of 61 miles, via the CSXT A-Line. A total of 17 stations are in the Full Build Alternative and they would be located at: DeLand, Fort Florida Road (new), Sanford, Lake Mary, Longwood, Altamonte Springs, Maitland (new), Winter Park, Florida Hospital, LYNX Central Station, Church Street (in downtown Orlando), Orlando Amtrak/ORMC, Sand Lake Road, Meadow Woods, Osceola Parkway, Kissimmee Amtrak, and Poinciana Industrial Park. Figure 2-2 shows the station locations on the existing track alignment and the existing double track sections.

As stated in the approved EA, the proposed service plan would provide 15-minute bi-directional service during morning and evening peak periods and 60-minute service in the midday, Monday through Friday (approximately 260 days per year). The primary infrastructure improvements include a new signal system and 40 miles of new 2nd track bringing the total double track to approximately 59 miles in the 61 mile corridor. The 2030 CRT Full Build Double Track Alternative is depicted in Figure 2-3.

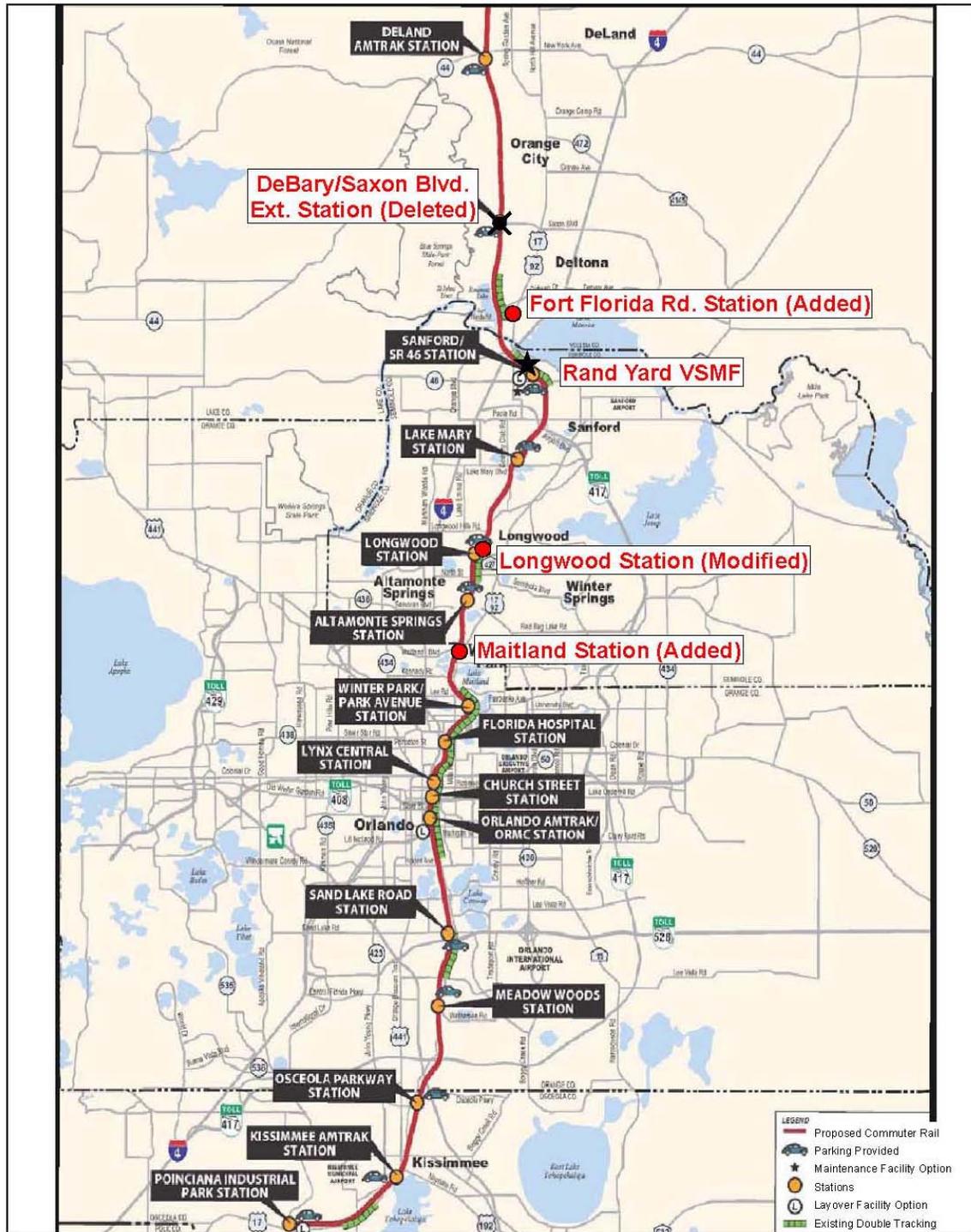


Figure 2-2 Proposed CRT Station and Existing - Double Track Sections

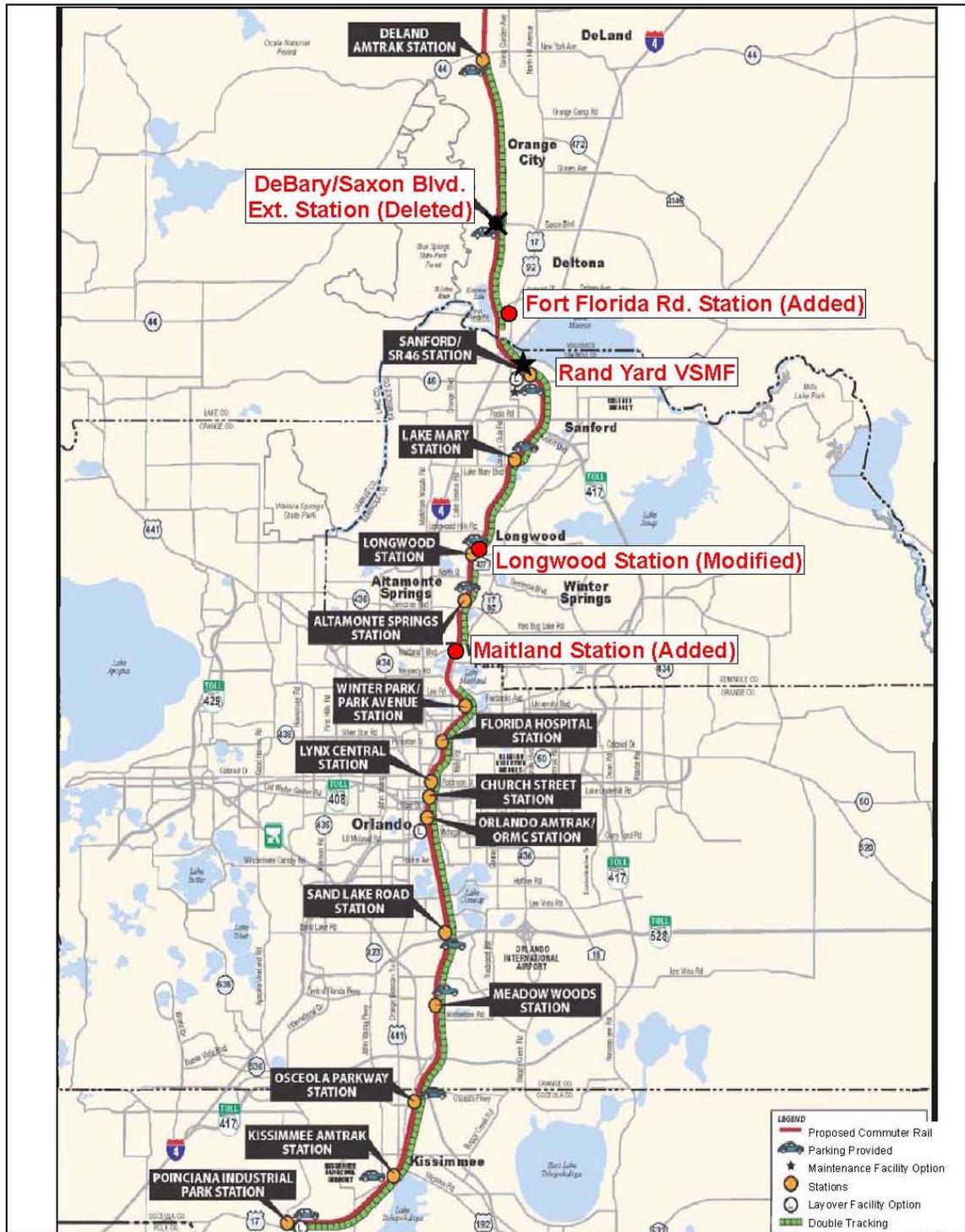


Figure 2-3 2030 CRT Full Build and Proposed Double Track

**Full Build Operating Requirements**

The Full Build Alternative operating requirements can be found in Section 2.3.4. of the approved EA. In this supplement to the EA, all trains are dispatched from the Operations Control Center (OCC) which would be located in the CRT Rand Yard VSMF location (defined in Section 2.1.4). Although the majority of the trains would be stored overnight at the Rand Yard VSMF, a few would be stored overnight at the end of line station layover yards. Limited midday train layover would be available at the end-of-line stations. The peak period schedules would require 21 bi-level DMUs and seven single-level DMUs. The total fleet, including maintenance spares, would be 34 DMUs – 24 bi-level and ten single-level DMUs.

**Full Build Feeder Bus Operations**

A full discussion of the fixed route bus transit operated by LYNX and VOTRAN is referenced in Section 2.3.4 of the approved EA. No modifications to the new fixed routes as described in the approved EA have been proposed in this EA supplement.

Table 2-2 presents the LYNX and VOTRAN bus routes to serve the two additional proposed commuter rail stations and the optimum number of bus bays required.

**Table 2-2 Feeder Bus Routes for Modifications to Stations: Full Build Alternative**

STATION	BUS ROUTES	BUS BAYS
Fort Florida	V23, V20X, V23X	3
Longwood (modification)	39, 61, 65	4
Maitland	102, 441	2

Source: Final Transit Operating Plans Report, November 2007

LYNX and VOTRAN are assumed to be the operators of any public transit local and express bus services in the CRT study area, within their respective jurisdictions.

**Full Build Station Modification and Key Features**

The location, function, and capacity of proposed transit stations were a major component of the EA alternatives development process. A full discussion can be found in Section 2.3.6. of the approved EA.

Through an integrated process of technical analysis, local government coordination, and community outreach, the final list of stations for the Full Build CRT Alternative was developed. As previously stated, the station and park-and-ride lot located at the DeBary/Saxon Boulevard Extension was removed at Volusia County’s request and replaced with Fort Florida Road Station, which was originally analyzed in the Alternatives Analysis. The DeBary/Saxon Boulevard Extension Station will be excluded from any further analysis related to this project. Maitland Station was added at the request of the City of Maitland. In addition, a minor change in configuration was made to the Longwood park-and-ride lot following input from the City of Longwood and other stakeholders.

The revised results of the station siting process are summarized in Table 2-3. Conceptual Station Site plans for the new stations at Fort Florida Road and Maitland as well as the modification at Longwood Station are shown in Appendix A. The CRT station prototypes and the station conceptual plans that have not been modified can be found in the approved EA, Section 2.3.6.

**Table 2-3 Full Build Station Modification and Key Features**

Station Name	Station Prototype	Parking Spaces
Fort Florida	Park & Ride	275
Longwood (modification)	Park & Ride	354
Maitland	Park & Ride	250

Source: Earth Tech Inc. and AECOM Consulting, 2007.

#### 2.1.4 Vehicle Storage and Maintenance and Layover Facilities

Section 2.3.7. of the approved EA provided an overview of the Rand Yard VSMF identified in the AA document. The approved EA specified the required services, and sites considered. The proposed configuration of the CRT VSMF located within the limits of the CSXT Rand Yard is shown in Appendix A, Figure A-6.

The necessary layover facility functions were also described in the approved EA and the recommended location identified. Photographs of typical VSMF facilities can be found in the approved EA, Section 2.3.7, Figures 2-30 through 2-34.

The approved EA identified Rand Yard as the preferred location for the CRT VSMF, along with a recommendation to consider and further assess the suitability of the Sanford Amtrak Auto Train yard and maintenance facility to provide heavy maintenance services to the CRT fleet. Subsequent to the approved EA a Technical Memorandum – Assessment of Amtrak Auto-Train Yard and Maintenance Facility (August 2007) was produced and coordinated with Amtrak. Since the VSMF Technical Memorandum was developed, Amtrak indicated a willingness to enter into contractual services with FDOT to offer DMU equipment maintenance services at their Auto Train facility. A MOU with Amtrak was reached that will include Amtrak providing intermediate/heavy vehicle maintenance at their existing Sanford maintenance shop facility; and use of the Amtrak vehicle wash facility at the same location. The CRT VSMF will be constructed within the limits of Rand Yard as evaluated in the approved EA to primarily perform daily inspections and running repairs. In addition, this new facility will also be able to serve as a mid-day storage facility.

#### Existing Sanford Amtrak Auto Train Facility

The Amtrak Autotrain<sup>®</sup> yard and maintenance facility is located in Sanford, adjacent to the CSXT main line and the Autotrain<sup>®</sup> Terminal and just to the south of the CSXT Rand Yard. Access to the site is from Persimmon Avenue, which intersects with SR 46 to the north of the site. The former Sanford Amtrak Terminal/Station, owned by CSXT, is located south of the yard and it is closed and abandoned. This site had been proposed for a CRT train storage yard before Rand Yard was selected as the preferred site. All Autotrain<sup>®</sup> Terminal activity is located on the north side of the yard with access from the CSXT lead to the Aloma industrial track that heads east toward Sanford and the Sanford International Airport.

Currently, one Amtrak Autotrain<sup>®</sup> is scheduled to arrive at 8:30 a.m. and depart from the yard daily at 4:30 p.m. Car and motorcycle vehicle unloading occurs throughout the day. All Autotrain<sup>®</sup> maintenance activities (vehicle washing, fueling, cleaning, inspection and repairs) are performed during the day within the facility. The use of the Amtrak Autotrain<sup>®</sup> Facility would be limited to providing equipment maintenance and vehicle washing. No CRT related construction or demolition would occur at the Sanford yard, therefore no environmental impacts are anticipated.

Review of the Amtrak Autotrain<sup>®</sup> Facility shows no sensitive receptors located within the FTA screening distance.

### Layover Facilities

The layover facilities for the proposed CRT Full Build Alternative are addressed in the approved EA, Section 2.3.7. The Sand Lake Road Station will be the layover facility for the IOS Terminus.

#### 2.1.5 Grade Crossings

Grade Crossings are discussed in Chapter 2, Section 2.3.8 of the approved EA. There are no changes to this section. The only grade crossing impacts are related to construction for the relocation of grade crossing warning due to the addition of 2<sup>nd</sup> track. Construction mitigation is covered in Chapter 3, Section 3.3.13 Construction Impacts of the approved EA.

## 2.2 Summary

The proposed Project scope changes do not change the limits of the 61 mile Full Build Alternative from the original approved EA. The Project provides 15 minute peak headway bi-directional service and 56 trips per day. However, further consultation and requests from local funding partners and Amtrak has resulted in specific changes to the Full Build: the number of stations has changed from 16 to 17 stations; elimination of the DeBary/Saxon Station; the addition of new stations at Fort Florida Road in Volusia County and on the west side of Orlando Avenue in Maitland in Orange County; and minor changes to the configuration of the park-and-ride lot at the Longwood Station.

The Full Build Alternative will be constructed in phases beginning with the IOS (Fort Florida Road to Sand Lake Road) of the LPA in 2010, the South Corridor (Sand Lake Road to Poinciana Boulevard) of the LPA in 2013 and the North Corridor extension to DeLand to complete the Full Build Alternative at some time in the future.