FINAL
ENVIRONMENTAL IMPACT STATEMENT

FLORIDA HIGH SPEED RAIL
TAMPA TO ORLANDO

Federal Railroad Administration
United States Department of Transportation

Florida High Speed Rail Authority

In Cooperation with:

Federal Highway Administration
United States Army Corps of Engineers

Hillsborough, Orange, Osceola, Polk Counties, Florida

7/19/2005
Date

Administrator
Federal Railroad Administration
U. S. Department of Transportation

MAY 17, 2005
Date

Chairman
Florida High Speed Rail Authority

May 2005

SUMMARY AND COMMITMENTS

S.1 INTRODUCTION

The potential for high speed rail to address a portion of the transportation needs of the State of Florida has a long history. The current effort to evaluate high speed rail's potential was initiated following an enactment by Florida's voters. In November 2000, Florida's voters adopted an amendment to the Constitution of the State of Florida that mandated the construction of a high speed transportation system in the state. The amendment required the use of train technologies that operate at speeds in excess of 120 miles per hour (mph) and consist of dedicated rails or guideways separated from motor vehicle traffic. The system was to link the five largest urban areas of Florida and construction was mandated to begin by November 1, 2003, to address a high speed ground transportation system.

The purpose of Article 10, Section 19 of the Constitution of the State of Florida was, "to reduce traffic congestion and provide alternatives to the traveling public." In June 2001, the Florida State Legislature, through the Florida High Speed Rail Authority Act, created the Florida High Speed Rail Authority (FHSRA) and charged the organization with the responsibility for planning, administering, and implementing a high speed rail system in Florida. The act also mandated that the initial segment of the system be developed and operated between St. Petersburg, Tampa, and Orlando areas with future service to the Miami area.

Following its creation in 2001, the FHSRA proceeded to implement the responsibilities set forth in the *Florida High Speed Rail Authority Act*. The FHSRA's proposal included the provision of high speed rail passenger service between downtown Tampa and Orlando International Airport. This project, while viewed by FHSRA as the first phase of the eventual achievement of the constitutional goal, has independent utility, in that it serves as an important transportation purpose in its own right and its implementation is not dependent upon future actions that may or may not be taken to expand high speed rail service beyond this project's limits. The FHSRA, with guidance from the federal lead agency, the Federal Railroad Administration (FRA), undertook a number of other actions to advance the high speed rail system, which are discussed in greater detail in Section 2, including preparation and issuance of the Draft Environmental Impact Statement (EIS) in August 2003 that preceded this Final EIS.

The FHSRA envisions possible future federal financial support for the project that might be provided through the FRA. While FRA and the U.S. Department of Transportation (USDOT) have several loan and loan guarantee programs that might be potential sources of future financial assistance, there are currently no existing grant or federal bond financing programs that would support the type of financial involvement envisioned by FHSRA. Several proposals to create such programs, however, are currently pending before Congress. The FRA may also have certain regulatory responsibilities, with respect to the project, which are consistent with its statutory railroad safety oversight activities. The Federal Highway Administration (FHWA) and the U.S. Army Corps of Engineers (USACE) are cooperating agencies for this document.

On November 2, 2004, Florida voters repealed the amendment to the Constitution of the State of Florida in its entirety resulting in removal of the constitutional mandate for a high speed rail system. This action, however, did not affect the legislative mandate for the FHSRA and the *Florida High Speed Rail Authority Act* remains in effect pending any action that the Florida Legislature may choose to take. The future of the proposed high speed rail system in Florida is thus uncertain. Notwithstanding this uncertainty, the FHSRA continues to believe that high speed rail can serve an important transportation purpose. FHSRA has also determined, and the FRA agrees, that it is in the best interest of the State of Florida to complete and issue this Final EIS. Considerable resources have been invested in bringing the document to this late stage of development and completing the environmental impact assessment process through issuance of a Final EIS has significant value, even if no further action is taken at this time to advance the proposed system.

S.2 PROPOSED ACTION

In developing its program, the FHSRA established, at a minimum, that the Tampa to Orlando high speed passenger rail system would operate 12 round trips per day, seven days a week, between 6 AM and 8 PM and reach a speed of 120 mph. The trains would accommodate up to 250 passengers with a maximum travel time of 1 hour and 10 minutes between Tampa and Orlando.

The 95-mile (mi.) Florida High Speed Rail (FHSR) project proposed by the FHSRA would be developed on new track, with the great majority of the system located within the existing right-of-way (ROW) of Interstate 4 (I-4), Interstate 75 (I-75), the Florida's Turnpike Bee Line Expressway (S.R. 528), the Orlando-Orange County Expressway Authority (OOCEA) Central Florida Greeneway (S.R. 417), and the CSX railroad. Figure S-1 presents the project area, including study Corridors A through E.

In its 2002 Report to the Florida Legislature, the FHSRA found that a traditional design-bid-build approach to the legislative mandate would not meet the aggressive November 2003 construction date or the directive to maximize private/public investment in high speed rail. The FHSRA concluded that the legislative directives could be more reasonably achieved by incorporating the Design, Build, Operate, Maintain, and Finance (DBOM&F) process. The FHSRA solicited proposals for a DBOM&F approach to build a high speed ground transportation system between Tampa and Orlando. The FHSRA found that two proposals were responsive and were to be evaluated as design/build alternatives.

S.3 THE PURPOSE AND NEED

The purpose of the proposed project is to enhance intercity passenger mobility between Tampa and Orlando by expanding passenger transportation capacity and providing an alternative to highway and air travel. This mobility is viewed as essential for the sustained economic growth of the region, as well as the quality of life of the region's residents and visitors. Presently, passenger mobility in the Tampa-Orlando corridor is provided primarily by highway, in particular by I-4. Transportation demand and travel growth, as prompted by social demand and

economic development and compared to existing and future roadway capacity, show a serious deficit in available capacity. In addition, increasing population, employment, and tourism rates continue to elevate travel demand in the study corridor, as documented by forecasts prepared by the University of Florida Bureau of Economic and Business Research.

The Florida Intrastate Highway System (FIHS) is already operating at or near capacity during an extended peak hour period of each day, and although capacity improvements to the interstate system along the corridor are either currently underway or planned for the near future, they are considered interim, "first phase" improvements. Ultimately, additional capacity improvements are needed to accommodate the future travel demand and are not currently programmed. The need for these improvements is further accentuated by increasing traffic volumes, congestion, and accident rates within the study corridor.

In 1991, the Florida Department of Transportation (FDOT) established a limit of ten lanes (five lanes in either direction) at any location on the FIHS. The three Master Plans governing I-4 within the project area were all adopted under this policy. Interim construction and ultimate ROW acquisitions are to maintain consistency with these Master Plans. The Master Plans also identify an envelope in the median for High Occupancy Vehicles or Light Rail Transit. Further, the 2002 "Development of the Florida Intrastate Highway System" (FDOT Procedure 525-030-250-f) and the 2003 "The Florida Intrastate Highway System Program Development Procedure" (FDOT Procedure 525-030-255-c) set up specific criteria for widening all roads on the FIHS. These procedures were developed based on year 2000 legislation (Section 335.02(3) F.S.), which establishes criteria that must be considered when determining the number of lanes on the FIHS. The procedure notes:

> Nothing in Section 335.02 (3) F.S. precludes a number of lanes in excess of 10 lanes. However, before the Department may determine the number of lanes should be more than ten, the availability of ROW, and the capacity to accommodate other modes of transportation within the existing rights of way must be considered.

This criterion also requires consideration of multi-modal alternatives and the consideration of local comprehensive plans and approved metropolitan long range transportation plans (LRTP). This requirement addresses the need for alternative transportation choices for those individuals who cannot, or choose not, to drive and those travelers looking for alternatives to congested highways.

S.4 BACKGROUND

High speed rail service, as a transportation option in Florida, specifically in the Tampa to Orlando corridor, has been the subject of multiple studies and actions by the Florida State Legislature, the state's executive branch, and the electorate. The Florida State Legislature passed its first legislation supporting high speed rail in 1986 with the *Florida High Speed Rail Transportation Commission Act*, which initiated a number of proposals between 1986 and 1991, but none were implemented due to lack of public funds. The 1992 *New High Speed Rail Act* spawned several additional studies that evaluated the feasibility of a network of high speed rail

corridors connecting major cities in the state. These studies culminated in the Florida Overland eXpress (FOX) study in 1996 and began the environmental review for a high speed rail connection between the Tampa Bay region, Orlando, and Miami. This EIS benefits from data collection and baseline environmental studies undertaken as part of these prior projects.

While the state terminated the FOX study due to lack of funds, legislative interest in high speed passenger rail continued. The legislature authorized the Cross-State Rail Feasibility Study in 2000, which recommended that an initial operating segment between downtown Tampa and Orlando International Airport should be built, followed by the addition of connections to St. Petersburg on the west coast and Port Canaveral on the east coast. The study further identified the need for alternative financing scenarios to build and operate the system.

Florida voters approved the *Constitutional Amendment on High Speed Rail* in the November 2000 election, and in 2001, the Florida State Legislature enacted the *Florida High Speed Rail Authority Act*. The Florida State Legislature identified the initial study segments to link the major urban areas of St. Petersburg, Tampa, and Orlando, and in accordance with the Amendment, mandated FHSR construction by November 2003. Although the amendment was repealed in November 2004, the legislative mandate gave impetus to move the Tampa-Orlando study from planning into engineering and construction.

S.5 ALTERNATIVES CONSIDERED

The alternatives selected for evaluation in this EIS consist of the following:

- No-Build Alternative, consisting of no FHSR service between Tampa and Orlando.
- Two technology alternatives reflecting the responsive proposals to the FHSRA DBOM&F solicitation.
- Four alignment alternatives per each technology, or a total of eight design/build alternatives.

S.5.1 No-Build Alternative

The No-Build Alternative assumes that a FHSR system would not be built between Tampa and Orlando. Passenger service between the two cities would instead consist of various bus alternatives and automobile use on I-4, I-75, the Bee Line Expressway (S.R. 528), and the Central Florida Greeneway (S.R. 417). The No-Build Alternative assumes that certain planned and funded highway improvements would be undertaken between Tampa and Orlando. A summary of these improvements is shown in Table S-1.

Table S-1
Roadway Improvements within the Study Area

Corridor	Roadway	Limits	Construction Status	Type
Hillsborough	I-275/I-4	CBD Interchange	In Progress	Interchange Improvements
	I-4	14th Street to 50th Street	Pending	Additional Lanes 4 to 8
	I-4	I-4 50th Street to Polk County Line	In Progress	Additional Lanes 4 to 6 and 8
Polk	I-4	Hillsborough County Line to U.S. 92	Completed	Additional Lanes 4 to 6
	I-4	U.S. 92 to Osceola County Line	In Progress	Additional Lanes 4 to 6
Osceola	I-4	Polk County Line to U.S. 192	In Progress	Additional Lanes
	Boggy Creek Road	U.S. 192 to Turnpike	Pending	Realignment & Shoulders
	Western Beltway	I-4 South of Disney to S.R. 50	Pending	New Construction Expressway
Orange	I-4	U.S. 441 to Maitland Blvd.	Completed	Additional Lanes
	I-4	Kirkman Road to Turnpike	Completed	Additional Lanes
	I-4	S.R. 528 to S.R. 482	Completed	Additional Lanes
	I-4	I-4 John Young Parkway	In Progress	Interchange Improvements
	I-4	I-4/EW Expressway	Pending	Interchange Improvements
	U.S. 441-17/92	Osceola Parkway to Taft/Vineland	Pending	Additional Lanes

Source: FDOT June 2003

The No-Build Alternative does not envision providing an alternative transportation mode between Tampa and Orlando for daily commuters, visitors, and residents of the area, and existing modes would have to satisfy all travel demand. The potential of the FHSR project to improve public transportation and increase the efficient use of the transportation system, both intercity and locally, would not be realized. Finally, the requirements of the legislative mandate to build a FHSR system would not be met.

S.5.2 Technology Alternatives

The FHSRA determined that two proposals were responsive to its solicitation for DBOM&F request. These represent different technologies with different track systems, rail locations, and station sites. Fluor Bombardier proposes a gas turbine-powered locomotive-hauled train technology, developed by Bombardier and FRA with the trademark name of "Jet Train". The gas turbine train has passenger equipment similar to Amtrak's Acela Express trains presently

operating between Washington, D.C. and Boston, Massachusetts. The Global Rail Consortium (GRC) proposes using an electric-powered locomotive-hauled train technology, powered from an overhead catenary system similar to that in use between New Haven, Connecticut and Boston, Massachusetts and the electric train uses the French designed TGV Atlantique train sets. Table S-2 summarizes the operating features of the two proposed technologies.

Table S-2
Summary of Operations by Technology

Feature (FHSRA minima)	Gas Turbine Train	Electric Train
Speed (120 mph)	125 mph	160 mph
Round trips per day (12)	14	16
Shuttle trips between Orlando International Airport and Disney (not required)	8	17
Trip time (1 hour, 10 minutes)	65–70 minutes	54-55 minutes
Seating capacity (250)	292	250

Station locations evaluated in the study included:

- Tampa Central Business District (CBD), south of Interstate 275 (I-275).
- I-4/Polk Parkway, west entry.
- I-4/Kathleen Road (S.R. 539) in the City of Lakeland.
- I-4 near Walt Disney World.
- I-4 near Orange County Convention Center (OCCC)/Multi-Modal Station.
- Orlando International Airport.

An operation and maintenance (O&M) facility is proposed at one of two locations near the Orlando International Airport.

S.5.3 Alignment Alternatives

The alignment alternatives use varying combinations of the I-275 and CSX corridors in downtown Tampa, the I-4 corridor between Tampa and Orlando, and either the Bee Line Expressway (S.R. 528) or Central Florida Greeneway (S.R. 417) corridor in Orlando. Design/Build Alternatives 1 through 4 consist of gas turbine technology, while Design/Build Alternatives 5 through 8 consist of the electric train technology. The eight alternatives use varying combinations of the same alignment. The alignments associated with each alternative are illustrated in Figure S-2 and briefly summarized as follows:

Tampa area: I-275/I-4 corridor – This is a new, grade-separated alignment that runs south of, and parallel to I-275 and I-4 to approximately $14^{th}/15^{th}$ Streets where the alignment crosses into the I-4 median.

Tampa area: CSX "S" line/CSX "A" line/I-75 – This is a new, grade-separated alignment that leaves the downtown station southeasterly through a commercial area to connect into the former CSX "S" line. The alignment runs eastward to connect to the existing CSX "A" line, running along the north side of the rail line to I-75. At I-75, the alignment runs in the interstate median northward to connect into the I-4 median.

Between I-75 to the Osceola/Orange county line: I-4 – This alignment between the Tampa and Orlando urban areas would use the I-4 median for the entire length.

Orlando area: Bee Line Expressway (S.R. 528)/Taft-Vineland Road – This grade-separated alignment would leave the I-4 median and follow along the north side of the Bee Line Expressway (S.R. 528), then along the median of Taft-Vineland Road, crossing new ROW to connect into a station at Orlando International Airport.

Orlando area: S.R. 536/Central Florida Greeneway (S.R. 417) – This grade-separated alignment leaves the I-4 median to run along the south side of S.R. 536, connecting to either the north side or the median of the Central Florida Greeneway (S.R. 417). From the Central Florida Greeneway (S.R. 417), the alignment would run along the east side of the South Access Road to a station at Orlando International Airport.

S.5.4 Summary

The EIS thus evaluates a total of eight design/build alternatives consisting of four different alignment options with two different technologies, as offered by the two proposers. Figure S-2 displays the eight design/build alternatives and Table S-3 provides a summary of the design/build alternatives by alignment and technology.

S.6 ALTERNATIVES CONSIDERED AND DISMISSED

The FHSRA considered several routes between Tampa and Orlando. In order to identify reasonable alternatives that could satisfy the identified project purpose and need, the FHSRA conducted a study to identify, quantify, and compare various FHSR route locations. The results of the screening process are documented in the Florida High Speed Rail Screening Report, which was completed in October 2002. This evaluation was built on the studies undertaken for high speed rail in the Tampa – Orlando corridor since the mid 1980s and, in particular, the work undertaken for the FOX project discussed previously. Forty-seven alignments were reduced to 20 as a result of this evaluation. Figure S-3 depicts both the eliminated and the retained study alignments.

Tampa area: The FHSR study team developed 21 alignments to connect the downtown Tampa station eastward to I-75 with alignments in the I-4 and CSX rail corridors. Ten alignments were eliminated for reasons including engineering constraints, disruption of access to low-income housing and community facilities, disruption of the Ybor City National Historic Landmark District (NHLD), and causing relatively greater environmental impacts than retained alignments.

Table S-3
Summary of Design/Build Alternatives
by Alignment and Technology

Alternative	1	2	3	4	5	6	7	8
Technology								
Gas turbine	X	X	X	X				
Electric train					X	X	X	X
Alignment								
I-275/I-4 in Tampa	X	X			X	X		
CSX Line/I-75 in Tampa			X	X			X	X
I-4 between Tampa and Orlando	X	X	X	X	X	X	X	X
Bee Line Expressway/Taft-Vineland Road in Orlando	X		X		X		X	
S.R. 536/Central Florida Greeneway in Orlando		X		X		X		X

Hillsborough County: Two alignments were evaluated in rural Hillsborough County: one along the I-4 corridor and the other parallel to the CSX rail line. The CSX rail alignment was eliminated from further consideration due to proximity impacts to a significant number of community facilities in Plant City along the railroad.

Polk County: Nine alignments were evaluated in Polk County. The alignments included the I-4 and CSX rail corridors, as well as connections between the two corridors. The CSX corridor was eliminated due to proximity impacts to community facilities in Lakeland, Auburndale, Haines City, and Davenport. With the elimination of the CSX alignment, connecting alignments to the I-4 corridor were no longer viable.

Orlando area: Fifteen alignments were evaluated in Osceola and Orange counties in the Orlando area. Seven alignments were eliminated. Some of the alignments connected to eliminated alignments in Polk County and would have disrupted existing commercial development along the alignment. A new terrain connection between I-4 and the Central Florida Greeneway (S.R. 417) had the greatest amount of wetland and wildlife habitat impact and limited access to alternative station sites. Other alignments were eliminated due to engineering constraints.

The retained alignments from the screening study were combined into the alignments that make up the eight design/build alternatives described previously.

S.7 PREFERRED ALTERNATIVE

The Project Development and Environment (PD&E) Study for this action investigated the eight design/build alternatives, evaluating not only on the technological differences, but also engineering, environmental impacts, costs, and other factors impacting the selection of the alignment. Development of alignments provided an analysis of socio-economic, natural, and physical environmental impacts within the proposed corridors. The impacts of the design/build alternatives and the No-Build Alternative are identified in Section 4 of this document. The FHSRA recommended a Preferred Alternative on October 27, 2003. This recommendation was subject to two conditions relative to memorandums of agreement (MOA). On November 10, 2004, the FHSRA determined that the two MOAs could not be reached and revised the prior recommendation of the Preferred Alternative.

Identification of the Preferred Alternative

The FHSRA considered Tampa and Orlando independently, in the decision to identify a Preferred Alternative. All alternative alignments are located along I-4 through Polk and Osceola counties. However, two separate alignments were considered in Tampa (Hillsborough County), the CSX and I-4 alignments; and in Orlando (Orange County), the Florida Turnpike's Bee Line Expressway (S.R. 528) and the Central Florida Greeneway (S.R. 417) alignments.

The FHSRA unanimously passed a motion identifying the I-4 alignment in Hillsborough County as the preferred alignment.

On October 27, 2003, the FHSRA originally identified the Central Florida Greeneway (S.R. 417) alignment as the preferred alignment in Orange County. The vote was subject to the following two conditions:

- Subject to an acceptable agreement between the FHSRA and Walt Disney Company related to donation of ROW and commitments to support ridership for the project.
- Subject to an acceptable agreement between the FHSRA and OOCEA related to use of the Central Florida Greeneway (S.R. 417) ROW.

The FHSRA ranked the Fluor Bombardier Team (gas turbine technology) as the preferred proposer. The initial Preferred Alterative was Alternative 2, which is the combination of the I-4 alignment in Hillsborough County and the Central Florida Greeneway (S.R. 417) alignment in Orange County utilizing the gas turbine technology.

On November 10, 2004, the FHSRA revised the recommendation of the Preferred Alternative because the two MOAs described previously, had not been executed. With this action, the FHSRA recommended Alternative 1 (gas turbine technology) as the Preferred Alternative, which is the combination of the I-4 alignment in Hillsborough County and the Bee Line Expressway (S.R. 528) alignment in Orange County.

Description of Preferred Alternative

The Preferred Alternative, Alternative 1, begins at the downtown Tampa station, which is located between Tampa Street and Marion Street, I-275, and Fortune Street. The FHSR alignment follows I-275 along the south and east ROW. The alignment is in the southeast quadrant of the I-275/I-4 interchange and crosses into the I-4 median in the area of 15th Street. The majority of the FHSR alignment between the Tampa station and the crossing into the I-4 median is within the ultimate ROW identified in the Tampa Interstate Study (TIS) for future interstate improvements; however, some additional ROW will be required.

The alignment continues east within the I-4 median through Hillsborough and Polk counties. As identified by the first preferred proposer, the preferred station to serve the Polk County/City of Lakeland area is located in the northwest quadrant of the Polk Parkway/I-4 interchange. The proposed station configuration includes a median platform and pedestrian bridge crossing to the main station on the north side of I-4. The City of Lakeland requested continuous consideration of a station option at the Kathleen Road site located in the northeast quadrant of that interchange with I-4. The City is continuing discussions with the preferred proposer for consideration of this site. Initial evaluation of the Kathleen site indicates that the I-4 median is not wide enough to provide a median platform at this site; therefore, the mainline tracks of the FHSR would leave the median of I-4 west of the CSX crossing and reenter the median east of the U.S. 98 interchange at I-4. However, the alignment would remain within the I-4 ROW. The environmental impacts associated with both of these options are included in the impact analysis.

Entering Osceola County, the grade-separated alignment remains within the I-4 median. The proposed Disney Station is located north of U.S. 192. The station platform is located in the median and station facility is located west of I-4 between U.S. 192 and the Osceola Parkway.

The alignment continues in the I-4 median until the I-4/Bee Line Expressway (S.R. 528) interchange, where it leaves the I-4 median and runs along the north side of the Bee Line Expressway (S.R. 528) within existing ROW. The Orange County Multi-modal Center site is located in the northeast quadrant of the International Drive/ Bee Line Expressway (S.R. 528) interchange. The station and alignment would be located along the north side of the Bee Line Expressway (S.R. 528) ROW with station platform located within the ROW of the interchange area.

The alignment continues on the north side of Bee Line Expressway (S.R. 528) until east of the Bee Line Expressway (S.R. 528)/John Young Parkway interchange, where it leaves the Bee Line Expressway (S.R. 528) and runs on new alignment east to Taft-Vineland Road. The alignment continues along Taft-Vineland Road and enters the City of Orlando property near Tradeport Drive. It then follows the Orlando Utilities Commission rail line as a new alignment traversing through the limits of Orlando International Airport from south to north and east of the proposed South Terminal.

The FHSR alignment into the property of Orlando International Airport is located within the planned rail corridor traversing through the limits of the airport, as identified in the Orlando International Airport Master Plan. The FHSR O&M facility is located on the southern portion of

the Orlando International Airport property east of the South Access Road. The limits of the O&M facility have been located to avoid any impacts to the conservation area located south of the airport.

The Preferred Alternative, with the location of the proposed stations and the O&M Facility, is shown in Figure S-4. The conceptual engineering plans, including the horizontal and vertical alignments of the Preferred Alternative are attached as Appendix A.

Preferred Alternative Analysis

The FHSRA identified additional items for inclusion with the Preferred Alternative at the December 17, 2003, board meeting. The additions to the Preferred Alternative as identified by the Fluor Bombardier Team include the following:

- Double track configuration for the entire alignment.
- Provision for future electrification.

The Fluor Bombardier Team proposal identified a single track between Tampa and the Disney area and double track from Disney to the Orlando International Airport. All of the design/build alternatives have been analyzed through all phases of the FHSR study as a double track configuration; therefore, no change to the analysis is required. Providing for future electrification, the preferred proposer in coordination with the FHSRA has identified features that result in no additional environmental consequences than the impacts documented in the Environmental Consequences of the Preferred Alternative in Section 4. The features for future electrification include the construction of the base foundations for future installation of catenary poles and incorporation of conduit for future electrification within the identified ROW of the Preferred Alternative.

S.8 SUMMARY OF IMPACTS

The evaluation matrix in Table S-4 summarizes the quantifiable impacts of the proposed FHSR Design/Build Alternatives 1 through 8 discussed in Section 4. The matrix provides an assessment of impacts for each alternative, providing the opportunity to effectively evaluate the consequences of each alternative.

Design/Build Alternatives 1 through 4 represent the four alignment combinations with the gas turbine technology. Design/Build Alternatives 5 through 8 represent the four alignment combinations with the electric train technology. The impacts for the Preferred Alternative, Design/Build Alternative 1, are highlighted in Table S-4.

Physical impacts, such as wetland, wildlife, and floodplain impacts are technology neutral. The differences in impacts are due to alignment location, station sites, and O&M facility sites. In general, there are slightly more natural impacts associated with the Central Florida Greeneway (S.R. 417) alignment due to crossing relatively undisturbed land. Noise, vibration, air quality,

Table S-4
Design/Build Alternatives Evaluation Matrix
(Preferred Alternative Highlighted)

	Alternatives							
	1	2	3	4	5	6	7	8
NATURAL ENVIRONMENT IMPACTS (AC.)								
Total Wetland Impacts (AC.)	40	31.3	39.2	30.5	25.6	24.4	30.5	23.6
High Quality Wetlands (AC.)	11	2	11	2	11	2	11	2
Protected Species Sites	9	15	10	16	9	15	10	16
FLOODPLAIN AND FLOODWAY (AC.)								
Base Floodplain Encroachment	56.88	54.54	61.04	58.70	56.88	54.54	61.04	58.70
Base Floodway Encroachment	9.45	6.47	9.45	6.47	9.45	6.47	9.45	6.47
CONTAMINATION SITES (RANKED H)								
Potential Petroleum Sites	2	0	7	5	2	0	7	5
Potential Hazardous Materials Sites	5	5	12	12	5	5	12	12
SECTION 4(f) IMPACTS								
Recreation Facilities	1	1	0	0	1	1	0	0
Historic/Archaeological Sites	0	0	2	2	0	0	2	2
COMMUNITY SERVICES								
Schools	8	12	5	9	8	12	5	9
Community Facilities	10	9	6	5	10	9	6	5
Parks & Recreation	5	7	5	6	5	7	5	6
Cemeteries	4	6	6	6	4	6	6	6
Churches	15	16	12	13	15	16	12	13
NOISE IMPACTS (MODERATE & SEVERE)								
Category 1 (Buildings and/or parks)	0	0	0	0	0	0	0	0
Category 2 (Residences, hospitals, and hotels)	15	5	16	6	53	105	38	90
Category 3 (Institutional – schools, libraries, churches, active park)	0	0	0	0	1	2	0	1
VIBRATION IMPACTS								
Category 1 (Buildings and/or parks)	1	0	1	0	1	0	1	0
Category 2 (Residences, hospitals, and hotels)	44	20	40	16	13	5	9	1
Category 3 (Institutional – schools, libraries, churches, active park)	0	0	0	0	0	0	0	0
AIR QUALITY EMISSIONS (Net Change in Tons/Year)								
CO	-101.7	-64.7	-100.9	-63.8	-152.0	-114.3	-151.8	-114.1
NOX	+189.0	+188.2	+191.4	+190.6	+23.3	+24.1	+23.7	+24.5
VOC	+8.9	+10.6	+9.2	+10.9	-8.1	-6.1	-8.1	-6.1
ENERGY CONSUMPTION (Change from 2010 No-Build)								
Millions BTU	498,855	507,770	505,658	514,574	239,820	243,623	243,314	247,124
SECTION 106 IMPACTS								
Historic Sites	5	5	7	7	5	5	7	7
Archaeological Sites	0	0	0	0	0	0	0	0
RELOCATIONS								
Residential	3	3	0	0	3	3	0	0
Business	3	8	15	23	3	8	15	23
COST								
ROW (Non-public)	$118M	$149M	$150M	$181M	$101M	$128M	$134M	$161M
Infrastructure	$1,900M	$2,033M	$1,881M	$2,015M	$2,177M	$2,306M	$2,154M	$2,284M
Mitigation	$30M	$30M	$30M	$30M	$30M	$30M	$30M	$30M
TOTAL COST	$2.048B	$2.212B	$2.061B	$2.226B	$2.308B	$2.464B	$2.318B	$2.476B

and energy impacts are more associated with the technology. In some cases though, the technology and alignment combinations will have varying effect such as with noise and vibration. Key impacts are summarized in the following text.

S.8.1 Wetlands

Maintaining the rail alignment within existing transportation ROW minimizes wetland impact. In the entire 95-mi. corridor, wetland impacts range from 23.6 acres (ac.) with Design/Build Alternative 8, to 40 ac. for Design/Build Alternative 1. The majority of differences between the alignment alternatives by technology are due to the location of the proposed O&M facility site. The Fluor Bombardier (gas turbine technology) proposal identified an alternate O&M facility site with more wetland impacts, compared to the site proposed by the GRC proposal (electric technology). The Fluor Bombardier proposal also identified an additional 30-foot (ft.) width requirement for the rail alignment on new ROW, as compared to the GRC proposal. The majority of the impacts are to disturbed wetlands of poor quality located in the median and ditches of I-4, I-75, the Central Florida Greeneway (S.R. 417), and the Bee Line Expressway (S.R. 528). Lesser quality wetlands also occur along the CSX tracks. High quality wetlands, which generally result in greater mitigation requirements, are impacted the greatest in Design/Build Alternatives 1, 3, 5, and 7. These higher quality wetlands primarily occur on undeveloped land along I-4 and the Bee Line Expressway (S.R. 528). Impacts associated with the gas turbine technology (Design/Build Alternatives 1 through 4) are higher than the electric train technology (Design/Build Alternatives 5 through 8) due to the reasons previously stated.

The Preferred Alternative (Alternative 1) would result in 40 ac. of wetland impacts resulting from the gas turbine train technology, of which 11 are considered high quality wetlands. Wetland impacts, which would result from the construction of FHSR, are proposed to be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344.

S.8.2 Wildlife and Habitat

There are 17 federal and/or state protected species that have the potential or are known to occur within the FHSR study area. Six of those species are reptiles and amphibians, six are birds, three are mammals, and the remaining two are plants. The evaluation matrix indicates the number of sites that might be impacted by the various design/build alternatives. All of the design/build alternatives have potential sites because of their crossing undeveloped areas near the Green Swamp along I-4 in Polk County. Design/Build Alternatives 2, 4, 6, and 8 have the most potential species involvement as they also include the additional ROW on the north side of the Central Florida Greeneway (S.R. 417). The FRA must make a formal determination of effect for federally protected species that may occur in a project area. Because the design/build alternatives use existing transportation corridors that pass through potential habitat, any of the alternatives may affect some potential sites, but it is not likely to adversely affect any of the species. Furthermore, the FDOT has committed to providing wildlife crossings in Polk County along I-4 during construction of the ultimate interstate improvements. The GRC electric train proposal includes wildlife crossings to be consistent with future I-4 reconstruction, while the

Fluor Bombardier gas turbine technology does not. The FHWA and FDOT will require that the selected technology include wildlife crossings in its final design.

The Preferred Alternative would have "no effect" on the American alligator, Florida pine snake, Florida scrub jay, Florida burrowing owl, Southeastern American kestrel, Florida panther, manatee, Florida black bear, and protected plant species. The Preferred Alternative "may effect, but is not likely to adversely effect" the Eastern indigo snake, gopher tortoise, Florida mouse, gopher frog, sand skink, Florida sandhill crane, bald eagle, wood stork, state protected wading bird species, and Sherman's fox squirrel. Section S.11 of this summary contains a listing of commitments for those species that the Preferred Alternative "may effect, but is not likely to adversely effect." As part of mitigation commitments, FHSRA will continue to coordinate with U.S. Fish and Wildlife Service (USFWS), the Water Management Districts (WMDs), and Florida Fish and Wildlife Conservation Commission (FFWCC) to develop design and construction methods to avoid and minimize impacts to these species.

S.8.3 Floodplains and Floodways

Impacts to floodplains were estimated conservatively and vary minimally between design/build alternatives. There are no substantial differences between the two technologies. Design/Build Alternatives 2 and 6 have the lowest impact of 54.5 ac., while Design/Build Alternatives 3 and 7 would impact 61 ac. Floodway impacts are minimal with the lowest impacts for Design/Build Alternatives 2, 4, 6, and 8, and only 3 additional ac. for the remaining design/build alternatives. The majority of the floodway impacts are along I-4 in western Hillsborough County (Pemberton Creek), and between the Central Florida Greeneway (S.R. 417) and Orlando International Airport (Boggy Creek). It should be noted that the FHSRA estimates approximately 16 to 30 mi. of the FHSR alignment would be located on an elevated structure that may further minimize floodplain impacts. However, the Fluor Bombardier gas turbine proposal places the alignment on retained earth fill through the Green Swamp area in east Polk County. The proposed wildlife crossings would also be within these limits. The GRC electric train proposal maintained an elevated section with bridge structure in the area of the Green Swamp. The final amount of impacted floodplains and floodways would be determined during final design.

The Preferred Alternative would impact approximately 56.88 ac. of floodplain and approximately 9.45 ac. of floodway. Subsequent to final design, during which impacts would be minimized, floodplain and floodway impacts would again be calculated and the amount of mitigation would be determined.

S.8.4 Contamination Sites

The greatest impacts to hazardous materials sites are associated with the design/build alternatives that include the CSX corridor (Design/Build Alternatives 3, 4, 7, and 8). Industrial sites are typically located along rail corridors. Design/Build Alternatives 3, 4, 7, and 8 have the highest impacts at 12 sites. The other design/build alternatives each impact five or fewer sites that are scattered along the entire FHSR alignments. No properties with petroleum or hazardous materials occur at the proposed station or O&M facility sites.

The Preferred Alternative contains five potentially hazardous material contaminated sites and two potentially petroleum contaminated sites were identified within the alignment. There are no potentially contaminated sites associated with the preferred station locations and maintenance yard.

The five sites identified will be investigated further prior to any construction. Investigative work will include visual inspection, monitoring of ongoing cleanups, and possible subsurface investigations. At known contamination sites, estimated areas of contamination will be marked on design drawings. Prior to construction, any necessary cleanup plans will be developed. Actual cleanup will take place during construction, if feasible. Special provisions for handling unexpected contamination discovered during construction will be included in the construction plans package.

S.8.5 Section 4 (f) Sites

Public parks and historic resources are located within the project corridor and require special consideration of impact avoidance under the requirements of Section 4(f) of the *Department of Transportation Act*. Section 4(f) authorizes the United States Secretary of Transportation to approve a transportation project requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, state, or local significance, or land of an historic site of national, state or local significance, only if there is no prudent and feasible alternative to using that land, and the project includes all possible planning to minimize harm to the protected site. The number of impacted Section 4(f) sites varies by alternative. Design/Build Alternatives 1, 2, 5, and 6 require 0.184 ac. from the Perry Harvey Sr. Park in Tampa where the alignment travels southeast and parallel to I-275. The No-Build and Alternatives 3, 4, 7, and 8 avoid impacts to the park.

Design/Build Alternative 1, 2, 5, and 6 do not involve any historic properties covered under Section 4(f). However, Design/Build Alternatives 3, 4, 7, and 8 impact three historic sites in Tampa where the alignment passes through a commercial urban area to connect to the CSX rail line. The alignment passes through the parking lot of the St. Paul African Methodist Episcopal (AME) Church and directly impacts the adjacent Parsonage, both of which are eligible for listing on the National Register of Historic Places (NRHP). The church would not be directly affected; however, the taking of land from the parking lot and the taking of the Parsonage could affect its use. The alignment for Design/Build Alternatives 3, 4, 7, and 8 passes directly north of the Tampa Union Station, which is listed on the NRHP, and requires a small amount of ROW from the historic boundary. The building itself is not affected. The No-Build and Design/Build Alternatives 1, 2, 5, and 6 avoid impacts to the historic properties.

Based upon available ROW information, the construction of the Preferred Alternative would require 0.184 ac. of Perry Harvey Sr. Park. The ROW requirements will be further refined during design and ROW mapping when detailed information is available. The following numbers

are clarifications of the amount of land needed for the FHSR and the previously FHWA approved TIS:

- Original TIS taking = 0.66 ac.
- Amount of TIS take needed for FHSR = 0.041 ac.
- Additional Amount needed for FHSR = 0.143 ac.
- Section 4(f) = 0.041 + 0.143 = 0.184 ac.

The Preferred Alternative impacts the northwest edge of Perry Harvey Sr. Park. The existing exercise/jogging path located in the northernmost section of the park (north of Estelle Street) would be terminated approximately 40 feet (ft.) east of its current terminus at Henderson Avenue.

As a result of continuing coordination, the FHSRA requested through a letter to the City of Tampa that they concur in writing with the proposed mitigation that provides for compensation for the impacts to Perry Harvey Sr. Park, which will be determined during the ROW phase of the FHSR project. Response from the City of Tampa indicates that compensation for impacts to the park can be accomplished through the eminent domain process. The FHSR project will comply with specific commitments and stipulations identified in the existing TIS MOA for the ultimate ROW improvements that include provisions for multi-modal transportation that apply to this project.

The Preferred Alternative does not involve any historic Section 4(f) properties. Although the FHSR Preferred Alternative would require the acquisition of two contributing historic structures within the Ybor City NHLD, this action would not result in a Section 4(f) involvement for the FHSR. This conclusion was reached, in consultation with the FRA and the FHWA, due to the fact that these two historic structures are located within the TIS Ultimate ROW and have already been determined to have Section 4(f) involvement with the previously approved TIS project. The use of these two historic structures has already been evaluated in the TIS Section 4(f) Evaluation and mitigation measures are included in a MOA. Therefore, the FHSR project will comply with the requirement of the existing TIS MOA and a new Section 4(f) Evaluation for common resources was not required.

The acquisition of the 0.184 ac. of ROW at Perry Harvey Sr. Park is an unavoidable impact of the project. There is no feasible and prudent alternative to the use of land from the park and the proposed action includes all possible planning to minimize harm to the park resulting from such use.

S.8.6 Community Services

There is a range of 34 to 50 different facilities located within a quarter mi. of the FHSR design/build alternatives. However, with the exception of Perry Harvey Sr. Park (Design/Build Alternatives 1, 2, 5, and 6) and the St. Paul AME Church (Design/Build Alternatives 3, 4, 7, and 8), no community services are directly impacted by ROW acquisition or access relocation. The majority of facilities within a quarter mi. of the alternatives are churches.

The Preferred Alternative will require acquisition of ROW from Perry Harvey Sr. Park. The acquisition, impacts, and mitigation are discussed in detail in Section 5.

S.8.7 Noise Impacts

Noise impacts are expected with all of the design/build alternatives, but vary depending on alignments and technology. Impacts occur primarily in Category 2, residential areas near downtown Tampa (Design/Build Alternatives 1, 2, 5, and 6); and in Orlando, near the Bee Line Expressway (S.R. 528) (Design/Build Alternatives 1, 3, 5, 7), and Central Florida Greeneway (S.R. 417) (Design/Build Alternatives 2, 4, 6, and 8). There are fewer affected residences on Alternatives 3, 4, 7, and 8 in Tampa, which primarily pass through industrial areas along the CSX rail corridor.

Noise impacts for all the design/build alternatives are attributed to track proximity and height, as well as train speed. However, the design/build alternatives utilizing gas turbine train technology (Design/Build Alternatives 1-4) tend to have fewer overall impacts to noise sensitive areas compared to the design/build alternatives utilizing the electric train technology (Design/Build Alternatives 5-8). For example, a total of 15 residences have moderate and severe noise impacts under Design/Build Alternative 1, while Design/Build Alternative 5, along the same general alignment, impacts 52 residences and 1 hotel. The difference in noise impact between the two technologies can be attributed mostly to the difference in the proposed alignment, the proposed track elevation, and the proposed train speed.

Design/Build Alternatives 2 and 4 impact the fewest residences, primarily because the gas turbine trains are located in the median of the Central Florida Greeneway (S.R. 417), instead of the north side of the road, which is closer to residences. The maximum number of impacted residences occurs under Design/Build Alternatives 6 and 8 with 105 and 90 sites impacted, respectively. Both alternatives are located on the north side of the Central Florida Greeneway (S.R. 417), close to the Hunter's Creek residences. The difference between Design/Build Alternatives 6 and 8 is due to fewer noise sensitive sites occurring along the alignment connecting to the CSX corridor in Tampa along Design/Build Alternative 8. Design/Build Alternatives 5 and 7, also utilizing electric train technology, have 53 and 38 sites impacted, respectively, because there are fewer affected noise sensitive sites along the Bee Line Expressway (S.R. 528).

For a direct comparison of the gas turbine technology to the electric train technology, if the gas turbine train were to be located on the north side of the Central Florida Greeneway (S.R. 417), the noise impacts would be 84 sites compared to the 90 sites identified for the electric train. Conversely, if the electric trains were to be located in the median of the Central Florida Greeneway (S.R. 417), 12 sites would be impacted compared to the 5 sites identified for the gas turbine technology.

FRA's policy identifies potential mitigation for severe impacts, as defined by FRA guidance. Sound barrier walls are expected to eliminate severe impacts. The No-Build Alternative and Design/Build Alternatives 2 and 4 would not require any barrier walls. Design/Build Alternative 8 would require the greatest amount of barrier wall with 2,800 linear ft. Of this distance,

2,600 ft. would be located on one side of the rail alignment along the north side of the Central Florida Greeneway (S.R. 417). Mitigating residual moderate noise impacts would require additional and/or enhanced noise barriers, and would require the application of building sound insulation treatments in some locations.

The Preferred Alternative (Alternative 1) would impact a total of 15 residences, 7 impacts are projected to be moderate and 8 impacts are projected to be severe.

Based on the results of the noise assessment, potential mitigation has been evaluated at all locations where severe impacts were identified. The proposed mitigation measure is the construction of sound barrier walls to shield the areas where severe impact is projected. The proposed noise barriers are expected to eliminate all of the severe impacts. Eliminating the residual moderate noise impacts would require additional and/or enhanced noise barriers, and would also require the application of building sound insulation treatments in some locations.

With regard to potential noise impacts at non-residential locations, the feasibility of noise mitigation would need further evaluation. At Perry Harvey Sr. Park, the projected impact is due to the close proximity of the park to the proposed track and ROW. As the design is finalized, noise mitigation will be considered in more detail to determine if the benefit is warranted.

S.8.8 Vibration Impacts

Train technology and location influence vibration impacts in the study area. For example, design/build alternatives utilizing gas turbine technology (Design/Build Alternatives 1-4) tend to have greater overall significant vibration impacts, compared to alternatives utilizing electric train technology (Design/Build Alternatives 5-8). The difference in vibration impacts between the two technologies can be attributed mostly to the proposed alignment, the proposed speed, and the weight of the train set for each technology. The numbers of affected sites for Design/Build Alternatives 1-4 range from 16 to 45, but most impacts occur with Design/Build Alternatives 1 and 3 along the Bee Line/Taft-Vineland alignment. Notably, many of the same sites along this alignment are similarly affected by the electric train alternatives (Design/Build Alternatives 5 and 7), indicating that this area is vibration sensitive regardless of technology. This same situation occurs in Tampa where all design/build alternatives using the I-4 alignment (Design/Build Alternatives 1, 2, 5, and 7) cause vibration impacts in a residential area near 34th Street. Other vibration impacts are scattered along I-4 in rural Hillsborough County (Design/Build Alternatives 1-4); and in the Celebration area in Osceola County (Design/Build Alternatives 5-8). These impacts are attributed to the close proximity of the rail alignment to sensitive areas.

The Preferred Alternative (Alternative 1) with the gas turbine train technology would have an impact at a total of 44 residences (Category 2 receptors) and 1 Category 1 receptor. No impacts would occur at Category 3 (institutional) receptors.

Vibration impacts that exceed FRA criteria are considered to be significant and warrant mitigation, if feasible. There are specific locations (defined as civil stations) on the Preferred Alternative where mitigation has been recommended to reduce the vibration levels. At a

minimum, mitigation will require the installation of ballast mats or other features that mitigate impacts. Because the current analysis indicates that the ballast mats would not eliminate all of the projected impacts, more extensive mitigation would be considered.

Vibration mitigation would be addressed in more detail during final design. Further analysis would be completed to confirm the validity of the projected impacts in identified affected areas. The additional analysis, conducted during final design, will consist of supplemental vibration propagation tests at sites concentrated in these areas, including soil-to-building transfer function measurements.

S.8.9 Air Quality

All design/build alternatives meet the requirements of air quality regulations promulgated by the U.S. Environmental Protection Agency (EPA). However, there is variation in the amount of emissions associated with each alternative. Two emissions sources, trains and motor vehicles, affect the net change in emissions for each alternative. Comparing train technologies, the amount of emissions from a gas turbine train is higher than the amount of emissions from an electric train. This is a result of the relatively strict controls and emission reduction measures employed by power plants, which would be the source of electricity for the electric train technology. Comparing the reduction in emissions for motor vehicles, Design/Build Alternatives 1, 3, 5, and 7 are forecasted to provide a greater reduction in motor vehicle miles traveled (vmt) than Design/Build Alternatives 2, 4, 6, and 8.

All design/build alternatives would result in a reduction in carbon monoxide (CO) emissions. The amount of reduction is primarily caused by the relatively high rate of emissions from motor vehicles, compared to gas turbine or electric trains. Design/Build Alternatives 5 and 7 (lower electric train emissions and more reduction in motor vehicle emissions) would produce the greatest reduction in CO followed by Design/Build Alternatives 1 and 3 (higher gas turbine train emissions and more reduction in motor vehicle emissions), Design/Build Alternatives 6 and 8 (lower electric train emissions and less reduction in motor vehicle emissions) and Design/Build Alternatives 2 and 4 (higher gas turbine train emissions and less reduction in motor vehicle emissions).

All design/build alternatives would result in an increase in oxides of nitrogen (NOX) emissions. This increase is caused by the relatively high emission rate of NOX from gas turbine or electric trains compared to motor vehicles. The electric train Design/Build Alternatives 5, 6, 7, and 8 produce the lowest increase, while the gas turbine train Design/Build Alternatives 1, 2, 3, and 4 have higher emissions of NOX. The difference between electric and gas turbine train alternatives is caused by the lower emission rate for electric trains compared to gas turbine trains.

All gas turbine train design/build alternatives would result in a slight increase in volatile organic compounds (VOC). This increase is caused by the slightly higher emission rate for the gas turbine train compared to motor vehicles. All electric train design/build alternatives would result in a slight decrease in VOC. This decrease is caused by the lower emission rate for the electric train compared to motor vehicles.

EPA has designated Polk, Osceola, and Orange counties as attainment areas; therefore, the General Conformity Rule is not applicable to these three counties. EPA has designated Hillsborough County as a maintenance area for ozone; therefore, the General Conformity Rule is applicable to the portion of the FHSR project in Hillsborough County. Predicted increases in VOC or NOX for the design/build alternatives are less than the de minimis rates (100 ton per year rate of increase) documented in the General Conformity Rule; therefore, a conformity determination is not required for this project.

The Preferred Alternative would result in a net decrease in regional emissions of CO, a net increase in emissions of NOX and emissions of VOC would remain fairly constant. The net increase in emissions of NOX is a result of the relatively high emission rate of this pollutant from gas turbine engines.

S.8.10 Energy Consumption

All of the design/build alternatives result in increased energy consumption compared to the No-Build alternative. However, energy requirements for fossil fuel consumption for the gas turbine engines (Design/Build Alternatives 1-4) are substantially higher than the fossil fuel required to generate electricity for the electric trains (Design/Build Alternatives 5-8). Highway energy consumption decreases for all alternatives because of diverted automobile ridership. Additional energy required for operating and maintaining an additional station at the OCCC (Design/Build Alternatives 1, 3, 5, and 7) is reflected in the analysis of estimated energy consumption.

The estimated change in net energy consumption in year 2010, including thermal losses for electric power generation, ranges between 239,820 and 514,574 million British Thermal Units (MBTU) among the design/build alternatives, with the electric train alternatives net consumption being considerably lower than the gas turbine train alternatives. The total change is a negligible fraction (less than $1/20^{th}$ of one percent) of Florida's total energy consumption for surface transportation (all non-military vehicle operation on highways, railroads, and fixed-guideway public transportation), which is estimated to reach one quadrillion BTU (i.e., 1,000,000,000 MBTU) by 2010.

The Preferred Alternative would result in a net increase of energy consumption by 498,855 MBTU, accounting for the propulsion and operation of the FHSR as well as the reduction of gasoline consumption by diverting automobile ridership.

S.8.11 Historic and Archeological Resources

Potential impacts occur to historic structures near the Tampa CBD, where 22 significant resources (listed, eligible, or potentially eligible for listing in the NRHPs) are located within or adjacent to the design/build alternatives. Design/build alternatives that use the CSX alignment (Alternatives 3, 4, 7, and 8) would have potential impacts to 16 significant historic resources. These alternatives would have no effect on seven of these resources and may have an effect on nine of these historic resources. These potential adverse and no adverse effects are primarily due to potential visual and noise impacts, but were not evaluated in detail since none of these alternatives were selected as the Preferred Alternative.

Design/build alternatives running parallel to the I-275/I-4 corridor in Tampa (Alternatives 1, 2, 5, and 6), including the Preferred Alternative, would have potential effects to 12 significant historic resources. These alternatives would have no effect on seven historic resources and a conditional no adverse impact on five historic resources. Property from two contributing historic structures within the Ybor City NHLD would be required from these alternatives, however, these properties were previously identified for acquisition in the Tampa Interstate Study EIS Record of Decision [1] of the I-275/I-4 reconstruction.

A Section 106 Consultation Case Report for the Preferred Alternative (described in the report as the Proposed Action) was prepared in December 2003 for coordination with the State Historic Preservation Officer (SHPO). A Section 106 consultation meeting was held on December 10, 2003 with the SHPO where it was agreed that the FHSR Preferred Alternative would have no effect on seven historic resources and a conditional no adverse effect on five historic resources. The specific conditions, as identified in Section S.13, are commitments agreed to by the FHSRA, FRA, and SHPO that will be incorporated into future DBOM&F contracts in a manner binding to the vendor. The final Section 106 Consultation Case Report was submitted to the SHPO on behalf of FRA on December 24, 2003. A response letter from the SHPO, dated January 5, 2004, concurred with the findings of the report (Appendix B) and agreed to the stipulated conditions for the "conditional no adverse effect" determination. The Section 106 Consultation Case Report was then forwarded to the Advisory Council on Historic Preservation (ACHP) and the National Park Service (NPS) Atlanta Regional office on February 20, 2004 for their reference and opportunity to comment. No comments have been received from the ACHP or the NPS.

None of the proposed Design/Build Alternatives1 through 8 have any involvement with NHRP-listed, eligible, or potentially eligible archaeological sites. Therefore, the proposed FHSR project would have no effect on any significant archaeological resources.

S.8.12 Relocations

There is no difference in relocation impacts between train technologies. Differences in impacts between the design/build alternatives are due to alignment locations. A minimal amount of residential relocations would occur to implement the FHSR. Design/Build Alternatives 1, 2, 5, and 6 require three residential relocations in two structures near I-4 at 12th Avenue in Tampa. Design/Build Alternatives 3, 4, 7, and 8 do not require any relocation of residential structures.

The residential relocations associated with Design/Build Alternatives 1, 2, 5, and 6 contain minority low-income households. These three relocations were previously identified for relocation under the Tampa Interstate Study EIS Record of Decision. If one of these design/build alternatives is selected for implementation, construction of FHSR would likely occur prior to acquisition of the two structures for the ultimate I-4 improvements. The structures are located at the northern edge of the neighborhood and do not affect the community's cohesion.

1 Tampa Interstate Study (TIS), Record of Decision, FHWA-FL-EIS-95-03-F, January 31, 1997.

The alignment combination for Design/Build Alternatives 4 and 8 result in a maximum of 23 business impacts in Tampa and Orlando. The majority of all business impacts occur in two areas: where the alignment transitions from I-4 toward the Central Florida Greeneway (S.R. 417) and within the Tampa CBD as it travels towards the CSX tracks.

Minimal impacts are associated with design/build alternatives that parallel the I-275/I-4 corridor in Tampa (three business impacts) and use the Bee Line Expressway (S.R. 428) alignment in Orlando (no impacts). Thus, the least amount of business impacts would occur with Design/Build Alternatives 1 and 5, which use these alignments.

The Preferred Alternative would require three residential relocations located in two structures near I-4 and 12th Avenue in the Ybor City area, as identified in the ultimate I-4 improvements. It would also require three business relocations including the City of Tampa Recreation Department, the former Hillsborough County Sheriff's Office and Jail Complex, and a bail bondsman.

S.8.13 Transportation Impacts

The FHSRA projected 2010 annual ridership ranges from 2.4 to 2.8 million passengers on the Tampa to Orlando high speed rail alternatives using the Bee Line Expressway (S.R. 528) (Design/Build Alternatives 1, 3, 5, and 7), and 3.8 to 4.1 million on the alternatives using the Central Florida Greeneway (S.R. 417) (Design/Build Alternatives 2, 4, 6, and 8). A significant portion of the increase of ridership on the alternatives using the Central Florida Greeneway (S.R. 417) is based on a ridership market that would be available through an agreement with Walt Disney World. The FHSR system would divert about 11 percent of persons traveling between Tampa and Orlando, 9 percent of those traveling between Lakeland and Tampa, and 9 percent of those traveling between Lakeland and Orlando. Impacts to existing travel modes affect the automobile and bus transit service.

The impact of the No-Build Alternative is probably the most adverse to transportation. The No-Build Alternative would result in continued congestion on the existing highway network regardless of programmed improvements for capacity expansion. Furthermore, FDOT's policy to limit lane capacity on interstate and state highways would mean that congestion will continue unabated, resulting in reduced travel times and increased hours of congestion. The design/build alternatives would create an alternative travel mode to congested highways.

The Preferred Alternative, including station locations and maintenance facilities, would not impact freight rail operations or disrupt the operation of the roadway systems. However, some local roads would have minor impacts. Some impacts would occur for Amtrak and Greyhound bus services for those destinations that terminate in Orlando or Tampa. Air travel between Tampa and Orlando is not considered to be a comparable alternative to either road or rail travel. There would be minimal impact on taxi and shuttle services.

S.8.14 Public Safety

Operation of FHSR service would be subject to the FRA's railroad safety oversight and the federal laws and regulations governing the safety of rail operations nationwide. Rail operations of the FHSR would be separated from any vehicle or pedestrian access throughout the corridor. In its 2002 Florida High Speed Rail Authority Report to the Florida State Legislature, the FHSRA found that when high speed rail crosses motor vehicle traffic, these crossings should be vertically separated (grade-separated). The proposed FHSR between Tampa and Orlando includes no at-grade crossings. The pedestrian access at stations would be separated from any track crossings with either elevated tracks with pedestrian access underneath or pedestrian bridges crossing over the tracks.

The use and implementation of the gas turbine power car and coach technology has been demonstrated by high speed service in the Northeast Corridor of the United States. Fluor Bombardier has indicated that the system is fully compliant with FRA's Tier II Passenger Equipment Safety Standards for speeds up to 150 mph. The equipment has also undergone testing at the USDOT's Technology Center in Pueblo, Colorado. The power and passenger car bodies meet the structural requirements of the FRA and American Association of Railroads (AAR) Standards S-034 and S-580. The passenger coach also meets *Americans with Disabilities Act (*ADA) requirements.

The electric train is proposing to utilize the French TGV Atlantique system that has over twenty years of successful operation. This system is currently not approved for operation in the United States. As part of the FOX proposal, the FRA was petitioned to establish safety rules governing the design and operation of a TGV system between Miami and Tampa via Orlando. On December 12, 1997, the FRA issued a proposed Rule of Particular Applicability, 49 CFR Part 243, applying specifically to the FOX program. No final rule was ever approved, as the FOX program was cancelled and FRA discontinued further action on the rulemaking. With the establishment of the new FHSR program, under the auspices of the FHSRA, the electric train technology will have to consult with the FRA with respect to any inconsistencies between its proposed operations and the FRA's railroad safety requirements. A series of meetings have already been held with the FRA to discuss design criteria, safety, and regulatory issues. Additional meetings are anticipated as the DBOM&F process moves forward.

An intrusion detection system with fencing along the train corridor would be provided by the electric train proposal. The gas turbine train proposal would not provide an intrusion detection system, because FRA safety requirements do not identify the need for such a system when the maximum operating speed is 125 mph or less. Access detection would be provided only at access/egress gates in the fencing that would be placed along the entire train corridor.

As a part of the required System Safety Program Plan, the FHSRA identified installation of TL-5 intrusion barriers between the rail system and the parallel highway in tangent sections and TL-6 intrusion barriers on highway curves and overhead highway structures. The electric train proposal includes the barrier requirements identified by the FHSRA. The gas turbine proposal utilizes FDOT Index 410 barriers at retained earth fill sections and TL-5 barriers at other sections

on tangent. No overhead highway structure barriers would be replaced except where overpasses are reconstructed. Under 49 CFR 213.361, FRA requires preparation of a barrier plan for systems operating at speeds over 125 mph. The gas turbine train would operate at 125 mph or less.

Any and all associated approvals for the barrier, fencing, intrusion detection and any additional protective measures that may be required must be coordinated and received from all Federal and State agencies having jurisdiction associated with the preferred alignment.

S.8.15 Total Cost for Construction

The total infrastructure costs, including ROW and mitigation costs, vary between $2.048 and $2.474 billion, with Design/Build Alternative 1 being the lowest and Design/Build Alternative 8 being the highest. The range between the lowest and highest alternative is $426 million. The two proposers identify these costs to be funded by the public sector with bond financing. The availability of federal funding to support these types of improvements is very limited under existing law consisting principally of loan and loan guarantee programs. However, several bills presently pending before Congress would create either direct federal grant programs or bond-financing mechanisms that could be used to develop high speed rail infrastructure.

The rolling stock costs were identified separately by each proposal. The gas turbine train proposal identified rolling stock costs of $221 million that would be funded with a $120 million Federal Grant with the balance financed with tax-exempt project revenue bonds paid from the operating revenues. No Federal grant program currently exists that would fund these equipment costs but, as discussed previously, several bills pending before Congress would create programs that could provide this form of Federal financial assistance. The electric train proposal identified a cost range for rolling stock of $91 million for the Central Florida Greeneway (S.R. 417) route alternatives and $99.1 million for the Bee Line Expressway (S.R. 528) route alternatives. The rolling stock would be refurbished rolling stock and would be financed through a 20-year lease paid for with operating revenues.

The operations and maintenance costs for a thirty year period, provided by the proposers, range from $1.618 billion to $1.779 billion for the electric train and $1.208 billion for the gas turbine train. The gas turbine train proposal identifies guaranteed O&M costs for the first seven years of operation, which are then subject to renegotiation with the FHSRA. The gas turbine train proposal also identifies that the total cost of O&M would be to the private sector on the Central Florida Greeneway (S.R. 417) route alternatives and the public sector would finance 30 percent of this total on the Bee Line Expressway (S.R. 528) route alternatives. The electric train proposal is guaranteed for thirty years and is financed by the private sector.

The Preferred Alternative cost as proposed by the Fluor Bombardier Team utilizing the gas turbine train technology is $2.048 billion.

S.9 COMPREHENSIVE PLANNING AND COORDINATION

Metropolitan Planning Organizations (MPOs) prepare LRTPs for major urban regions, including the Tampa, Lakeland, and Orlando areas. Table S-5 provides the status of the LRTPs and actions needed for the four counties through which the project alignment travels. All of the plans include high speed rail as part of their long range transportation management.

Table S-5
High Speed Rail Study Area
Long Range Transportation Plans

Document	LRTP Adoption Date	Reference to High Speed Rail	Actions Needed
Hillsborough County			
Hillsborough County 2025 LRTP	Adopted: November 13, 2001	Yes – Chapter 4, Regional Transportation Planning; Chapter 6, Needs Assessment; 2025 Cost Affordable Transit Network Map	None
Polk County			
Polk County 2025 LRTP	Adopted: December 7, 2000 Amended: December 2002	Yes – Policies 5.8 and 5.9; Map	None
Orange and Osceola Counties			
METROPLAN Orlando 2020 LRTP	Adopted: December 1995 Refined: December 2002	Yes – Transit and Concepts Vision Plan	Written opinion of consistency between HSR alignments and LRTP has been requested.

There are 13 local governments including counties and cities, as well as an improvement district, within the project area. These local governments maintain comprehensive plans in compliance with *Florida Statutes, Chapter 163*. According to statute, these plans contain multi-modal transportation elements. These elements must also be consistent with the LRTPs of the MPOs.

Table S-6 shows the action needed prior to construction for each transportation element within the FHSR corridors. Local government plans vary in their compliance with their MPO LRTPs. The cities of Tampa and Lakeland and their respective county plans (Hillsborough and Polk) are consistent with their MPO plans. However, there is no documented consistency in Osceola County with METROPLAN's long range plan. See Table S-6 for additional information.

Table S-6
High Speed Rail Study Area
Transportation Elements

Document	Adoption Date	Reference to High Speed Rail	Actions Needed
Hillsborough County			
Hillsborough County Transportation Element	Adopted: March 2001	Yes - Policy 6.1.4, Future Transit Corridor Map	None
City of Tampa Transportation Element	Adoption Scheduled: April 2004	Yes - Intermodal Analysis, Policy 4.4.1, Policy 9.1.3, 2025 Highway Needs Plan	None
City of Plant City Transportation Element	Adopted: May 13, 1999	No	None
Polk County			
City of Lakeland Transportation Element	Adopted: December 27, 2001 Refined: January 2003	Yes - Mass Transit Section, Rail Section, Policy 7D; Map of Corridor	None
Polk County Transportation Element	Adopted: December 19, 2001 Refined: January 2003	Yes - Policy 3.302-A4, Support Data - Railroad Operations; Corridor Map	None
Osceola County			
Osceola County Transportation Element	Adopted: April 22, 1991	No	Policies included in amendment cycle (Adoption December 2003)- Map of proposed corridor and intermodal policy amendments
Reedy Creek Improvement District	January, 1997	No	Map of proposed corridor and intermodal policy amendments
Orange County			
Orange County Transportation Element	Adopted: December 5, 2000	No	Map of proposed corridor and intermodal policy amendments
City of Orlando Transportation Element	Adopted: January 26, 1998	Yes - Objective 1.16, Policies 1.16.1 to 1.16.4, Support Data Reference	Map of proposed corridor

S.10 PUBLIC INVOLVEMENT PROGRAM

A comprehensive Public Involvement Program was carried out for this study. The program began early in the study and continued throughout the process. The following summarizes this program and detailed information is contained within Section 6 of this EIS.

The Notice of Intent was published in the Federal Register on March 27, 2002 and an Advance Notification package was distributed to federal, state, and local agencies and to appropriate United States and State senators and representatives on April 3, 2002. Written comments were received from several of the agencies and have been addressed during the coordination and development of the EIS (see Appendix B).

Throughout the project, FHSRA organized meetings to provide interested parties with project updates. FHSRA held two agency coordination meetings: April 30, 2002 and July 30, 2003. FHSRA also held meetings with the local MPO and committees, elected officials, small groups, and non-governmental organizations. In addition, the FHSRA established a Cultural Resource Committee (CRC) to assist in the evaluation of significant cultural resources, potential effects, and methods for mitigation.

Two series of Public Information Workshops were held in each of the four counties located within the proposed FHSR corridors. The first series of public workshops was held in May 2002 to provide the attendees with an opportunity to review the proposed conceptual corridors, engineering design concepts, and the proposed high speed rail technologies, and to submit their comments. The second series of public meetings was held in January 2003 to provide the attendees with an opportunity to review the retained alignments, eliminated alignments, proposed high speed rail technologies, and construction schedules, and to submit their comments.

A series of Public Hearings was held in October 2003 in three of the four counties at locations along the FHSR corridor. The purpose of this series of Public Hearings was to solicit public comment on the Draft EIS, the proposed FHSR alternatives, the proposed technologies, construction schedules, and other issues related to the development of a high speed rail system.

A newsletter was mailed to all property owners, interested citizens, and local and state officials that summarized the first series of Public Information Workshops, provided a summary of project activities, announced the second series of Public Information Workshops, and listed upcoming events and key project dates.

A web page was developed to provide updated information on FHSR. The following information was displayed on-line: Florida High Speed Rail Screening Report, project schedule, workshop announcements, schedule of elected official and small group meetings, schedule of MPO and committee meetings, workshop results, and handout materials from the meetings. The website also provided a list of frequently asked questions, displayed meeting minutes of all public meetings, and offered viewers the opportunity to submit questions and comments to the project team.

S.11 AREAS OF CONTROVERSY

Public involvement is a key element of the impact analysis for the FHSR study, providing the study team guidance on the key issues of concern that require particular attention. The public involvement process, thus far, has revealed some areas of controversy. The public expressed concern regarding the potential FHSR visual and noise impacts to the 36 neighborhoods of the Hunter's Creek Community. Also, residents have voiced their opposition to any alternative that includes the Central Florida Greeneway (S.R. 417). Many residents, through public workshop attendance, public hearing attendance, comments, e-mails, phone calls, and correspondence, have voiced their support for the Bee Line Expressway (S.R. 528) alternatives.

Controversy also exists as to whether and how FHSR should serve the OCCC and the general alignment between Walt Disney World and the Orlando International Airport. This controversy is reflected in the provision of the OCCC station site with the Bee Line Expressway (S.R. 528) (Design/Build Alternatives 1, 3, 5, and 7) versus the Walt Disney World station site with the Central Florida Greeneway (S.R. 417) (Design/Build Alternatives 2, 4, 6, and 8). Discussions regarding the proposed station sites and preference of alternatives have occurred throughout the study, including through public involvement efforts and articles in the media. The Chairman of the Orange County Board of County Commissioners sent a letter on October 31, 2002, outlining the reasons FHSR should utilize the OCCC station site (see Appendix B).

S.12 UNRESOLVED ISSUES WITH OTHER AGENCIES

S.12.1 I-4 Wildlife Crossing

A commitment by FDOT to provide a future wildlife crossing in Polk County is contained in the Design Change Reevaluation of I-4 from Memorial Boulevard in Polk County to the Osceola County line. Design/Build Alternatives 1, 2, 3, and 4 do not provide for a future animal crossing (See Appendix A, Corridor D, Station 3230+00 and 3735+00 in Polk County), but would be required to do so to maintain consistency with FDOT commitments.

S.12.2 Coordination with Federal Aviation Administration

In an April 19, 2002, response to the Advance Notification of the FHSR project, the Federal Aviation Administration (FAA) requested continued coordination during the design of project components and location.

S.12.3 Coordination with Walt Disney World Resort

A station is proposed at Walt Disney World Resort, between Osceola Parkway and U.S. 192. The station facilities, including automobile parking lot, would be located west of I-4, while the transit platforms would be located in the median of I-4. Pedestrian access to the station would be constructed over the westbound lanes of I-4 in order to link the platform to the station facilities. This vacant parcel would then be developed into a transit stop and parking facility in order to access the FHSR station. The median of I-4 would also be reconstructed. There is no current access to the proposed station on the Disney property. A new roadway approximately ½ mi. in

length would need to be constructed to connect the parking area to the existing roadway network. Due to the proximity of these improvements to resort, it would be necessary to coordinate with representatives from the Walt Disney World Resort.

S.12.4 Coordination with FRA and FHWA

A portion of the FHSR alignment is located within the proposed and existing ROW of the "Ultimate" Tampa Interstate (I-4) in order to avoid impacts to historic resources near the Tampa CBD. For that reason, FDOT and FHSRA developed a MOA allowing the FHSR to be located in the median of I-4/I-275. The MOA discusses joint-use of the ROW, safety plans, and barrier protection measures. The MOA, which is included in Appendix B, was signed by FHSRA and FDOT. Signatures are pending for FRA and FHWA.

S.12.5 Coordination with Local Government

FHSRA coordinated with local agencies to ensure consistency of MPO LRTPs and transportation elements of the local comprehensive plans with the FHSR project. All of the applicable LRTPs include high speed rail as a part of their long range transportation management; however, FHSRA has not received a written opinion of consistency from METROPLAN (Orlando 2020 LRTP). Additionally, the FHSR project is consistent with the transportation elements of the Hillsborough County, City of Tampa, Polk County, and the City of Lakeland local government comprehensive plans. However, there is no mention of FHSR in the transportation elements of the Osceola County, Reedy Creek Improvement District, or Orange County comprehensive plans. FHSRA has requested that a map of the proposed corridor and intermodal policy amendments be included in these plans, as well as the City of Orlando Comprehensive Plan. Additional coordination of these consistency issues will be necessary.

S.13 PERMITS REQUIRED

In order to proceed into the design phase coordination, a number of state and federal agencies would be required to determine the permit requirements. The USACE, FDEP, Southwest Florida Water Management District (SWFWMD), South Florida Water Management District (SFWMD), and St. Johns River Water Management District (SJRWMD), regulate wetlands within the project area. USFWS, EPA, National Marine Fisheries Service (NMFS), and FFWCC review and comment on federal and state wetland permit applications. Currently, it is anticipated that the following permits may be required for this project:

Permit	**Issuing Agency**
Environmental Resource Permit (ERP)	WMD/FDEP
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System Permit (NPDES)	FDEP

The complexity of the permitting process depends greatly on the degree of the impact to jurisdictional wetland areas. The WMDs require an Environmental Resource Permit (ERP) when construction of any project results in the creation of a water management system, or impact

to “Waters of the State” or isolated wetlands. An Individual Permit (and wetland mitigation) would be required with mitigation for wetland impacts because impacts would be greater than one ac.

For USACE, a 404 Permit would also be required. This permit requires compliance with Section 404(b)(1) guidelines of the Clean Water Act (CWA). CWA compliance includes verification that all impacts have been avoided to the greatest extent possible, that unavoidable impacts have been minimized to the greatest extent possible, and that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, preservation, and/or enhancement.

Any project which results in the clearing of five or more ac. of land would require a National Pollutant Discharge Elimination System (NPDES) permit from FDEP, pursuant to 40 C.F.R Parts 122 and 124. In conjunction with this permit, a Storm Water Pollution Prevention Plan (SWPPP) would be required and implemented during the construction of the project by implementing such measures as Best Management Practices (BMPs). The primary functions of the NPDES requirements are to assure that sediment and erosion control during construction of the project takes place.

Once the application(s) are submitted, the permitting process period ranges from 30 to 240 days.

S.14 COMMITMENTS

The FHSRA is committed to the following measures for the FHSR project from Tampa to Orlando:

1. The following commitments were agreed upon by the FHSRA, FRA, and SHPO, as part of the Section 106 Consultation process. They would also be incorporated into future DBOM&F contracts in a manner that will be binding to the vendor.

    a. Provide the FHSR design plans (for the Tampa CBD and Ybor City areas) to the SHPO for review and comment at 30 percent, 60 percent, and 90 percent submittal.

    b. Coordinate the design of the Tampa Station with the SHPO to ensure that historic integrity is maintained at the nearby North Franklin Street Historic District and the St. Paul AME Church Parsonage.

    c. Implement vibration monitoring during construction adjacent to the Oaklawn Cemetery, German American Club and within the Ybor City NHLD to determine if damage is likely to occur according to damage criteria described in FRA's guidance manual, *High Speed Ground Transportation Noise and Vibration Impact Assessment*, Chapter 10. If vibration levels approaching the damage criteria are found to occur during construction, immediate coordination with the SHPO would be conducted to determine the use of less destructive methods and/or minimization methods for continuing the construction.

d. The stipulations of the TIS MOA would be fulfilled for any impacts to contributing historic structures within the Ybor City NHLD and the TIS Ultimate ROW.

e. Aesthetic treatment for the FHSR would be compatible with the existing Urban Design Guidelines set up for the TIS within the Tampa CBD and Ybor City areas. At minimum, the color of the concrete should be compatible with the TIS concrete color. The SHPO, City of Tampa, and local community groups, will be included in the development of the FHSR aesthetics.

2. Since the Proposed Action alignment passes through a portion of the Barrio Latino Local Historic District, the FHSR project shall be coordinated with the Barrio Latino Commission during the design phase, as required by the Tampa Code of Ordinances, Chapter 27 Zoning.

3. Construction of the Preferred Alternative will require 0.184 ac. of Perry Harvey Sr. Park. The ROW requirements will be further refined during design and ROW mapping when detailed information is available. As a result of continuing coordination, the FHSRA requested through a letter to the City of Tampa that it concur in writing with the proposed mitigation that provides for compensation for the impacts to Perry Harvey Sr. Park, which will be determined during the ROW phase of the FHSR project. Response from the City of Tampa indicates that compensation for impacts to the park can be accomplished through the eminent domain process (See City of Tampa Parks Director letter dated March 11, 2004, in Appendix B). As stated previously, the TIS Ultimate ROW includes provisions for multi-modal transportation that applies to the FHSR project. The FHSR project will comply with the specific commitments and stipulations identified in the existing TIS MOA for the Ultimate ROW improvements.

4. To assure protection of the Eastern indigo snake during construction, FHSRA will incorporate the "*Construction Precautions for the Eastern Indigo Snake"* guidelines into the final project design and require that the construction contractor abide strictly to the guidelines throughout construction. The guidelines include the following:

a. FHSRA shall provide Eastern indigo snake educational information, as contained in the applicable FDOT Districts One, Five, or Seven approved educational plans, to construction employees prior to the initiation of any clearing, construction, or gopher tortoise relocation activities. The applicable FDOT Districts One, Five, or Seven educational exhibits shall be posted at sites immediately accessible to all employees.

b. All construction activities shall cease in the immediate vicinity of any live Eastern indigo snake found within the project area. Work may resume after the snake, or snakes, are allowed to leave the area on its own.

c. Location of live sightings shall be reported to the USFWS Vero Beach field office at (561) 562-3909.

d. If a dead Eastern indigo snake is found on the project site, the snake shall be frozen as soon as possible and FHSRA shall notify the Vero Beach field office immediately for further instruction.

5. The FHSRA will conduct comprehensive surveys for gopher tortoises and their burrows during the final design phase of the project within the construction limits (including roadway footprint, construction staging areas and stormwater management ponds) and prior to construction. If burrows are identified during these surveys, FHSRA will contact the FFWCC to coordinate mitigation for any impacts to this species and acquire the necessary incidental take or relocation permits. Although the incidental take permit is issued for the gopher tortoise, the permitting process provides protection for the Florida mouse and gopher frog.

6. Based on the identification of sand skink habitat within the project area, the FHSRA will conduct surveys during the design/build phase and prior to permitting. The surveys will be conducted, in potentially suitable habitat, between March 1st and May 15th in accordance with the USFWS' draft protocol. Further coordination with the USFWS will take place prior to the initiation of the surveys to coordinate any potential impacts during the design/build phase of the FHSR project.

7. Prior to construction, resurveys for sandhill cranes in areas that may support nesting habitat will be conducted. If any crane nests are located, FHSRA will contact FFWCC immediately. Construction activities in the vicinity of the nest would cease until appropriate protective measures are determined.

8. One bald eagle's nest, PO-50 in Polk County, is located less than 300 ft. from the I-4 southern ROW limit. Because this nest was active through the 2002/2003 nesting season, the nest tree is still provided protection by the USFWS. Therefore, the FHSRA will contact the USFWS to discuss if the nest site is considered viable. If the nest is viable, then standard construction precautions will be implemented to assure the nest and any nesting activity would be protected from construction. Also, prior to construction, the Preferred Alternative will be re-evaluated to determine if any new nests have been established in proximity to the construction corridor.

9. Based on new USFWS guidelines, impacts to certain wetland systems within an 18.6-mi. radius, or the Core Foraging Area (CFA), of a wood stork colony may directly affect colony productivity. FHSRA commits to ensuring that there is no net loss of wetlands within the project area. The replacement of drainage ditches, swales, and retention ponds will be at a 1:1 or greater ratio, resulting in no net loss of CFA. Indirect impacts (e.g., changes in hydrological regimes) to adjacent wetlands will be minimized by adherence to wetland permitting requirements of the WMDs and the USACE. FHSRA further commits, where reasonable, to ensure that any wood stork habitat alteration is mitigated within the foraging range of known habitat rookeries in the project area in compliance with the USFWS' SLOPES requirements.

10. In an effort to minimize or eliminate any adverse affects to the Sherman's fox squirrel, the FHSRA will survey areas supporting suitable habitat outside of existing transportation ROW for nests just prior to construction in those areas. If an active nest is located during these surveys, the FHSRA will contact the FFWCC for guidance on assuring no adverse effect.

11. A commitment by FDOT to provide a future wildlife crossing during construction of the ultimate interstate improvements in Polk County is contained in the Design Change Reevaluation of I-4 from Memorial Boulevard in Polk County to the Osceola County line. Design/Build Alternatives 1, 2, 3, and 4 do not provide for a future animal crossing (See Appendix A, Corridor D, Station 3230+00 and 3735+00 in Polk County), but will be required to do so to maintain consistency with FDOT commitments. Since the FHSR is considered to be a viable portion of the ultimate I-4 corridor, the successful proposer will include wildlife crossings in its final design.

12. FHSRA, in coordination with the FRA, will comply with all applicable federal noise regulations, standards, criteria, and guidelines in the construction phase and in the operation of rail service. With regard to potential noise impacts at non-residential locations, the feasibility of noise mitigation would need further evaluation. At Perry Harvey Sr. Park, the projected impact is due to the close proximity of the park to the proposed track and ROW. As the design is finalized, noise mitigation will be considered in more detail to determine if the benefit is warranted. The FHSRA has committed to mitigating noise impacts that exceed the FRAs criteria for severe impacts. Mitigation will be coordinated with local communities during the final design phases of the project.

13. Vibration impacts that exceed FRA criteria are considered to be significant and warrant mitigation, if feasible. Vibration mitigation will be addressed in more detail during final design. Further analysis will be needed to confirm the validity of the projected 20 residential impacts in the area of 34th Street and Branch Forbes Road in Hillsborough County. The additional analysis, conducted during final design, will consist of supplemental vibration propagation tests at sites concentrated in these areas, including soil-to building transfer function measurements.

14. Potential contamination sites identified in this study will be investigated further prior to any construction. Investigative work will include visual inspection, monitoring of ongoing cleanups, and possible subsurface investigations. At known contamination sites, estimated areas of contamination will be marked on design drawings. Prior to construction, any necessary cleanup plans would be developed. Actual cleanup would take place during construction, if feasible. Special provisions for handling unexpected contamination discovered during construction will be included in the construction plans package.

15. The FHSRA is committed to working with its transportation partners (FHWA and FDOT) in the development of this project, and will continue to coordinate all aspects of the project with these agencies. The design/build consultant must follow FDOT Design and

Specifications to meet requirements for maintenance of traffic plans during construction of the FHSR. Coordination with Districts One, Five, and Seven will include any concurrent construction along the I-4 corridor. The design/build consultant will coordinate meetings for the development of the maintenance of traffic plans and the outcome of these meetings will be an acceptable plan to both FDOT and FHWA prior to approved use of the interstate ROW for the FHSR.

16. The FHSRA is committed to working with the Greater Orlando Aviation Authority (GOAA) and the FAA in the development of this project, and will continue to coordinate all aspects of the project with these agencies, especially in relation to the design of project components and stations in the vicinity of the Orlando International Airport.

17. FRA/FHWA will require the submittal and approval of specific plans addressing emergency and maintenance access to the guideway, construction access, and construction staging. The design/build process will address specific system safety and security in accord with FRA standards through development of a Safety Plan following completion of the environmental process.

18. Although the Final EIS proposes a fencing solution similar to what was originally proposed in the RFP, continued coordination with the design/build firm for fencing locations, as well as an intrusion detection system, barriers, and other protective measures, will be required in the design/build phase.

19. It is anticipated that roadway improvements in the immediate area of any station would be required and further coordination will identify specific roadway improvements in the design/build phase. Any roadway improvements will be coordinated with local agencies, including the City of Lakeland and Polk County. Visual impacts of a station will also be coordinated with various agencies, including the City of Lakeland and Polk County, through the design/build phase of the project.

20. A formal wetland jurisdictional survey will be produced during the permitting effort. Review and approval of these lines will be conducted by appropriate local, state and federal agencies. Plans will comply with the any local requirements including the Hillsborough County Environmental Protection Commission guidelines.

21. A continuing process of avoidance, minimization, and mitigation will be performed during final design and permitting. At this time, wetland impacts, which will result from the construction of this project, will be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all wetland mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C.s. 1344. Under this statute, transportation improvement mitigation can be achieved through long range planning, rather than a project-by-project basis. The mitigation is carried out by either the FDEP or the WMD. Under S. 373.4137 F.S., mitigation of FHSR wetland impacts will be implemented through the FDEP. Each WMD has developed a regional wetland mitigation plan to address the estimated

mitigation needs. This plan is updated on an annual basis and approved by the Florida State Legislature.

22. The FHSRA will comply with all applicable local, state, and federal standards and regulations regarding building demolitions and renovations, asbestos, and open burning requirements, including the Hillsborough County Environmental Protection Commission guidelines.

23. The Preferred Alternative would result in potential visual/aesthetic issues within the Tampa CBD. Where the FHSR leaves the I-4 median within Ybor City, coordination will occur with the City of Tampa to ensure design compatibility in height and design with the proposed Ybor City Gateway design at I-4 and 21st Street.

24. The FHSR alignment into the property of Orlando International Airport is located within the existing rail corridor traversing through the limits of the airport, as identified in the Orlando International Airport Master Plan. The FHSR O&M facility is located east of the South Access Road and on the southern portion of the Orlando International Airport property east of the South Access Road. The limits of the O&M facility have been located to avoid any impacts the conservation area located south of the airport and will require additional coordination with Orlando International Airport and FAA throughout the design phase.

25. Impacts to residents and travelers in the immediate vicinity of the project may result due to the construction of the Preferred Alternative; however, they would be of short duration in any given location since the construction would proceed in a scheduled sequence. All construction will be conducted in accordance with the FDOT's Standard Specifications for Road and Bridge Construction and Best Management Practices (BMPs).

26. The Preferred Alternative falls within the jurisdictions of the SWFWMD, the SFWMD, and the SJRWMD. The water quality criteria associated with each agency would apply to the portion of the project within the respective district limits. The FDEP would administer the project water quality requirements. The FHSR must meet criteria, which are located in rules 62-302.500 and 62-302.530 of the *F.A.C.*

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SECTION 1
PURPOSE AND NEED

1.1 INTRODUCTION

The potential for high speed rail to address a portion of the transportation needs of the State of Florida has a long history. The current effort to evaluate high speed rail's potential was initiated following an enactment by Florida's voters. In November 2000, Florida's voters adopted an amendment to the Constitution of the State of Florida that mandated the construction of a high speed transportation system in the state. The amendment required the use of train technologies that operate at speeds in excess of 120 miles per hour and consist of dedicated rails or guideways separated from motor vehicle traffic. The system was to link the five largest urban areas of Florida and construction was mandated to begin by November 1, 2003, to address a high speed ground transportation system.

The purpose of Article 10, Section 19 of the Constitution of the State of Florida was, "to reduce traffic congestion and provide alternatives to the traveling public." In June 2001, the Florida State Legislature, through the Florida High Speed Rail Authority Act, created the Florida High Speed Rail Authority (FHSRA) and charged the organization with the responsibility for planning, administering, and implementing a high speed rail system in Florida. The act also mandated that the initial segment of the system be developed and operated between St. Petersburg, Tampa, and Orlando areas with future service to the Miami area.

Following its creation in 2001, the FHSRA proceeded to implement the responsibilities set forth in the Florida High Speed Rail Authority Act. The FHSRA's proposal included the provision of high speed rail passenger service between downtown Tampa and Orlando International Airport. This project, while viewed by FHSRA as the first phase of the eventual achievement of the constitutional goal, has independent utility, in that it serves as an important transportation purpose in its own right and its implementation is not dependent upon future actions that may or may not be taken to expand high speed rail service beyond this project's limits. The FHSRA, with guidance from the federal lead agency, the Federal Railroad Administration (FRA), undertook a number of other actions to advance the high speed rail system, which are discussed in greater detail in Section 2, including preparation and issuance of the Draft Environmental Impact Statement (EIS) in August 2003 that preceded this Final EIS.

The FHSRA envisions possible future federal financial support for the project that might be provided through the FRA. While FRA and the U.S. Department of Transportation (USDOT) have several loan and loan guarantee programs that might be potential sources of future financial assistance, there are currently no existing grant or federal bond financing programs that would support the type of financial involvement envisioned by FHSRA. Several proposals to create such programs, however, are currently pending before Congress. The FRA may also have certain regulatory responsibilities, with respect to the project, which are consistent with its statutory railroad safety oversight activities. The Federal Highway Administration (FHWA) and the U.S. Army Corps of Engineers (USACE) are cooperating agencies for this document.

On November 2, 2004, Florida voters repealed the amendment to the Constitution of the State of Florida in its entirety resulting in removal of the constitutional mandate for a high speed rail system. This action, however, did not affect the legislative mandate for the FHSRA and the Florida High Speed Rail Authority Act remains in effect pending any action that the Florida Legislature may choose to take. The future of the proposed high speed rail system in Florida is thus uncertain. Notwithstanding this uncertainty, the FHSRA continues to believe that high speed rail can serve an important transportation purpose. FHSRA has also determined, and the FRA agrees, that it is in the best interest of the State of Florida to complete and issue this Final EIS. Considerable resources have been invested in bringing the document to this late stage of development and completing the environmental impact assessment process through issuance of a Final EIS has significant value, even if no further action is taken at this time to advance the proposed system.

The Florida High Speed Rail (FHSR) system proposed by the FHSRA to be located between downtown Tampa and Orlando International Airport would be developed on new track, with the great majority of the system located within existing right-of-way (ROW) of Interstate 4 (I-4), Interstate 75 (I-75), the Florida's Turnpike Bee Line Expressway (S.R. 528), the Orlando-Orange County Expressway Authority's (OOCEA) Central Florida Greeneway (S.R. 417), or the CSX railroad. Figure S-1 presents the study area. This Final EIS establishes the specific location and major design concepts of the proposed FHSR system from Tampa to Orlando in Florida, a distance of approximately 95 miles (mi).

The FHSRA has prepared this Final EIS with the FRA as the federal lead agency. The FRA is an operating administration within the USDOT and has oversight responsibility for the safety of railroad operations nationwide. Cooperating federal agencies include: FHWA and USACE. The FHSRA and the FRA have determined that an EIS is appropriate in order to satisfy the *National Environmental Policy Act of 1969* (NEPA)[1].

Preparation of this EIS, together with its circulation and review and comment, is designed to ensure that all viable alternatives for the project are evaluated, including a No-Build Alternative; that all substantial transportation, social, economic, and environmental impacts are assessed; and that public involvement and comments are solicited to assist the decision-making process. The evaluation of alternatives helps to ensure that the environmental impacts, benefits, costs, and trade-offs among alternatives are in compliance with federal and state requirements and addressed according to FRA procedures and Council on Environmental Quality (CEQ) regulations.

1.2 PURPOSE

The purpose of FHSR is to enhance intercity passenger mobility in Florida by expanding passenger transportation capacity and providing an alternative to highway and air travel. The FHSR Tampa-Orlando phase addresses concerns of increasing vehicular congestion on the I-4 corridor. Currently, few convenient alternatives exist that could reduce commuter, business, freight, and tourist highway traffic. In 1991, the Florida Department of Transportation (FDOT) established a limit of ten lanes (five lanes in either direction) at any location on the Florida Intrastate Highway System (FIHS). The three Master Plans governing I-4 within the project area

were all adopted under this regulation[2]. Interim construction and ultimate ROW acquisitions are consistent with these Master Plans. The Master Plans also identify an envelope for High Occupancy Vehicles or Light Rail Transit.

In 2002 and 2003, FDOT Procedures 525-030-250-f [3] and 525-030-255-c[4] set up specific criteria for widening all roads on the FIHS. These procedures were developed based on year 2000 legislation (Section 335.02(3) F.S.), which establishes criteria that must be considered when determining the number of lanes on the FIHS. The criteria include consideration of multi-modal alternatives and the consideration of local comprehensive plans and approved metropolitan long range transportation plans (LRTPs). The procedure notes:

> Nothing in Section 335.02 (3) F.S. precludes a number of lanes in excess of 10 lanes. However, before the Department may determine the number of lanes should be more than ten, the availability of ROW, and the capacity to accommodate other modes of transportation within the existing ROW must be considered.

The Metropolitan Planning Organizations (MPOs) within the study area support the establishment of the FHSR system within their jurisdictions as part of a balanced, multi-modal transportation system. They have worked closely with representatives of the FHSRA in the development of this EIS.

Federal and congressional transportation initiatives, most notably the *Transportation Equity Act for the 21st Century* and its predecessor the *Intermodal Surface Transportation Efficiency Act*, encourage public transportation investment that increases national productivity and domestic and international competition while improving safety, social, and environmental conditions. These policies encourage investments that:

- Link all major forms of transportation.
- Improve public transportation systems and services.
- Enhance efficient operation of transportation facilities and services.

Together, these statements of policy support the purpose of this proposed FHSR project.

1.3 NEED

Transportation demand and travel growth, as prompted by social demand and economic development, is outpacing existing and future roadway capacity. Increasing population, employment, and tourism rates continue to elevate travel demand in the study corridor as documented by forecasts prepared by the University of Florida Bureau of Economic and Business Research (BEBR). Currently, the FIHS is operating at or near capacity. Although capacity improvements to the interstate system along the corridor are either currently underway or planned for the near future, they are considered interim, "first phase" improvements. Although not funded or programmed, ultimate capacity improvements are needed to accommodate future travel demand. This need is further emphasized by increased traffic volumes, congestion, and accident rates in the study corridor. Social and economic demands will

continue to call for provision of alternative transportation choices for those individuals who cannot or choose not to drive, as well as those travelers looking for alternatives to congested highways.

1.3.1 Transportation Demand and Travel Growth

Florida's growing economy is expected to attract projected population and fuel tourism growth. The increase in the number of automobiles will far out-strip the state's ability to provide enough safe, efficient, and environmentally acceptable solutions with existing highway and airport infrastructure.

Florida is the fourth most populous state in the U.S. with a current population of 16 million, and a projected population of 24 million by 2030, according to the Florida Statistical Abstract 2001[5]. The ratio of licensed drivers per residence is the third highest in the nation, indicating the demand for, and high reliance on, automobile travel for mobility and access in the state. Travel demand in the corridor between Tampa and Orlando was estimated in the Investment Grade Ridership Study, Summary Report[6] prepared by the FHSRA in November 2002. As part of this study, information regarding forecasts of population, employment, and hotel room availability was obtained from the three MPOs within the corridor - Tampa Bay, Polk County, and Orlando. These MPO forecasts were compared on a county level to forecasts prepared by the BEBR to confirm that the MPO data was consistent with the official state data (the BEBR estimates).

Total corridor population is forecast to increase 33 percent from 2002 to 2025 as shown in Table 1-1. The population of the Orlando region (Orange, Seminole, and Osceola counties) was expected to increase by 46 percent over this same period. The Tampa Bay region (Hillsborough, Pasco, and Pinellas counties) is forecast to increase by 23 percent and Polk County by 38 percent. Additionally, employment in the corridor was expected to increase 47 percent by year 2025 as shown in Table 1-2. The Orlando and Lakeland regions were estimated to increase by approximately 57 percent and the Tampa Bay region by approximately 37 percent.

An increase in the number of hotel rooms is one measure used to estimate growth in visitor travel within the corridor. Overall, the number of hotel rooms was estimated to increase approximately 83 percent between 2002 and 2025 as shown in Table 1-3. The highest rate of increase was expected in the Orlando region (approximately 100 percent). In the Tampa Bay region, the number of hotel rooms was expected to increase approximately 47 percent, and in Polk County by approximately 22 percent.

Table 1-1
Summary of Population Trends in
FHSR Tampa-Orlando Corridor

Region	Existing 2002 Population	Projected 2025 Population	Percent Change
Orlando			
Orange County	938,367	1,411,809	50
Seminole County	380,425	475,498	25
Osceola County	183,637	314,054	71
Sub-Total	1,502,429	2,201,361	46
Lakeland			
Polk County	451,515	625,725	38
Tampa Bay			
Hillsborough County	981,712	1,321,758	35
Pinellas County	904,827	963,138	6
Pasco County	341,337	460,669	35
Sub-Total	2,227,876	2,745,565	23
Overall Study Corridor	**4,181,820**	**5,572,651**	**33**

Source: Investment Grade Ridership Study, Summary Report

Table 1-2
Summary of Employment Trends in
FHSR Tampa-Orlando Corridor

Region	Existing 2002 Employment	Projected 2025 Employment	Percent Change
Orlando			
Orange County	742,901	1,150,908	55
Seminole County	196,323	321,105	64
Osceola County	66,296	110,810	67
Sub-Total	1,005,520	1,582,823	57
Lakeland			
Polk County	181,722	286,344	58
Tampa Bay			
Hillsborough County	698,108	1,055,801	51
Pinellas County	511,037	584,881	14
Pasco County	99,972	151,353	51
Sub-Total	1,309,117	1,792,035	37
Overall Study Corridor	**2,496,359**	**3,661,202**	**47**

Source: Investment Grade Ridership Study, Summary Report

Table 1-3
Hotel Room Growth in
FHSR Tampa-Orlando Corridor

Region	Existing 2002 Hotel Rooms	Projected 2025 Hotel Rooms	Percent Change
Orlando			
Orange County	79,388	169,298	113
Seminole County	4,055	8,998	121
Osceola County	27,367	44,598	63
Sub-Total	110,810	222,894	101
Lakeland			
Polk County	5,841	7,127	22
Tampa Bay			
Hillsborough County	19,832	33,484	69
Pinellas County	24,038	30,869	28
Pasco County	3,214	5,042	57
Sub-Total	47,084	69,395	47
Overall Study Corridor	163,736	299,416	83

Source: Investment Grade Ridership Study, Summary Report

Tables 1-1, 1-2, and 1-3 indicate the significant increases in population, employment, and tourism within the counties containing the FHSR corridors. The predicted population growth documented in the tables would require future services, including multiple modes of transportation, to insure socio-economic growth and economic sustainability.

1.3.2 Capacity

The growing population and tourism rates in Florida place severe demands on an already congested transportation system. The counties, which contain the FHSR study area, also contain approximately 30 percent of the state's population and over 50 percent of the state's tourism revenue. Thus, transportation congestion would be more acute in these areas than elsewhere in the state. This is one of the reasons that FHSRA targeted the Tampa to Orlando area for the FHSR system.

In order to evaluate I-4 capacity, FHSR analyzed three time frames (2001, 2008, and 2025), which are presented in Table 1-4 and Figure 1-1. The Tampa-Orlando corridor is served by highways that currently operate at or near capacity, and will continue to do so after interim expansions are completed. Table 1-4, Existing and Future Roadway Capacity, illustrates capacity (number of lanes), traffic volumes, and level of service (LOS) for existing conditions, in both 2008 (estimated opening year for rail service) and 2025 design years. LOS is used as an indicator of a roadway's congestion level. Six different levels (A through F) are used to describe the level of congestion operating on a road. LOS A exists when a road has free flow or

unrestricted conditions, while LOS F describes a roadway with extreme congestion including long queues. Table 1-5 shows I-4 improvements recently completed, currently under construction, or planned for construction in the near future. Even with these improvements, I-4, in the vicinity of the Tampa and Orlando metropolitan areas, would operate at LOS F by the year 2008[7]. Many of the arterial routes providing access to I-4 are functionally obsolete and inadequate to accommodate current traffic, much less anticipated growth in travel demand. In 2008, half of the roadway network along the proposed FHSR corridor will operate at LOS F. While FHSR will not eliminate congestion, it offers an alternative transportation option, and can relieve some of the traffic problems.

Based on the November 2002 Investment Grade Ridership Study, Summary Report, a total of 4,253,000 automobile trips within the project area would be replaced by trips on the FHSR system by 2010. This represents a reduction of 4.3 percent of total trips that would otherwise travel on the congested highway network between Tampa and Orlando in 2010. In terms of overall traffic between the cities, 11 percent of the 4.5 million annual travelers are forecasted to utilize the FHSR between Tampa and Orlando, as noted in the Investment Grade Ridership Study, Summary Report.

Table 1-4 and Figure 1-1 present the existing and future congestion levels for I-4, the Central Florida Greeneway (S.R. 417), and the Bee Line Expressway (S.R. 528). Even with the completion of the I-4 projects that are funded with pending construction, and the considerable planned I-4 improvements in the future, capacity problems on I-4 would continue through 2025. The need for a substantial widening of the Florida Turnpike and the Bee Line Expressway (S.R. 528) by 2008 is also shown. Only limited portions of the Central Florida Greeneway (S.R. 417) would have excess capacity by 2025.

Table 1-4
Existing and Future Roadway Capacity

Segment	2001			2008			2025		
	Lanes	$AADT_1$	LOS_2	$Lanes_3$	$AADT_3$	LOS_2	$Lanes_3$	$AADT_3$	LOS_2
I-4 from Downtown Tampa to Tampa City Limits (50th Street)	4	132,000	F	6*	140,000	F	6*	164,000	F
I-4 from Tampa City Limits (50th Street) to I-75	6	91,000	D	6	114,000	E	6	117,000	E
I-4 from I-75 to Plant City (S.R. 39)	6	93,000	D	6	130,000	F	6	145,000	F
I-4 from Plant City (S.R. 39) to Polk Parkway	6	87,000	D	6	110,000	E	6	137,000	F
I-4 from Polk Parkway to U.S. 98	4	69,000	E	6	86,000	D	6	115,000	E
I-4 from U.S. 98 to U.S. 27	4	62,000	D	6	62,000	C	6	88,000	D
I-4 from U.S. 27 to Osceola County Line	4	82,000	F	6	90,000	D	6	116,000	E
I-4 from Osceola County Line to Central Florida Greeneway	4	63,000	E	6	$72,000_1$	C	8**	151,000	E

Table 1-4 (cont.)
Existing and Future Roadway Capacity

Segment	2001			2008			2025		
	Lanes	$AADT_1$	LOS_2	$Lanes_3$	$AADT_3$	LOS_2	$Lanes_3$	$AADT_3$	LOS_2
(S.R. 417)									
I-4 from Central Florida Greeneway (S.R. 417) to Epcot Center Drive (S.R. 536)	6	117,000	E	6	$137,000_1$	F	8**	175,000	F
I-4 from Epcot Center Drive (S.R. 536) To Bee Line Expressway (S.R. 528)	6	143,000	F	6	$175,000_1$	F	8**	$220,000_4$	F
Central Florida Greeneway (S.R. 417) from I-4 to Epcot Center Drive (S.R. 536)	4	16,100	A	4	$24,000_1$	B	4	$28,000_4$	B
Central Florida Greeneway (S.R. 536) to John Young Parkway	4	26,000	B	4	$39,000_1$	C	4	$76,000_4$	E
Central Florida Greeneway (S.R. 417) from John Young Parkway to Boggy Creek Drive	4	25,000	B	4	$37,000_1$	C	4	$45,000_4$	C
Bee Line Expressway (S.R. 528) from I-4 to John Young Parkway	4	63,000	D	4	$74,000_1$	F	10***	$121,000_5$	C

Sources:
1 Florida Traffic Count Information, FDOT, 2001
2 Quality/Level of Service Handbook, FDOT, 2002
3 Tampa Bay Regional Planning Model; Polk TPO Model
4 MetroPlan Orlando 2020 LRTP
5 Bee Line Expressway (S.R.528) PD&E Study, Florida's Turnpike, 2003s

* 6-lane divided freeway plus interchange with the Crosstown Connector
** 6-lane divided freeway plus 2 HOV lanes.
*** 8-lane divided expressway plus 2 HOV lanes.

While the FHSR system cannot meet all of the future capacity needs of I-4 within the study area, the high speed rail traffic diversion may delay the need for future improvements to I-4 and the Bee Line Expressway (S.R. 528), freeing funds for other network capacity improvements.

1.3.3 Safety

Safety is a paramount consideration in providing transportation. A key rail safety consideration focuses on reducing or eliminating conflicts between people, automobiles, trucks, and trains. These conflicts occur most frequently at grade crossings and where pedestrians and automobiles cross rail lines. In the interest of minimizing the possibility of train-vehicular or pedestrian collisions and maximizing safety, this project incorporates grade-separated crossings for all streets and highways. Barrier intrusion systems would also be incorporated into the design/build alternatives.

Projected growth in the mobility of people and goods by truck, rail, auto, transit, and air over the next two decades underscores the need for improved safety. Florida's overall highway facility and injury rate exceeds national averages, ranking third in fatality rate and tenth in crashes involving injuries[8].

Table 1-5
Roadway Improvements within the Study Area

Corridor	Roadway	Limits	Construction Status	Type
Hillsborough	I-275/I-4	Central Business District (CBD) Interchange	In Progress	Interchange Improvements
	I-4	14th Street to 50th Street	Pending	Additional Lanes 4 to 8
	I-4	I-4 50th Street to Polk County Line	In Progress	Additional Lanes 4 to 8 and 6
Polk	I-4	Hillsborough County Line to U.S. 92	Completed	Additional Lanes 4 to 6
	I-4	U.S. 92 to Osceola County Line	In Progress	Additional Lanes 4 to 6
Osceola	I-4	Polk County Line to U.S. 192	In Progress	Additional Lanes
	Boggy Creek Road	U.S. 192 to Turnpike	Pending	Realignment & Shoulders
	Western Beltway	I-4 South of Disney to S.R. 50	Pending	New Construction Expressway
Orange	I-4	U.S. 441 to Maitland Blvd.	In Progress	Additional Lanes
	I-4	Kirkman Road to Turnpike	In Progress	Additional Lanes
	I-4	S.R. 528 to S.R. 482	In Progress	Additional Lanes
	I-4	I-4 John Young Parkway	In Progress	Interchange Improvements
	I-4	I-4/EW Expressway	Pending	Interchange Improvements
	U.S. 441-17/92	Osceola Parkway to Taft/Vineland	Pending	Additional Lanes

Source: FDOT June 2003

The Florida Department of Highway Safety and Motor Vehicles publishes an annual summary entitled, "Florida Traffic Crash Facts." The summary reported for the years 2000 and 2001 that there were a total of 2,999 and 3,013 fatalities, respectively. The summary also reported 231,588 and 234,600 non-fatal injuries in 2000 and 2001, respectively, an increase of 3,012. The number of crashes also increased approximately 9,628 with 246,541 and 256,169 crashes, in 2000 and 2001, respectively. These increases correspond to an estimated fatality rate of 2.0 per 100 million vehicle miles of travel (VMT), compared to a national average of 1.5 per 100 million VMT, demonstrating that Florida is approximately 33 percent higher than the national average[9].

The FHSR would be required to determine protective measures necessary to prevent intrusions of vehicular traffic, unauthorized persons, large animals, and objects into the rail alignment from the surrounding highway system and overpasses. FHSRA is further required to obtain any and all associated approvals for the barrier, fencing, and intrusion detection systems, in addition to any protective measures that would be required from all federal and state agencies having jurisdiction within the corridors proposed for use by the FHSR.

Passengers must have confidence that the proposed rail service is not only reliable and fast, but is as safe as or safer than other modes. Recent statistics indicate that passenger rail travel is one of the safest modes of transportation in terms of total accidents and fatalities.

1.3.4 Social Demands/Economic Development

More than 17 percent of Florida's citizens are age 65 years or older, compared to the national average of 12 percent. In addition, there are an estimated two million citizens in Florida with disabilities, who depend on access to user-friendly transportation facilities and services for

mobility between major urban centers and visitor attractions. The population living in the corridor between Tampa and Orlando represents approximately 30 percent of the total Florida population.

For minimal charge, bus service in each county is available to residents and visitors. These buses provide service to all areas of the county including neighborhoods, attractions, and CBDs. As a percentage of all trips taken, the approximate percentage of transit users within Orange County is 4 percent; Hillsborough County is 3 percent; Polk County is 2 percent; and Osceola County is 2 percent.

Traveling between counties in the region, however, one must rely on other transportation choices. The primary mode of choice is the automobile, but private bus services are also available. Amtrak travel is provided from the northeast U.S., south to Miami via Orlando, and then on to Florida's east coast. There is no passenger rail travel available between Tampa and Orlando. Amtrak, through the Martz Tampa Bay bus lines, offers a continuation of service from Orlando to Tampa. The bus service, via Martz Tampa Bay bus lines, runs twice daily and makes one stop in Lakeland. The trip takes approximately 2 hours and 50 minutes, costing $54.00 for one adult passenger's round trip ticket. Greyhound buses run several times daily, between Orlando and Tampa, make stops in several cities en route, and offer flexible departure times from early morning to late in the evening. Travel time depends on the number of stops and can range from 1 hour and 40 minutes to 3 hours and 45 minutes. The cost of one adult passenger round trip ticket is $32.25.

Travel time is an important factor when traveling on business or for pleasure. With the 71 million people visiting Florida for business and recreation each year, automobile and air travel are equally popular modes of transportation. However, because of the high popularity, automobile and air travel are also quickly emerging as the most congested modes of transportation. The result is that business travelers lose productive working hours and tourists lose valuable recreation time because of delays on congested roadways and in congested airports.

The FHSRA Investment Grade Ridership Study, Summary Report assessed traffic along the FHSR corridor to categorize and quantify corridor ridership, analyze drive times, and determine travel characteristics between Tampa and Orlando. According to the report, estimated driving time between downtown Tampa and Orlando International Airport can take up to 91 minutes utilizing I-4 and other congested roadways. Conversely, travel time at posted speeds between these two destinations is estimated to be a 82-minute trip. Further, travel times vary by bus, from 1 hour and 40 minutes to 3 hours and 45 minutes, not including parking, boarding/deboarding, or travel to and from origin/destination. By comparison, an estimated rail trip on FHSR between downtown Tampa and Orlando International Airport will take approximately 64 minutes, not including parking, boarding/deboarding, or travel to and from origin/destination.

Total travel time by air, from origin to destination, includes road delays, ticketing access, terminal navigation, transfer time, and enplane/deplane time. Also, travel time by air has increased recently as airports have become more cautious about security. Air travel between Tampa and Orlando is currently provided by one round trip flight per day serving primarily

connecting travelers. The estimated flight time is approximately 45 minutes, but this does not include time required for parking, security checks, enplaning/deplaning, or travel to and from the origin/destination. Altogether, air travelers between Tampa and Orlando can expect a travel time of approximately 2 hours and 45 minutes.

Persons traveling by automobile pay approximately $0.36 per mi. for business travel and about $0.12 per mi. for non-business travel. For air travel, ticket costs range from $1.55 to $2.90 per mi. For bus service, costs can vary from $0.34 to $0.57 per mi. These travel costs can be compared to rail rates that are estimated at expected ticket price of approximately $0.31 per mi. from Tampa to Orlando.

In order to ensure efficient and cost effective travel for business and tourist travelers, more than one mode of transportation is desirable. The Florida State Comprehensive Plan[10], which was enacted by the Florida Legislature, calls for a high speed rail system linking Florida's major urban centers. This plan also provides long-range policy guidance for the orderly social, economic, and physical growth of the state.

1.3.5 Air Quality

Under the *1990 Clean Air Act Amendments*, three Florida airsheds, encompassing six urbanized counties, were designated as ozone non-attainment areas. One of those airsheds, Tampa Bay (Hillsborough and Pinellas counties) is within the FHSR study corridor and was designated as a "marginal" ozone non-attainment area. On February 5, 1996, the U.S. Environmental Protection Agency (EPA) redesignated the airshed as "attainment" for the 1-hour ozone National Ambient Air Quality Standard (NAAQS).

The redesignation also provided EPA approval of "maintenance plans." Maintaining air quality standards is part of the FDOT Strategic Plan for 1998-2006[11]. The challenge in the Tampa Bay area will be to continue to reduce vehicle emissions to acceptable levels and then maintain air quality standards by encouraging more efficient use of land resources, improving mobility, and providing alternative transportation facilities and services. These, and other approaches aimed at reducing the demand for trips in single occupancy vehicles, must be an integral part of all transportation plans and programs to ensure that these areas conform to federal air quality standards. Multi-purpose transportation corridors, such as high speed rail lines in medians and designated lanes for high occupancy vehicles and local travel, are transportation strategies that can achieve a reduction in pollution levels.

The ability to meet federal air quality standards over the next 20 years will also require a number of parallel actions, including reductions in the number of VMT; improved land-use planning and development; transportation demand management strategies; operational improvements and use of new technologies; more people per vehicle; and travel alternatives to the single occupancy vehicle. The FHSR is expected to reduce total VMT between Tampa and Orlando.

The *Clean Air Act* makes transportation conformity the affirmative responsibility of the USDOT, the State of Florida, and the MPO. In addition, transportation conformity with the ozone attainment and maintenance strategies contained in the Florida State Implementation Plan for the

Tampa Bay area is an important criterion for evaluating project alternatives, including the No-Build Alternative. The FHSRA has coordinated with regional MPOs on how this project is, or will be, reflected in each of the metropolitan LRTPs, regardless of the NAAQS designation.

1.3.6 Modal Inter-Relationship

Intermodal connections with major airports and existing and planned local and regional transit systems are required in Florida's 2020 Transportation Plan. Within this plan, it is indicated that the FHSR should connect with airports at Miami, Orlando, and Ft. Lauderdale. A high speed rail connection is proposed for the Orlando International Airport. Another connection would serve the Orange County Convention Center (OCCC) multi-modal station. In addition to the FHSR, it is anticipated the OCCC multi-modal station would handle automobile parking and buses in the immediate future, and light rail and the I-Drive Circulator system in the future. The circulator system is currently under study to determine technology requirements needed to provide a transit system for the I-Drive economic area. The Tampa Station, located in the downtown business district, would serve the Hillsborough Area Regional Transit Authority (HARTline), the Tampa Electric Company (TECO) Line Streetcar System, and future light rail. HARTline has constructed an area transit center, with service to all busses in the system, across from the proposed FHSR station. The streetcar system currently serves downtown Tampa, Ybor City, and Channelside with future connection with the proposed Tampa light rail system. The light rail system is planned to connect downtown Tampa to Tampa International Airport, the University of South Florida (USF), West Shore business district, south Tampa, and area hospitals.

1.4 BACKGROUND OF FLORIDA HIGH SPEED RAIL

Starting as early as the 1960s, the feasibility of high speed rail has been studied in Florida. In 1976, the Florida Legislature mandated the first study, the Florida Transit Corridor Study[12]. The study resulted in the FDOT's identification and acceptance of limited access highway medians as a potential location for high speed rail. The study proposed the use of existing rail corridors as well, both on and parallel to the existing facilities. The study also established the size of the rail envelope within medians of limited access roadways at 44 feet (ft.) for a dual track.

In 1982, Florida Governor Bob Graham authorized the creation of the Florida High Speed Rail Committee. The Committee, in 1984, issued the Florida Future Advanced Transportation Report[13]. The report recommended using public/private partnerships to proceed with the implementation of a high speed rail system. The report also recommended using existing publicly-owned ROW for the system. As a result, the Florida Legislature passed the *Florida High Speed Rail Transportation Commission Act (the Act)* to, "encourage and enhance the establishment of a high speed rail transportation system connecting the major urban areas of the state." The act defined a high speed rail transportation system as, "any high speed, fixed guideway transportation system for transporting people or goods . . . capable of operating at speeds in excess of 120 miles per hour (mph)."

Between 1986 and 1991, a number of proposals and attempts were made to implement high speed rail with a variety of combinations of private and public funds and taxing proposals. However, none of these attempts resulted in the implementation of high speed rail.

In 1992, the Florida Legislature enacted the *New High Speed Rail Act*, transferring the responsibility from the Commission to the FDOT. Key studies conducted by FDOT after the 1992 revision of the *New High Speed Rail Act* are discussed below. The FDOT conducted these studies to assess market factors that would be critical in the implementation of high speed rail.

In 1993, FDOT completed its study, High Speed/Intercity Rail Passenger System Planning Assessment of Routes and Alignments[14]. It was a statewide examination of possible routes for high speed rail. FDOT conducted a second study, Florida High Speed and Intercity Rail Market and Ridership Study[15], which was an examination of the characteristics of the intercity rail market and ridership characteristics between Tampa, Orlando, and Miami. This study concluded that recreational travel and business travel were the two predominant trip purposes for high speed rail travel.

Also in 1993, FDOT completed a third study, the High Speed Rail Transportation Study – Tampa Bay to Orlando Corridor[16]. The study further investigated whether the Orlando-Tampa Bay corridor was suitable for high speed rail. Because of intensive development and the existence of major wetlands within the Orlando-Tampa Bay corridor, the study focused on existing corridors connecting Pinellas County to Orlando, mainly the I-4/I-275 and CSX rail corridors. At the conclusion of the study, FDOT determined that the I-4/I-275 corridor was the preferred alternative for high speed rail implementation between Orlando and the Tampa Bay area. For this reason, FDOT, in conjunction with the reconstruction of I-4/I-275, proposed to preserve an envelope within the median of the reconstructed interstate corridor between Orlando and Pinellas County for a high speed rail transportation system.

In 1995, FDOT produced Florida Intercity Rail Passenger Service, Options for the 21st Century, a Component of the Florida Transportation Plan[17]. It included a discussion of various corridors between Orlando and Tampa. These include the I-4 median, the CSX railroad tracks, and a new alignment. The document recommended the establishment of a public/private franchise to ensure a cost effective and marketable intercity high speed rail network.

In 1995, the Florida Overland eXpress (FOX), a limited partnership composed of affiliates of four global companies, was awarded the franchise to form a public/private partnership with the FDOT for the purpose of creating a high speed rail system in Florida. FOX studied an initial route, which linked Miami to the Orlando International Airport with the anticipation of expansion of the route to Tampa. The Florida Overland eXpress (FOX) Study[18] was initiated by FDOT in 1996. The Notice of Intent for the environmental process was issued in the Federal Register on April 27, 1998, describing the alternatives under consideration. The scoping process for the EIS included eight public workshops in communities along the study corridors, as well as review workshops with federal, state, and local agencies during May and June 1998.

As a result of the input from the scoping process and the agency screening process, FDOT, in cooperation with FHWA and FRA, identified alternative corridors to be evaluated in the FOX EIS including the alignments paralleling I-4. The I-4 corridor from Orange County to the Tampa Bay area had six options, three in the Orlando metropolitan area, and three between Lakeland and the Tampa metropolitan area. Stations were planned for Orlando area attractions, Lakeland,

and Tampa. Due to the termination of state funding for the study in early 2000, no further work was undertaken on the EIS.

In 2000, the Florida Legislature authorized the Coast to Coast Rail Feasibility Study[19]. It was later renamed the Cross-State Rail Feasibility Study. The study was not an environmental or preliminary engineering study, but instead focused on the physical and financial feasibility of the I-4 corridor between Orlando and the Tampa Bay area for high speed rail. The study team recommended the following "Next Steps":

- Conduct no additional planning studies.
- Initiate preliminary engineering and work activities.
- Conduct an Investment Grade Ridership Study.
- Build the initial operating segment between Union Station in Tampa and the Orlando International Airport, with eventual development of a total system between St. Petersburg and Port Canaveral.
- Develop a highly creative financial analysis in order to maximize the potential for all possible revenue sources.
- Use of freight revenues could help reduce operating shortfalls.
- Acknowledge that the State of Florida will have to contribute a significant share of costs.

In November 2000, Florida voters adopted the amendment to the Constitution noted earlier, which mandated that high speed rail be implemented with construction to begin by November 1, 2003 leading to the creation of the FHSRA and the extensive planning efforts and environmental assessment activities described in other section of this Final EIS. On November 2, 2004, Florida voters repealed the Constitutional amendment as discussed in Section 1.1 and the future of the high speed rail project remains with the Florida Legislature and Governor. The FHSRA continues to believe, based upon the various studies and analyses, that the proposed high speed rail project could serve an important transportation need in the Tampa-Orlando corridor.

1.5 REFERENCES/NOTES

1. The National Environmental Policy Act of 1969, as amended. (Pub. L. 91-190, 42 U.S.C. 4321-4347, January 1, 1970, as amended by Pub. L. 94-52, July 3, 1975, Pub. L. 94-83, August 9, 1975, and Pub. L. 97-258; September 13, 1982).

2. Tampa Interstate Study, Greiner, Inc., Tampa, Florida (1992-1996); Interstate 4 Multi-Modal Master Plan (1997); Interstate 4 Multimodal Interstate Master Plan (1989-Revised 1989); Polk County Interstate 4 Master Plan (1994).

3. Development of the Florida Intrastate Highway System, Florida Department of Transportation Procedure, Topic No. 525-030-250-f; Systems Planning Office; Tallahassee, Florida; Effective Date: May 16, 2002.

4.

Development of the Florida Intrastate Highway System, Florida Department of Transportation Procedure, Topic No. 525-030-255-c; Systems Planning Office; Tallahassee, Florida, Effective Date: May 21, 2003.

5. Florida Statistical Abstract; University of Florida: Bureau of Economic and Business Research, Warrington College of Business Administration; Gainesville, Florida; 2001.

6. Investment Grade Ridership Study, Summary Report; prepared for the Florida High Speed Rail Authority; prepared by AECOM Consulting, Wilbur Smith Associates; November 20, 2002.

7. Level of Service is a qualitative assessment of a roadway's operating condition or level of congestion. Stratified into six letter grades A through F, LOS A is a free-flow operation with vehicles almost completely unrestricted in their ability to maneuver within the traffic stream, LOS F indicates that the capacity of the freeway has been exceeded resulting in long queues and extremely high levels of congestion.

8. Source: National Highway Traffic Safety Administration; 2000.

9. Ibid.

10. Florida State Comprehensive Plan; The Florida Legislature; Tallahassee, Florida.

11. Strategic Plan for 1998-2006; Florida Department of Transportation; Tallahassee, Florida.

12. Florida Transit Corridor Study; Alan Voorhees and Associates; March 1976.

13. Florida Future Advanced Transportation Report; Florida High Speed Rail Committee; April 1984.

14. High Speed/Intercity Rail Passenger System Planning Assessment of Routes and Alignments (and Appendices); Wilbur Smith Associates; 1993.

15. Florida High Speed and Intercity Rail Market and Ridership Study (and Technical Appendices); KPMG Peat Marwick; July 1993.

16. High Speed Rail Transportation Study – Tampa Bay to Orlando Corridor; ICF Kaiser Engineers; September 1993.

17. Florida Intercity Rail Passenger Service, Options for the 21st Century, A Component of the Florida Transportation Plan; January 1995.

18. Florida Overland eXpress Study; Florida Overland eXpress; 1999.

19. Coast to Coast Rail Feasibility Study / Cross-State Rail Feasibility Study; STV Incorporated; June 2001.

SECTION 2
ALTERNATIVES

This section of the Final Environmental Impact Statement (EIS) discusses the various Design/Build Alternatives, as well as the No-Build Alternative. It summarizes information from the previous studies that examined the feasibility of high speed rail in Florida. It then moves to the current Florida High Speed Rail (FHSR) Study and examines the study corridors that are initially identified, evaluated, and documented within the study area. Then, the corridors/station locations retained for further analysis are presented. The last Design/Build Alternatives discussion combines corridors/station locations retained for further analysis with the viable design/build technology proposals.

2.1 HISTORICAL OVERVIEW OF HIGH SPEED RAIL

Over the last 20 years, there has been increasing growth in population and significant change in land use from rural to urban along the Interstate 4 (I-4) corridor. In recognition of these changes and the need to increase the overall transportation capacity, the Florida Legislature began addressing high speed rail options in the 1970s. Section 1, Purpose and Need, provides a detailed description of the history of high speed rail studies in Florida. The following paragraphs summarize the early studies' significant conclusions which provide the foundation for this current high speed rail study.

In 1976, the Florida Transit Corridor Study[1] proposed use of:

- Limited access highway medians as a potential location for high speed rail.
- Existing rail corridors, both on and parallel to the existing roadway facilities.
- A rail envelope within medians of limited access roadways set at 44 feet (ft.) for a dual track.

In 1984, the Florida Future Advanced Transportation Report[2] recommended using:

- Public/private partnerships to proceed with the implementation of a FHSR system.
- Existing publicly-owned right-of-way (ROW) for the system.

In 1993, The Florida Department of Transportation (FDOT) completed three studies. The first, High Speed/Intercity Rail Passenger System Planning and Assessment of Routes and Alignments[3], was an examination of possible routes. The second, Florida High Speed and Intercity Rail Market and Ridership Study[4], concluded that:

- Recreational travel and business travel were the predominant trip purposes for high speed travel.
- The location of the alignment and the locations of stations were more significant to the success of FHSR than factors such as cost or type of rail.

The third, High Speed Rail Transportation Study - Tampa Bay to Orlando Corridor[5], concluded that the I-4/Interstate 275 (I-275) corridor was the Preferred Alternative for high speed rail implementation between the Tampa Bay and Orlando areas.

In 1995, FDOT produced Florida Intercity Rail Passenger Service, Options for the 21st Century, A Component of the Florida Transportation Plan[6]. It recommended that a public/private franchise be established for a cost effective and marketable intercity rail network.

In 1996, The Florida Overland eXpress Study[7] (FOX) provided an opportunity for Federal Railroad Administration (FRA), Federal Highway Administration (FHWA), and FDOT to provide information about the proposed FHSR system and corridor/station alternatives to the general public. This study was terminated before completion in 1998.

In 2000, the Florida Legislature authorized the Cross-State Rail Feasibility Study[8] which focused on the physical and financial feasibility of the I-4 corridor between the Tampa Bay and Orlando areas. This study concurred with previous studies' findings that suggested the interstate median as the preferred alignment location.

Concurrently with the Cross-State Rail Feasibility Study, Florida voters approved the *Constitutional Amendment on High Speed Rail*, and in 2001, the Florida Legislature enacted the *Florida High Speed Rail Authority Act*. The Florida Legislature identified the initial study segments to link the major urban areas of St. Petersburg, Tampa, and Orlando, and required FHSR construction by November 2003.

In 2001, the Florida High Speed Rail Authority (FHSRA) initiated a Project Development and Environment (PD&E) study to support the preparation of this Final EIS, with logical termini defined as the Tampa Central Business District (CBD) on the west, and the Orlando International Airport on the east. The study area is shown in Figure 2-1. The No-Build and design/build alternatives considered in this Final EIS and studied during the PD&E study are discussed in the following subsections. Although Florida voters repealed the *Constitutional Amendment on High Speed Rail* in November 2004, the requirements set forth in the *Florida High Speed Rail Authority Act* still remain valid.

2.2 NO-BUILD ALTERNATIVE

The No-Build Alternative assumes that a FHSR system would not be built between Tampa and Orlando. The requirements of the legislative mandate for the FHSRA to build a high speed ground transportation system would not be met. An additional mode of travel for daily commuters, visitors, and residents of the area would not be available, and existing modes would have to satisfy all travel demand.

The No-Build Alternative includes planned and programmed transportation projects within the study area that are on the financially constrained "needs" plan. Those projects are summarized in Section 1, Purpose and Need. Although roadway demand continues to grow, the No-Build Alternative would not offer diversion from the roadway to FHSR. As a result, capacity and level of service (LOS) would decrease sooner than if FHSR was built. The resulting anticipated need

to improve capacity and the LOS of the Tampa to Orlando transportation corridor will likely result in the use of the alignment identified for the FHSR for additional travel lanes. This will result in similar environmental consequences identified with the proposed project.

2.3 DESIGN/BUILD ALTERNATIVE ANALYSIS

In its 2002 Report to the Florida Legislature[9], the FHSRA found that a traditional design-bid-build approach to the legislative mandate would not meet the aggressive November 2003 construction date or the directive to maximize private/public investment in high speed rail. The FHSRA concluded that the legislative directives could be more reasonably achieved by incorporating the Design, Build, Operate, Maintain, and Finance (DBOM&F) procurement process into the *National Environmental Policy Act* (NEPA) process. This allowed the proposers to identify technology-specific impacts which would be evaluated during the PD&E Study. The process also identifies operational characteristics and financing options to assist the FHSRA in selecting a design/build firm.

In order to narrow the focus of the evaluation process, the PD&E Study started with an initial screening of corridors and station sites to eliminate non-viable alternatives from further consideration. The Florida High Speed Rail Screening Report[10], completed in October 2002, documents the initial evaluation process in detail and Section 2.3.1 summarizes the report's findings.

After the non-viable alternatives were screened from further evaluation, the FHSRA solicited proposals to DBOM&F a high speed ground transportation system between Tampa and Orlando. The DBOM&F proposal responses are the basis for the alternatives considered in this Final EIS. Section 2.3.3 provides additional information on the selection of the DBOM&F proposals that are further evaluated in the Final EIS. Section 4 of the Final EIS describes the potential impacts of the alternatives.

Table 2-1
Milestones in the Combined EIS/DBOM&F Process

Milestone	Date
Florida High Speed Rail Act establishes project limits for the first phase of the FHSR, which includes the corridor between Tampa and Orlando.	2001
PD&E Study identifies initial Preliminary Study Corridors Evaluation for the Tampa-Orlando HSR corridor.	January 2002
Preliminary Study Corridors Evaluation screens viable corridors.	October 2002
The FHSRA issues request for DBOM&F proposals. The request for proposals (RFP) identifies parameters for proposal, including alignments, design criteria, and operations.	October 2002
DBOM&F proposals submitted and evaluated for responsiveness to FHSRA's RFP. Design/Build alternatives identified for evaluation in EIS.	February-April 2003
The FHSRA and FRA approve DEIS for public review.	August 2003
The FHSRA identified Design/Build Alternative 2 as the Preferred Alignment. Preparation of the FEIS was initiated.	October 27, 2003
Florida voters rescinded FHSR Amendment.	November 2, 2004
The FHSRA revised Preferred Alignment to Design/Build Alternative 1 and directed completion of the FEIS and Record of Decision.	November 10, 2004

2.3.1 Preliminary Corridors

The FHSR PD&E Study initially identified six potential FHSR routes:

- Within the median of I-4
- Parallel to the existing CSX Rail Line (A-Line)
- Within the abandoned CSX "S" Rail Line (S-Line)
- Parallel to the Central Florida Greeneway (S.R. 417)
- Parallel to the Bee Line Expressway (S.R. 528)
- Connections through undeveloped land in Hillsborough and Osceola counties

The study area was divided from west to east into six corridors, A through E. The corridors are also shown on Figure 2-1.

The study's corridor evaluation process began by breaking each corridor into smaller geographical segments and labeling them as Segments 1, 2, and so forth. The route location, or alignment, was then given an alphabetical label, such as Alignments a, b, c, and so forth. The division and alphabetical labeling was necessary in order to track and compare quantified impacts in geographic areas. The entire process of identifying, quantifying, and comparing various FHSR route locations within each segment was documented in the Florida High Speed Rail Screening Report.

The evaluation process reduced the number and location of the alignments within each corridor. A matrix summary of the potential environmental impacts identified in the evaluation process is contained in the Screening Report. Of the 44 original segments, many did not meet the purpose and need of the project; therefore, the number of segments was reduced to 19 as a result of this evaluation. The matrix provides specific information as to why an alignment was eliminated or retained. The criteria used to eliminate infeasible alignments are:

- Structure and Embankment Quantity
- Wetlands Acreage by Quality
- Floodplains and Floodway Acreage
- Protected Species Habitat Acreage
- Historic Sites
- Contamination Sites
- Churches and Schools
- Cemeteries
- Public Recreation sites
- Public Services
- ROW

The eliminated and retained alignments are described in the following paragraphs. Figures 2-2 through 2-6 display the eliminated and retained alignments in Corridors A through E. Each figure shows the retained alignments in yellow and the eliminated alignment in a black-dashed line. Section 2.5 discusses station sites evaluated, eliminated, and retained for further evaluation.

Corridor A

Alignments within Corridor A, Segments 1 through 4, are identified in Figure 2-2.

Segment 1 extends from the eastern edge of the Hillsborough River, as the western boundary, to the intersection of Morgan Street and Harrison Street, as the eastern boundary. Four alignments were evaluated for Segment 1 and two were retained. Alignments a and b were eliminated and alignments c and d retained. Table 2-2 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-2
Summary of Alignments Evaluated in Corridor A
Segment 1-Hillsborough River to Morgan/Harrison Street

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	New alignment, grade-separated south and parallel to I-275.	No	• Inadequate horizontal clearance between the proposed station and the alignment. • Impacts the greatest number of significant historic structures (5). • Impacts the greatest amount of wetlands (1.8 ac.). • Does not allow for a future extension of HSR service west of the Hillsborough River, without constructing a longer and more costly structure across the river.
b	New alignment, grade-separated north and parallel to I-275.	No	• A new structure is required to cross over I-275/I-4 interchange, adding substantial project costs. • Relocation impacts to elderly and low-income residences west of Hillsborough River precluding a future FHSR connection to the west. • Access impacts and potential re-construction in the low- income, historic district Tampa Heights and the new Stetson University Campus.
c	New alignment, grade-separated; crosses existing commercial area of small businesses and surface parking lots.	Yes	• Minimizes environmental impacts. • Facilitates a FHSR connection to the west.
d	New alignment, grade-separated.	Yes	• Minimizes environmental impacts.

Segment 2 extends from the western boundary of the Morgan Street and Harrison Street intersection to the intersection of Kennedy Boulevard and the Lee Roy Selmon Crosstown Expressway, as the eastern boundary. Four alignments were evaluated for Segment 2, and two were retained. For Segment 2, alignments b and d are retained and alignments a and c were eliminated. Table 2-3 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-3
Summary of Alignments Evaluated in Corridor A
Segment 2 – Morgan/Harrison Streets to Kennedy Boulevard/Lee Roy Selmon Crosstown Expressway

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	Grade-separated, new alignment between Morgan Street and Nebraska Avenue.	No	• Requires the greatest amount of ROW. • Creates the greatest number of potential commercial relocations.
b	Grade-separated, new alignment between Morgan Street and Nebraska Avenue. It crosses an existing commercial area of primarily small businesses and surface parking lots. It is near the entry to Perry Harvey Sr. Park and the historic Union Station.	Yes	• Reduces the amount of ROW required. • Minimizes the number of potential commercial relocations. • Avoids impacts to Perry Harvey Sr. Park and does not impact Nick Nuccio Parkway. • Connects with Alignment c in Segment 1.
c	Grade-separated, new alignment that crosses the entry to Nick Nuccio Parkway, a gateway into historic Ybor City and primary access to the Central Park Village public housing development. The Parkway as a City of Tampa linear park.	No	• Requires complete reconstruction of the Nick Nuccio Parkway, adding to overall project costs. • Disrupts traffic access to Ybor City and the Central Park Village. • Impacts the linear park within the Parkway.
d	Grade-separated, new alignment parallel and east of I-275.	Yes	• Minimizes impacts to Perry Harvey Sr. Park. • No direct impacts to historic structures.

Segment 3 extends from the intersection of Kennedy Boulevard and the Lee Roy Selmon Crosstown Expressway, as the western boundary, to the mid-block of 36th and 37th Streets, as the eastern boundary. Three alignments were evaluated for Segment 3 and two were retained. Alignments c and d are retained, and alignment b is eliminated in Segment 3. Table 2-4 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-4
Summary of Alignments Evaluated in Corridor A
Segment 3 – Kennedy Boulevard/Lee Roy Selmon Crosstown Expressway to 36th/37th Street

Alignment	Description	Retained for Further Evaluation	Comments on Eliminated Alignment
b	Grade-separated, new alignment, parallel to the CSX C-Line.	No	• The alignment bisects the Ybor City National Historic Landmark District and impacts the greatest number of historic structures. • The elevated structure would create unacceptable visual impacts to historic resources and redeveloped areas in Ybor City. • The alignment conflicts with the Hartline transit system's planned light rail system in same corridor.
c	Grade-separated, new alignment from Kennedy Boulevard to the former CSX S-Line, north of Adamo Drive; The former CSX S-Line is a mixture of CSX and other public/private owners.	Yes	• No impacts to the Ybor City National Historic Landmark District.
d	Grade-separated, new alignment crosses into the I-4 median above the proposed entry/exit to Ybor City at 14th/15th Streets.	Yes	• Avoids direct impacts to the newly developed Ybor City area. • Contained within the I-4 median. • Minimal impacts to Perry Harvey Sr. Park.

Segment 4 extends from the mid-block of 36th and 37th Streets, as the western boundary, to the interchange of U.S. 41 and I-4, as the eastern boundary. Four alignments were evaluated for Segment 4, and two were retained. Segment 4, alignment d is retained in the I-4 median and alignment c from the mid-block of 36th and 37th Streets to east of 39th Street is retained. Alignments a, b, and the portion of c from east of 39th Street were eliminated from further evaluation. Table 2-5 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-5
Summary of Alignments Evaluated in Corridor A
Segment 4 – 36th/37th Street to U.S. 41/I-4 Interchange

Alignment	Description	Retained for Further Evaluation	Comments on Eliminated Alignment
a/b	Grade-separated, new alignment, connecting between CSX A-Line and I-4.	No	• Connects only to previously eliminated alignments in Segment 3.
c	Grade-separated, new alignment from the former CSX S-Line, north of Adamo Drive to east of 39th Street; The former CSX S-Line is a mixture of CSX and other public/private owners.	Yes	• The eliminated portion from 39th Street east to the U.S.41/I-4 interchange impacts industrial properties and requires crossing the CSX A-Line.
d	Grade-separated, new alignment within the I-4 median.	Yes	• Contained within the existing ROW of the I-4 median.

Corridor B

Corridor B, including segments 1 and 2 are identified in Figure 2-3.

Segment 1, along the I-4 alignment, extends from the interchange of U.S. 41 and I-4, as the western boundary, to just west of the Mango Road exit at C.R. 579, as the eastern boundary. Segment 1, along the CSX Line extends from the intersection of 39th Street, as the western boundary, to just east of I-75, as the eastern boundary. Segment 1 alignments pass the Seminole Indian Reservation and the Florida State Fairgrounds that are located to the south of I-4. Three alignments were evaluated for Segment 1 and two were retained. Alignments c and d, which cross the Tampa Bypass Canal, were retained and alignment b was eliminated. Table 2-6 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-6
Summary of Alignments Evaluated in Corridor B
Segment 1 – In I-4 Median
U.S. 41/I-4 Interchange to West of Mango Road/C.R. 579

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
b	Grade-separated, new alignment, parallel to the CSX A-Line in Ybor City.	No	• Connects only to previously eliminated alignments in Corridor A. • Requires the greatest amount of new ROW.
c	Grade-separated, new alignment extends from the former CSX S-Line through the Uceta Yards to the existing CSX A-Line ROW until the I-75 median.	Yes	• Minimizes the amount of new ROW required.
d	Grade-separated, new alignment within the I-4 median.	Yes	• Minimizes the amount of new ROW required.

Segment 2 provides a connector located within the I-75 ROW. It connects from the CSX A-Line, as the southern boundary, to I-4, as the northern boundary. The area contains industrial and agricultural land uses interspersed with commercial and office complexes, such as the Sabal Office Park. Three alignments were evaluated for Segment 2 and one was retained. Alignment b is retained and alignments a and c were eliminated. Table 2-7 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-7
Summary of Alignments Evaluated in Corridor B
Segment 2 – CSX A-Line to I-4

Alignment	Description	Retained for Further Evaluation	Comments on Eliminated Alignment
a	Grade-separated, new alignment parallel to U.S. 301.	No	• Relocates four commercial properties. • Disrupts access and acquires parking from the Florida State Fairgrounds. • Requires a new crossing of the Bypass Canal.
b	Grade-separated, new alignment, within the I-75 median.	Yes	• Has the least amount of overall impacts.
c	Grade-separated, new alignment parallel and east of I-75, within existing interstate ROW.	No	• Impacts the greatest amount of wetlands and floodplains. • Requires the greatest amount of ROW.

Corridor C

Preliminary alignments for Corridor C are displayed in Figure 2-4.

Corridor C extends from just east of I-75, as the western boundary, to just east of the Hillsborough and Polk County lines, as the eastern boundary. Land uses along the I-4 alignment include pasturelands and commercial uses, such as Cracker Barrel, Lazy Days Campground, and Rooms To Go. Two alignments were evaluated for Segment 1 and one was retained. Alignment d, located within the I-4 median, is retained. Alignment a was eliminated because of numerous community impacts in Plant City. Table 2-8 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-8
Summary of Alignments Evaluated in Corridor C
East of I-75 to East of Hillsborough/Polk County Line

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	Grade-separated, new alignment parallel to CSX tracks.	No	• The elevated guideway would create a disruptive visual impact in Plant City's established neighborhoods and downtown. • The alignment bisects and creates adverse impacts to the Plant City Historic District. • The alignment would create proximity impacts to numerous churches, schools, parks and community facilities.
d	Grade-separated, new alignment, within the I-4 median.	Yes	• Significantly fewer impacts to downtown Plant City and NRHP-listed Plant City Historic District.

Corridor D

Preliminary alignments for Corridor D, Segments 1 through 3, are identified in Figure 2-5.

Segment 1 extends from just east of the Hillsborough/Polk County line, as the western boundary, to the interchange of Socrum Loop Road, as the eastern boundary. Land uses along the I-4 include industrial and commercial uses, such as a horse trailer sales lot, Tree Sweet citrus facility, Lakeland Interstate Park, and an abandoned Owens-Corning factory. Interspersed among these uses are large open pasturelands. Three alignments were evaluated for Segment 1 and one was retained. Alignment d, located within the I-4 median, is retained. Alignments a and c were eliminated. Table 2-9 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-9
Summary of Alignments Evaluated in Corridor D
Segment 1 – Hillsborough/Polk County Line to I-4/Socrum Loop Interchange

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	Grade-separated, new alignment parallel to CSX tracks.	No	• The alignment bisects and creates adverse impacts to the Lakeland Historic District. • There are significant ROW and business relocation impacts within downtown Lakeland. • The alignment would create proximity impacts to numerous community resources including churches, parks, schools and public facilities.
c	Grade-separated, new alignment connecting alignments a and d.	No	• The alignment connects only to eliminated alignments in Corridor C • The alignment creates significant wetland impacts (152 acres) within its 3.4-mile length.
d	Grade-separated, new alignment, within the I-4 median.	Yes	• Avoids impacts to downtown Lakeland and the Lakeland Historic District. • Overall least amount of impacts.

Segment 2 extends from the Socrum Loop Road interchange, as the western boundary, to just west of the C.R. 557 interchange, as the eastern boundary. Commercial uses are clustered near the interchanges. Other land uses vary from residential to pastureland, pine groves, and orange groves. A portion of the area west of I-4 contains the Green Swamp, which is an Area of Critical State Concern. Two alignments were evaluated for Segment 2 and one was retained. Alignment d, located in the I-4 median, is retained. Alignment a was eliminated due to numerous community impacts in Auburndale. Table 2-10 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-10
Summary of Alignments Evaluated in Corridor D
Segment 2 – I-4/Socrum Loop Interchange to West of I-4/C.R. 557 Interchange

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	Grade-separated, new alignment parallel to CSX tracks through Polk County and the City of Auburndale.	No	• The alignment bisects and disrupts the established development in Auburndale. • The alignment creates proximity effects to numerous churches, schools, parks and community facilities. • The alignment only connects to the eliminated alignment in Corridor C.
d	Grade-separated, new alignment, within the I-4 median.	Yes	• Overall least amount of social impacts.

Segment 3 extends from just west of the C.R. 557 interchange, as the western boundary, to just east of the World Drive interchange in the Celebration area, as the eastern boundary. The land use pattern along I-4 is predominately passive agriculture with some residential developments. The southern portion of the project area contains three small cities: Lake Alfred, Haines City, and Davenport. Four alignments were evaluated for Segment 3 and one was retained. Alignments a, b, and c were eliminated. These alignments would be on new alignment and grade-separated through much of the developed city properties in this segment. Alignment d, within the I-4 median, is retained. Table 2-11 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-11
Summary of Alignments Evaluated in Corridor D
Segment 3 – West of I-4/C.R. 557 Interchange to East of I-4/World Drive Interchange

Alignment	Description	Retained for Further Evaluation	Comments on Eliminated Alignment
a	Grade-separated, new alignment from Davenport through undeveloped land to north of I-4.	No	• The alignment impacts nearly 2.195 acres of high quality wetlands. • The alignment requires the greatest amount of ROW compared to all other alignments. • The alignment connects only eliminated alignments in Corridor B, C, and D to I-4 alignments.
b	Grade-separated, new alignment between Lake Alfred and Haines City.	No	• The alignment connects only to an eliminated alignment in Corridors B, C, and D.
c	Grade-separated, new alignment parallel to the CSX rail tracks through Haines City.	No	• The alignment bisects established neighborhood and commercial development in Auburndale and Lake Alfred. • The alignment creates proximity impacts to a greater number of (17) churches and (five) public recreation sites. • The alignment connects only to previously eliminated alignments in Corridors B, C, and D.
d	Grade-separated, new alignment, within the I-4 median.	Yes	• Overall least amount of impacts. • Avoids impacts to the cities of Auburndale and Lake Alfred.

Corridor E

Alignments within Corridor E, Segments 1 through 4, are identified in Figure 2-6.

Segment 1 extends from just east of the World Drive interchange in the Celebration area, as the western boundary, to just west of the Osceola Parkway, as the eastern boundary. Disney's Wide World of Sports complex is located on the west side of I-4 and the Celebration community is to the east. Three alignments were evaluated for Segment 1 and one was retained. Alignment d, within the I-4 median, is retained. Alignments a and c were eliminated. Table 2-12 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-12
Summary of Alignments Evaluated in Corridor E
Segment 1 – World Drive Interchange to Osceola Parkway

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a	Grade-separated new alignment north of and parallel to I-4.	No	• The alignment impacts the greatest amount of wetlands (321 ac.). • New commercial development has occurred in the alignment. • The alignment only connects to a previously eliminated alignment in Corridor D.
c	Grade-separated new alignment that connects alignment a and d.	No	• New commercial development has occurred in the alignment. • The alignment only connects to eliminated alignment a.
d	Grade-separated alignment in the I-4 median.	Yes	• Overall least amount of impacts.

Segment 2 extends from just west of the Osceola Parkway, the western boundary, onto the Bee Line Expressway (S.R. 528), and extends until just west of the John Young Parkway, the eastern boundary. Land uses along I-4 to the east and west are predominantly tourist-oriented developments. At the I-4/Bee Line Expressway (S.R. 528) interchange, Sea World dominates the southeast corner, while the Orange County Convention Center (OCCC) dominates the northeast corner. Beyond the OCCC, rural/agricultural lands owned by Universal Studios border the north side of the Bee Line Expressway (S.R. 528). Five alignments were evaluated for Segment 2 and three were retained. Alignments a, c, and d are retained. Alignments b and e were eliminated. Table 2-13 summarizes the alignment descriptions and the reasons for eliminating or retaining alignments.

Table 2-13
Summary of Alignments Evaluated in Corridor E
Segment 2 – Osceola Parkway to John Young Parkway

Alignment	Description	Retained for Further Evaluation	Comments on Alignments
a/c	Grade-separated new alignment parallel and south of S.R. 536, connecting into the Central Florida Greeneway.	Yes	• Provides connection to the Central Florida Greeneway.
b	Grade-separated new alignment connecting I-4 and the Central Florida Greeneway.	No	• Impacts the greatest amount of wetlands acres. • Impacts the greatest amount of protected species habitat. • New structure over I-4/S.R. 536 adds substantial project costs. • Only allows access to Disney property, with no option for access to a proposed nearby station within the I-4 median.
d	Grade-separated within the I-4 median and along the north side of the Bee Line Expressway ROW; Provides connection to the proposed Orange County multi-modal center at International Drive and OCCC.	Yes	• Overall least amount of impacts. • Overall least cost.
e	Grade-separated new alignment along U.S. 192, between I-4 and the Central Florida Greeneway.	No	• Disrupts access to two large commercial land uses and Celebration community, creating longer and more expensive spans of FHSR guideway. • The alignment requires a high rise structure over a ramp of the I-4/U.S. 192 interchange that add substantial project costs.

Segment 3, along the Bee Line Expressway (S.R. 528), extends from just west of the John Young Parkway, as the western boundary, to just east of the Boggy Creek Road/Tradeport Drive intersection, as the eastern boundary. As the Bee Line Expressway (S.R. 528) intersects John Young Parkway, the segment continues east along Taft-Vineland Road. The land use in this area is predominantly light industrial. Three alignments were evaluated for Segment 3. Two alignments were originally retained; however, later analysis determined engineering constraints prevented their construction. No alignments were retained for further study.

Segment 4 extends along the Bee Line Expressway (S.R. 528), which is the northern boundary, from just west of the John Young Parkway intersection east along Taft-Vineland Road to Orlando International Airport on South Access Road. The southern boundary of Segment 4 extends along the Central Florida Greeneway (S.R. 417), and then turns northward and enters Orlando International Airport from the south along South Access Road. The west end of the Central Florida Greeneway (S.R. 417) is predominantly low-density residential developments,

such as Hunters Creek Community. Two combined alignments, e/g and f/h, were evaluated and retained for Segment 4. Table 2-14 summarizes the alignment descriptions.

Table 2-14
Summary of Alignments Evaluated in Corridor E
Segment 4 – John Young Parkway to Orlando International Airport

Alignment	Description	Retained for Further Evaluation
e/g	Grade-separated new alignment within the Bee Line and Taft-Vineland ROW.	Yes
f/h	Grade-separated new alignment within Central Florida Greeneway ROW; and along the South Access Road ROW into the proposed Orlando International Airport South Terminal.	Yes

Figure 2-7, Corridor/Stations for Further Evaluation, displays all of the eliminated and retained alignments by corridor.

2.3.2 Corridors for Further Evaluation

The evaluation process described in the previous section, and presented in greater detail in the Florida High Speed Rail Screening Report, compared alignments within each geographic corridor segments and eliminated those with significant social, natural, or physical environmental impacts and that failed to meet purpose and need. The retained and eliminated alignments within the corridor segments were presented to the public in January 2003 for review and comment. See Section 6 of this report for additional information regarding the public information process. Station sites retained for further study are discussed in Section 2.5 and shown on Figure 2-7.

In order to compare impacts along the entire trip from terminus to terminus, the retained alignments within each segment are aggregated within each corridor to form eight different routes (A1, B1, C1, etc.), as shown in Table 2-15, and then the various routes are linked together to form four viable corridors (A, B, C, etc.), as shown in Table 2-16. Although all data is organized by segment so that impacts can be easily tracked, all future discussions will focus on retained routes within each viable corridor.

Table 2-15
Retained Routes

Segments	Route
Corridor A	
$A_1c + A_2d + A_3d + A_4d$	= A1
$A_1d + A_2b + A_3c + A_4c$	= A2
Corridor B	
B_1d	= B1
$B_1c + B_2b$	= B2
Corridor C	
C_1d	= C1
Corridor D	
$D_1d + D_2d + D_3d$	= D1
Corridor E	
$E_1d + E_2d + E_4egh$	= E1
$E_1d + E_2ac + E_4fh$	= E2

The Viable Corridors are shown on Figure 2-7, Corridors/Stations for Further Evaluation.

Table 2-16
Viable Corridors

Routes	Corridor
A1 + B1 + C1 + D1 + E1	Corridor 1
A1 + B1 + C1 + D1 + E2	Corridor 2
A2 + B2 + C1 + D1 + E1	Corridor 3
A2 + B2+ C1 + D1 + E2	Corridor 4

Corridors 1 through 4 comprise the Viable Corridor.

2.3.3 Design/Build Alternatives Selection Process

As previously discussed, the FHSRA selected and incorporated a DBOM&F process into the EIS analyses process. The second stage of the DBOM&F was initiated on October 7, 2002, when the FHSRA solicited proposals to construct a high speed ground transportation system, from Tampa to Orlando. The RFP consisted of a variety of data collected by the FHSRA to date. The RFP data included:

- Florida High Speed Rail Corridor Screening Report, October, 2002
- Florida High Speed Rail Preliminary Engineering Plans
- PD&E Study Preliminary Engineering Calculations and Tables
- Florida High Speed Rail Design Criteria
- Preliminary Engineering Geotechnical Data
- FDOT I-4 Design Plans (1 CD)
- Preliminary Conceptual Drainage Report
- Station Alignment and Concept Plans

- Digital Terrain Model and Surveyor's Report
- Utility Data Plans
- FHSRA Ridership Study

In order to reduce costs for the respondents, the RFP required only Viable Corridors 1 and 2 for the design/build evaluation. However, all four Viable Corridors are evaluated in this Final EIS, and any one of them could be selected and negotiated with the respondents.

Five proposals from four different companies were received on February 10, 2003. The proposers were:

- Et3.com Inc.
- Fluor Bombardier
- Georgia Monorail Consortium (Proposal 1 and Proposal 2)
- Global Rail Consortium

On April 17, 2003, two of the respondents were determined by the FHSRA to be non-responsive and are not included within this document. They are Et3.com Inc. and Georgia Monorail Consortium. A letter dated April 17, 2003, from the FHSRA explains the reasons for the determination of non-responsiveness.

The FHSRA preliminarily found that two proposals were responsive and were to be evaluated as Design/Build Alternatives in the Final EIS. The two teams and their technologies are: Fluor Bombardier, which proposed the use of a gas turbine train technology, and the Global Rail Consortium, which proposed the use of an electric train technology. The two proposals contain different technologies, track systems, rail locations, and station sites.

The four Viable Corridors shown in Table 2-16 result in eight Alternatives, with four alternatives for each technology. The Fluor Bombardier group proposal is represented as the gas turbine train and the Global Rail Consortium proposal as the electric train. The alternative combinations of location and technology are identified in Table 2-17.

Table 2-17
Design/Build Alternatives

Viable Corridors	Technology	Alternatives
Corridor 1	Gas Turbine Train	Alternative 1
Corridor 2	Gas Turbine Train	Alternative 2
Corridor 3	Gas Turbine Train	Alternative 3
Corridor 4	Gas Turbine Train	Alternative 4
Corridor 1	Electric Train	Alternative 5
Corridor 2	Electric Train	Alternative 6
Corridor 3	Electric Train	Alternative 7
Corridor 4	Electric Train	Alternative 8

The Design/Build Alternatives 1 through 8, are shown on Figure 2-8.

2.4 DESIGN/BUILD ALTERNATIVES

Within the RFP documents for DBOM&F, FHSRA identified engineering and operational characteristics that firms responding to the RFP were to meet. The design criteria was intended to provide a starting point from which various proposed technologies would be refined. Two technologies have been identified for continued analysis. The Flour-Bombardier proposal utilizes the gas turbine (gas turbine train) technology and the Global Rail Consortium proposal utilizes an electrified, modified, electric train technology. The following section identifies key elements of the RFP responses.

2.4.1 Design/Build Alignment Variations

Although the RFP required one corridor for the FHSR from downtown Tampa to the Disney area in Osceola County, the RFP required two alternative corridors from the Disney area to the Orlando International Airport. The first corridor is within the north side ROW of the Central Florida Greeneway (S.R. 417) to Boggy Creek Road and into the proposed south terminal at Orlando International Airport. The second corridor is within the north side ROW of the Bee Line Expressway (S.R. 528) from I-4 to John Young Parkway continuing east in the median of Taft-Vineland Street, as coordinated with Orange County. This corridor then follows the Orlando Utilities Commission rail line into the south of Orlando International Airport.

The typical sections, plan sheets, vertical profiles, and station concepts are included in Appendix A-1, Sheets 1 through 204. The plan sheets identify horizontal alignments that are within the existing 44 ft. median envelope of the interstate/freeway alignments. The plan sheets also identify horizontal alignments that require new ROW with a 60 ft. envelope. The vertical clearance identified in the plan sheets provides a minimum of 19 ft. clearance between top of rail and bottom of structure utilizing an electrified train system. The following text describes the variations of the horizontal and vertical alignment geometry proposed by the Fluor Bombardier Gas Turbine Train and the Global Rail Consortium Electric Train. Appendix A-2 includes the plan sheets identifying variations to the alignment as proposed by the gas turbine train and electric train proposals.

Gas Turbine Train

In specific areas, the Fluor-Bombardier Gas Turbine Train proposal varies from track location alignments, vertical alignments, and ROW defined by the FHSRA in the RFP:

- Alignment shifts to the north and west of I-4 at a maximum distance of 550 ft. to enter the Disney Station (see Appendix A-2, Sheets 119A through 124A, 155A, and 156A).
- Alignment transitions from I-4 and shifts south to the Central Florida Greeneway (S.R. 417) median instead of the north side of the Central Florida Greeneway (S.R. 417). The alignment also transitions from the Central Florida Greeneway (S.R. 417) median to Orlando International Airport at a maximum of 325 ft. to the north and west of the FHSR alignment (see Appendix A-2, Sheets 159A through 181A).

- The gas turbine train proposal varies from the vertical profile provided by the FHSRA at some locations with a vertical profile that is generally set a few ft. higher. These variances would result in the replacement of the following overpass road bridges:

  – C.R. 559 Polk County
  – S.R. 557 Polk County
  – C.R. 545 Polk County
  – I-75 Ramps (3) Hillsborough County

- The gas turbine train proposal revises the vertical alignment at two locations identified for wildlife crossings. The RFP identified emergency crossovers between the east and west traffic lanes due to the separation between interchanges. These crossovers were located in conjunction with wildlife crossings that FDOT has planned as a part of future I-4 improvements. The gas turbine train proposal identifies a vertical alignment following the interstate vertical alignment, not allowing for these crossings. However, an elevated roadway crossing over the rail alignment is proposed for emergency vehicles at a single location with no provision for wildlife crossings.
- The typical sections for the gas turbine train technology are shown in various scenarios in Appendix A-4. Where new ROW is required, the gas turbine train proposal identifies the need to increase the 60 ft. wide envelope to 75 ft., with an additional 20 ft. of temporary construction easement.
- The gas turbine train proposes to use the median of the Central Florida Greeneway (S.R. 417); therefore, additional ROW identified to the north side of this transportation corridor would not be required within this proposal.

Electric Train

The Global Rail Consortium Electric Train technology would be constructed within the FHSRA's defined ROW and vertical alignments. Typical sections for the technology are shown in Appendix A-4. However, the proposal contains the following track location variances from the alignment defined by the FHSRA:

- Alignment shifts to the east 28 ft. as it leaves I-4 and continues on to the Tampa CBD station site (see Appendix A-2 Sheet 2A).
- Alignment shifts to the north, a maximum of 1,565 ft. as it leaves the Boggy Creek Road and travels north to Orlando International Airport (see Appendix A-2, Sheets 152A through 154A and 183A).

The proposers' variances and other differences are incorporated into the definition of the design/build alternatives and are considered in this Final EIS.

2.4.2 Operations

The FHSRA, as part of the DBOM&F RFP, requested that performance standards and LOS be established that would optimize ridership and revenues. These standards, as a minimum, would

identify trip times between termini and stations, frequency of service, and adequate capacity for passengers.

The DBOM&F documents identified the following minimum performance standards:

- Operating Speed
  The proposed technology must meet the requirements of the legislative mandate and be capable of operating on an unconstrained alignment at speeds in excess of 120 miles per hour (mph).
- Trip Times
  The proposed technology and operating plan must provide a 1 hour, 10 minute maximum travel time between Tampa and Orlando International Airport including stops for passenger boarding/de-boarding at all intermediate stations.
- Passenger Capacity
  The proposed technology, train configuration (consist), and operating plan should be capable of providing a minimum passenger capacity of 250-seated passengers per consist. In the event that the proposed technology uses a train configuration that does not provide this minimum capacity, then the proposer may provide additional service frequency to achieve equivalent passenger capacity.
- Intercity Service
  The proposed intercity service would include a minimum of 12 round trips per day between Tampa and Orlando International Airport. The operator may propose an operating plan without stops at intermediate stations; however, operators would propose a plan that optimizes the overall system ridership.
- Hours of Operation
  Minimum service hours would be from 6:00 AM until 8:00 PM.
- Service Ramp-up
  The operator may propose to phase-in new service over the first two operating years of the project, if opening service of the project is not less than 8 intercity round trips per day.
- Service Expansion
  The operator may propose increased service above minimum levels in order to optimize ridership and revenue.

The gas turbine train and the electric train systems have the following operational characteristics:

Gas Turbine Train

The gas turbine train proposal indicates that a maximum speed of 125 mph would be obtained, meeting the minimum speed requirements. This results in travel times between 65 minutes for the Central Florida Greeneway (S.R. 417) alignment and one hour, 10 minutes for the Bee Line Expressway (S.R. 528) alignment, which is at or near the maximum trip time identified by the FHSRA. Non-stop travel times are noted to be 58 and 63 minutes. The difference is the longer Bee Line Expressway (S.R. 528) alignment compared to the Central Florida Greeneway

(S.R. 417) alignment in Orange County. No trip times were provided for the shuttle trips between Orlando International Airport and the Disney area.

The gas turbine train proposal identifies that the ridership information prepared for and provided by the FHSRA was utilized in the development of the operations plan. This ridership information includes the Tampa-Orlando Investment Grade Ridership Study, Operations Plan, November 14, 2002 and the Investment Grade Ridership Study, Summary Report, November 20, 2002.

A fleet of six trains is proposed to provide intercity and shuttle service in the Disney area. The shuttle service would be provided between Orlando International Airport and Walt Disney World and would operate on the same mainline tracks as the intercity service. No non-stop service was identified in the proposed operational plan. The operating hours are identified between 6:00 AM and 11:00 PM. The gas turbine train proposal meets the FHSRA criteria related to capacity, trip times, operating speeds, and hours of operation.

Electric Train

The electric train proposal indicates that a maximum speed of 160 mph would be obtained resulting in trip times of 55 minutes with stops and 44 minutes non-stop between Tampa and Orlando International Airport. The shorter Central Florida Greeneway (S.R. 417) alignment reduces the stated trip times by one minute. The travel times for the shuttle service are 14 minutes for the Central Florida Greeneway (S.R. 417) alignment and 15 minutes for the Bee Line Expressway (S.R. 528) alignment.

The electric train proposal references the Investment Grade Ridership Study, Summary Report, November 20, 2002, for the development of their operations plan. This report was prepared by two independent consultants for the FHSRA and documented the results of each of these analyses. The operations plan for the electric train proposal is based on the average of the two analyses.

A fleet of five trains is proposed with four trains providing intercity and shuttle service and one train identified as a spare. Five passenger cars and two power cars, one on each end of the consist, provide a total of 250 seats. Four direct trips are proposed between Tampa and Orlando with 12 trips providing intercity service. An additional 17 shuttle trips are proposed between Orlando International Airport and the Disney area. The operating hours are identified between 5:50 AM and 11:15 PM. The electric train proposal meets the FHSRA criteria related to capacity, trip times, operating speeds, and hours of operation.

2.4.3 Bridge Structures

The bridge structures for the FHSR project would be designed to specifications identified in the FDOT Structures Design Guidelines[11], AASHTO LRFD Bridge Design Specifications[12], and AREMA 2002 Manual for Railway Engineering[13].

The FHSRA has required that the rail alignment be grade–separated, which results in the use of significant bridge structures through the corridor. The FHSR provided vertical profiles that cumulatively represent a total bridge structure length ranging from 16.5 miles (mi.) to 30.1 mi. for the alternative alignments in the study area. The total length of the alignments, as provided by the FHSRA, ranges from 83.8 mi. to 85.7 mi.

Gas Turbine Train

The gas turbine train proposal identified bridge structures of either concrete, or a combination of concrete and steel elements. Conventional construction methods would be employed to construct the bridge structures. Appendix A-4, Figures 2-21 through 2-27 illustrate the proposed gas turbine train typical sections for bridges.

Electric Train

The electric train proposal identified the use of concrete box girders for all spans. Appendix A-4, Figures 2-28 through 2-31 include typical bridge sections with various types of column support.

2.4.4 Retaining Walls

Retained earth walls would be utilized in areas that require fill, where ROW is not adequate to allow for a typical slope embankment. This occurrence is typical throughout the proposed alignments located within an interstate or freeway median. FHSRA requires a minimum of 10 ft. from centerline of track to near face of the wall.

Gas Turbine Train

The gas turbine train proposal substituted retained earth fills for elevated bridges, where feasible, as an optimization/enhancement, thereby reducing bridge structures by approximately 35 to 42 percent between Tampa and Orlando. A standard barrier and chain link fence would extend above the wall.

Electric Train

The electric train proposal maintains required vertical clearance by depressing the alignment in locations to pass underneath overhead structures. Where the width of the I-4 median does not permit the appropriate grading of new ditches, retaining walls would be used. Where this occurs, the design would incorporate a conventionally reinforced bottom slab and a pumping system to remove storm drainage, thereby ensuring that the rail corridor maintains positive drainage away from the ballast. The bottom slab would be designed to resist hydrostatic uplift from groundwater and would support retaining walls on either side of the track section. A standard barrier and chain link fence would extend above the wall.

2.4.5 Barriers

The FHSRA identified the following guidelines for utilizing barriers to protect the rail alignment and objects within the rail corridor:

- Permanent highway barriers would be installed between the rail line and immediately adjacent parallel roadways, in accordance with FRA regulations.
- Where the rail line is on pier-supported structures within 100 ft. of the highway, barriers would be required to protect piers and the occupants of highway vehicles.
- Overhead highway bridge pier structures within the rail corridor would be protected using crash barriers.
- FHSR systems would have protection against guideway and ROW entry by unauthorized persons, large animals, and objects. A 6-ft. chain link fence would be installed within the guideway between the barrier structure and the track. Fencing would not be required where the barrier or retaining wall height exceeds the height of the fence. Overhead highway bridge structures would include chain link fencing across the width of the guideway, plus 20 ft. on each side to aid in the prevention of vandalism.
- FHSR systems would include an intrusion detection system, capable of detecting large objects that strike or rupture the chain link fence. Where fencing is not required (at high retaining walls or barriers), the intrusion detection system would be furnished using electromechanical or other appropriate means of detection. The intrusion detection system would be tied into the train control system to allow either warning or train stop, as determined by the system safety study performed during the design and construction phase.
- Should a system that provides train-operating speeds in excess of 125 mph be proposed, the additional FRA operating requirements of 49CFR 213.361 would be met during the design and construction phase. These requirements include the preparation and approval, through the FRA, of a "Right-of-way Plan" from the owner of a class 8 and 9 track that is required for trains operating at speeds over 125 mph. This plan would contain provisions in areas of demonstrated need for the prevention of: vandalism, launching of objects from overhead bridges or structures into the path of the trains, and intrusion of vehicles from adjacent ROW.

Gas Turbine Train

The gas turbine train proposal states the median barriers would typically support a chain link fence to prevent unauthorized access. Placing a 6-ft. chain link fence 30 inches (in.) inside the barrier (as proposed by the FHSRA) provides an area for rubbish to collect between the fence and the barrier. Mounting the fence on top of the barriers optimizes the design by increasing the clearance between the train and adjacent structures, eliminating rubbish accumulation, and reducing potential maintenance costs.

An intrusion detection system, as identified by the FHSRA, has not been provided as part of the gas turbine train proposal because FRA does not require an intrusion detection system when the

maximum operating speed is 125 mph or less. Access detection would be provided at access/egress gates in the fencing.

Electric Train

The electric train proposal states that, because the proposed FHSR system is located within the I-4 corridor with its centerline within 100 ft. of a highway travel lane, a continuous concrete barrier wall would be placed along both edges of the I-4 paved, inside shoulder. These barriers would protect against intrusion by unguided automotive vehicles including motorcycles, automobiles, light trucks, and over the road trucks. The electric train typical section places 6-ft. chain link fence along both sides of the corridor, whether at-grade or on structure. The electric train design would meet or exceed the minimum level of protection, including intrusion detection system and barriers between roadways as described in the RFP.

2.4.6 Drainage

The process for drainage design approvals would be coordinated with the Florida Department of Environmental Protection (FDEP) and the Water Management Districts (WMD) in the four county areas.

The criteria and regulations of the agency responsible for the water body ultimately receiving the discharge would be used. Where two or more agencies control a portion of the FHSR corridor, more stringent criteria must be met. Portions of the I-4 corridor in Hillsborough County that have been re-constructed already account for potential stormwater generated by FHSR and little modification to existing stormwater management systems is expected.

For the remaining portions of the FHSR, there are some options to be considered for pollution abatement volume treatment, attenuation, and flood compensation associated with the permitting process.

- Utilizing an existing FDOT surface water management system within the ROW, as is, can be the most economical option.
- Modifying the outfall of an existing FDOT surface water management system with the ROW.
- Constructing a new surface water management system within the FDOT ROW or adjacent land owned by the State.
- Adding an ex-filtration trench system may be considered as a surface water management system alternative.
- Adding stormwater management systems under elevated structures is also an option.
- The purchase of adjacent land to be used as a surface water management system is an option.

Construction of the FHSR would create impacts to existing drainage systems. It is the responsibility of the DBOM&F firm to remedy any impacts in accordance with FDOT, FDEP, WMDs, and applicable local authority criteria.

Gas Turbine Train

The gas turbine train proposal includes drainage design and quantities based on information provided by the FHSRA, with minor adjustments to reflect optimizations to the design.

The retaining wall sections would have drainage solutions including:

- Barrier wall inlets on both sides
- Barrier wall inlets on one side
- Ditch conveyance
- Trunkline inside the wall

It is also assumed that existing drainage structures and piping are adequate to carry the load imposed by the rail alignment. Existing box culverts would be removed and replaced in the rail corridor within the road median only. The box culverts located under the roadway corridor would not be replaced.

Floodplain compensation for potential floodplain impacts has not been determined in the gas turbine train proposal. Also, no provision has been made for a weather station or flood detection equipment.

While the FHSRA noted that I-4 in Hillsborough County can accommodate drainage from the FHSR, the gas turbine train proposal's preliminary review of aerials and plans indicate that ponds are not sufficiently spaced to warrant this assumption. If existing stormwater ponds and structures cannot be modified for additional volumes, then the gas turbine train proposal states additional ROW would be required for a stormwater management system.

Electric Train

The electric train proposal states that drainage would be designed within the criteria identified by the FHSRA.

The electric train proposal would collect storm water on the track area in perforated drain tiles after percolating through the ballast(s). The drain lines, extending longitudinally along the outside of the tracks with outlets, as needed, to empty into the existing drains or into the new trunk lines, would run parallel to the shoulder of the driving lanes on I-4. Where the median width permits, the design would forgo the subsurface trunk lines and utilize ditches between the roadway shoulder and the barrier wall, or track section to collect and transfer storm drainage.

Storm water would be conveyed in ditches or trunk lines to the existing transverse drainage system, which currently transports water under and to the outside of I-4. The proposed longitudinal system reduces the number of transverse drainage pipes beneath the track structure. This longitudinal design was chosen to keep the conveyance system as high as possible. It also eliminates higher strength concrete pipes necessary to support trainloads and eliminates any future maintenance concerns with pipe beneath the train and track envelope.

Should existing cross drain culvert capacity be exceeded, the electric train proposal includes resizing these pipes or installing new cross drains at appropriate locations. Additionally, the proposal would address the requirements for erosion and sediment control and provide plans for stormwater pollution prevention.

Construction of the FHSR would create impacts to existing drainage systems. The electric train proposal identifies the responsibility as theirs to remedy any impacts in accordance with FDOT, FDEP, and WMD requirements and applicable local authority criteria.

2.4.7 Highway Modification

Any highway modifications must meet FDOT roadway standards and/or local agency roadway standards. The FHSRA has provided an alignment within transportation corridors that minimizes impacts to the existing roadways. Within the median of the interstates, geometry of rail alignments has been provided that requires design variations from the FDOT and FHWA standards. These design variations include reduced shoulder widths to accommodate the geometry of the rail alignment. However, the reduced shoulder widths still meet minimum shoulder width requirements of the state and federal agencies.

Construction of the FHSR would require coordination with roadway agencies for concurrence to the maintenance of traffic plans. The proposers would have to obtain concurrence from these agencies for construction within existing transportation corridors and to show that impacts to existing traffic would be minimized. The construction of the FHSR would require approval/authorization from FHWA, FDOT, and the Orlando-Orange County Expressway Authority (OOCEA) to be within the ROW of the transportation corridors within the respective agency's jurisdiction. The FHSRA would require a Memorandum of Agreement (MOA) with OOCEA for use of the Central Florida Greeneway (SR 417) ROW.

Gas Turbine Train

The gas turbine train proposal states that no highway modifications result from their proposal; however, as discussed in Section 2.3.7, the gas turbine train proposal identified three crossroad overpasses and three ramp structures that would need to be replaced with the proposed gas turbine train vertical alignment. The proposed gas turbine train alignment also proposes to be within the median of the Central Florida Greeneway (S.R. 417), however, no approval from the OOCEA has been provided for use of the Greeneway median.

Electric Train

The electric train proposal also states that no highway improvements are proposed except near stations and at maintenance facilities. The electric train proposal identifies a Disney area station alternative in the median of I-4. This would require approximately one mi. of the westbound I-4 lanes to be reconstructed. The electric train proposal utilizes the Central Florida Greeneway (S.R. 417) alignment along the north side of the ROW as identified by the FHSRA.

2.4.8 Operational and Maintenance Facility

The FHSRA identified two potential sites per technology for an Operational and Maintenance (O&M) facility. Both sites are located in the vicinity of Orlando International Airport. The available sites at Orlando International Airport would provide sufficient size, compatible land use, and minimal environmental impacts at the project's eastern terminus. One site would serve only the Bee Line Expressway (S.R. 528) alignment, whereas the second site could serve either the Bee Line Expressway (S.R. 528) or the Central Florida Greeneway (S.R. 417) alignment. Figure 2-9 shows the locations of the O&M Facilities as proposed by the FHSRA.

The O&M facility would allow the following main functions:

- Rolling stock maintenance
- Workshops and storage for fixed (infrastructure) assets
- Accommodation of maintenance staff
- Track access to the alignment for maintenance personnel

The rolling stock maintenance would employ a technology-specific vehicle maintenance shop that would incorporate facilities including:

- Train washing
- Multiple service and inspections tracks
- Dedicated preventative maintenance track
- Dedicated heavy maintenance track
- Dedicated axle storage track
- Dedicated wheel truing track
- Drop table
- Electrical and mechanical
- Supervisors and support offices

Major specialist equipment required to maintain the rolling stock would include:

- Wheel diagnostic machine
- Train washer
- Fueling system
- Wheel truing machine
- Drop table
- Gantry crane
- Fuel storage
- Sand and delivery system

- Sewage treatment
- Bridge/monorail cranes

An external, expandable, vehicle storage area would support the vehicle maintenance shop. The fixed (infrastructure) assets would have dedicated facilities, including a maintenance storage track, secure storage areas, and a specialist workshop.

Major special equipment required to maintain the fixed assets would include:

- High-rail utilities
- Track geometry vehicle
- Rail grinder
- Production tamper
- Ballast regulator

The maintenance facility would also accommodate FHSR staff in a dedicated administration building that would also contain the Operations Control Center.

Gas Turbine Train

The gas turbine train proposal utilizes the proposed site directly south from Orlando International Airport (Site 3 on Figure 2-9). The gas turbine train proposal identifies an alternative site for the facility that would serve only the Bee Line Expressway (S.R. 528) alternative (Site 2 on Figure 2-9). This site is located east of the site identified by the FHSRA. The gas turbine train proposal also identifies that a larger area is required for the O&M facility including additional ROW for track spurs at the approaches to the O&M facility. An additional 5 ac. are identified in the gas turbine train proposal. The O&M facility layouts for the proposed gas turbine train sites are shown in Appendix A-4, Figures 2-42 through 2-45.

Electric Train

The electric train proposal states that the sites as identified by the FHSRA, location and size, are adequate for their technology requirements (Sites 1 and 3 on Figure 2-9). A single plan for both proposed sites of the electric train O&M facility is shown in Appendix A-4, Figures 2-46 and 2-47.

2.5 STATIONS

The development of the potential station locations for the FHSR was based on identifying locations that minimized environmental impacts and that could be accessed from the mainline tracks with reasonable alignment geometry and cost. The following sections identify the process and factors that led to the proposed station locations, and the selection of the two remaining viable station proposals.

2.5.1 Preliminary Station Locations

The FHSRA identified potential station sites for each of the proposed station locations: Tampa, Lakeland, Disney area, OCCC, and Orlando International Airport. The sites were identified in discussions with local governmental agencies to ensure conformity with local plans, future growth plans, and intermodal connectivity. The following text discusses station(s) by location, proposed sites, and any evaluation or coordination with local governments identifying analytical reasons for eliminating or retaining a proposed station site. Station sites eliminated were either infeasible or failed to meet the purpose and need of FHSR. A site map of the viable station locations is presented in Figure 2-10.

Tampa

In coordination with local officials and agencies, FHSRA identified two sites for a station in the downtown area of Tampa and these are presented in Figure 2-2.

- Site A is located between Tampa Street and Marion Street, I-275, and Fortune Street. This is the proposed area for the Tampa Intermodal Site that would provide connections to an extension of the existing Ybor City Trolley, future light rail, bus, and a pedestrian corridor connected to the CBD via Franklin Street.
- Site B would be located in or adjacent to Union Station on Nick Nuccio Parkway and Nebraska Avenue. Union Station is an historic site and currently serves as the Amtrak passenger terminal for Tampa.

Coordination with the local governmental agencies identified Site A as the preferred location due to the long range capabilities of this site to accommodate intermodal connections, and current plans for redevelopment in this area.

The FHSRA eliminated Site B from further consideration due to the historic site designation and the modifications that would be required to accommodate high speed rail. Insufficient developable land for a new high speed rail station adjacent to Union Station was another factor. Within the immediate limits of Union Station are the existing Lee Roy Selmon Crosstown Expressway with future improvements, the beginning of Nick Nuccio Parkway (entranceway into Ybor City), and the Central Park Village, a low-income housing complex owned by the Tampa Housing Authority.

Lakeland

In coordination with the City of Lakeland, City of Plant City, and Polk County, eight potential stations were identified for the proposed Lakeland station and are presented in Figure 2-5. The following discussion identifies each station and the reasons for not including the site for continued evaluation, as determined at this stage of the project.

- Site A is located in the northwest quadrant of the Kathleen Road/I-4 interchange. This site is privately owned and currently undeveloped, but would require development and approval for the infrastructure required for the station. The property owner has expressed

interest in working with the FHSRA for this potential site. The City of Lakeland acknowledges the benefits of a station at the Kathleen Road interchange to establish connectivity to the local bus system and accommodate proposed growth in this area of the city.

This site has been eliminated from consideration due to the limited width of the property. The station platform would run the width of the property resulting in additional impacts to surrounding properties. This proposed site is located near a ridgeline that would require long lengths of additional structure and very high embankment to maintain acceptable vertical alignment approaches into and out of the station to the west. The CSX rail line borders the western edge of this property and would also influence the vertical alignment.

- Site B is located in the northeast quadrant of the Kathleen Road/I-4 interchange. This site is privately owned with development occurring in the vicinity. Infrastructure is in place that could be utilized by a potential station at this site. The existing ground is higher than the interstate; therefore, the elevated tracks over I-4 would rise to meet the existing ground. The horizontal alignment of I-4 from the eastern approaches provide for the track alignment to leave the median and minimize ROW impacts to properties along the northern interstate ROW. The City of Lakeland acknowledges the benefits of a station at the Kathleen Road interchange to establish connectivity to the local bus system and accommodate proposed growth in this area of the city. This site was retained for further evaluation in the Final EIS.

- Site C is in the southwest quadrant of the Kathleen Road/I-4 interchange on the abandoned site of the Owens/Illinois facility. This site presents some alignment challenges, both vertically and horizontally, for access to the site to and from the I-4 corridor. The City of Lakeland acknowledges the benefits of a station at the Kathleen Road interchange to establish connectivity to the local bus system and accommodate proposed growth in this area of the city.

  This site was eliminated from further consideration due to the topographic features at the area. The station site is at the lower elevations of a ridge that would require long lengths of additional structure and very high embankment for the tracks to merge into and diverge out of the median of I-4 to access the station. In order to maintain acceptable vertical alignment approaches into and out of the station, it would require that the station platforms be elevated at significant height from the existing ground.

- Site D is located at the S.R. 33/Socrum Road and I-4 interchange. The site surrounds an abandoned rest area adjacent to I-4 and is in an area of heavy congestion. The inability to access the station from the existing transportation network is a primary concern identified by the City of Lakeland and Polk County.

This site has been eliminated from further consideration based on the coordination with local governmental, which revealed concerns about the additional congestion in this area of Lakeland and the future planning by these agencies for a station on the west side of Lakeland.

- Site E is located in the northwest quadrant of the Polk Parkway (west access)/ I-4 interchange. This site was identified through coordination with the City of Plant City and supported by the ridership study. The proposed station could be located in the median with crossover access to and from the station site north of the interstate. Access would be provided from Clark Road and infrastructure improvements would be required. The site was retained for further evaluation in the Final EIS.

- Site F is located in the southwest quadrant of the S.R. 33/I-4 interchange, approximately 4 mi. east of the Socrum Road interchange. This site is undeveloped and would require the extension of all infrastructure services from the City.

  This site has been eliminated from further consideration based on concerns of the City of Lakeland that the site was not compatible with future land use plans.

- Site G is located in the southeast quadrant of the Kathleen Road/I-4 interchange in the Lakeland Interstate Business Park. Basic infrastructure for the station exists at this proposed site.

  This site has been eliminated from further consideration based on the horizontal approaches into and out of the I-4 median. A series of horizontal curves directly east of the proposed site would require an additional bridge structure to access the station site and minimize ROW impacts and relocations to commercial properties along the southern ROW line of the interstate. The topography, with I-4 being at a higher elevation than the proposed site, would require the station platform to be located approximately 30 ft. over the existing ground.

- Site H is located at the downtown Lakeland Amtrak station. Expansion of the existing station is limited with impacts to the existing CSX rail line and to Lake Mirror. The Lake Mirror Promenade is listed in the National Register of Historic Places (NRHP).

  This site has been eliminated from further consideration since the alignment segment that would serve this location (Alignment a in Corridor D) was eliminated from further consideration during the corridor screening evaluation of the project, as identified in Section 2.3.1.

Disney Area

In coordination with Walt Disney World, three potential station sites were identified on Disney property with a fourth site identified in the I-4 median that could potentially provide a station on

non-Disney property. These sites are presented in Figure 2-6. The following discussion identifies the proposed station sites.

- Site A is located west of I-4 and north of U.S. 192. Disney's World of Sports is located west of this proposed site and the station's roadway access ties into the existing roadway system.

- Site B is located west of I-4 between U.S. 192 and the Osceola Parkway. Infrastructure does not exist at this proposed site.

- Site C is located west of I-4 and south of Osceola Parkway. Infrastructure does not exist at this proposed site.

- Site D is located in the median of I-4 between U.S. 192 and the Osceola Parkway. The platforms would be located in the median with station facilities located to the east or west of I-4.

Due to the close proximity of these four sites to each other, Sites A and C have been eliminated from further consideration. Elimination is based on the close proximity of the station sites to major crossroads, U.S. 192, and Osceola Parkway. Close coordination has been maintained with Walt Disney Company; and if the proposed station site is on Disney property, it would be located to minimize impacts to future Disney plans and maximize the benefits to FHSR. Sites B and D are contained within the same boundary limits and are combined as Site B/D for further analysis.

Orange County Multi-modal Center

The Orange County Multi-modal Center site is located in the northeast quadrant of the International Drive/ Bee Line Expressway (S.R. 528) interchange. Orange County has acquired land and is planning a transportation hub serving the OCCC and the International Drive Activity Center. The station site is presented in Figure 2-6.

Several FHSR alignments serving this site were examined during the preliminary screening of alternatives. The station and alignment would be located along the north side of the Bee Line Expressway (S.R. 528) ROW with station platforms located within the ROW of the interchange area. The platform and station facilities would be connected to the parkway and the proposed multi-modal center by a pedestrian bridge.

Orlando International Airport

The station at Orlando International Airport would be located on the eastern side of the future south terminal expansion. The Greater Orlando Aviation Authority (GOAA) Airport Master Plan identifies the western site of the south terminal to be constructed first. The FHSR station, if constructed, would be located in an area of future terminal expansion. The design of this station would be closely coordinated with GOAA. The site is presented in Figure 2-6.

In order for the station to be connected to the main GOAA terminal facilities, the airport internal transportation system would need to be extended to the FHSR system and other infrastructure improvements consistent with GOAA's plan would have to be accelerated. The implementation and funding of airport infrastructure would also need to be closely coordinated with GOAA.

2.5.2 Viable Station Locations

The preliminary station location evaluations identified for continued evaluation are shown in Figure 2-10.

From the preliminary information gathered, the FHSRA developed a draft program identifying minimum station requirements as follows:

- Bus and drop-off facilities 95,000 square ft. (SF)
- Pedestrian Plaza 5,000 SF
- Station Concourse and Waiting 27,500 SF
- Ticketing 1,800 SF
- Public Restrooms 2,000 SF
- Vending/concessions 8,000 SF
- Equipment/Mechanical Space 1,000 SF
- Platforms (2 per station) 800 linear ft. (LF) each
- Vertical Circulation 5,000 SF
- Parking 500 Spaces

The ancillary uses and additional issues associated with the Disney area and Orlando International Airport stations have been identified through continued coordination with the respective parties. The following discussion identifies the additional points of coordination for these two proposed stations.

Disney Area Station

In coordination with the Walt Disney Company, one potential site (Site B/D) was identified for further evaluation on Disney property west of I-4 between the U.S. 192 and Osceola Parkway interchanges. To access Site B, the FHSR alignment would leave the I-4 median west of the U.S. 192 interchange and east of the Osceola Parkway interchange. Site D is proposed with a station platform located in the median and the station facility located west of I-4. The Walt Disney Company has indicated support of a FHSR station with ancillary uses within the station limited to:

- Food and non-alcoholic beverage machines
- ATM machine(s)
- Public telephones
- Internet or rail informational kiosks
- Public restroom facilities
- Ticketing facilities

Orlando International Airport Station

The operator of FHSR would manage and operate waiting and ticketing areas associated with the station. Other ancillary uses, such as concessions and food services, would be operated by GOAA or vendors selected by GOAA.

2.5.3 Design/Build Station Locations

The stations included in the gas turbine train and electric train proposals are identified in Appendix A-4.

The stations identified by the gas turbine train and electric train proposals that would be analyzed through the environmental analysis process and documentation are as follows:

Tampa Station:	Site A
Lakeland Station:	Site E (Site B is also evaluated in the EIS, as requested by the City of Lakeland)
Disney Area Station:	Site B/D
Orange County Multi-Modal Center	
Orlando International Airport	

The City of Lakeland requested direct coordination with the proposers to pursue additional dialogue on the proposed Lakeland station. Site B is preferred by the City of Lakeland and the environmental assessments at this site would be included in the environmental documentation.

2.6 PREFERRED ALTERNATIVE

The Project Development & Environment (PD&E) Study investigated four alternative alignments that were analyzed on the potential impacts of two separate technologies. This resulted in a total of eight alternative alignments with Alternatives 1 through 4 analyzed based on the gas turbine technology and Alternatives 5 through 8 analyzed based on the electrified technology. The eight alternative alignments were evaluated based on the technological differences, engineering and environmental impacts, costs, and other factors impacting the selection of the alignment. Development of alignments provided an analysis of socio-economic, natural, and physical environmental impacts within the proposed corridors. The impacts of the design/build alternatives and the No-Build Alternative are identified in Section 4 of this document.

The Draft EIS was issued August 21, 2003 and three Public Hearings were held in early October 2003 at locations along the FHSR corridor. The PD&E study, the Draft EIS and comments on the Draft EIS were given consideration by the FHSRA prior to the October 27, 2003 FHSRA Board meeting where a recommendation of the Preferred Alternative was initially identified with two MOAs as caveats. At the November 10, 2004 FHSRA Board meeting, the FHSRA revised

their initial recommendation of the Preferred Alternative because the two MOAs had not been executed.

Identification of the Preferred Alternative

The FHSRA considered the two separate areas, Tampa and Orlando, in the decision process to identify a Preferred Alternative. All alternative alignments are on I-4 through Polk and Osceola counties. Two separate alignments were considered in Tampa (Hillsborough County), the CSX and I-4 alignments; and in Orlando (Orange County), Florida Turnpike's BeeLine Expressway (S.R. 528) and the Central Florida Greeneway (S.R. 417).

On October 27, 2003, the FHSRA unanimously passed a motion identifying the I-4 alignment in Hillsborough County as the preferred alignment. The FHSRA also initially identified the Central Florida Greeneway (S.R. 417) alignment as the preferred alignment in Orange County subject to the execution of two MOAs. The two MOAs required the following:

- An acceptable agreement between the FHSRA and Walt Disney Company related to donation of ROW and commitments to support ridership for the project
- An acceptable agreement between the FHSRA and the OOCEA related to use of the Central Florida Greeneway (S.R. 417) ROW.

The FHSRA ranked the Fluor Bombardier Team (gas turbine technology) as the preferred proposer. The initial Preferred Alterative was Alternative 2, which is the combination of the I-4 alignment in Hillsborough County and the Central Florida Greeneway (S.R. 417) alignment in Orange County utilizing the gas turbine technology. On November 10, 2004, the FHSRA revised the recommendation of the Preferred Alternative because the two MOAs described previously, had not been executed. With this action, the FHSRA recommended Alternative 1 (gas turbine technology) as the Preferred Alternative, which is the combination of the I-4 alignment in Hillsborough County and the Bee Line Expressway (S.R. 528) alignment in Orange County.

Description of Preferred Alternative

The Preferred Alternative, Alternative 1, begins at the Downtown Tampa Station located between Tampa Street and Marion Street, I-275, and Fortune Street. The FHSR alignment follows I-275 along the south and east ROW of this transportation corridor. The alignment is in the southeast quadrant of the I-275/I-4 interchange with the rail alignment crossing into the I-4 median in the area of 15th Street. The majority of the FHSR alignment between the Tampa station and the crossing into the I-4 median is within the Ultimate ROW identified in the Tampa Interstate Study (TIS) for future interstate improvements, however, some additional ROW will be required.

The alignment continues east within the I-4 median through Hillsborough and Polk Counties. The preferred station, as identified by the first preferred proposer, serving the Polk County/City of Lakeland area is located in the northwest quadrant of the Polk Parkway/I-4 interchange. The station is proposed with a median platform with a pedestrian bridge crossing to the main station

on the north side of I-4. The City of Lakeland requested continued consideration of a station option at the Kathleen Road site located in the northeast quadrant of that interchange with I-4. The city is continuing discussions with the preferred proposer for consideration of this site. The I-4 median is not wide enough to provide a median platform at this site; therefore, the mainline tracks of the FHSR would leave the median of I-4 west of the CSX crossing of I-4 and reenter the median east of the U.S. 98 interchange at I-4. The alignment will remain within the I-4 ROW. The environmental impacts associated with this option are included in the impact analysis.

Entering Osceola County, the alignment remains within the I-4 median. The proposed Disney Station is located north of U.S. 192. The station platform is located in the median and station facility is located west of I-4 between U.S. 192 and the Osceola Parkway.

The alignment continues in the I-4 median until the I-4/Bee Line Expressway (S.R. 528) interchange, where it leaves the I-4 median and runs along the north side of the Bee Line Expressway (S.R. 528) within the existing ROW.

The Orange County Multi-modal Center site is located in the northeast quadrant of the International Drive/ Bee Line Expressway (S.R. 528) interchange. The station and alignment would be located along the north side of the Bee Line Expressway (S.R. 528) ROW with station platforms located within the ROW of the interchange area.

The alignment continues on the north side of Bee Line Expressway (S.R. 528) until east of the Bee Line Expressway (S.R. 528)/John Young Parkway interchange, where it leaves the Bee Line Expressway (S.R. 528) and runs on new alignment east to Taft-Vineland Road. The alignment continues along Taft-Vineland Road and enters the City of Orlando property near Tradeport Drive. It then follows the Orlando Utilities Commission rail line as a new alignment traversing from south to north through the limits of Orlando International Airport, east of the proposed South Terminal.

The rail alignment into the property of Orlando International Airport has been coordinated to be within the rail corridor traversing through the limits of the airport, as identified in the Orlando International Airport Master Plan. The FHSR O&M facility is located on the southern portion of the Orlando International Airport property east of the South Access Road. The limits of the O&M facility have been located to avoid any impacts the conservation area located south of the airport.

The Preferred Alternative with the location of the proposed stations and the O&M Facility is shown in Figure 2-11. The conceptual engineering plans, including the horizontal and vertical alignments, of the Preferred Alternative are attached as Appendix C.

Preferred Alternative Analysis

The FHSRA identified further options for inclusion with the Preferred Alternative at the December 17, 2003, board meeting. The options to the Preferred Alternative as identified by the preferred proposer include the following:

- Double track configuration for the entire alignment.
- Provision for future electrification.

The proposed alignments have been analyzed through all phases of the FHSR study as a double track configuration; therefore, no changes to the analysis are required. Providing for future electrification, the preferred proposer in coordination with the FHSRA, has identified features that result in no additional environmental consequences than the impacts documented in the Environmental Consequences of the Preferred Alternative. The features for future electrification include construction of the base foundations for future installation of catenary poles and incorporation of conduit for future electrification within the identified ROW of the Preferred Alternative.

2.7 ENVIRONMENTALLY PREFERRED ALTERNATIVE

The Environmentally preferred alternative is the No Build Alternative, which although failing to meet the project purpose and need, would result in less direct and indirect impact to the environment.

2.8 REFERENCES

1. Florida Transit Corridor Study; Alan Vorhees and Associates; March 1976.

2. Florida Future Advanced Transportation Report; Florida High Speed Rail Committee; April 1984.

3. High Speed/Intercity Rail Passenger System Planning Assessment of Routes and Alignments (and Appendices); Wilbur Smith Associates; 1993.

4. Florida High Speed and Intercity Rail Market and Ridership Study (and Technical Appendices); KPMG Peat Marwick: July 1993.

5. High Speed Rail Transportation Study – Tampa Bay to Orlando Corridor; ICF Kaiser Engineers; September 1993.

6. Florida Intercity Rail Passenger Service, Options for the 21st Century, A Component of the Florida Transportation Plan; January 1995.

7. Florida Overland eXpress Study; Florida Overland eXpress; 1999.

8. Coast to Coast Rail Feasibility Study / Cross-State Rail Feasibility Study; STV Incorporated; June 2001.

9. 2002 Report to the Legislature; Florida High Speed Rail Authority; Tallahassee, Florida; January 2002.

10.

Florida High Speed Rail Screening Report; Parsons Transportation, PBS&J; Tampa, Florida; October 2002.

11. Structures Design Guidelines; Florida Department of Transportation; Tallahassee, Florida; 2001.

12. Load Resistance Factor Design Bridge Design Specifications; American Association of State Highway Transportation Officials; Washington, D.C.

13. Manual for Railway Engineering; American Railway Engineering and Maintenance of Way Association; Landover, Maryland; 2002.

SECTION 3
AFFECTED ENVIRONMENT

3.1 SOCIAL AND ECONOMIC CHARACTERISTICS

This section details socio-economic conditions including population, housing, employment, and income characteristics.

3.1.1 Population Characteristics

The study area for the Florida High Speed Rail (FHSR) project extends from downtown Tampa in Hillsborough County (Corridor A), through Polk and Osceola counties, and terminates in the city of Orlando in Orange County (Corridor E) (Section 2, Figure 2-1). The counties in this central Florida region are experiencing tremendous growth and are projected to continue this growth pattern in the short-term and long-term future. In each county, a majority of the population resides in unincorporated regions and this trend is projected to continue into the short-term and long-term future.

Table 3-1 illustrates county population growth that occurred between the years 1980, 1990, and 2000; population projections for the years 2010 and 2020; and the population percentage change by county and state between the years 1980-1990, 1990-2000, and 2000-2020.

Table 3-1
Population Statistics by County and in Florida
1980, 1990, 2000, 2010, and 2020

	1980	1990	Percent 1980-1990	2000	Percent Change 1990-2000	2010	2020	Percent Change 2000-2020
Florida	9,746,961	12,938,071	32.7	15,982,378	23.5	18,776,000	21,683,300	35.7
Hillsborough	646,939	834,054	28.9	998,948	19.8	1,153,100	1,314,100	31.5
Polk	321,652	405,382	26.0	483,924	19.4	554,900	628,200	29.8
Osceola	49,287	107,728	118.6	172,493	60.1	231,500	294,300	70.6
Orange	470,865	677,491	43.9	896,344	32.3	1,112,200	1,338,300	49.3

Source: Florida Statistical Abstract, 2001
Note: Projections are medium projections and rounded to (1,000's).

Population characteristics of the study area are described by corridor in the following paragraphs (see Section 2 for corridor definition).

Corridors A through C

Hillsborough County is located along Tampa Bay on the west coast of Florida, adjacent to the Gulf of Mexico. The county ranks fourth in population in the state of Florida and is made up of three municipalities. Tampa, the county seat, is the largest municipality in Hillsborough County with a year 2000 population of 303,447. Hillsborough County is anticipated to grow approximately 32 percent by 2020.

Corridor D

The population patterns of Polk County, which ranks eighth in the state for population, differ significantly from Hillsborough County. Polk County is composed of 17 different municipalities. Lakeland is the most populated municipality in the county, with a population of 78,452 in 2000. Polk County population is expected to increase by approximately 30 percent by 2020.

Osceola County, which contains both Corridors D and E, is the least populated county included in the study area, ranking twenty-third in the state, but is rapidly increasing in number of residents. While the county is primarily rural, the population is projected to increase more than 70 percent by 2020.

Corridor E

Orange County ranks sixth in population in the state. The population of Orange County is disbursed into 13 incorporated municipalities, the largest of which is Orlando. Year 2020 projected growth is expected to increase approximately 50 percent.

Age and Racial Composition

Age data is presented in Table 3-2. The data indicates that three of the four counties have a much younger median age than the state as a whole. Only Polk County has a median age comparable to Florida as a whole.

Table 3-2
Age Characteristics by County and in Florida
Year 2000

	Total	0-14	15-24	25-44	45-64	65 and Over	Median Age
Florida	15,982,378	3,034,565	1,942,377	4,569,347	3,628,492	2,807,597	38.7
Hillsborough	998,948	212,554	133,655	316,603	216,463	119,673	35.1
Polk	483,924	98,223	59,912	127,929	109,122	88,738	38.6
Osceola	172,493	38,375	23,806	53,403	37,200	19,709	34.6
Orange	896,344	190,288	134,105	302,676	179,316	89,959	33.3

Source: Florida Statistical Abstract, 2001

As Table 3-3 indicates the state of Florida has increased in non-white population approximately 5 percent between 1990 and 2000. All four counties have also experienced increases in non-white population, with Osceola and Orange counties increasing more than 10 percent from 1990 to 2000.

Table 3-3
Racial Composition by County and in Florida
Years 1980-2000

	1990			2000		
	Total Population	White (%)	Non-White (%)	Total Population	White (%)	Non-White (%)
Florida	12,938,071	83.1	16.9	15,982,378	78.0	22.0
Hillsborough	834,054	82.9	17.1	998,948	75.2	24.8
Polk	405,382	84.4	15.6	483,924	79.6	20.4
Osceola	107,728	89.3	10.7	172,493	77.2	22.8
Orange	677,491	79.5	20.5	896,344	68.6	31.4

Sources: Florida Statistical Abstract, 2001; Hillsborough County City-County Planning Commission, Socioeconomic Data Report, August 2001.

Table 3-4 illustrates the total households and persons per household for 1990 and 2000. Persons per household figures in every county were higher than the state average in 1990 and 2000. Both Orange and Osceola counties show significant differences between 1990 and 2000 with an increase of 81,109 households in Orange County and increase of 18,666 in Osceola.

Table 3-4
Total Households and Persons per Household by County and in Florida
Years 1990 and 2000

	1990			2000		
	Total Population	Number of Households	Persons per Household	Total Population	Number of Households	Persons per Household
Florida	12,938,071	5,138,360	2.50	15,982,378	6,337,929	2.46
Hillsborough	834,054	325,238	2.51	998,948	391,357	2.51
Polk	321,652	155,870	2.53	483,924	187,233	2.52
Osceola	49,287	39,228	2.69	172,493	60,977	2.79
Orange	470,865	255,177	2.57	896,344	336,286	2.61

Source: Florida Statistical Abstract, 2001.

3.1.2 Employment and Economic Characteristics

Distinct economic forces drive the economic growth of each county. Table 3-5 contains a comparison of the labor force, total of unemployed persons, and percent unemployment for each county and Florida for the years 1999 and 2000. From 1999 to 2000, each county experienced an increase in the number of workers contributing to the labor force. This growth ranged from an increase of 1,707 in Osceola County to an increase of 15,767 in the labor force in

Hillsborough County. The percent of unemployed persons in each county remained within two tenths of a percentage point of their corresponding 1999 figures.

Table 3-5
Labor Force and Unemployment by County and in Florida
Years 1999 and 2000

	1999			2000		
	Labor Force 1999	Unemployed Persons	Percent Unemployment 1999	Labor Force 2000	Unemployed Persons	Percent Unemployment 2000
Florida	7,361,000	284,000	3.9	7,490,000	269,000	3.6
Hillsborough	549,091	14,302	2.6	564,858	14,626	2.6
Polk	200,224	9,695	4.8	204,355	9,660	4.7
Osceola	84,514	2,267	2.7	86,221	2,375	2.8
Orange	488,182	13,367	2.7	496,692	12,644	2.5

Source: Florida Statistical Abstract, 2001.

Table 3-6 contains information on employment by industry group and county compared to Florida in 2000. The services industry contains the majority of employment in each county, as well as Florida.

Table 3-6
Employment by Industry Group by County and in Florida
Year 2000

Category	Hillsborough County	Polk County	Osceola County	Orange County	Florida
Agriculture/Forestry/Fishing	12,035	8,302	827	9,085	155,187
Mining	25	2,324	(N/A)	40	6,214
Construction	27,425	10,043	2,740	28,550	366,724
Finance/Insurance/Real Estate	46,870	8,676	2,758	33,123	439,249
Services	222,854	46,233	15,572	271,916	2,330,537
Manufacturing	37,429	19,672	1,710	37,111	487,962
Transportation/Communication Public Utilities	31,760	9,111	708	33,980	340,643
Wholesale/Retail Trade	34,701	9,285	2,019	32,938	364,669

Sources: Florida Statistical Abstract, 2001; Hillsborough County City-County Planning Commission, Socioeconomic Data Report, August 2001

As Table 3-7 illustrates, every county and the state of Florida had more than 20 percent of the population living below the poverty level in 1997. Three of the four counties had median household incomes similar to the state. Only Orange County was significantly higher with a median of $36,979.

Table 3-7
Percent Below the Poverty Level and Median Household Income and Number of Households

	Median Household Income 2000 (In Dollars)	Percent Below the Poverty Level -- 1997
Florida	32,877	21.8
Hillsborough	35,994	22.0
Polk	31,030	25.4
Osceola	32,552	21.8
Orange	36,979	20.2

Sources: Florida Statistical Abstract, 1998 & 2001.

Corridors A through C

Hillsborough County

In recent years, Hillsborough County has evolved from an economy supported primarily through agriculture, construction, and retirement into an economy increasingly supported by retail/wholesale services, light manufacturing, major wholesale distribution, and corporate offices. The service sector represents the highest concentration of employment in Hillsborough County, as it does in the state, generating nearly 40 percent of the employment in the county. Educational institutions provide a significant portion of the employment base. The School District of Hillsborough County and the University of South Florida (USF) provide nearly 30,000 jobs combined. Other important employers include federal, state, and local government entities, such as Hillsborough County Government, the City of Tampa, MacDill Air Force Base, and Tampa International Airport. Tampa International Airport directly or indirectly provides approximately 18,000 jobs.

Corridor D

Polk County

Polk County's largest employers in 2000 included the Polk County School Board (9,500 employees) and Publix Supermarkets (7,500 employees). Other top county employers are local, federal, and state government, medical services, insurance companies, and IMC-Agrico. The largest employment category is the services category with 46,233 employees.

Osceola County

Osceola County, in which contains both Corridors D and E, also has a large percentage of employees working in the services category with 15,572 people in 2000. Walt Disney World Resort and Sea World theme parks are located just outside of Kissimmee-St. Cloud and are major economic contributors to the economy of the county through the tourism industry.

Corridor E

Orange County

In Orange County, the service industry represents the highest portion of the economy. In addition, approximately 42.2 percent of the employed population works in the Orlando metropolitan area. Service industry employment can be attributed to the concentration of theme parks and resorts located within close proximity to Orange and Osceola counties. The economy of Orange County is fueled heavily by the tourism industry. The top private employer in the Orlando metropolitan area is Walt Disney World, with 55,900 employees in 2000, approximately 37,100 more employees than Adventist Health System, the private company ranking second on the list.

3.2. EXISTING LAND USE

3.2.1 CORRIDOR A: East of the Hillsborough River to U.S. 41 in Tampa and Corridor B: U.S. 41 to the Bypass Canal in Hillsborough County

Figure 3-1 shows the Existing Land Use for Corridors A and B within the City of Tampa. The existing land use map is generalized; however, three categories predominate: Single Family Residential, Industrial, and Public. The residential areas are primarily located north and west of Interstate 275 (I-275) and Interstate 4 (I-4). The industrial uses occur around the Port of Tampa, along U.S. 41 and the Lee Roy Selmon Expressway. Public land is located primarily in Ybor City, the Port of Tampa, and along the Hillsborough River.

3.2.2 CORRIDOR B U.S. 41 in Tampa to East of I-75, Hillsborough County and CORRIDOR C: East of I-75, Hillsborough County, to West Entry of the Polk Parkway, Polk County

Figure 3-2 shows the Existing Land Use for Hillsborough County. The generalized existing land use for the corridor indicates Industrial and Public Land uses predominate west of Interstate 75 (I-75). East of I-75 and within Corridor C, Single Family Residential and Agricultural land uses predominate. The map also indicates that Single Family Residential is expanding into the rural areas on the north and east portion of Hillsborough County.

Figure 3-3 shows the Existing Land Use for Plant City. The land use map displays a typical pattern of land use for a small city with Single Family being the primary land use and a mixture of Commercial and Industrial uses along the major roadways, I-4, and U.S. 92.

3.2.3 CORRIDOR D: West Entry of Polk Parkway, Polk County, to Celebration Area, Osceola County

Figure 3-4 shows the Existing Land Use for Polk County and the City of Lakeland. The northern portion of the corridor contains predominantly Rural and Low-Density Residential uses adjacent to Passive Agricultural uses. Active Agricultural uses are dispersed throughout the corridor. There are large amounts of existing Vacant Land and Water Bodies. From west to east, the

corridor contains primarily residential uses within the following urban areas: cities of Lakeland, Auburndale, Winter Haven, Haines City, and Davenport.

Figure 3-5 shows the Existing Land Use for Corridor D within Osceola County. The current land use is a combination of Residential, Vacant Land, Agriculture, and Recreation and Open Space uses. Commercial land use within this corridor occurs north of I-4 on U.S. 192.

3.2.4 CORRIDOR E: Celebration Area, Osceola County, to Orlando International Airport, Orange County

Figure 3-5 also shows the Existing Land Use for Osceola County within Corridor E. Within Osceola County north of U.S. 17, existing land uses are Agricultural and Recreation and Open Space. North and south of I-4 are Commercial uses and the new town community of Celebration.

Figure 3-6 shows the Exiting Land Use of Orange County. Commercial and Conservation land use exists west of I-4 in the vicinity of Disney World. This area also contains a number of Water Bodies. Both north and south of the Central Florida Greeneway (S.R. 417), Conservation, Rural/Agriculture, and Low Density Residential uses exist. The residential area east and west of the Florida Turnpike contains the Hunter's Creek neighborhood. At the intersection of I-4 and the Bee Line Expressway are Institutional and Commercial uses including the Orange County Convention Center (OCCC) and International Drive. Clusters of Industrial uses occur near the intersection of the Bee Line Expressway (S.R. 528) and the Florida Turnpike. To the east of this area is the Orlando International Airport.

3.3 FUTURE LAND USE PLANS

Local government comprehensive plans are developed to provide guidance for new development, as well as redevelopment of land uses in the future. In Florida, all comprehensive plans also contain transportation plans or elements. Comprehensive plans generally specify future land uses based on an aggregation of existing uses in the developed areas, and desirable future land uses in vacant and agricultural areas. A discussion of future land uses is presented for each corridor.

3.3.1 Corridor A: East of the Hillsborough River to U.S. 41 in Tampa and Corridor B: U.S. 41 in Tampa to East of I-75, Hillsborough County

Figure 3-7 shows the Future Land Use Categories for the City of Tampa, which differ from existing land use patterns. The plans:

- Increase residential density along I-4.
- Promote redevelopment in Tampa Heights and Ybor City through use of Community and Regional Mixed Use categories.
- Develop the Central Business District (CBD) with Mixed and High Density Residential uses.
- Change designation of the area east of Ybor City (including the Port of Tampa) between the Lee Roy Selmon Expressway and the CSX tracks to Heavy Industrial use.

- Encourage redevelopment in Ybor City and Channelside through the Regional Mixed use designation.

Figure 3-8 shows the Future Land Use Categories for Hillsborough County for Corridor B, which differ from existing land use patterns. Changes include:

- Establish an Urban Mixed use area along I-75.
- Continue the existing mixture of uses north and south of I-4 by utilizing the Community Mixed Use designation.

The Mixed Use designations allow for existing single family densities and service commercial uses to coexist with higher residential densities and office uses which encourage redevelopment.

3.3.2 CORRIDOR C: East of I-75, Hillsborough County to the West Entry of the Polk Parkway, Polk County

Figure 3-8 shows the Future Land Use for Hillsborough County for Corridor C, which differs from existing land use patterns. The plans:

- Encourage rural residential use north of I-4 and west of Brandon by utilizing Residential-1, Residential Planned-1, and Agricultural Estate designations.
- Continue single family and low density multi-family residential development in the Brandon area by utilizing Residential-4 and Residential-6 categories.

Figure 3-9 shows the Future Land Use for Plant City, which differs from existing land use patterns. The changes include:

- Increase residential densities to Residential-6, Residential-9, and Residential-20 designation.
- Change the Mining designation east of Plant City to Heavy Industrial and the mixture of uses east of Plant City along U.S. 92 to Heavy Industrial.
- Provide for Office/Commercial uses around the CBD and along major roadways.

3.3.3 CORRIDOR D: West Entry of Polk Parkway, Polk County to Celebration Area, Osceola County

Figure 3-10 shows the Future Land Use for Polk County, the City of Lakeland, and other cities, which differs from existing land use patterns. These plans:

- Change designations northwest of I-4 from Passive Agriculture to Residential Suburban.
- Change from Vacant and Passive Agriculture northeast of I-4.
- Maintain the small city character in Lakeland, Auburndale, Winter Haven, Haines City, and Davenport through Residential Density Low designation.

Figure 3-11 shows the Future Land Use for Osceola County within Corridor D. The future development plans for Osceola County differ from existing land use patterns. The changes include:

- Expand the Destination New Town designation from the Recreation and Open Space designation in and around the Celebration area.
- Increase commercial areas significantly on both sides of I-4 and north up to U.S. 192.

3.3.4 CORRIDOR E: Celebration Area, Osceola County to Orlando International Airport, Orange County

Figure 3-11 shows the Future Land Use for Osceola County with Corridor E. The future development plans for Osceola County intensifies existing land use patterns. This includes:

- Expand the Destination New Town designation from the Recreation and Open Space designation in and around the Celebration area.
- Increase commercial areas significantly on I-4, U.S. 192, and Central Florida Greeneway (S.R. 417).

Figure 3-12 shows the Future Land Use for Orange County, which differs from existing land use patterns. The plans:

- Change designations from Rural/Agriculture to Low Density, Low-Median Density, and Medium Density Residential along both sides of the Central Florida Greeneway (S.R. 417).
- Add Industrial land use designation to the intersection of the Central Florida Greeneway (S.R. 417), S.R. 527, and the Florida Turnpike.
- Increase development along I-4 through the Activity Center Mixed Use category.

3.4 FUTURE TRANSPORTATION PLANS

3.4.1 Long Range Transportation Plans

Three agencies are responsible for long-range transportation planning within the FHSR study corridors. They are: the Hillsborough County Metropolitan Planning Organization (MPO), the Polk County Transportation Planning Organization (TPO), and METROPLAN Orlando. These agencies are authorized under federal and state statutes for multi-jurisdictional and multi-modal transportation planning.

Table 3-8 provides the status of the long-range transportation plans and actions needed by the four counties within Corridors A through E in reference to FHSR. The Hillsborough County MPO adopted its 2025 Long Range Transportation Plan[1] (LRTP), with the appropriate FHSR references, in November 2001. The TPO for Polk County adopted its 2025 Long Range Transportation Plan[2] in December 2000. The Polk County LRTP was amended in December 2002 to include two policies addressing FHSR and adding Corridor D to a LRTP map.

The METROPLAN Orlando guides multi-modal transportation planning in Orange, Seminole, and Osceola counties, including sixteen municipalities. METROPLAN adopted its 2020 Long Range Transportation Plan[3] in December 1995. METROPLAN Orlando is presently preparing a 2025 LRTP. High speed rail policies and a map showing both retained alignments (Alignments E1 and E2) in Orange County have been included in METROPLAN's Transit and Visions Concept Plan.

3.4.2 Local Government Transportation Planning

There are 13 local governments including counties and cities, as well as an improvement district within Corridors A through E. These local governments maintain comprehensive plans in compliance with *Florida Statutes, Chapter 163*. By rule, these plans contain multi-modal transportation elements. These elements must be consistent with the LRTPs of the MPO.

Table 3-9 shows the actions needed prior to construction for each transportation element within the FHSR corridors. Not all communities have incorporated the FHSR into their comprehensive plans, most notably Orange County and Osceola County.

Table 3-8
High Speed Rail Study Area
LRTPs

Document	Applicable Corridors	LRTP Adoption Date	Reference to High Speed Rail	Actions Needed
Hillsborough County				
Hillsborough County 2025 LRTP	A, B, C	Adopted: November 13, 2001	Yes – Chapter 4, Regional Transportation Planning; Chapter 6, Needs Assessment; 2025 Cost Affordable Transit Network Map	None
Polk County				
Polk County 2025 LRTP	D	Adopted: December 7, 2000 Amended: December 2002	Yes – Policies 5.8 and 5.9; Map	None
Orange and Osceola Counties				
METROPLAN Orlando 2020 LRTP	D, E	Adopted: December 1995 Refined: December 2002	Yes – Transit and Concepts Vision Plan	Written opinion of consistency between FHSR alignments and LRTP has been requested

Table 3-9
High Speed Rail Study Area
Transportation Elements

Document	Applicable Corridors	Adoption Date	Reference to High Speed Rail	Actions Needed
Hillsborough County				
Hillsborough County Transportation Element	A, B, C	Adopted: March 2001	Yes - Policy 6.1.4, Future Transit Corridor Map	None
City of Tampa Transportation Element	A, B	Adopted: April 2004	Yes - Intermodal Analysis, Policy 4.4.1, Policy 9.1.3, 2025 Highway Needs Plan	None
City of Plant City Transportation Element	C	Adopted: May 13, 1999	No	None
Polk County				
City of Lakeland Transportation Element	D	Adopted: December 27, 2001 Refined: January 2003	Yes - Mass Transit Section, Rail Section, Policy 7D; Map of Corridor	None
Polk County Transportation Element	D	Adopted: December 19, 2001 Refined: January 2003	Yes - Policy 3.302-A4, Support Data - Railroad Operations; Corridor Map	None
Osceola County				
Osceola County Transportation Element	D	Adopted: April 22, 1991	No	Policies included in amendment cycle (Adoption Summer/Fall 2004)- Map of proposed corridor and intermodal policy amendments
Reedy Creek Improvement District	D, E	January, 1997	No	Map of proposed corridor and intermodal policy amendments
Orange County				
Orange County Transportation Element	E	Adopted: December 5, 2000	No	Map of proposed corridor and intermodal policy amendments
City of Orlando Transportation Element	E	Adopted: January 26, 1998	Yes - Objective 1.16, Policies 1.16.1 to 1.16.4, Support Data Reference	Map of proposed corridor

3.5 COMMUNITY SERVICES

Community service facilities provide a focal point for adjacent neighborhoods and communities, as well as serve the needs of the surrounding areas. For the purpose of this study, community service facilities are separated into five categories: schools, community facilities, parks and recreation facilities, cemeteries, and churches. The community facilities category includes libraries, police and fire stations, hospitals, water and wastewater plants, and other public services facilities.

The community service facilities within the study corridor are shown in Figure 3-13 through Figure 3-17 and span from Corridor A in Hillsborough County through Corridor E in Orange County. The facilities include those located within a 1/4 mile (mi.) (1,320 ft.) of each side of the right-of-way (ROW) centerline of the studied alignments. Community service facilities are listed by corridor from west to east and north to south and are numerically referenced on Figures 3-13 through 3-17. Names of the community service facilities provided in the tables of this section are numbered to coincide with the numerical references.

3.5.1 Schools

The schools within the ¼-mi. wide study area include public and private education facilities ranging from early childhood educational centers to colleges and universities. The 28 schools are listed in Table 3-10 by map identification number, name, and corridor designation. Eleven schools are located in Corridor A. The Stetson Law School Complex is located just north of I-275 in downtown Tampa. Hillsborough Community College has a campus located in Ybor City, south of I-4. One school is located in Corridor B, two in Corridor C, three in Corridor D, and eleven in Corridor E.

Table 3-10
Potentially Affected Schools

Map Identification Number	School Name	Corridor
1	Just Elementary School	A
2	Stewart Middle School (Magnet)	A
3	Blake High School (Magnet)	A
4	Stetson Law School Complex (Proposed)	A
5	Lee Elementary School (Magnet)	A
6	B.T. Washington Middle School (Magnet)	A
7	HCC (Ybor Campus)	A
8	Shore Elementary School (Magnet)	A
9	Gary Adult Center	A
10	Franklin Middle School	A
11	Oak Park Elementary School	A
13	Armwood High School	C

Table 3-10 (cont.)
Potentially Affected Schools

Map Identification Number	School Name	Corridor
14	Gordon Burnett Middle School	C
19	Winston Elementary School	D
25	Watson Elementary School	D
33	Celebration School	D
34	New Vistas Elementary School (Proposed)	E
35	Primrose K-6 Private School	E
36	Hunters Creek Middle School	E
37	Hunters Creek Elementary School	E
38	Endeavor Elementary School	E
39	Southwood Elementary School	E
40	Cypress Creek High School (Magnet)	E
41	Meadow Woods Elementary School	E
42	Meadow Woods Middle School	E
43	Durrance Elementary School	E
44	Florida Southern College (Orlando/Ocala Program)	E
45	Mary Help of Christians School for Boys	B

3.5.2 Community Facilities

For the purpose of this study, community facilities are classified as libraries, police and fire stations, hospitals, water and wastewater plants, and other public services facilities. Nineteen community facilities were identified within the study area and are listed by map identification number, name, and corridor designation in Table 3-11. Corridors A through E and are also shown on Figures 3-13 through 3-17. Corridor A contains five community facilities, three in Corridor B, five in Corridor C, two in Corridor D, and four in Corridor E.

Table 3-11
Potentially Affected Community Facilities

Map Identification Number	Community Facility Name	Corridor
1	John F. German Library	A
2	Hillsborough County Jail	A
3	Ybor Branch Library	A
4	Post Office, Tampa	A
5	Hillsborough County Sheriff's Operations Center	A
6	Seminole Indian Reservation	B
7	Florida State Fairgrounds	B
8	Mango Civic Center	B
9	Hillsborough County Fire Station	C
11	Hillsborough County Sanitary Landfill	C
17	Lake Thonotosassa Conservation Area	C
18	Wastewater Treatment Plant	C
24	Hillsborough County Fire Station	C
28	Lakeland Municipal Water Plant	D
43	Polk County Wastewater Treatment Plant	D
46	Orange County Convention Center	E
47	Orange County Fire Station Number 53	E
48	Orange County Fire Station Number 73	E
49	Water Treatment Plant	E

3.5.3 Parks and Recreation

There are 25 park and recreation facilities in the study area. Of these 25 facilities, 19 are located in Hillsborough County, 2 in Polk County, and 4 in Orange County. The parks are identified in Table 3-12 by map identification number, park name, and corridor designation.

Table 3-12
Potentially Affected Parks

Map Identification Number	Park Name	Corridor
1	Riverfront Park, Tampa	A
2	Phil Bouraquarez Park, Tampa	A
3	Curtis Hixon Park, Tampa	A
4	Morgan Street Park, Tampa	A
5	Robles Park Playground, Tampa	A
6	Perry Harvey Sr. Park, Tampa	A
7	Tampa Park Plaza, Tampa	A
8	Nuccio Parkway Linear Park, Tampa	A
9	Marti Park, Tampa	A
10	Cuscaden Park, Tampa	A
11	Ybor Centennial Park, Tampa	A
13	Highland Pines Playground, Tampa	A
14	Grant Park, Tampa	B
15	Kings Forest Park, Hillsborough County	B
16	Oak Park, Tampa	B
17	Williams/Tanner Road Park, Hillsborough County	B
18	Evans Neighborhood Park, Hillsborough County	C
27	Sansone Community Park, Plant City	C
28	Otis M. Andrews Sports Complex, Plant City	C
32	Lake Gibson Park, Lakeland	D
39	Van Fleet Trail Extension (Proposed), Polk County	D
51	Shingle Creek Greenway, South Florida Water Management District (SFWMD)	E
52	Shingle Creek Greenway, SFWMD	E
53	Bear Creek Recreation Complex, Orange County	E
54	South Orange Sports Complex, Orange County	E

3.5.4 Cemeteries

There are seven cemeteries within the study area. There are five cemeteries in Hillsborough County, one in Polk County, and one in Osceola County. The cemeteries are listed by map identification, name, and corridor designation in Table 3-13. Oaklawn Cemetery is located in downtown Tampa along I-275. There are no cemeteries within Corridors B or E.

Table 3-13
Potentially Affected Cemeteries

Map Identification Number	Cemetary Name	Corridor
1	Fortune Street Cemetery	A
4	Memorial Park Cemetery	C
5	Garden of Peace Cemetery	C
6	Oak Lawn Cemetery	C
7	Unnamed Cemetery	C
8	New Home Cemetery	D
15	Oak Hill Cemetery	D

3.5.5 Churches

There are 37 churches within the study area. There are 30 churches in Hillsborough County, 2 in Polk County, one in Osceola County, and four in Orange County. The churches are listed in Table 3-14 by map identification number, name, and corridor designation.

Table 3-14
Potentially Affected Churchs

Map Identification Number	Church Name	Corridor
1	Bethel African Methodist Episcopal (AME) Church	A
2	Miami Latin Church of God	A
3	Palm Avenue Baptist Church	A
4	Grace Evangelical Church	A
5	Greater Bethel Baptist Church	A
6	Followers of Jesus Christ	A
7	Good News Baptist Church	A
8	Pentecostal Church of God	A
9	St. James House of Prayer	A
10	Faith Temple Baptist Church	A
11	Friendly Missionary Baptist Church	A
12	Paradise Missionary Baptist Church	A
13	Ebenezer Baptist Church	A
14	Mt. Sinai AME Church	A
15	Faith Tabernacle of Tampa	A
16	New Salem Primitive Baptist Church	A
17	New Life Holiness Church	B
18	Trinity Chapel	B
19	New Mt. Silla Missionary Baptist Church	B

Table 3-14
Potentially Affected Churchs

Map Identification Number	Church Name	Corridor
20	Living Water Church	B
21	Christian Fellowship	B
22	First Apostolic Church	B
23	Mt. Calvary Baptist Church	B
26	Apostles Foundation Church	C
40	Nazarene Christian Church	C
42	Mt. Zion Assembly of God	C
43	Mt. Zion Assembly of God	C
48	Jehovah's Witnesses Assembly Hall	C
49	Faith Temple Assembly of God	C
54	Victory Assembly of God	D
57	Lake Gibson Church of God	D
105	Oak Hill Baptist Church	D
106	Fountain of Living Water Church	E
107	Peace United Methodist Church	E
108	Taft Missionary Baptist Church	E
109	Iglesia De Dios Pentecostal Church	E
110	St. Paul AME Church	A

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3.6 ARCHAEOLOGICAL AND HISTORIC RESOURCES

This section describes the archaeological and historic resources that have been listed on or determined eligible for the National Register of Historic Places[4] (NRHP) and are located in the vicinity of the proposed FHSR alignments evaluated in the Final EIS.

A desktop literature search of known NRHP-listed and -eligible cultural resources was conducted early in the Project Development and Environment Study to assist with the screening of preliminary alignments. A project cultural resource assessment survey (CRAS) methodology and Area of Potential Effect (APE) were prepared in order to comply with the requirements of the *National Historic Preservation Act*, as implemented in *36 CFR 800.4* (*Identification of Historic Properties*). A letter of concurrence, outlining the methodology and APE, was signed by FHSRA, cooperating federal agencies, and the State Historic Preservation Officer (SHPO) in February and March 2003 (see Appendix B).

The APE for the FHSR project was determined by evaluating the improvements under consideration and the possible effects improvements could have on cultural resources, such as visual, noise, access, use, and vibration. The APE for the archaeological survey is designated as

the ROW for each of the proposed alternatives and the footprint of each proposed station and maintenance facility. The APE for the historical survey is designated as 500 ft. (or two blocks) to either side of the centerline of the alternatives west of I-75. Areas of the APE that are obscured from the FHSR by both lanes of I-4 and/or a noise wall were not surveyed unless the FHSR is elevated above I-4. East of I-75, the APE includes the areas within the ROW and immediately adjacent. The APE for station and maintenance facility locations includes the proposed site, as well as properties immediately adjacent.

A Cultural Resource Assessment Corridor Level Analysis Report[5] (February 2003, revised March 2003) was prepared first to provide preliminary cultural resource information to assist in the avoidance of resources listed in, determined eligible for listing in, or potentially eligible for listing in the NRHP, as well as National Historic Landmark (NHL) properties. The Cultural Resource Assessment Corridor Level Analysis Report was submitted to the SHPO, Federal Highway Administration (FHWA), U.S. Army Corps of Engineers (USACE), and Advisory Council for Historic Preservation (ACHP). A concurrence letter dated April 15, 2003, was received from the SHPO (see Appendix B).

In the meantime, a comprehensive CRAS Report was prepared for the alternatives being evaluated in the EIS. The purpose of the CRAS was to locate, identify, and bind any cultural resources within the project's APE, and to assess their significance in terms of eligibility for listing in the NRHP. The CRAS Report (July 2003) was submitted to the SHPO, FHWA, and USACOE on July 28, 2003. The results are described in the following section.

3.6.1 Inventory of Archaeological and Historic Resources

Background research included a search of the Florida Master Site File[6] (FMSF) and NRHP listings to determine previously recorded historic structures and archaeological sites within and adjacent to the project corridor. Background research conducted as part of the previously prepared Cultural Resources Technical Study, Florida High Speed Rail, Internal Working Draft[7] (February 26, 1999) was also utilized as part of this project.

The CRAS fieldwork was conducted in February and March 2003. As a result, all known NRHP-listed or NRHP-eligible, plus all potentially eligible cultural resources were identified and are listed in Table 3-15. The historic district boundaries and individual resources are shown on Figure 3-18. A brief description of these resources follows the table.

Table 3-15
NRHP-Listed and NRHP-Eligible Cultural Resource

Corridor	Figure ID No.	FMSF No.	Site Name	Address	City/ Community	NRHP or NHL Status
A	1	8HI8536	North Franklin Street Historic District	North Franklin Street, between E. Harrison and E. Fortune Streets	Tampa	NRHP-Listed
A	13	8HI741	Floridian Hotel	905 N. Florida Avenue	Tampa	NRHP-Listed, City of Tampa Landmark
A	14	8HI753	J.J. Newberry Building	815-819 N. Franklin Street	Tampa	NRHP-Eligible
A	15	8HI752	Kress Building	811 N. Franklin Street	Tampa	NRHP-Listed
A	16	8HI751	Woolworth Building	801 N. Franklin Street	Tampa	NRHP-Eligible
A	12	8HI8744	First United Methodist Church's Thomas Henderson Memorial Chapel	1001 N. Florida Avenue	Tampa	Potentially NRHP-Eligible
A	2	8HI155	St. Paul AME Church	506 E. Harrison Street	Tampa	NRHP-Eligible, City of Tampa Landmark
A	3	8HI5595	Oaklawn Cemetery	606 E. Harrison Street	Tampa	NRHP-Eligible
A	4	8HI3282	Greater Bethel Baptist Church	1206 N. Jefferson Street	Tampa	NRHP-Eligible
A	17	8HI124	Fire Station No. 1/ Tampa Firefighters Museum	720 E. Zack Street	Tampa	NRHP-Eligible, City of Tampa Landmark
A	5	8HI8574	St. James Episcopal Church	1001 India Street/1202 N. Governor Street	Tampa	Potentially NRHP-Eligible
A	6	8HI3688, 8HI8575	Allen Temple AME Church and Parsonage	1112-1116 E. Scott Street (Located within Central Park Village	Tampa	Potentially NRHP-Eligible
A	7	8HI3659	St. Peter Claver Catholic School	1401 N. Governor Street	Tampa	Potentially NRHP-Eligible
A	18	8HI906	Jackson Hotel	851 E. Zack Street	Tampa	NRHP-Eligible

Table 3-15
NRHP-Listed and NRHP-Eligible Cultural Resource

Corridor	Figure ID No.	FMSF No.	Site Name	Address	City/ Community	NRHP or NHL Status
A	19	8HI6939	Union Depot Hotel	858-864 E. Zack Street	Tampa	NRHP-Listed, City of Tampa Landmark
A	20	8HI298	Tampa Union Station	601 N. Nebraska Avenue	Tampa	NRHP-Listed, City of Tampa Landmark
A	8	8HI313	Ybor City National Historic Landmark District (NHLD)	Varies	Tampa	NHLD, Locally Listed Historic District (different boundaries)
A	10	8HI142	German American Club	2105 N. Nebraska Avenue	Tampa	NRHP-Eligible, Contributing Resource within the Ybor City NHLD
A	9	8HI835	Centro Asturiano	1913 N. Nebraska Avenue	Tampa	NRHP-Listed, Contributing Resource within the Ybor City NHLD
A	11	8HI4415	I-Type House	2210 N. 31st Street	Tampa	NRHP-Eligible

North Franklin Street Historic District
Listed in the NRHP in 2002, the North Franklin Street Historic District (8HI8536) includes nine buildings along Franklin Street, between E. Harrison and E. Fortune Streets in downtown Tampa. The commercial buildings that comprise the small historic district are significant due to their association with the historical and commercial development of the northern part of downtown Tampa. This portion of the downtown district was historically home to more modest commercial businesses, such as automobile dealerships, small restaurants, and family-owned businesses. Additionally, this historic district maintains architectural significance based on the concentration of Masonry Vernacular buildings located within its boundaries. The Masonry Vernacular buildings in the district range from early-twentieth century brick edifices exhibiting arched windows and brick detailing to mid-twentieth century buildings with plain stucco-covered exterior walls and fixed glass storefront windows.

Floridan Hotel/905 N. Florida Avenue
The Floridan Hotel (8HI741) was listed in the NRHP in 1996 for its architectural and commercial importance. It is also listed as a City of Tampa Landmark. Completed in 1926, the Floridan Hotel was designed by the firm Francis J. Kennard and Son, and constructed by G. A. Miller. The 18-story building features a prominent four-story base, which supports the

14 brick-faced upper stories. Fenestration consisting of wood frame, double-hung sash windows is a characteristic feature. The building is architecturally significant for its Renaissance Revival elements and form based on traditional early skyscraper design. When the Floridan Hotel was constructed, it was the tallest structure in Tampa. It is the only historic skyscraper remaining in the city. Its commercial significance is based on its association with the real estate development in Tampa at the close of the Florida Land Boom era. The Floridan Hotel was constructed through local enterprise and effort in direct response to the need for a hotel.

J. J. Newberry Building/815–819 N. Franklin Street

The J. J. Newberry Building (8HI753) is the finest early example of the sleek lines of the International style in downtown Tampa. It was built in 1940 on the site of the former five-story Central Office Building. The two-story retail building epitomizes the sleek International mode with its absence of applied decoration, smooth brick walls, ribbon windows, and rounded corners. Elongated vertical windows glazed with glass block are set over the entrances and provide some verticality to the overall horizontal composition. This building features a structural system consisting of steel trusses supported by steel columns, with the entire second floor suspended from the exposed truss system above. This leaves the entire first floor clear of columns. This was an innovative approach that allowed for flexibility in retail display. During the CRAS of the Tampa Rail Project in 2002, this building was determined individually eligible for listing in the NRHP as part of the proposed Historic Resources of Downtown Tampa Multiple Property Submission (MPS).

Kress Building/811 N. Franklin Street

The S. H. Kress & Co. Building (8HI752) was listed in the NRHP in 1983 for its architectural and commercial significance. The Kress chain was noted throughout the country for its architecturally distinguished buildings, and the downtown Tampa building is no exception. The Renaissance Revival building, located in the heart of downtown Tampa's historic retail district, is the most architecturally illustrious commercial structure in the CBD dating from the years following the Florida Land Boom. The structure was designed by G. E. Mackay, a New York City architect, in 1929 and built the same year for S. H. Kress & Company. The four-story, block-deep commercial building is executed in polychromatic terra cotta set against soft beige and pink ashlar walls. The Kress store was one of the most popular and long-lived retail establishments in downtown Tampa, and it flourished throughout the 1930s, 1940s, and early 1950s, and eventually closed in 1980.

Woolworth Building/801 N. Franklin Street

Constructed in 1916 and remodeled in the 1940s, the Woolworth Building (8HI751) is a fine example of the Art Deco style. The façade is treated with colorful glazed tan and bronze blocks with contrasting blue glazed geometric trim. The storefront windows are set over black marble spandrels. The original suspended awning has been removed. In the 1910s, Woolworth expanded into the adjacent two-story commercial building to the east. In the 1960s, Woolworth was the site of Civil Rights-era lunch counter sit-ins by the National Association for the Advancement of Colored People's (NAACP) Youth Council. This historic resource remains in good condition. During the CRAS of the Tampa Rail Project, prepared in 2002, this building was determined

individually eligible for listing in the NRHP as part of the proposed Historic Resources of Downtown Tampa MPS. Its significance is in the areas of commerce and African-American history.

First United Methodist Church's Thomas Henderson Memorial Chapel/1001 N. Florida Avenue
The congregation of First United Methodist Church constructed the Tom Henderson Memorial Chapel (8HI8744) at 1001 N. Florida Avenue, situated in the center of the 1000 block of N. Florida Avenue, in 1948. This small building serves as a wedding and funeral chapel for the First United Methodist Church in downtown Tampa and is considered potentially eligible for listing in the NRHP. The First United Methodist Church's circa-1968 main building is located immediately south of the chapel at 410 E. Tyler Street, while the circa-1958 Branscomb Hall is situated on the same block north of the chapel. Designed by Leslie Iredell, the chapel is a well-preserved example of the Late Gothic Revival style found in the downtown area of Tampa. The masonry building is one-and-one-half stories and is one bay wide by four bays long. Decorative elements include buttresses, quoining, Gothic arches, a simplified cross, and two oculus openings which feature stained glass rose windows. The Thomas Henderson Memorial Chapel is a symbol of the growth and development of the First United Methodist Church, the oldest religious organization in Tampa. The building is an excellent example of the Late Gothic Revival style. Although typical of 1940s-era construction with the use of modest materials and minimal details, it is significant that the design retained the details and decorative elements that make this structure a fine example of the style.

St. Paul African Methodist Episcopal (AME) Church/506 E. Harrison Street
The St. Paul AME Church (8HI155) was determined eligible for listing in the NRHP in 1999, and is listed as a City of Tampa Landmark. From 1906 to 1917, the congregation of St. Paul AME Church constructed the building located at 506 E. Harrison Street, on the northeast corner of Harrison and Marion Streets. It is a two-and-one-half-story masonry building with Late Gothic Revival detailing. The main façade fronts Harrison Street, and the main entrance is accessed through an arcaded porch. This arcaded porch is located between corner towers. Other notable Late Gothic Revival details include the brick exterior, stone buttresses, brick corbelling, and cornice with dentils. It is architecturally important, as it is an excellent example of the Late Gothic Revival style found within the city of Tampa. St. Paul AME Church is considered to be exceptionally significant at a local level based on its associations with the historical development of the African-American community in Tampa. This is one of the oldest churches and is the largest African-American-owned building in the city.

Oaklawn Cemetery/606 E. Harrison Street
Oaklawn Cemetery (8HI5595) was determined eligible for listing in the NRHP in 1999. This cemetery is bounded by Harrison Street on the south, Jefferson Street on the east, Laurel Street on the north, and Morgan Street on the west. Although technically two separate cemeteries, Oaklawn Cemetery and St. Louis Cemetery, the two now appear as one cemetery with a common entrance and one boundary wall that encloses both cemeteries. It is approximately 3 acres (ac.) and contains an estimated 1,080 graves. The majority of the gravestones date to between 1850 and 1930. Two historic buildings are also located in the cemetery. This cemetery reflects both

the city's early settlement pattern and its effort to plan for growth. Oaklawn Cemetery displays the area's social history and developmental patterns through the variety of ethnic backgrounds it represents. It is also notable for its mortuary art forms and architecture, which exhibit the sensibilities of the late nineteenth and early twentieth centuries. The cemetery is important for understanding the living conditions and burial practices of various ethnic groups, including Tampa's African-American, Hispanic, and Italian communities.

Greater Bethel Baptist Church/1206 N. Jefferson Street
This church building was documented in 1990 as part of the Tampa Interstate Study,[8] and was determined eligible for listing in the NRHP. The Greater Bethel Baptist Church (8HI3282) was built around 1940. The Reverend Jacob Wesley Rhodes constructed the present building, which replaced an earlier wood frame church on the site. This church, which fronts west onto Jefferson Street, has a rectangular basilica-type plan. The church is constructed of brick and has a continuous masonry foundation. Pointed arch windows with contrasting limestone keystones and sills are located in each bay. The building has a steeply gabled roof covered with composition shingles. The front (west) façade features two towers at either end. The Greater Bethel Baptist Church is significant as an exemplary example of the Late Gothic Revival style. It exhibits many characteristics of the style including pointed arch windows, buttresses, towers, and brick exterior walls. The church is also important to Tampa's African-American heritage, as it served as a notable social institution within the community.

Fire Station No. 1 or the Tampa Firefighters Museum/720 Zack Street
Built in 1911, Fire Station No. 1 (8HI124) served as Tampa's Fire Department Headquarters from 1911 until 1978. The citizens of Tampa organized one of Florida's first volunteer fire departments in 1860. The red brick building is simply ornamented with a cornice of buff-colored corbelled brick, topped by a red brick parapet, which steps up at the primary corner facing Zack and Jefferson Streets. The interior of the first floor retains its original appearance. This building is considered to be significant due to its associations with social history, community planning and development, and government, and the basic integrity of the original architecture. During the CRAS of the Tampa Rail Project prepared in 2002, the building was determined individually eligible for listing in the NRHP as part of the proposed Historic Resources of Downtown Tampa MPS. This building is also a City of Tampa Landmark.

St. James Episcopal Church/1001 India Street/1202 N. Governor Street
St. James Episcopal Church (8HI8574), constructed around 1921 at 1001 India Street/1202 N. Governor Street, on the northeast corner of India Street (historically Lamar Avenue) and Nelson Court within the Central Park Village public housing project, is considered potentially eligible for listing in the NRHP. The congregation occupied the building until 1985. Subsequently, the church served as offices for the Head Start Program and as a clinic, but is presently vacant. The church is an excellent example of the Romanesque Revival style, unique to this area of Tampa. The masonry building is constructed of masonry framing and surfaced with red brick and a reddish mortar to match. The three-story belfry tower further distinguishes the main entrance to the building. Constructed in the African-American area historically known as "The Scrub," this church is culturally important as a symbol of the strength, unity, and growth of the African-

American community in Tampa. This building is completely surrounded by the Central Park Village public housing complex, constructed in 1955, and is one of very few remaining historic structures in this area. The building is an excellent example of the Romanesque Revival style expressed in the red brick and mortar, paired arch windows, and decorative arch features throughout the building.

Allen Temple AME Church and Parsonage/1112–1116 E. Scott Street
The Allen Temple AME Church (8HI3688), now the Paradise Missionary Baptist Church, was constructed between 1910 and 1914 at 1116 E. Scott Street on the northwest corner of E. Scott Street and N. Governor Street. The International-style Allen Temple AME Parsonage (8HI8575) was built ca. 1953 and is situated immediately west of the church at 1112 E. Scott Street. These buildings are considered potentially eligible for listing in the NRHP. The Allen Temple AME Church occupied the property until 1990, when the congregation relocated to its new facility on Palm Avenue. The Paradise Missionary Baptist Church has inhabited the church building since 2000. The church is an excellent example of the Late Gothic Revival style found in Tampa. The church is culturally important as a symbol of the strength, unity, and growth of the African-American community in Tampa. As the original home to one of the oldest African-American congregations in Tampa, the church building represents the strong Christian beliefs of the community and the importance of the people's faith. The Parsonage represents a history of growth, as it replaced an earlier parsonage that was located on the same site.

St. Peter Claver Catholic School/1401 N. Governor Street
The parish of St. Peter Claver Catholic School (8HI3659), along with Father Tyrrell, pastor of St. Louis' Catholic Church, constructed the building at 1401 N. Governor Street on the northeast corner of E. Scott Street and N. Governor Street in 1929, which is considered eligible for listing in the NRHP. The annex to the east was constructed when the school expanded in 1952. The Masonry Vernacular school building is two stories and one bay wide by three bays long. The walls are constructed of wood and masonry framing with a masonry band course dividing the first and second floor. The annex is composed of masonry framing, surfaced in matching brick with a decorative pierced brick pattern on the south elevation. The school is culturally important as a symbol of strength, unity, and growth of the African-American community in Tampa. As the oldest African-American school still in operation in Hillsborough County, the building represents the strong beliefs of the parish and community and the importance of education. Although the building does not display the use of the more expensive materials due to financial constraints, it is significant in depicting the growth and development of the school and as an example of twentieth century educational buildings.

Jackson Hotel/851 Zack Street
As part of the CRAS of the Tampa Rail Project prepared in 2002, the Jackson Hotel (8HI906) was determined eligible for listing in the NRHP for its significance in the areas of ethnic heritage, architecture, and social history. Built around 1905, the Jackson Hotel is a two-story Frame Vernacular building, which also exhibits Colonial Revival and Bahamian influences. This house is one of the last remaining examples of domestic dwellings in the area once called "The Scrub." This building has a mostly rectangular plan and features a wood frame structural system

that rests on a brick pier foundation. The large Frame Vernacular house is six bays deep by three bays wide, and is currently being utilized as apartments. It is an important building that historically typified the African-American community in the early part of the twentieth century. Architecturally, this vernacular building reflects influences of the area's residents and trends of the period.

Union Depot Hotel/856–860 Zack Street
The Union Depot Hotel (8HI6939) was listed in the NRHP in the year 2000 and also is considered a City of Tampa Landmark. The Masonry Vernacular style commercial building was constructed in 1912. The vacant two-story former hotel is six-sided and constructed of red brick. Notable features include arched windows, the use of red brick with blond brick details, and cast iron framed storefronts. A sign that reads "JJ Stevens-1912" is located on the parapet. Most of the windows found throughout the building have been covered with boards. The Union Depot Hotel maintains significance as a turn-of-the-century commercial building with Italianate features and for its historical associations with the nearby Tampa Union Station. It was constructed to serve as satellite lodging and a commercial venue for the nearby Tampa Union Station.

Tampa Union Station /601 Nebraska Avenue
The Tampa Union Station (8HI298) passenger building was designed by J. F. Leitner, a prominent local architect, and built ca. 1912 in the Italian Renaissance Revival style. Located in the predominantly industrial area between downtown Tampa and the port activities in the Ybor Channel area, the building was ideally situated to serve both the needs of freight and passenger service. A two-story brick passenger station and adjoining one-story brick freight depot, connected by a metal shed canopy, along with the original open gabled passenger canopies, form the historic complex. Because of its significance in the areas of community planning and development, transportation, and architecture, it was listed in the NRHP in 1973. It is also a City of Tampa Landmark. Although this building was not mentioned in the 1973 report, the Tampa Union Station Baggage Building is potentially eligible for listing in the Tampa Union Station NRHP designation.

Ybor City National Historic Landmark District
The Ybor City NHLD (8HI313) is located within or adjacent to several alternative segments in the city of Tampa, Hillsborough County. Designated by the National Park Service on December 14, 1990, the Ybor City NHLD constitutes one of the most outstanding collections of resources associated with late-nineteenth and early-twentieth century Cuban and Spanish settlement in the United States. With strong Cuban, Italian, and other ethnic associations, the district contains buildings that illustrate the key aspects of the experiences of those immigrant groups. The NHLD includes an impressive array of cigar factories, the largest such collection in the United States, and related industrial structures; a major collection of commercial and commercial-residential structures; a group of ethnic clubhouses; and historic worker housing.

Ybor City was established in October 1885 as a planned "company" town. Vicente Martinez Ybor served as president of the Ybor City Land & Development Company, which offered land,

buildings, and other incentives to entice cigar makers from Key West, Florida and Havana, Cuba to relocate to this new city. Cigar factories were generally built first with worker's houses built around them. New blocks or sections were added as new factories were built. The original settlement centered on 7th Avenue, which became the main commercial street. A large fire devastated much of Ybor City in March 1908.

The Ybor City National Register District was initially listed in the NRHP in 1974 and focused along 7th Avenue between 13th Street and 22nd Street. In some areas, the district extended as far north as Palm Avenue and as far south as 5th Avenue. In 1975, a local historic district with large rectangular-shaped boundaries, the Barrio Latino District, was established. The Barrio Latino District boundaries were recently expanded to the east and south in December 2002 to include a larger area. The current boundaries are primarily Nebraska Avenue on the west, Columbus Drive and I-4 on the north, 26th and 28th Streets on the east, and 4th Avenue and Adamo Drive on the south. In December 1990, Ybor City was designated as a NHLD with larger boundaries than the NRHP District. The approximate boundaries are Nebraska Avenue on the west, 21st Street on the north, 26th Street on the east, and 1st Avenue on the south. In 1991, a total of 948 historic structures were considered contributing to the Ybor City NHLD.

German American Club/2105 N. Nebraska Avenue

The German American Club (8HI142), also known as Los Caballeros de la Luz, is a contributing resource within the Ybor City NHLD and is considered to be individually eligible for listing in the NRHP. Built in 1909 and remodeled several times, this three-story building occupies the northeast corner of Nebraska Avenue and 11th Street. Faced with concrete block covered with applied stucco and molded to form the appearance of tooled stone masonry, the building exhibits Classical details and proportions. Originally, the building housed a club for Ybor City's German residents, until it was sold in 1919 during a period of anti-German sentiment following World War I. The Young Men's Hebrew Association occupied it from 1925 until 1944. Los Caballeros de la Luz, a Hispanic group, acquired it in 1962. The City of Tampa currently owns the building and several city agencies occupy it at this time.

Centro Asturiano/1913 N. Nebraska Avenue

Centro Asturiano (8HI835) is both individually listed in the NRHP and is a contributing resource within the Ybor City NHLD. The prominent architectural firm of Bonfoey and Elliot designed the building, and construction was completed between 1913 and 1914. Located on the southeast corner of Palm Street and Nebraska Avenue, this three-story yellow brick and stone building features an elaborate front façade with Beaux Arts characteristics. Centro Asturiano maintains architectural and historical significance. Architecturally, it is an excellent example of Beaux Arts Classicism, while exhibiting influences from a number of other architectural styles. The building's historical importance is based on its associations with the Spanish immigrants who established homes in the Tampa/Ybor City area starting in the late 1880s.

I-Type House/2210 N. 31st Street

The I-Type House (8HI4415) was documented in 1990 as part of the Tampa Interstate Study, and was determined eligible for listing in the NRHP. It is located on the southwest corner of N. 31st

Street and E. 12th Avenue in a residential neighborhood on the eastern edge of Ybor City. The two-story house is a wood frame structure clad in drop siding set on a concrete pier foundation. The front (east) façade has a two-story wooden porch of three bays that extends across almost the entire length of the façade. The I-Type House is significant to the architectural history of Tampa as a rare surviving example of a Frame Vernacular "I-Type" single-family house. Although the house dates from the turn of the twentieth century, it represents the survival of an eighteenth century, mid-Atlantic coastal housing type which, during the nineteenth century, became popular throughout the southeast.

Corridor A

Archaeological Resources

There are no NRHP-listed archaeological resources within Corridor A. One NRHP-eligible archaeological resource was previously recorded along alignments within Corridor A. Based on field reconnaissance, the Columbus Drive Site (8HI83) appears to have been destroyed by urban development and is no longer NRHP-eligible.

Historic Resources

Twenty significant historic resources identified within Corridor A, including three historic districts, are located in the city of Tampa, Hillsborough County (See Table 3-15). These resources were primarily constructed during the first half of the twentieth century, and they exhibit the patterns and physical characteristics of the city's built environment during these years. They also represent the commerce, planning and development, ethnic history, and social history of Tampa. The NRHP-listed and locally landmarked Tampa Heights Historic District is located north and west of I-275. It is situated outside of the FHSR project APE, however, since all of the alignments being evaluated are located south of I-275 and therefore would not cause any direct (actual land acquisition) or secondary (visual, noise, use, etc.) impacts to the Tampa Heights Historic District. For this reason, the Tampa Heights Historic District is not included in the CRAS or in Table 3-15.

Corridor B

Archaeological Resources

There are no NRHP-listed archaeological resources within Corridor B. One NRHP-eligible archaeological resource was previously recorded along alignments being evaluated within Corridor B. The Diamond Dairy Site (8HI476), originally recorded within the proposed ROW of I-75, was previously subjected to Phase III mitigative excavation, and subsequently destroyed by construction of the interstate highway.

Historic Resources

No NRHP-listed or NRHP-eligible historic resources are recorded along alignments within Corridor B.

Corridor C

Archaeological Resources
No NRHP-listed or NRHP-eligible archaeological resources are recorded along alignments within Corridor C.

Historic Resources
No NRHP-listed or NRHP-eligible historic resources are recorded along alignments being evaluated within Corridor C.

Corridor D

Archaeological Resources
No NRHP-listed or NRHP-eligible archaeological resources are recorded along alignments within Corridor D.

Historic Resources
No NRHP-listed or NRHP-eligible historic resources are recorded along alignments within Corridor D.

Corridor E

Archaeological Resources
No NRHP-listed or NRHP-eligible archaeological resources are recorded along alignments within Corridor E.

Historic Resources
No NRHP-listed or NRHP-eligible historic resources are recorded along alignments within Corridor E.

3.7 PHYSICAL ENVIRONMENT

3.7.1 Air Quality

Transportation sources that utilize fossil fuels for power produce pollutants. The primary mode of transportation within the FHSR project area is the motor vehicle. A project that affects the vehicle miles traveled (VMT) by motor vehicle will also affect fuel use and the amount of pollutants emitted.

National Ambient Air Quality Standards

The U.S. Environmental Protection Agency (EPA) established National Ambient Air Quality Standards (NAAQS) for six criteria pollutants including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), lead, particulate matter, and sulfur dioxide (SO_2). The NAAQS are summarized in Table 3-16. Primary standards set limits to protect public health, and secondary

standards set limits to protect public welfare. The State of Florida has adopted NAAQS [Florida Department of Environmental Protection (FDEP), Rule 62, Chapter 62-204 Air Pollution Control-General Provisions]. With the exception of SO_2, which has a stricter state standard, the standards are the same as the NAAQS.

Table 3-16
National Ambient Air Quality Standards

Pollutant	Averaging Time	Standard Value [1]	Standard Type
Carbon Monoxide	8-Hour	9 ppm (10 mg/m^3)	Primary
	1-Hour	35 ppm (40 mg/m^3)	Primary
Nitrogen Dioxide	Annual Arithmetic Mean	0.053 ppm (100 ug/m^3)	Primary & Secondary
Ozone	1-Hour	0.12 ppm (235 ug/m^3)	Primary & Secondary
	8-Hour	0.08 ppm (157 ug/m^3)	Primary & Secondary
Lead	Quarterly Average	1.5 ug/m^3	Primary & Secondary
Particulate (PM 10) [2]	Annual Arithmetic Mean	50 ug/m^3	Primary & Secondary
	24-Hour	150 ug/m^3	Primary & Secondary
Particulate (PM 2.5) [3]	Annual Arithmetic Mean	15 ug/m^3	Primary & Secondary
	24-Hour	65 ug/m^3	Primary & Secondary
Sulfur Dioxide	Annual Arithmetic Mean	0.030 ppm (80 ug/m^3)	Primary
	24-Hour	0.14 ppm (365 ug/m^3)	Primary
	3-Hour	0.50 ppm (1300 ug/m^3)	Secondary

[1] ppm = parts per million, mg = milligrams, ug = micrograms, m^3 = cubic meters
[2] PM 10 standard is for particles with diameters of 10 micrometers or less
[3] PM 2.5 standard is for particles with diameters of 2.5 micrometers or less
Source: EPA, 1990

Transportation sources, particularly motor vehicles, are the primary source of CO, oxides of nitrogen (NO_x), and hydrocarbons (also referred to as volatile organic compounds or VOC). In the presence of heat and sunlight, NO_x and VOC chemically react to form O_3. Particulate matter and SO_2 are primarily emitted from stationary sources that burn fossil fuels (e.g., power plants, industrial processes). Historically, motor vehicles were the major source of lead. However, the phase-out of leaded gasoline has virtually eliminated motor vehicles as a source of lead emissions.

Attainment Status

All areas of the United States have been assigned a designation to comply with the NAAQS. Based on air quality monitoring data, an area that has not shown a violation of the NAAQS is designated as "in attainment." An area that has shown a violation of the NAAQS may be designated as "non-attainment." Areas that were designated non-attainment subsequent to the *Clean Air Act Amendments of 1990* (CAAA), but have since been re-designated as in attainment by EPA, are referred to as "maintenance areas."

All four counties within Corridors A through E are currently designated as in attainment of the NAAQS for all pollutants. However, Hillsborough County, within Corridor A, was designated as in attainment of the NAAQS for O_3 subsequent to the CAAA, and, therefore, is classified as a maintenance area. As required by the maintenance area designation, an air quality maintenance plan was developed for the Tampa Bay area, which includes Hillsborough County. The most current version of the plan, Air Quality Maintenance Plan (2005-2015) Hillsborough and Pinellas Counties[9] (FDEP 2002), was developed as an element of the State Implementation Plan (SIP).

As documented in the maintenance plan for Hillsborough County, the area has continued to comply with the NAAQS for O_3. Trends from O_3 monitoring show continued progress in lowering the maximum one-hour O_3 levels. Based on projections for future years, emissions of VOC and NO_x are expected to remain below attainment year levels throughout the 10-year maintenance plan period. The most recent update to the maintenance plan did not require any substantial change in commitments from the previous plan.

Conformity Determination

After passage of the 1990 CAAA, regulations were established requiring that federal actions conform to any SIP. Two conformity regulations were developed:

- 40 Code of Federal Regulations (CFR) Part 93 Subpart A (commonly referred to as the Transportation Conformity Rule) requires a conformity determination for federal actions related to transportation plans, programs, and projects that are developed, funded, or approved by the U.S. Department of Transportation and by MPOs or other recipients of funds under Title 23, United States Code (USC) or the Federal Transit Laws (49 USC Chapter 53).
- 40 CFR Part 93 Subpart B (commonly referred to as the General Conformity Rule) applies to federal actions not covered by the Transportation Conformity Rule.

The conformity regulations are applicable to the portion of the FHSR project traversing Hillsborough County, within Corridors A, B, and C, because the county area is classified as a maintenance area for O_3. Polk, Osceola, and Orange counties, where Corridors C through E are located, are all designated as in attainment of all the NAAQS prior to the 1990 CAAA. Therefore, the conformity regulations are not applicable to these three counties.

Monitoring Data

Air quality monitors are maintained throughout the project area. The Monitor Summary Report prepared by EPA was reviewed for the year 2002 and is summarized in Table 3-17 for the four counties within Corridors A through E. There were no reported violations of the NAAQS for any of the pollutants monitored.

The Pollutant Standard Index (PSI) is an approximate indicator of overall air quality within a county. As indicated in Table 3-17, some counties have monitor stations for some, but not all, of the pollutants. PSI values consider all of the available measurements in each county.

The Monitor PSI Report maintained by EPA was reviewed for 2001, the most recent year available. For Hillsborough County, within Corridors A, B, and C, air quality was rated good for 62 percent, moderate for 37 percent, and unhealthy for 1 percent of the 274 days that a PSI was developed. For Polk County, within Corridors C and D, air quality was rated good for 74 percent and moderate for 26 percent of the 273 days that a PSI was developed. For Osceola County, within Corridors D and E, air quality was rated good for 82 percent and moderate for 18 percent of the 273 days that a PSI was developed. For Orange County, Corridor E, air quality was rated good for 76 percent and moderate for 24 percent of the 274 days that a PSI was developed.

Table 3-17
Monitor Summary Data

County	Carbon Monoxide (ppm) [1]		Nitrogen Dioxide (ppm) [1]	Sulfur Dioxide (ppm) [1]		Ozone (ppm) [1]	Pm 10 (Ug/M^3) [2]		Lead (Ug/M^3) [2]
	2nd Max 1-Hour	2nd Max 8-Hour	Annual Mean	2nd Max 24-Hour	Annual Mean	2nd Max 1-Hour	2nd Max 24-Hour	Annual Mean	Quarterly Mean
Hillsborough	5.3	3.8	0.011	0.047	0.007	0.094	56	27.0	1.27
Polk	NA[3]	NA[3]	NA[3]	0.010	0.004	0.092	78	21.0	NA[3]
Osceola	NA[3]	NA[3]	NA[3]	NA[3]	NA[3]	0.094	NA[3]	NA[3]	NA[3]
Orange	4.4	2.5	0.011	0.005	0.001	0.102	38	23.0	NA[3]

[1] ppm = parts per million
[2] ug/m^3 = micrograms per cubic meter
[3] Pollutant not monitored in the county
Source: EPA, 2002.

3.7.2 Noise

Noise is typically defined as unwanted or undesirable sound, where sound is characterized by small air pressure fluctuations above and below the atmospheric pressure. The basic parameters of environmental noise that affect human subjective response are: (1) intensity or level; (2) frequency content; and (3) variation with time. The first parameter is determined by how greatly the sound pressure fluctuates above and below the atmospheric pressure, and is expressed on a compressed scale in units of decibels. By using this scale, the range of normally encountered sound can be expressed by values between 0 and 120 decibels. On a relative basis, a 3-decibel change in sound level generally represents a barely-noticeable change outside the laboratory, whereas a 10-decibel change in sound level would typically be perceived as a doubling (or halving) in the loudness of a sound.

The frequency content of noise is related to the tone or pitch of the sound, and is expressed based on the rate of the air pressure fluctuation in terms of cycles per second (called Hertz and abbreviated as Hz). The human ear can detect a wide range of frequencies from about 20 Hz to 17,000 Hz. However, because the sensitivity of human hearing varies with frequency, the A-weighting system is commonly used when measuring environmental noise to provide a single number descriptor that correlates with human subjective response. Sound levels measured using this weighting system are called "A-weighted" sound levels, and are expressed in decibel notation as "dBA." The A-weighted sound level is widely accepted by acousticians as a proper unit for describing environmental noise.

Because environmental noise fluctuates from moment to moment, it is common practice to condense all of this information into a single number, called the "equivalent" sound level (Leq). Leq can be thought of as the steady sound level that represents the same sound energy as the varying sound levels over a specified time period (typically 1 hour or 24 hours). Often the Leq values over a 24-hour period are used to calculate cumulative noise exposure in terms of the Day-Night Sound Level (Ldn). Ldn is the A-weighed Leq for a 24-hour period with an added 10-decibel penalty imposed on noise that occurs during the nighttime hours (between 10 PM and 7 AM). Many surveys have shown that Ldn is well correlated with human annoyance, and, therefore, this descriptor is widely used for environmental noise impact assessment. Figure 3-19 provides examples of typical noise environments and criteria in terms of Ldn. While the extremes of Ldn are shown to range from 35 dBA in a wilderness environment to 85 dBA in noisy urban environments, Ldn is generally found to range between 55 dBA and 75 dBA in most communities. As shown in Figure 3-19, this spans the range between an "ideal" residential environment and the threshold for an unacceptable residential environment according to federal agency criteria.

High Speed Rail Noise Criteria

Noise impact for this project is based on the criteria defined in the FRA guidance manual, High-Speed Ground Transportation Noise and Vibration Impact Assessment[10] (Final Draft, December 1998). The FRA noise impact criteria are founded on well-documented research on community

reaction to noise and are based on change in noise exposure using a sliding scale. Although higher levels of train noise are allowed in neighborhoods with high levels of existing noise, smaller increases in total noise exposure are allowed with increasing levels of existing noise.

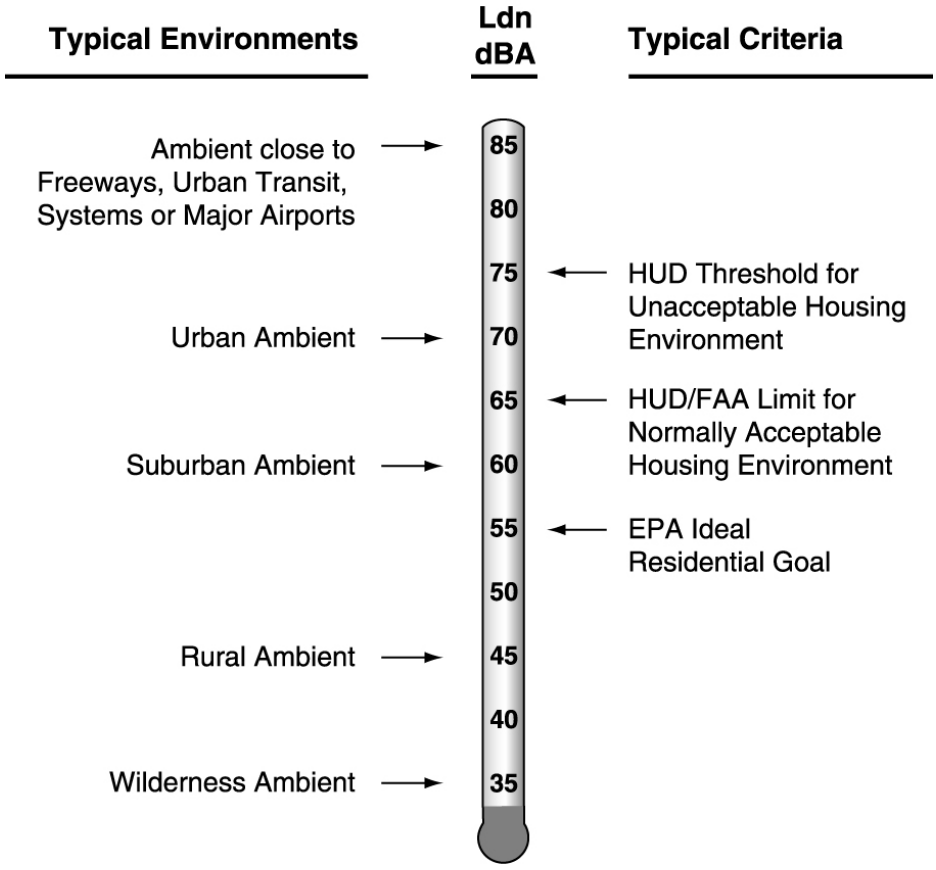
The FRA Noise Impact Criteria group noise sensitive land uses into the following three categories:

Category 1: Buildings or parks where quiet is an essential element of their purpose.

Category 2: Residences and buildings where people normally sleep. This includes residences, hospitals, and hotels where nighttime sensitivity is assumed to be of utmost importance.

Category 3: Institutional land uses with primarily daytime and evening use. This category includes schools, libraries, churches and active parks.

Figure 3-19
Examples of Typical Outdoor Noise Exposure



Ldn is used to characterize noise exposure for residential areas (Category 2). For other noise sensitive land uses, such as outdoor amphitheaters and school buildings (Categories 1 and 3), the maximum 1-hour Leq during the facility's operating period is used.

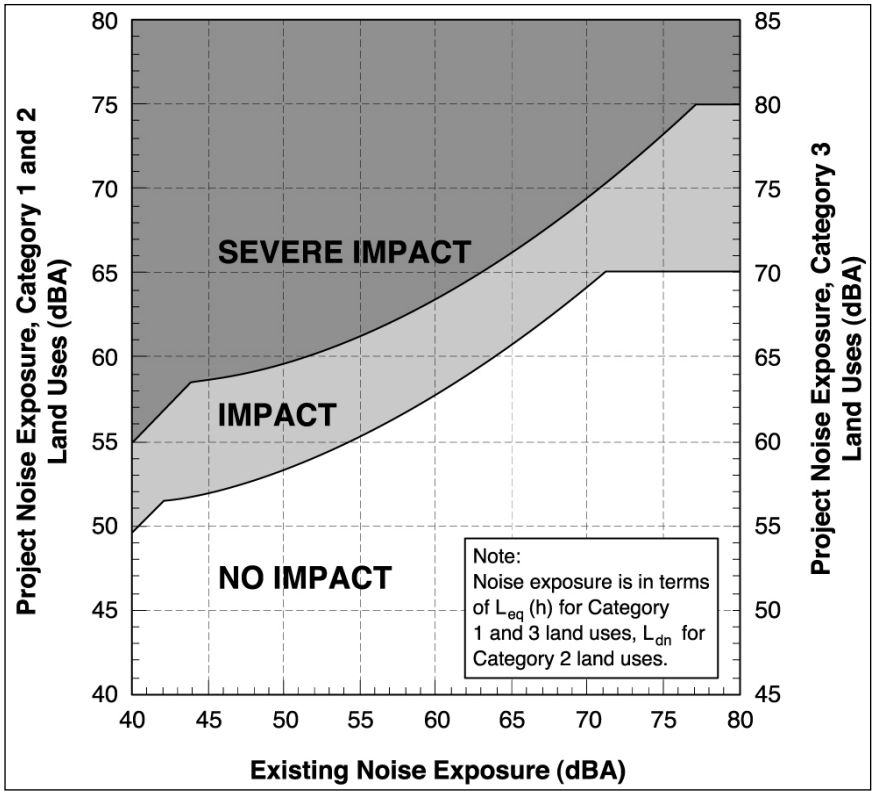
There are two levels of impact included in the FRA criteria. The interpretation of these two levels of impact is summarized below:

Severe: Severe noise impacts are considered "significant" as this term is used in the *National Environmental Policy Act of 1969* (NEPA) and implementing regulations. Noise mitigation will normally be specified for severe impact areas unless there is no practical method of mitigating the noise.

Impact: In this range of noise impact, sometimes referred to as moderate impact, other project-specific factors must be considered to determine the magnitude of the impact and the need for mitigation. These other factors can include the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-indoor sound insulation, and the cost effectiveness of mitigating noise to more acceptable levels.

The noise impact criteria are summarized in Table 3-18. The first column shows the existing noise exposure and the remaining columns show the project noise exposure thresholds that would cause either moderate or severe impact. The future noise exposure would be the combination of the existing noise exposure and the additional noise exposure caused by the project.

Table 3-18
FRA Noise Impact Criteria



Source: Federal Railroad Administration, December 1998

Existing Noise Conditions

Noise-sensitive land uses along the project corridor were first identified based on drawings within Corridors A through E, aerial photographs, visual surveys, and land use information. Based on this review, summary descriptions of noise-sensitive land uses and existing noise sources along the FHSR corridor alignments defined in Section 2, from west to east, are as follows:

- Alignment A1 (Corridor A). Noise-sensitive land uses along this alignment include single-family residences, apartment complexes, and hotels. In addition, there are areas of commercial use, as well as churches and schools, on both sides of the alignment. Existing noise is dominated by traffic on I-275, I-4, and local roadways.

- Alignment A2 (Corridor A). Noise-sensitive land uses along this alignment include single-family residences, apartment complexes, and hotels. In addition, there are areas of commercial use, as well as churches and schools, on both sides of the alignment. Existing noise is dominated by traffic on I-275 and local vehicular traffic.

- Alignment B1 (Corridor B). Single and multi-family residences, mobile homes, churches, and schools are the noise-sensitive land uses along this alignment. Commercial buildings are interspersed throughout this area on both sides of the alignment. Existing noise sources along this alignment include traffic on local roads, as well as traffic on I-4 and I-75.

- Alignment B2 (Corridor B). Along this alignment, the noise-sensitive land uses consist of single-family residences, mobile homes, schools, and churches. Commercial buildings are also interspersed throughout the alignment. The dominant noise sources in this area are local vehicular traffic, in addition to traffic on I-75 and I-4.

- Alignment C1 (Corridor C). The noise-sensitive land uses along this alignment consist of single-family residences, mobile homes, hotels, apartments, schools, and churches. A few commercial building are interspersed throughout the alignment. The dominant noise source is the traffic along I-4.

- Alignment D1 (Corridor D). Along the eastern section of this alignment, noise-sensitive land uses consist of single-family homes, mobile homes, hotels, churches, and schools. Along the western section of this alignment, noise-sensitive land uses include hotels and apartments. In between the eastern and western sections is mostly vacant land. Churches and schools, as well as commercial buildings, are interspersed along the eastern section. The dominant noise source throughout this alignment is traffic on I-4.

- Alignment E1 (Corridor E). The noise-sensitive land uses in this area consist of hotels (concentrated in the eastern section of this alignment), single-family residences, churches, and mobile homes. Commercial buildings are interspersed on both sides of the alignment. The dominant noise sources along this alignment are the local traffic and the traffic on I-4 and the Bee Line Expressway (S.R. 528).
    - Alignment E2 (Corridor E). The noise-sensitive land uses along this alignment include apartments, single and multi-family residences, schools, churches, and hotels. A few commercial buildings are interspersed throughout the area. The dominant noise sources along this alignment are the traffic from I-4 and from the Central Florida Greeneway (S.R. 417).

Existing ambient noise levels in the previously listed areas were characterized through direct measurements at selected sites along the corridors during the period from January 20 through January 29, 2003. Estimating existing noise exposure is an important step in the noise impact assessment since, as indicated previously in this report, the thresholds for noise impact are based on the existing levels of noise exposure. The measurements included both long-term (typically 24-hour) and short-term (30 to 60 minute) monitoring of the A-weighted sound level at representative noise-sensitive locations.

All of the measurement sites were located in noise-sensitive areas, and were selected to represent a range of existing noise conditions along the corridors. Figure 3-20 shows the general location of the 18 long-term monitoring sites (LT-1 through LT-18) and 25 short-term monitoring sites

(ST-1 through ST-25). At each site, the measurement microphone was positioned to characterize the exposure of the site to the dominant noise sources in the area. For example, microphones were located at the approximate setback lines of the receptors from adjacent roads or rail lines, and were positioned to avoid acoustic shielding by landscaping, fences or other obstructions.

The results of the existing ambient noise measurements, summarized in Table 3-19, were used as a basis for determining the existing noise conditions at all noise-sensitive receptors along the FHSR corridor. Because the existing ambient noise is dominated by highway traffic in most locations along the project corridor, the measured Ldn values were typically normalized to a distance of 100 ft. from the highway to characterize the existing noise for each area. In some areas, the Ldn was estimated from short-term Leq data using the method recommended by the FRA. More commonly, the short-term Leq data were used to characterize the existing noise levels at specific institutional receptors. The resulting characterization of existing ambient noise conditions is summarized in the following section.

Table 3-19
Summary of Existing Ambient Noise Measurement Results

Alignment No.	Site No.	Measurement Location Description	Start of Measurement		Meas. Time (Hrs)	Noise Exposure (dBA)	
			Date	Time		Ldn	Leq
A1	LT-1	S.F. Res. @ 1706 12th Avenue	1-20-03	12:00	24	69	--
B1	LT-2	S.F. Res @ 2360 12th Avenue	1-20-03	13:00	24	69	--
B1	LT-3	S.F. Res. @ 3411 N. 56th Street	1-20-03	15:00	24	76	--
B1	LT-4	S.F. Res. @ 7214 Kingsbury Circle	1-21-03	16:00	24	66	--
B2	LT-5	Mobile Home Park off of Falkenburg Rd	1-21-03	16:00	24	77	--
C1	LT-6	S.F. Res. @ 13120 Gore Rd	1-21-03	16:00	24	68	--
C1	LT-7	S.F. Res. @ 5650 Harvey Tew Road	1-21-03	16:00	24	64	--
C1	LT-8	S.F. Res. @ 910 King Street	1-22-03	10:00	24	72	--
C1	LT-9	S.F. Res. @ 2502 Northside Frontage Road	1-22-03	17:00	24	72	--
D1	LT-10	Cambridge Cove Apartments	1-23-03	10:00	24	64	--
D1	LT-11	S.F. Res. @ 1703 Canary Circle	1-23-03	14:00	24	74	--
D1	LT-12	S.F. Res. @ 5563 Citrus Hill Drive	1-23-03	17:00	24	62	--
D1, E1	LT-13	Parkway Apartments - Bldg. 3028	1-27-03	10:00	24	67	--
E1	LT-14	S.F. Res. @ End of 3rd Avenue	1-27-03	11:00	24	68	--
E2	LT-15	S.F. Res. @ 13476 Texas Woods Circle	1-27-03	12:00	24	61	--
E2	LT-16	S.F. Res. @ 1234 Epson Oaks Way	1-28-03	9:00	24	63	--
E2	LT-17	S.F. Res. @ 13172 Heather Moss Drive	1-28-03	13:00	24	67	--
E2	LT-18	S.F. Res. @ 14444 Estrella	1-28-03	17:00	24	62	--
A1	ST-1	S.F. Res. @ East 7th Avenue	1-20-03	11:47	1	--	69
*	ST-2	S.F. Res. @ 15th Avenue and 20th Street	1-20-03	15:06	1	--	63
C1	ST-3	Landmark Baptist Church	1-20-03	15:05	1	--	64
C1	ST-4	Armwood High School	1-21-03	9:13	1	--	69
C1	ST-5	Assembly Hall of Jehovah's Witnesses	1-21-03	9:14	1	--	62
C1	ST-6	Evans Park	1-21-03	10:35	1	--	66
C1	ST-7	Cedars of Lebanon Missionary Baptist Church	1-21-03	10:37	1	--	64

Table 3-19 (cont.)
Summary of Existing Ambient Noise Measurement Results

Alignment No.	Site No.	Measurement Location Description	Start of Measurement		Meas. Time (Hrs)	Noise Exposure (dBA)	
			Date	Time		Ldn	Leq
C1	ST-8	Townsgate Apartments, #1210	1-21-03	12:08	1	--	63
A2	ST-9	Corner of East 2nd Avenue and North 23rd Street	1-22-03	9:02	1	--	64
B2	ST-10	World Revival Church	1-22-03	11:10	1	--	66
D1	ST-11	S.F. Res. @ West 10th Street, #2	1-22-03	11:30	1	--	67
B2	ST-12	Tanner Road Park	1-22-03	13:28	1	--	70
D1	ST-13	Victory Church	1-23-03	9:38	¾	--	59
C1	ST-14	Faith Temple Assembly of God	1-24-03	9:39	1	--	64
D1	ST-15	1123 Walt Williams Road, near homes 143/144	1-24-03	10:00	1	--	63
D1	ST-16	S.F. Res. @ 513 Union Drive	1-24-03	11:48	1	--	67
D1	ST-17	Wendell Watson Elementary School	1-24-03	12:45	1	--	60
D1	ST-18	Hampton Inn – Celebration, FL	1-27-03	9:09	1	--	69
*	ST-19	Apartments at 10555 Willow Drive – Orlando, FL	1-27-03	11:00	1	--	69
*	ST-20	Hotels North of Interstate-4 – Orlando, FL	1-27-03	11:14	1	--	70
E2	ST-21	Meadowwood Elementary School	1-27-03	14:07	1	--	55
E2	ST-22	Hunters Creek Middle School	1-27-03	14:46	½	--	53
*	ST-23	Spring Hill Suites – Buena Vista, FL	1-28-03	14:38	½	--	68
E2	ST-24	Holiday Inn – Orlando, FL	1-28-03	15:44	½	--	65
E1	ST-25	S.F. Res. @ end of Marco Polo Drive	3-27-03	9:00	1	--	63

Source: Harris Miller Miller & Hanson Inc., 2003

* Extra measurement

Due to the large area that some corridors encompass, ranges of noise levels were used to describe the ambient noise levels, rather than a single noise level. The range of noise levels was taken from multiple measurement locations within a single alignment.

- Alignment A1 (Corridor A). The Ldn in this area is estimated to range between 77 dBA and 79 dBA at 100 ft. from I-275/I-4, based on 1-hour and 24-hour measurements (ST-1 and LT-1). The existing daytime Leq for the parks, churches, and schools in this area is taken to be 69 dBA, based on the actual measurement at site ST-1, which best represents the churches and schools.

- Alignment A2 (Corridor A). The existing Ldn for this area is estimated to be 72 dBA at 100 ft. from Adamo Drive based on the 1-hour measurement at site ST-9. The parks, churches, and schools in this area have an estimated daytime Leq of 64 dBA based on the measurement at site ST-9.

-

Alignment B1 (Corridor B). The Ldn for this area is estimated to range between 74 and 78 dBA at 100 ft. from I-4 based on 24-hour measurements (LT-3 and LT-4). The western most area of this alignment has an estimated Ldn of 81 dBA at 100 ft. from I-4 based on the measurements at site LT-5. The higher Ldn for this area is due to the intersection of I-75 and I-4. The daytime Leq within this area is estimated to be 69 dBA based on a 24-hour measurement (LT-4).

- Alignment B2 (Corridor B). The existing Ldn along this alignment is estimated to range between 76 and 77 dBA at 100 ft. from I-75 based on 1-hour measurements (ST-10 and ST-12). The northern area of this alignment (the same as the eastern area of Alignment B1) has an estimated Ldn of 81 dBA at 100 ft. from I-75 based on the 24-hour measurement LT-5. As previously discussed, this higher level is due to the intersection of I-4 and I-75. The daytime Leq in Alignment B2 is estimated to range from 66 dBA to 70 dBA based on measurements at ST-10 and ST-12.

- Alignment C1 (Corridor C). The Ldn in this area is estimated to be between 76 and 77 dBA at 100 ft. from I-4 based on 24-hour measurements (LT-6, LT-7, LT-8, and LT-9). The existing daytime Leq for the schools, parks, and churches within this alignment is estimated to range between 62 and 69 dBA based on the 1-hour measurements at ST-3, ST-4, ST-5, ST-6, ST-7, ST-8, and ST-14.

- Alignment D1 (Corridor D). The Ldn in the Lakeland area of this alignment is estimated to be in the range of 75 dBA to 79 dBA at 100 ft. from I-4 based on 24-hour measurements (LT-10 and LT-11). The majority of this alignment is estimated to be 68 dBA at 100 ft. from I-4 based on the long term measurement site LT-12. Near the Celebration area, the Ldn is estimated to be 80 dBA at 100 ft. from I-4 based on 24-hour measurement at site LT-13.

- Alignment E1 (Corridor E). The existing Ldn in the I-4 area is estimated to be 80 dBA at 100 ft. from I-4 based on a 24-hour measurement at site LT-13. Along the Bee Line Expressway (S.R. 528), the Ldn is estimated to be 68 dBA at 100 ft. from the centerline based on a 1-hour measurement (ST-25). The existing Ldn in the eastern section of this alignment is estimated to be 59 dBA based on a 24-hour measurement at site LT-14. The existing daytime Leq is estimated to be 68 dBA based on the 1-hour measurement at site ST-23.

- Alignment E2 (Corridor E). The existing Ldn for the majority of this area is estimated to be in the range of 70 dBA to 74 dBA at 100 ft. from the Central Florida Greeneway (S.R. 417) based on 24-hour measurements (LT-16, LT-17, and LT-18). In the eastern most section of this alignment (East of Landstar Boulevard), the Ldn is estimated to be 65 dBA at 100 ft. from the centerline based on the measurement at site LT-15. The daytime Leq for parks, schools, or churches in this alignment is estimated to be between 53 and 64 dBA based on 1-hour measurements at sites ST-21, ST-22, and ST-24.

3.7.3 Vibration

Ground-borne vibration is the oscillatory motion of the ground about some equilibrium position that can be described in terms of displacement, velocity, or acceleration. Because sensitivity to vibration typically corresponds to the amplitude of vibration velocity within the low-frequency range of most concern for environmental vibration (roughly 5-100 Hz), velocity is the preferred measure for evaluating ground-borne vibration from rail projects.

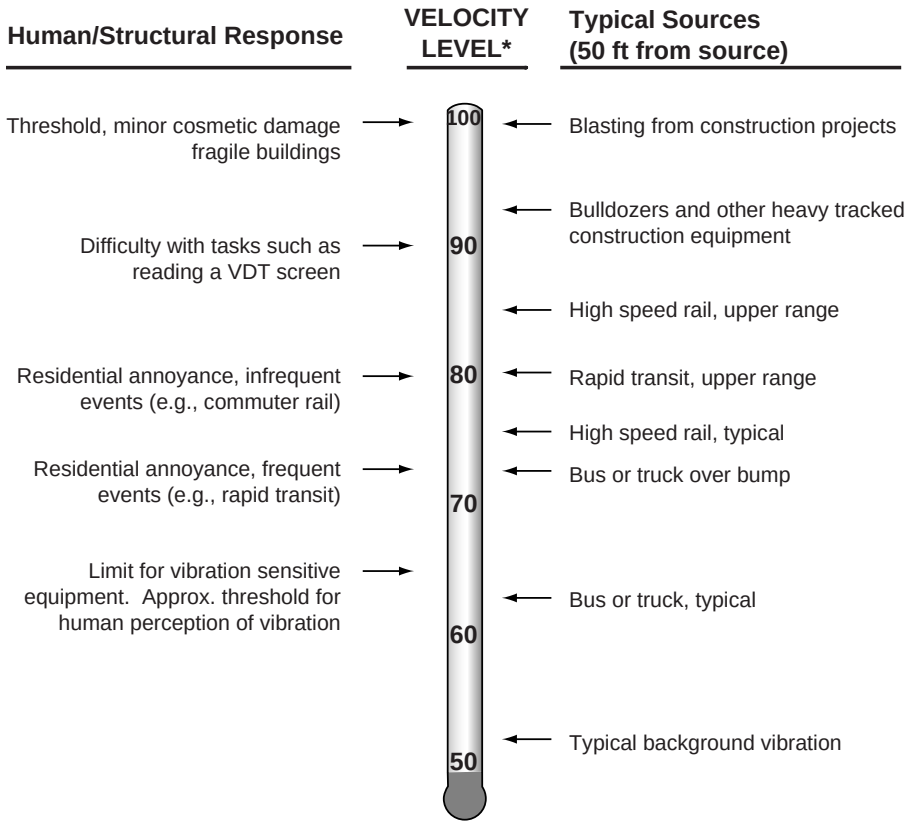
The most common measure used to quantify vibration amplitude is the peak particle velocity (PPV), defined as the maximum instantaneous peak of the vibratory motion. PPV is typically used in monitoring blasting and other types of construction-generated vibration, since it is related to the stresses experienced by building components. Although PPV is appropriate for evaluating building damage, it is less suitable for evaluating human response, which is better related to the average vibration amplitude. Thus, ground-borne vibration from passenger rail systems is usually characterized in terms of the "smoothed" root mean square (rms) vibration velocity level, in decibels (VdB), with a reference quantity of one micro-inch per second. VdB is used in place of dB to avoid confusing vibration decibels with sound decibels.

Figure 3-21 illustrates typical ground-borne vibration levels for common sources, as well as criteria for human and structural response to ground-borne vibration. As shown, the range of interest is from approximately 50 to 100 VdB, from imperceptible background vibration to the threshold of damage. Although the approximate threshold of human perception to vibration is 65 VdB, annoyance is usually not significant unless the vibration exceeds 70 VdB.

Ground-Borne Vibration Criteria

The FRA ground-borne vibration impact criteria are based on land use and train frequency, as shown in Table 3-20. There are some buildings, such as concert halls, recording studios, and theaters, which can be very sensitive to vibration, but do not fit into any of the three categories listed in Table 3-21. Due to the sensitivity of these buildings, they usually warrant special attention during the environmental assessment of a rail project.

Figure 3-21
Typical Ground-Borne Vibration Levels and Criteria



** RMS Vibration Velocity Level in VdB relative to 10^{-6} inches/second*

It should also be noted that Tables 3-20 and 3-21 include separate FRA criteria for ground-borne noise, the "rumble" that can be radiated from the motion of room surfaces in buildings due to ground-borne vibration. Although expressed in dBA, which emphasizes the more audible middle and high frequencies, the criteria are set significantly lower than for airborne noise to account for the annoying low-frequency character of ground-borne noise. Because airborne noise often masks ground-borne noise for above ground (i.e. at-grade or elevated) rail systems, ground-borne noise criteria are primarily applied to subway operations where airborne noise is not a factor. For the above-grade rail system planned along the FHSR alternatives, ground-borne noise criteria are not considered to be applicable to any adjacent receptors.

Table 3-20
Ground-Borne Vibration and Noise Impact Criteria

Land Use Category	Ground-Borne Vibration Impact Levels (VdB re 1 micro inch/sec)		Ground-Borne Noise Impact Levels (dB re 20 micro Pascals)	
	Frequent Events[1]	Infrequent Events[2]	Frequent Events[1]	Infrequent Events[2]
Category 1: Buildings where low ambient vibration is essential for interior operations.	65 VdB[3]	65 VdB[3]	-4	-4
Category 2: Residences and buildings where people normally sleep.	72 VdB	80 VdB	35 dBA	43 dBA
Category 3: Institutional land uses with primarily daytime use.	75 VdB	83 VdB	40 dBA	48 dBA

Notes:
1. "Frequent Events" is defined as more than 70 vibration events per day. Most rapid transit projects fall into this category.
2. "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. This criterion limit is based on levels that are acceptable for most moderately sensitive equipment such as optical microscopes. Vibration sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
4. Vibration-sensitive equipment is not sensitive to ground-borne noise.

Source: Federal Railroad Administration, December 1998.

Table 3-21
Ground-Borne Vibration and Noise Impact Criteria for Special Buildings

Type of Building or Room	Ground-Borne Vibration Impact Levels (Vdb Re 1 Micro-Inch/Sec)		Ground-Borne Noise Impact Levels (Db Re 20 Micro Pascals)	
	Frequent Events[1]	Infrequent Events[2]	Frequent Events[1]	Infrequent Events[2]
Concert Halls	65 VdB	65 VdB	25 dBA	25 dBA
TV Studios	65 VdB	65 VdB	25 dBA	25 dBA
Recording Studios	65 VdB	65 VdB	25 dBA	25 dBA
Auditoriums	72 VdB	80 VdB	30 dBA	38 dBA
Theaters	72 VdB	80 VdB	35 dBA	43 dBA

Notes:
1. "Frequent Events" is defined as more than 70 vibration events per day. Most transit projects fall into this category.
2. "Infrequent Events" is defined as fewer than 70 vibration events per day. This category includes most commuter rail systems.
3. If the building will rarely be occupied when the trains are operating, there is no need to consider impact. As an example consider locating a commuter rail line next to a concert hall. If no commuter trains will operate after 7 pm, it should be rare that the trains interfere with the use of the hall.

Source: Federal Railroad Administration, December 1998.

Existing Vibration Conditions

Because there are no significant sources of existing ground-borne vibration along the FHSR Corridors A through E, other than occasional truck traffic, the vibration measurements for this project focused on characterizing the vibration propagation characteristics of the soil at representative locations. Eleven vibration testing sites were selected to represent a range of soil conditions in areas along the retained alignments within the corridors that include vibration-

sensitive receptors. Figure 3-22 shows the general receptor locations and site descriptions are as follows:

- Site V-1: Alignment A1 (Corridor A) - Corner of Laniar and Estelle - Tampa, FL
- Site V-2: Alignment B1 (Corridor B) - Corner of 54th Street and 26th Avenue - Tampa, FL
- Site V-3: Alignment C1 (Corridor C) - Armwood High School - Tampa, FL
- Site V-4: Alignment C1 (Corridor C) - Townsgate Apartments - Plant City, FL
- Site V-5: Alignment D1 (Corridor D)- Glenwood Park - Gibsonia, FL
- Site V-6: Alignment E1 (Corridor E) - Marriott Village - Lake Buena Vista, FL
- SiteV-7: Alignment E1 (Corridor E) - Excel Tech - Orlando, FL
- Site V-8: Alignment E1 (Corridor E) - Corner of 3rd Avenue and 11th Street - Orlando, FL
- Site V-9: Alignment E2 (Corridor E) - Corner of International Drive and World Center Drive - Orlando, FL
- Site V-10: Alignment E2 (Corridor E) - Corner of Tacon Drive and Verano Drive - Orlando, FL
- Site V-11: Alignment E2 (Corridor E) - Pinnacle Cove Apartments - Orlando, FL

At each of the vibration sites, ground-borne vibration propagation tests were conducted according to the "Detailed Vibration Assessment" procedures described in the FRA guidance manual *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (Final Draft, December 1998). The tests were performed by impacting the ground at discrete points along a line, while measuring the input force and corresponding ground vibration response at various distances. The resulting force-response transfer functions were used to calculate the "line source transfer mobility", which describes vibration transmission characteristics of the soil as a function of both frequency and distance from the source. The transfer mobility can be combined with the input force characteristics of a high speed rail vehicle to predict future vibration levels at locations along the project corridor

To provide a representative summary of the ground-borne vibration characteristics of the soil along the project corridors, Figure 3-23 shows the results for the line source transfer mobilities measured at the 100 ft. position at each of the 11 vibration measurement sites. Except for those areas represented by sites 3, 4, and 6, results indicate that the ground vibration response to a given input force is greatest in the 25 Hz to 63 Hz frequency range. Vibrations in this frequency range can cause perceptible vibrations, but can mitigated using conventional track vibration isolation techniques (e.g. ballast mats). In the areas represented by sites 3 and 4, the maximum vibration response was measured to extend to higher frequencies (up to 250 Hz for site 3 and up to 80 Hz for site 4). Vibrations at these higher frequencies pose a greater risk of ground-borne noise impact, but can also be treated quite effectively by using conventional track vibration isolation methods. However, in the area represented by site 6, the ground vibration response was measured to be greatest in the 20 Hz to 125 Hz range. If the input force of a high speed rail vehicle is concentrated in this frequency range and causes vibration impact, mitigation may require more extensive and costly track vibration isolation treatments (e.g. floating slabs).

More details on the propagation test and analysis procedures are given in the FRA guidance manual, *High-Speed Ground Transportation Noise and Vibration Impact Assessment* (Final Draft, December, 1998). Additional technical information, including all of the measurement data

from each of the eleven sites, can be found in the supporting technical report *Noise and Vibration Impact Assessment for the Florida High Speed Rail Project*.

3.7.4 Water Quality

Corridors A through E include seven major watersheds: Tampa Bay, the Hillsborough River, the Palm River, the Alafia River, the Peace River, the Withlacoochee River, and the Kissimmee River. The Hillsborough and the Palm Rivers drain into Tampa Bay. Tampa Bay is tidally influenced and is connected to the Gulf of Mexico. The Withlacoochee, the Alafia, and Peace Rivers drain to the Gulf of Mexico. The Kissimmee River flows to Lake Okeechobee. The area within Corridors A and B drain into the Palm and Hillsborough Rivers. The majority of the land within Corridor C drains into the Hillsborough River, with a portion flowing to the Alafia River. Corridor D drains to the Peace and the Withlacoochee Rivers. Corridor E drains into the Kissimmee River. Watershed data was collected for use in the Water Quality Impact Evaluation (WQIE), which is further described in Section 4 of this report.

3.7.5 Floodways and Floodplain

Floodplain information for Corridors A through E was obtained from Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRM) and Flood Insurance Studies. According to the FIRMs, the corridors traverse flood zones A, B, C, and E and portions of the FHSR project are located within the 100-year floodplain. Zone A denotes areas of the 100-year floodplain in which the base flood elevations and flood hazard factors have not been determined. Zone B denotes areas between the 100-year and 500-year floods, areas subject to 100-year flooding with average depths less than 1 ft; areas where the contributing drainage area is less than one square mile (sq. mi.); or areas protected by levees from the base flood. Zones C and E are areas of undetermined base flood elevation and/or areas subject to flooding by a frequency event exceeding 100 years.

Corridors A, B, C, and D pass through 32 areas designated as either Zone A or Zone B. Within the Green Swamp area of Polk and Osceola counties, the floodplain meanders, crossing I-4 at virtually every cross drain. Encroachment into the Green Swamp was counted as a single encroachment (i.e., there are 31 areas outside of the Green Swamp that are encroached by the corridors).

Floodplain encroachment in Florida is governed by FEMA and regulated by the Water Management Districts (WMD): Southwest Florida Water Management District (SWFWMD), SFWMD, and St. Johns River Water Management District (SJWMD) through the Environmental Resource Permit (ERP) process.

The base floodplain near the Hillsborough River in Hillsborough County (Corridor A) results from tidal storm surge, with the base floodplain elevation at approximately elevation 10.0 National Geodetic Vertical Datum (NGVD) of 1929. Any encroachment into a tidal storm surge floodplain does not have to be compensated.

All other floodplain encroachments within the study area are from fresh water rainfall events and would have to be compensated for on a "cup for cup" basis. This basis means that for every cup of fill-material placed in the floodplain below the 100-year floodplain elevation, one cup must be excavated at the same elevation in an area that is hydraulically connected to the floodplain.

3.7.6 Hydrology and Drainage

In order to assess the hydrologic needs for the FHSR system, an inventory of existing stormwater management systems was conducted. The evaluation determined that with the exception of recent reconstruction and widening of I-4, the areas containing the project alternatives do not have storm water permits or any surface water management systems currently in place. The following discussion identifies those areas on I-4 which were recently reconstructed and notes if drainage provisions for FHSR are included.

In Hillsborough County (Corridors A, B, and C), the reconstruction of I-4 extends from 21st Street on the west and ends at County Line Road to the east. The permits of these segments assumed the median of I-4 to be impervious. It is assumed that no additional drainage facilities for the water quality treatment and attenuation requirements would be necessary for FHSR construction; however, the conveyance system within the existing median may require modification.

Corridor D consists of four sections of I-4 in Polk County. Only Section One, from the Polk/Hillsborough County line to Memorial Boulevard, has been widened. Permit No. 4311896.09 has been issued and construction has been completed. This permit expired on May 13, 2003. The permit of this segment assumed the median of I-4 to be impervious. The Florida Department of Transportation (FDOT) has recently let each of the remaining three sections as design/build contracts. Additional coordination would need to occur between the FHSRA and the I-4 drainage designers within Polk County, FDOT – District One, and the WMDs.

Section Two (within Corridor D,), from Memorial Boulevard to U.S. 98, Permit No. 43011896.019, ERP was issued on September 28, 2000, and expires on January 30, 2006. Construction is underway. The design for the 6-lane widening did not take the FHSR project into consideration. However, the constructed ponds may be expanded to include FHSR. The permitting is in process for Section Three, from U.S. 98 to C.R. 557, and Section Four, C.R. 557 to the Polk/Osceola County line. Again, the design for the 6-lane widening did not take FHSR into consideration. The constructed ponds may be expanded or enlarged to include the FHSR project. The widening of Sections Two through Four is to the outside of the existing 4-lane highway and assumed the I-4 median to be grass. In some areas within these sections, the median has been utilized for storm water treatment and flood compensation; the 44-ft. minimum median clearance required for FHSR has not been provided.

For the remainder of Corridors D and E within Osceola and Orange counties, no previously issued permits have taken FHSR into consideration for storm water treatment and attenuation.

Within Corridor E, the Central Florida Greeneway (S.R. 417) has a surface water management system constructed; but, again, FHSR was not included in the design.

3.7.7 Topography, Soils, and Geology

This section presents a summary of the existing subsurface soil conditions located in the vicinity of the proposed FHSR Corridors A through E. Included are discussions of the regional geology, topography, and problem soils identified in each corridor. More detailed information is contained in the two Contamination Screening Evaluation Reports (CSERs) prepared as part of this study, the Contamination Screening Evaluation Report[11] (December 2002, and the Florida High Speed Rail Draft Contamination Screening & Evaluation Report[12] (January 2003). The limits of the CSERs are from downtown Tampa to Lakeland (U.S. 98) and from Lakeland (U.S. 98) to Orlando International Airport.

Regional Geology

Throughout central Florida, water is one of the most important natural resources. It can be classified into two systems: the groundwater system and the surface water system. In the groundwater system, there are two water-bearing zones of interest: the confined and the unconfined aquifers. The confined aquifer, called the Floridan aquifer, extends under much of Florida. The Green Swamp region in the northeastern portion of Polk County is believed to be a recharge area for part of the Floridan aquifer that underlies most of west central Florida. Except for this recharge area, most of the Floridan aquifer is under a confining layer of clay or other impermeable material. This confining (cap) layer is responsible for the artesian water pressure within the Floridan aquifer.

The Hawthorn formation is the confining layer in Hillsborough, Polk, Osceola, and Orange counties. The Hawthorn formation is the cap layer between the deep Floridan aquifer and the shallow surficial and intermediate aquifers. The surficial aquifer is found throughout most of Polk County.

Due to its prevalent geology, central Florida is prone to the formation of sinkholes, or large, circular depressions created by local subsidence of the ground surface. In areas where the Hawthorn formation is absent, water table groundwater (and associated sands) can flow downward to cavities within the limestone aquifer recharging the Floridan aquifer, causing the formation of surface sinkholes. Thus, in central Florida, areas of effective groundwater recharge to the Floridan aquifer have a higher potential for the formation of surface sinkholes. Based on the review of the U.S. Geological Survey (USGS) map entitled "Recharge and Discharge Areas of the Floridan Aquifer in the SJWMD and Vicinity, Florida," (1984), the proposed FHSR project traverses regions that vary from a classification of "no recharge" to "high recharge" for Corridors A thru E. Generally, the FHSR corridor in Hillsborough and Polk counties (Corridors A through D) is in a "high recharge" area. Osceola and Orange counties (Corridors D and E) are in a "low recharge" area.

The groundwater table was measured where apparent. The depths to the groundwater table, when encountered, ranged from about 3 ft. to greater than 15 ft. below the existing ground surface in Hillsborough and Polk counties. The groundwater table is typically within 10 ft. of the ground surface for Osceola and Orange counties and fluctuates within 3 to 6 ft., with the highest level occurring near the end of September (seasonal high) and the lowest level occurring near the end of May (seasonal low).

Groundwater conditions vary with environmental variations and seasonal conditions, such as the frequency and magnitude of rainfall patterns, as well as man-made influences, such as existing swales, drainage ponds, and underdrains.

Topography

Topographical quadrangle maps published by the USGS were reviewed for general elevation data along the proposed FHSR alignments. The results are summarized in Table 3-22.

Table 3-22
Elevation Data

USGS Map Title	Corridor	Approximate Range of Elevations Along Proposed Corridors (Feet, NationalGeodeticVertical Datum)
Tampa, Florida	A, B	0 to 55
Brandon, Florida	B	15 to 80
Thonotasassa, Florida	B, C	10 to 105
Plant City West, Florida	C	50 to 135
Plant City East, Florida	C	90 to 170
Lakeland, Florida	D	135 to 240
Providence	D	135 to 140
Lake Jessamine	E	80 to 135
Pine Castle	E	75 to 95

The elevations for Corridors A and B range from 0 to 105 ft. above NGVD. The elevations for Corridor C range from 10 to 170 ft. above NGVD. The elevations for Corridor D range from 135 to 240 ft. above NGVD. The elevations for Corridor E range from 75 to 135 ft. above NGVD. USGS maps from Providence to Lake Jessamine were not available for review.

Soil Survey Data

Natural Resources Conservation Service (NRCS) Maps were obtained for Hillsborough, Polk, Osceola, and Orange counties. Each map was reviewed for general near-surface soil information within Corridors A through E. More detailed information regarding soils is contained in the CSERs.

Based on the review of the Hillsborough, Polk, Osceola, and Orange County Soil Conservation Service maps, several map soil units along the proposed corridors have been identified as "problem soils." For purposes of this study, problem soils have been defined as organic soils and

mined land suspected of having the potential for settlement or stability concerns. Additional information regarding muck probe locations from Lakeland (U.S. 98) to Orlando International Airport is described in the CSER. The map soil units identified as problem soils are described by corridor alignments as follows:

Alignments A1 and A2 (Corridor A)

Alignments A1 and A2 do not contain any map soil units that have been identified as problem soils.

Alignments B1 and B2 (Corridor B)

Alignment B1 contains three map soils units that have been identified as problem soils. They are described as follows:

- Basinger, Holopaw, and Samsula soils, depressional are identified in the "Hillsborough County, Florida Soil Survey" as map unit (5). These soils are found in swamps and in depressions on the flatwoods. Undrained areas where these soils are found are frequently ponded for long periods. Based on the survey, the organic soils can be encountered as deep as 34 inches (in.) below existing grades.
- Chobee muck, depressional is identified in the "Hillsborough County, Florida Soil Survey" as map unit (11). These soils are found in broad depressions on Harney flats. Undrained areas can be ponded for very long periods. This soil consists of approximately 4 in. of muck. Underlying the muck are silty sands transitioning to sandy clays to depths of at least 80 in.
- Eaton mucky sand, depressional is identified in the "Hillsborough County, Florida Soil Survey" as map unit (14). Based on the survey, this soil is found in depressions on the flatwoods and consists of a top layer of approximately 8 in. of mucky sand. Underlying the layer of mucky sand is silty sand to sandy clay of at least 80 in. This soil experiences ponding for one to four months during most years.

Alignment B2 contains two map soil units that have been identified as problem soils. These map soil units are identified in the "Hillsborough County, Florida Soil Survey" as map units (5) and (14) and were described previously.

Alignment C1 (Corridor C)

Alignment C1 contains one map soils unit that has been identified as a problem soil. This map soil unit is identified in the "Hillsborough County, Florida Soil Survey" as map unit (5) and was previously described under Alignment B.

Alignment D1 (Corridor D)

Alignment D1 contains five map soil units that have been identified as problem soils. They are described as follows:

- Eaton mucky fine sand, depressional is identified in the "Polk County, Florida Soil Survey" as map unit (6). This soil is very poorly drained and is found in wet depressions on the flatwoods. This soil consists of a top layer of muck, approximately 6 in. thick, underlain by soils transitioning from slightly silty sands to sandy clays. Areas consisting of this soil may experience ponding for six months or more during most years.
- Samsula muck is identified in the "Polk County, Florida Soil Survey" and the "Osceola County, Florida Soil Survey" as map units (13) and (40), respectively. This soil is very poorly drained and is encountered in swamps and marshes. This soil consists of muck to about 31 in. underlain by strata of silty sands and sands. Development within this map unit is limited, according to the Soil Survey, due to excessive ponding and organics.
- Kaliga muck is identified by the "Polk County, Florida Soil Survey" as map unit (32). This soil is very poorly drained and is encountered in swamps and marshes. This soil consists of a top layer, approximately 30 in. thick, of muck. Underlying the muck are silty sands, sandy silts, and clayey sands. During most years, these soils experience ponding for very long periods.
- Hontoon muck is identified by the "Polk County, Florida Soil Survey" and the "Osceola County, Florida Soil Survey" as map units (35) and (15), respectively. This soil is poorly drained and is encountered in swamps and marshes. This soil consists of muck to 75 in. below grade. The underlying soils beneath this top layer of muck are identified as variable. The soil survey states development within this map unit is limited due to ponding and low soil strength.
- Udorthents, excavated is identified by the "Polk County, Florida Soil Survey" as map unit (58). This map unit consists of excavated areas, locally called "Borrow Pits." The excavated soil and geologic material have been removed for use as fill or as base for roads. Included in mapping are areas of spoil around the edge of the pits. The spoil is mostly sand or clay.

Alignments E1 and E2 (Corridor E)

Alignment E1 contains four map soil units that have been identified as problem soils. They are described as follows:

- Basinger fine sand, depressional is identified in the "Orange County, Florida Soil Survey" as map unit (3). This soil is very poorly drained and is found in shallow depressions and sloughs and along the edges of freshwater marshes and swamps. This soil consists of a surface layer of black fine sand about 7 in. thick, underlain by soils transitioning from gray fine sand to pale brown fine sand. Areas consisting of this soil may experience ponding for six months or more during most years.
- Samsula muck is identified in the "Orange County, Florida Soil Survey" as map unit (40). This soil is very poorly drained and is found in freshwater marshes and swamps. This soil consists of a surface layer of black muck about 8 in. thick, underlain by soils transitioning from brown muck to gray fine sand. Areas consisting of this soil may experience ponding for six months or more during most years.
- Samsula, Hontoon, Basinger association, depressional is identified in the "Orange County, Florida Soil Survey" as map unit (41). This soil is very poorly drained and is found in

shallow depressions and sloughs and along the exterior and interior areas of freshwater marshes and swamps. Undrained areas where these soils are found are frequently ponded for long periods. The organic soils can be encountered as deep as 80 in. below existing grades.

- Sanibel muck is identified in the "Orange County, Florida Soil Survey" as map unit (42). This soil is very poorly drained and is found in depressions, freshwater marshes and swamps, and poorly defined drainageways. This soil consists of a surface layer of black muck about 11 in. thick, underlain by soils transitioning from black fine sand to gray fine sand. Areas consisting of this soil may experience ponding for six months or more during most years.

Alignment E2 contains three map soil units that have been identified as problem soils. These map soil units are identified in the "Orange County, Florida Soil Survey" as map units (3), (41), and (42) and were described previously.

Subsurface Exploration

Subsurface exploration was performed to obtain preliminary subsurface data in areas without sufficient current geotechnical information. The exploration was done to identify areas of potential problems for further site specific testing during the final design phase. Borings, samples, and tests have been completed in accordance with the FDOT Soils and Foundation Handbook (2000).

Standard Penetration Test (SPT) borings, power auger borings, and manual muck probes were performed along Corridors A through E, in areas where the proposed FHSR is anticipated to be constructed either on embankments or upon structures above existing grades. The test areas generally consist of many potential successive street and/or rail crossings, and the SPT borings were performed at locations without sufficient existing geotechnical data. Two borings were drilled from a barge in the Six Mile Creek By-Pass Canal within Alignment B2. In general, the soil borings performed along the retained alignments encountered various soil types. The description of the soil types and their corresponding classification are summarized in Table 3-23. The approximate boring locations are shown in the Report of Geotechnical Data Collection[13] and the Preliminary Geotechnical Report[14] that were prepared as part of this Study.

Table 3-23
Soils Encountered in SPT and Power Auger Borings

Soil Description	Unified Soil Classification
Clean to Slightly Silty Fine Sand	SP/SP-SM
Slightly Clayey to Clayey Sand	SP-SC/SC
Organic Sand to Organic Silt, Clay	PT
Sandy Clay to Clay and Calcareous Sandy Muck Clay to Clay	CL/CH
Weathered Limestone with Calcareous Clay	WL
Slightly Silty to Silty Sand	SP-SM/SM
Chert	---

3.7.8 Contamination

A Contamination Screening Evaluation was completed for each corridor to help identify any known or potential, hazardous material or petroleum contamination sites. Contaminated sites present potential production delays, as well as cost for required remedial actions when contamination is discovered. If the discovery is made early enough, there may be the possibility of avoiding the problem entirely. If avoidance is not possible, early discovery would allow proper handling in a logical, timely manner. For the purpose of this study, potential contamination sites are separated into two categories: hazardous materials sites and petroleum sites. Table 3-24 lists the number, ranking, and type of sites by corridor.

All sites were evaluated to determine risk potential. Risk ratings were assigned to each site based upon field reviews, land use, historical tenancy evaluations, and regulatory agency research. Risk ratings range from No to High risk and are described as follows:

- **No –** After a review of all available information, there is nothing to indicate contamination would be a problem.
- **Low –** The former or current operation has a hazardous waste generator identification number, or deals with hazardous materials; however, based on all available information, there is no reason to believe there would be any involvement with contamination.
- **Medium –** After a review of all available information, indications are found that identify known soil and/or water contamination and that the problem does not need remediation, is being remediated, or that continued monitoring is required.
- **High –** After a review of all available information, contamination is documented, and would require remediation to avoid impacts to the corridor.

Two separate CSERs were prepared for this study. The first addresses the area from downtown Tampa to Lakeland, while the second evaluates the area from Lakeland to Orlando International Airport. The potentially contaminated sites were identified based on regulatory records review, literature review, aerial photography review, and project reconnaissance within 300 ft. of the proposed ROW. The potentially contaminated facilities within the study corridor are discussed in detail and figures depicting the location of the facilities and tables providing the names and other relative information regarding these facilities are also contained in the CSERs.

Table 3-24
Ranked Potential Contamination Sites By Corridor

Corridor	Total Sites	Ranked High	Ranked Medium	Ranked Low	Ranked No.	Hazardous Materials	Petroleum	Both
A	148	94	20	32	2	39	71	38
B	52	24	5	18	5	17	22	13
C	20	5	3	10	2	4	14	2
D	36	6	3	27	0	8	11	17
E	51	10	0	41	0	8	17	26

3.8 NATURAL RESOURCES

3.8.1 Natural Communities

Existing upland and wetland vegetative communities within Corridors A through E were identified through literature reviews, existing maps, and photo-interpretations. Each community was classified using the FDOT Florida Land Use, Cover and Forms Classification System[15] (FLUCCS). Wetlands communities and their classifications are discussed in Section 3.8.2, this section will focus on the upland communities identified.

The following published information was also collected and analyzed for uplands:

- U.S. Department of Agriculture (USDA), NRCS, Hillsborough, Polk, Osceola, and Orange County Soil Surveys
- USGS, Topographic Quadrangle maps, 7.5-minute series
- Aerial Photographs of the Project Area
- WMD Land Use Mapping

Twenty-three upland communities, primarily natural, are located within the project study area. Many upland community types, especially those minimally altered by land use changes or natural fire suppression, support protected wildlife and plant species. Table 3-25 presents the list of upland communities recorded within the FHSR corridors.

Table 3-25
Existing Natural Communities within the FHSR Study Area

FLUCCS Code	Description
200	Agriculture
210	Cropland and Pasture
212	Unimproved Pasture
214	Row Crops
220	Tree Crops
221	Citrus Groves
240	Nurseries and Vineyards
260	Other Open Rural Lands
300	Rangeland
310	Herbaceous
320	Shrub And Brush
321	Palmetto Prairie
329	Other Shrubs And Brush
400	Upland Forests
410	Upland Coniferous Forests
411	Pine Flatwoods
413	Sand Pine
414	Pine And Mesic Oak
419	Other Pines
420	Upland Hardwood Forests
421	Xeric Oak
430	Other Upland Hardwood Forests
434	Hardwood – Coniferous Mixed
436	Upland Scrub, Pine And Hardwoods
440	Tree Plantations
441	Coniferous Plant

Agriculture

Although altered by human activity, some agricultural lands (FLUCCS 200) provide suitable habitat for many protected wildlife species, but few protected plant species. In particular, pasturelands offer the most valuable habitat of all the agricultural lands. This land use/habitat type is located in Corridors A through E, especially concentrated in Alignments C1 and D1.

Rangelands

Rangelands (300) are native habitats that lack tree cover. These habitats can either support a groundcover mostly of grasses and forbs or saw palmetto (*Serenoa repens*) and shrubs may dominate. Some protected wildlife species (e.g., sandhill cranes and burrowing owls) depend on the native habitats in rangeland. Rangeland habitats are located exclusively in Alignments D1, E1, and E2.

Forested Uplands

Forested uplands (400) are represented by twelve distinct FLUCCS codes in the study area. However, the majority of upland forest types within the study area are Pine Flatwoods (411) and

Hardwood – Coniferous Mixed (434). One small, forested upland area occurs in Corridor A, where land use is mostly urbanized. In Corridors B through E, where land use is predominantly rural, forested uplands are located throughout.

3.8.2 Wetlands

In order to determine the approximate locations and boundaries of existing wetland communities within the FHSR project study area, available site-specific data was collected and reviewed. The following information was collected and analyzed:

- USDA, NRCS, Hillsborough County Soil Survey 1990
- USDA, NRCS, Polk County Soil Survey 1990
- USDA, NRCS, Osceola County Soil Survey 1990
- USDA, NRCS, Orange County Soil Survey 1990
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Maps
- USGS, Topographic Quadrangle maps, 7.5 minute series
- WMD Land Use Mapping
- USFWS Classification of Wetlands and Deepwater Habitats of the United States, 1979
- FLUCCS
- Aerial Photographs of the project area at 1"= 400' scale

A total of 1,760 surface water and wetland systems have been identified within the study area or adjacent to the existing ROW and represent 34 individual FLUCCS categories falling within ten broad community types and total approximately 2,401 ac. (Table 3-26). These systems include emergent, scrub shrub, forested, and open water habitats that have become fragmented and encroached upon by urban, agricultural, and transportation-related activities. These systems include mainly riverine, palustrine, and some lacustrine systems. The project corridor crosses the Hillsborough River in Tampa and the Green Swamp, which is located primarily in Polk County. The composition of broad community types within the FHSR corridor are described in the table.

Table 3-26
FLUCCS Categories and Corresponding USFWS Code for Wetlands Identified in the FHSR Study Area

FLUCFCS[1]	Description	USFWS Code[2]	Description
500	Water (used for stormwater ponds)	L1OW	Lacustrine, Limnetic, Open Water
510	Streams and Waterways	R2OWHx	Riverine, Lower Perennial, Open Water, Permanently Flooded
520	Lakes	L1OWH	Lacustrine, Limnetic, Open Water, Permanent

Table 3-26 (cont.)
FLUCCS Categories and Corresponding USFWS Code for Wetlands Identified in the FHSR Study Area

FLUCFCS[1]	Description	USFWS Code[2]	Description
523	Lakes larger than 10 ac.		Lacustrine, Limnetic, Open Water, Permanently Flooded
530	Reservoirs		
540	Bays and Estuaries	M2US	Marine, Intertidal, Unconsolidated Shore
600	Wetlands	PFO1C	Palustrine, Forested, Broad-Leaved Deciduous, Seasonally Flooded
610	Wetland Hardwood Forests		
611	Bay Swamps		
615	Streams and Lake Swamps		
617	Mixed Wetland Hardwoods		
618	Willow and Elderberry		
619	Exotic Wetland Hardwoods		
620	Wetland Coniferous Forests	PFOxx	Palustrine, Forested (needle-leaved, broad leaved), (seasonally, temporarily flooded)
621	Cypress		
622	Pond Pine		
627	Slash Pine Swamp Forest		
630	Wetland Forested Mixed		
631	Wetland Shrub		
640	Vegetated Non-Forested Wetlands	PEMxx	Palustrine, Emergent
641	Freshwater marsh		
643	Wet Prairie		
644	Emergent Aquatic Vegetation	L1AB	Lacustrine, Limnetic, Aquatic Bed
653	Intermittent Pond	L1OWJ	Lacustrine, Limnetic, Open Water, Intermittently Flooded
621/640	Cypress/ Vegetated Non-Forested Wetlands	PFOxx; PEMxx	Palustrine, Forested (needle-leaved, broad leaved), Palustrine, Emergent
621/641	Cypress/Freshwater Marsh	PFOxx/ PEMxx	Palustrine, Forested (needle-leaved, broad leaved), (seasonally, temporarily flooded); Palustrine, Emergent
510/630	Stream & Waterway/Wetland Forested Mixed	R2OWHx/ PFOxx	Riverine, Open Water, Permanently Flooded; Palustrine, Forested (needle-leaved, broad leaved), (seasonally, temporarily flooded)
510/631	Stream & Waterway/Wetland Shrub	R2OWHx/ PFOxx	Riverine, Open Water, Permanently Flooded; Palustrine, Forested (needle-leaved, broad leaved), (seasonally, temporarily flooded)
641/643	Freshwater Marsh/Wet Prairies	PEMxx	Palustrine, Emergent
510/641	Streams & Waterways/Freshwater Marsh	R2OWHx/ PEMxx	Riverine, Open Water, Permanently Flooded; Palustrine, Emergent

Table 3-26 (cont.)
FLUCCS Categories and Corresponding USFWS Code for Wetlands Identified in the FHSR Study Area

FLUCFCS[1]	Description	USFWS Code[2]	Description
510/621	Streams & Waterways /Cypress	R2OWHx/ PFOxx;	Riverine, Open Water, Permanently Flooded, Palustrine, Forested (needle-leaved, broad leaved)
610/510	Wetland Hardwood Forests/Streams & Waterways	PFOxx/ R2OWHx	Palustrine, Forested (needle-leaved, broad leaved), (seasonally, temporarily flooded); Riverine, Open Water, Permanently Flooded
640/510	Vegetated Non-Forested Wetlands/Streams & Waterways	PEMxx/ R2OWHx	Palustrine, Emergent; Riverine, Open Water, Permanently Flooded

Notes:
1. FLUCCS =Based on Florida Land Use Cover Forms Classification System, third ed. 1999.
2. USFWS = Based on U.S. Fish and Wildlife Service Classification of Wetlands and Deepwater Habitats of the United States, 1979.

The 500 series represents approximately 28.7 percent, or 695.59 ac., of the wetland systems within the project corridor. This category also includes stormwater management facilities (retention/detention ponds), which account for 636 ac. of the total 1,760 ac. of wetlands (36.0 percent of total).

The 610 series represents approximately 11.0 percent or 264.60 ac. within the project corridor. Of the 1,760 wetlands identified in the study area, 136 are freshwater wetland hardwood forests.

Within the 620 series, a total of 236 coniferous forested wetlands were identified totaling approximately 715.09 ac. in coverage. Coniferous forested wetland communities represent 29.7 percent of the total wetlands. Cypress (621) comprises 26.0 percent of that total.

The 630 series comprises a total of 259 separate mixed forested wetlands, totaling approximately 367.83 ac. in coverage. This category represents 15.3 percent of the total wetlands.

The 640 series has a total of 492 non-forested freshwater wetlands in the project corridor totaling approximately 339.49 ac. The area comprised by these non-forested wetland communities within the project corridor is approximately 14.7 percent.

Series 650, specifically 653, has a total acreage of 4.55. The intermittent pond is located in Alignment C1.

Table 3-27 provides the wetland acreages per FLUCCS code and corridor.

3.8.3 Wildlife and Habitat

A determination of all potential protected species occurring within the study area was accomplished by evaluating the most recent data available from the Florida Natural Areas Inventory and databases provided by the Florida Fish and Wildlife Conservation Commission (FFWCC). Those databases identify known occurrences of protected and rare species by county. These data were evaluated in conjunction with considerations for the FHSR Corridors A through E physical location and the habitat requirements of protected species within each county. Preliminary field reviews were conducted in February and March 2003 to identify those species occurring or potentially occurring within Corridors A through E.

During the field evaluations, a total of five state protected (only) and one federally protected wildlife species were observed. These include the American alligator, gopher tortoise, Florida pine snake, Southeastern American kestrel, Florida sandhill crane, and the Florida mouse. One federally protected plant species was observed, Lewton's milkwort.

In addition to those species observed during the field evaluations, there is a potential for four state protected (only) and five federally protected species to be present within the project study area (all corridors). These include the Eastern indigo snake, gopher frog, Florida panther, Sherman's fox squirrel, Florida manatee, Florida black bear, Florida burrowing owl, bald eagle, and wood stork.

Table 3-27
Wetland Acreage by FLUCCS Category and Corridor Alignments

FLUCCS Code	Acreage by Corridor Alignments							
	Corridor A		Corridor B		Corridor C	Corridor D	Corridor E	
	A1	A2	B1	B2	C1	D1	E1	E2
500			17.06	0.53	31.72	70.22	208.59	132.69
510	0.08		11.0	11.07	3.03	1.99	36.07	23.72
510-621							24.25	
510-641						2.14	0.24	
510-630							3.99	
510-631							1.03	
520	2.19		38.76		10.96			
523						17.12		
530		0.31	9.99	1.69	16.73	2.19	15.05	
540		1.19						
600							102.23	3.25
610			0.55	4.08	24.4	25.24	22.37	
611							3.59	
615			4.99	2.92	6.4	21.02		

Table 3-27 (cont.)
Wetland Acreage by FLUCCS Category and Corridor Alignments

FLUCCS Code	Acreage by Corridor Alignments							
	Corridor A		Corridor B		Corridor C	Corridor D	Corridor E	
	A1	A2	B1	B2	C1	D1	E1	E2
617					9.83	3.46	17.29	2.10
618					2.86	0.91	0.01	6.59
619				0.51				
620			4.55	0.28	3.4	62.31		
621			4.44	0.65		356.32	137.01	103.81
621/510								26.20
621/640							4.53	2.38
621-641								5.30
622							3.63	
627							0.29	
630		1.88	11.38	10.25	13.29	195.17	46.67	35.32
631				1.36		45.62	0.91	
640	2.43				1.12	0.39	8.49	0.96
640/510							0.46	
641	0.08	0.22		17.39	96.97	161.12	2.71	2.39
641(osw)			0.10			1.52		
643					1.4		1.31	
641/643						0.01		
643				1.13		16.97		
644			1.72			0.11		
653					4.55			
TOTAL ACREAGE	4.78	3.60	144.28	52.47	226.65	983.82	640.71	344.70

During other studies conducted for the FDOT, the federally protected sand skink and Florida scrub jay were found to be located within the FHSR study area. In addition, one federally protected plant species was documented, the scrub plum.

Protected Species Within Project Corridors

Corridor A -- Within Corridor A, the most urbanized of all the project's corridors, no protected species or suitable habitat occurs.

Corridor B -- This corridor transitions from the highly urban areas in the Tampa vicinity, to less urban areas of central Hillsborough County. Here, wildlife habitat is extremely limited, but some areas provide habitat for protected species. Gopher tortoise habitat occurs in one area along Alignment B2, while Florida sandhill crane habitat occurs along Alignment B1. However, no direct evidence or observations of either species were recorded. Also, a Florida panther was killed on I-4 in Alignment B1 on March 10, 2003, in a highly developed area that does not provide suitable habitat. Neither the USFWS nor FFWCC identifies Hillsborough County as providing suitable habitat for the panther.

Corridor C -- Corridor C traverses eastern Hillsborough County, where the land use is much more rural than Corridors A and B. Both suitable habitat areas and observations of occurrence were recorded for the gopher tortoise, Southeastern American kestrel, and Florida sandhill crane. In addition, suitable habitat was located for the Sherman's fox squirrel.

Corridor D -- This corridor traverses most of the alignment through Polk County and a portion of the alignment through Osceola County. Much of this corridor, with the exception of the Lakeland area, is agricultural with many undeveloped natural communities, including the southern edge of the Green Swamp and Florida's Central Ridge System.

Both suitable habitat areas and observations of occurrence were documented for the gopher tortoise, sand skink, Florida pine snake, and Florida sandhill crane within this corridor. Under a separate study, the Florida scrub jay was documented, but no other suitable habitat area was located. Also under the study, the sand skink was observed (Polk County) and a suitable habitat area was located during the FHSR evaluations in Osceola County. Suitable habitat areas were also located for the following species: the Florida burrowing owl, Southeastern American kestrel, bald eagle, Florida mouse, and Sherman's fox squirrel. A radio-collared Florida panther was tracked by the FFWCC, and in the spring of 2000, it crossed I-4 at least twice. Protected plant species observed from this corridor include the scrub plum and Lewton's milkwort.

Corridor E -- Although some natural communities still persist in this corridor, much of this corridor (both Alignments E1 and E2) has been developed, especially in the vicinity of the Orlando International Airport. Both suitable habitat areas and observations were documented for the American alligator, gopher tortoise, Florida sandhill crane, and Florida mouse (Alignment E1). Also, other suitable habitat areas were located in Alignment E2 for the Florida mouse.

All Corridors -- Some protected wildlife species are noted for their ability to utilize altered habitats and/or a great diversity of natural habitats. Those species are typically transient in nature and, therefore, may occur along any corridor of this study. For this project, such species include the state and federally protected wood stork and Eastern indigo snake, and the state protected wading birds: snowy egret, tricolored heron, little blue heron, and white ibis.

3.8.4 Farmlands

Future adopted land use plans for the study area indicate that planned uses along Corridors A through E range from mixed use, commercial, industrial, and all densities of residential uses to rural/agricultural land uses. There are scattered areas of existing farmland throughout the project. Corridor A does not have any existing farmlands. Corridors B, C, and D have the majority of existing farmlands throughout the study area. Within Corridors B and C, in the Hillsborough County area, farmlands extend from east of 50th Street to just west of County Line Road and from north of I-4 to south of the CSX corridor. They are concentrated in an area just west of Kingsway Road eastward to just west of Thonotosassa Road. These farmlands consist of mostly citrus groves with limited farmlands of small crops. Within Corridor D, farmlands are located east of the Polk County line to east of the Osceola County line and from north of I-4 to

the CSX corridor, just east of the Haines City area. They are concentrated in the area from east of Mount Olive Road to west of Greenpond Road both north and south of I-4. The farmlands in this area consist of mostly citrus groves with limited farmlands of small crops. Corridor E has very limited existing farmlands that are located north of I-4 in the vicinity of Sand Lake Road and are small crops.

Based on the 2000 edition of the Florida Statistical Abstract[16], citrus acreage by county is as follows:

- Hillsborough County – 27,328 ac.
- Polk County – 101,482 ac.
- Osceola County – 15,480 ac.
- Orange County – 9,155 ac.

3.9 TRANSPORTATION

3.9.1 Existing Railroad Conditions/Operations

Existing Passenger Train/Bus Service

The National Railroad Passenger Corporation (Amtrak) does not provide passenger rail service between Tampa and Orlando, but it does provide bus service between the two cities. Bus transportation is available via Martz Tampa Bay bus lines. This route runs twice daily from Tampa (Corridor A) with one stop in the City of Lakeland (Corridor D) before reaching Orlando (Corridor E). It takes about 2 hours and 50 minutes one-way and the round trip fare for one adult passenger is $54.00. Amtrak, by way of Martz Tampa Bay, offers bus service from Lakeland to Orlando that runs daily and the round trip cost is $36.00 for one adult passenger.

Within the Orlando area (Corridor E), there are two passenger train services available, Sunset Limited and Silver Service/Palmetto. Sunset Limited provides passenger train service to a number of destinations, including Winter Park, Sanford, DeLand, Palatka, Jacksonville, Lake City, Madison, Tallahassee, Chipley, and Pensacola. Fares vary from $9.50 to $76.00, depending on the destination. From Pensacola, the Sunset Limited provides passenger service to Alabama, Mississippi, Louisiana, Texas, New Mexico, Arizona, and California. All destinations are served three times a week. Silver Service/Palmetto provides service to Miami with possible stops along the way in Kissimmee, Winter Haven, Sebring, Okeechobee, West Palm Beach, Delray Beach, Deerfield Beach, Ft. Lauderdale, and Hollywood. At its destination in Miami, Amtrak, by way of Martz Tampa Bay, offers extended service via bus to the Miami International Airport. This trip takes approximately 5 hours and 35 minutes, runs daily, and the one-way cost for one adult passenger to the Miami station is $53.00.

There is no direct service from Tampa to Miami. The traveler must first take Martz Tampa Bay bus service to Orlando and then take the Silver Service/Palmetto train to Miami. The trip takes 9 hours and 15 minutes, and the cost is $71.00.

Existing Freight Rail Service

CSX provides freight rail services over the largest rail network in the eastern United States and provides rail transportation to over 23,000 route miles in 23 states. In Florida, CSX owns 1,619 route miles and owns 56 percent of the state's railway system. The main CSX freight line in central Florida begins in the Uceta Yard in Tampa (Corridor A), continues east through Plant City (Corridor C), Lakeland (Corridor D), Auburndale (Corridor D), and Orlando (Corridor E), and then runs north to Sanford, and finally to Jacksonville. The primary freight is food, lumber, wood, chemicals, and minerals. Nighttime operations in the Uceta Yards (Corridor A) involve trains carrying phosphates. From the Uceta Yard, trains can go east through Brandon paralleling S.R. 60. In Brandon, the line forks and the main line continues on to Plant City, while the other line travels southeast into Polk County. Another mainline, out of the Uceta Yard, travels past the Amtrak passenger station in downtown Tampa and heads in the eastern direction along S.R. 574 and S.R. 600 into Polk County. The line out of the Uceta Yard that travels through downtown Tampa in the middle of Polk Street travels through the CBD six times a day.

3.9.2 Existing Highway Conditions/Operations

The existing highway conditions evaluated include roadway characteristics and operations primarily for the interstate system. Existing conditions were obtained from the FDOT, the Tampa-Hillsborough County Expressway Authority, the Orlando-Orange County Expressway Authority, and other local agencies. The traffic count data available was for the year 2001 and was used for existing conditions. The level of service (LOS) was determined from the FDOT Generalized Tables. Table 3-28 provides a summary of existing roadway characteristics by corridor.

Overall Operations

Throughout the project area, I-4 is generally operating at a deficient LOS. The deficiency results from the increase in vehicle traffic associated with land development, population growth, tourism, and the lack of funds for corresponding roadway expansion. Generally, the local roadway system and toll roads have been expanded to meet the traffic demand. Specific conditions for each corridor are summarized in the following paragraphs.

Table 3-28
2001 Roadway Network LOS by Corridor

Corridor	Road Name	Number of Lanes	Road Type	AADT	LOS
A	I-275	6	Interstate	161,000	F
	I-4	4	Interstate	132,000	F
	Nuccio Pkwy	2	Collector	4,000	A
	Adamo Drive	4	Arterial	27,000	B
	Lee Roy Selmon	4	Expressway	51,000	C
B	I-4 (East of I-75)	6	Interstate	95,000	D
	I-4 (West of I-75)	6	Interstate	109,000	E
	I-75	6	Interstate	86,000	D
	Broadway Avenue	2	Collector	9,000	C
C	I-4 (West of Plant City)	6	Interstate	93,000	D
	I-4 (East of Plant City)	6	Interstate	87,000	D
D	I-4 (West of Lakeland)	6	Interstate	69,000	E
	I-4 (East of Lakeland)	4	Interstate	62,000	D
	I-4 (East of U.S. 27)	4	Interstate	82,000	F
	I-4 (Osceola County)	4	Interstate	63,000	E
E	I-4 (NE of U.S. 192)	6	Interstate	117,000	E
	I-4 (SW of Bee Line	6	Interstate	143,000	F
	S.R. 536	6	Arterial	26,000	B
	S.R. 417	4	Expressway	25,000	B
	Bee Line Expressway	4	Expressway	63,000	D
	Taft/Vineland Road	2	Collector	24,000	F
	Boggy Creek Road	2	Collector	9,700	D

Corridor A

Beginning east of Hillsborough River in downtown Tampa and moving eastward to U.S. 41, Corridor A has several major roadways. These include I-275, I-4, and the roadway network within the Tampa CBD. I-275 is a 6-lane urban interstate in the vicinity of the FHSR corridor. I-275 provides mobility to the various business districts in Hillsborough County and adjacent Pinellas County. It is a major east-west interstate, linking Tampa International Airport and the Tampa CBD. It also extends north from the CBD to northern Hillsborough County, a rapidly developing area. I-4 is a major east-west interstate linking the CBD with I-75 in eastern Hillsborough County. The roadway network in the CBD consists of 3-lane and 4-lane, one-way minor arterials and collectors. The AADT is low and the LOS is acceptable. Nuccio Parkway connects the CBD with Ybor City, one of Tampa's historical districts. Adamo Drive is an east-west arterial that runs from downtown Tampa through eastern Hillsborough County. The Lee Roy Selmon Expressway provides a connection between the CBD and unincorporated east Tampa. The segments of I-275 and I-4 in Tampa are deficient, as the existing traffic has exceeded the capacity of these facilities. The operation of Nuccio Parkway, Adamo Drive, and the Lee Roy Selmon Expressway is acceptable.

Corridor B

Continuing eastward from U.S. 41 to east of I-75, the existing roadway network in Corridor B includes I-4, I-75, and Broadway Avenue. The segment of I-4 within Corridor B is a 6-lane urban interstate. In Corridor B, the LOS of I-4 east of I-75 is marginally deficient.

Corridor C

Continuing eastward from east of I-75 to the western connection of the Polk Parkway, Corridor C follows the I-4 corridor. It serves eastern Hillsborough County, a rural agricultural area. I-4 is a 6-lane rural interstate, except through Plant City where it is an urban interstate. There were no existing deficiencies in Corridor C due to the recent 6-lane widening of I-4 in eastern Hillsborough County. The LOS should substantially improve subsequent to the construction.

Corridor D

Continuing from the western connection of the Polk Parkway east to Celebration, Corridor D follows the I-4 corridor. It serves Polk and Osceola counties and its various communities (i.e., Lakeland, Polk City, Auburndale, and Kissimmee). In Corridor D, I-4 is marginally deficient in the Lakeland urban area and deficient east of U.S. 27 in eastern Polk County. I-4 is programmed for 6-laning throughout Corridor D, prior to the opening year 2008 for the FHSR system.

Corridor E

Continuing eastward from Celebration to the Orlando International Airport, the existing roadway network within Corridor E includes I-4, State Road 536 (S.R. 536), Central Florida Greeneway (S.R. 417), Bee Line Expressway (S.R. 528), Taft/Vineland Road, and Boggy Creek Road. In Corridor E, I-4 is marginally deficient in Osceola County and Orange County north of U.S. 192 and deficient southwest of the Bee Line Expressway (S.R. 528). Taft/Vineland Road is also deficient. The operation of S.R. 536, the Central Florida Greeneway (S.R. 417), the Bee Line Expressway (S.R. 528), and Boggy Creek Road is acceptable.

3.9.3 Existing Modes of Public Transportation

This section provides information on other modes of public transportation that will continue to serve the community needs throughout the study corridors. The primary mode of public transportation is bus transit service. The bus routes described in this section are those near the proposed FHSR station locations in Hillsborough, Polk, Osceola, and Orange counties.

Corridor A (From East of the Hillsborough River, City of Tampa to U.S. 41, Hillsborough County)

Within Corridor A, the Hillsborough Area Regional Transit Authority (HARTline) is the primary mass transit provider of public transportation service and is available throughout Hillsborough

County. HARTline also offers two other types of public transportation, the Tampa Electric Company's (TECO) Line Streetcar and the proposed Tampa Light Rail, in which travel is centered on the main business routes within the City of Tampa. These three modes of travel are interconnected and can easily work with the schedule of FHSR and the proposed station location for downtown Tampa. These modes can provide easy and convenient extended services to downtown Tampa and other points of interest.

HARTline operates 143 peak period buses serving 37 local routes and 12 express routes. Of these 49 bus routes, 31 operate near the proposed FHSR station in downtown Tampa. The buses run seven days a week, starting as early as 4:30 AM and continuing as late as 10:30 PM, depending on the route being serviced.

Corridor A has one proposed FHSR station located south of I-275, just east of the Hillsborough River. The Marion Transit Center (MTC) is the closest bus terminal near the proposed station and is an avenue for "buses only." Soon both MTC terminals will be a stop for all buses in the HARTline system. This "buses only" avenue runs south of I-275 through downtown Tampa along Marion Street and ends at Whiting Street. MTC has two terminals: the Northern Terminal, located at 1211 North Marion Street, and the Commuter Center, with listings of bus routes, showers, lockers, customer service, and ticket sales, located further south. Because MTC is across the street from the proposed FHSR station, it would allow passengers to use HARTline's public transit service throughout the county.

The TECO Line streetcar is operated and maintained by HARTline and is currently running in its first phase of development. The 2.3-mi. section connecting downtown Tampa, Ybor City, and Channelside currently provides ten station stops with service every 15 – 20 minutes. Planned phases of construction will soon extend services north on Franklin Street to Whiting Street and the Fort Brooke garage. The streetcar, which runs seven days a week with extended hours on the weekend, is projected to connect more than 35,000 people to the downtown area. HARTline has committed to locating a northern expansion route to abut the FHSR station.

The proposed Tampa Light Rail system is scheduled to begin operation in approximately five years and will connect downtown Tampa to major parts of the city including the USF, area hospitals, South Tampa, the West Shore business district, and later to Tampa International Airport. The light rail system will have a total of 26 stations throughout the city, with three in close proximity to the MTC and the proposed FHSR station in downtown Tampa. The Tampa Light R ail route and stations along with the TECO Streetcar route are shown together in Figure 3-24 and Figure 3-25.

Corridor B (U.S. 41 in Tampa to East of I-75, Hillsborough County)

Within Corridor B, HARTline is the primary mass transit provider of public transportation service. In Corridor B, the transfer center for buses in the HARTline system is located in Netpark on the corner of Hillsborough Avenue and 56th Street. There are six bus routes: 15, 32, 34, 37, 39, and 41 that utilize this transfer center, with each serving different areas of Hillsborough County. Serviceable areas are as far north as Busch Boulevard, south to Brandon,

west to Town N' Country, and one route stopping at HCC, Tampa Campus. Local route number 32 provides limited service to the area east of Hillsborough Avenue and west of I-75.

Corridor C (East of I-75, Hillsborough County to the West Entry of Polk Parkway, Polk County)

Within Corridor C, the HARTline is the primary mass transit provider of public transportation service with one express route, 28X, the Plant City/Seffner/Dover Express, and four local routes. Going eastbound, the route starts at the MTC center in downtown Tampa and travels on I-4, exiting south at County Road 579. This route utilizes the major roads of Martin Luther King, Jr. Boulevard, Branch Forbes Road, and Highway 92 until reaching Plant City. The four local routes, 70, 71, 72, and 73 known collectively as the Strawberry Connection, provide bus services to areas of downtown Plant City.

Corridor D (West Entry of Polk Parkway, Polk County to Celebration Area, Osceola County)

In Corridor D, in Polk County, transit services include the Lakeland Area Mass Transit District (LAMTD), which operates the Citrus Connection, Handy Bus, Van Pool, and the Citrus Trolley to serve the business district. LAMTD provides service to 15 routes and operates 31 buses, 13 mini-buses, and seven vans. Also, in Polk County there is the Winter Haven Area Transit (WHAT) and the Intercity Bus Service. The WHAT serves residents of Winter Haven and operates three buses on four routes. The Intercity Bus Service provides connections to LAMTD and WHAT for residents of small urban areas. LAMTD and WHAT center their services in the areas of Lakeland and Winter Haven, with extended service to Bartow and Auburndale.

Polk County has two proposed FHSR station locations, one at Kathleen Road and the other at Polk Parkway, both north of I-4. Although there is no bus service to the Polk Parkway site, there is one bus terminal, through the LAMTD with the Citrus Connection that is near the proposed FHSR Kathleen Road station site. This bus terminal is at Kathleen Road and 10th Street, just south of I-4. It is also an Amtrak Train Terminal and a Greyhound bus terminal. Amtrak, by way of Martz Tampa Bay, continues its bus service onward to Orlando and to Tampa. LAMTD route number 50 makes a stop at the terminal and also serves the Coleman Busch Building, Lakeland Square Mall, and Market Square Shopping Center.

Corridor E (Celebration Area, Osceola County to Orlando International Airport, Orange County)

Within Osceola County, the proposed FHSR station location, known as the Walt Disney World site, would either be located in the median or the north side of I-4, between Osceola Parkway and U.S. 192. The Lynx bus system provides public transportation to this area of Osceola County. Lynx is the bus system serving the tri-county area of Orange, Seminole, and Osceola counties. The Central Florida Regional Transportation Authority runs Lynx, and they operate 231 buses around 61 routes. Currently, there are seven Lynx bus routes that serve Osceola County. These routes: 50, 56, 300, 301, 302, 303, and 304 travel on I-4 to the westside transfer center in

downtown Disney. The bus routes make stops to a number of Walt Disney theme parks and also provide service to areas in other parts of Orange and Osceola counties including Celebration, downtown Orlando, International Drive, and Sea World.

Along with the 61 routes that the Lynx bus system services in Orange County, there is a circulator specifically for the downtown area, Lymmo, which is free of charge and runs approximately every five minutes during office hours. There is a van pool service for commuters; A+ Link, which offers door-to-door service for people who are medically or physically qualified; and community shuttles.

Orange County has two proposed FHSR station locations: OCCC and the Orlando International Airport. Since Lynx has many transit services in place serving different parts of the more than 2,100 sq. mi. in the tri-county area of Osceola, Orange, and Seminole counties, a FHSR station at any of the proposed locations would allow easy transfer between the high speed rail and the local transit service.

For the proposed station location at the OCCC, Lynx Routes 8, 38, and 42 are in the vicinity of this high speed rail station. Route 8 starts its service at the downtown bus station near Church Street. It continues southwest and makes various stops along the way at Orange Blossom Trail, Beltz Factory Outlet Mall, Wet N' Wild, OCCC, and ultimately, International Drive. Route 38 starts its bus schedule at the downtown bus station, and runs south on I-4 with stops also at the OCCC and Wet N' Wild. Route 42 begins its service at the Orlando Premium Outlets and continues north to the Osceola Parkway bus stop. It has nine stops along the way, some of which are the OCCC, Wet N' Wild, Beltz Factory Outlet Mall, and the last stop at the Orlando International Airport.

Along with Route 42, Routes 11, 41, and 51 also serve the Orlando International Airport. Route 11 begins in downtown Orlando at the bus station and runs south on Orange Avenue with a total of five stops, including Orlando Regional Lucerne and two hospitals. Route 41 runs along S.R. 436 with 11 stops serving Apopka, West Town Center, Altamonte Mall, Florida Hospital, Casselberry, and Florida Southern College. Route 51 consists of six stops along Conway Road. It begins in downtown Orlando and serves Reeves Terrace, Lake Como, Dover Shores, Lee Vista Center, and the Orlando International Airport.

Modes of Private Travel

In addition to the public transportation listed above, there are other modes of private travel such as cruise lines, private bus service, and shuttle services that operate in Hillsborough, Polk, Osceola, and Orange counties.

The Port of Tampa, which serves Corridor A within the Channelside District in downtown Tampa, is home to a number of cruise lines. These include Carnival, Celebrity, Holland America, and Royal Caribbean cruise lines, which offer cruises to the Caribbean and Latin America. There is also the Yucatan Express, which is a cruise ferry to Mexico where one can board a car on the trip. Channelside offers a parking garage for those who drive to the port and

for those who fly into Tampa International Airport. There are numerous shuttles and taxis that can transport travelers to their destination.

Greyhound bus line, which serves Corridors A through E, offers service between Tampa and Orlando and visits numerous cities within Hillsborough, Polk, Osceola, and Orange counties. They have a variety of schedules throughout the day, and trips occur on a daily basis. Bus stops include the cities of Plant City, Lakeland, Winter Haven, Lake Alfred, Haines City, Davenport, Kissimmee, and finally Orlando. The cost of a one-way ticket is $17.25, and a round trip fare is $32.25 for one adult passenger on all schedules.

Air travel serves the areas within Corridors A through E (Tampa to Orlando) and currently provides one round trip per day between Tampa and Orlando, departing Tampa in mid-morning and returning in the early evening. Scheduled flight time between the two cities is about 45 minutes with additional time necessary for check-in and travel to and from the airport and the ultimate destination, making entire trip approximately 2 hours and 45 minutes. Round trip fares range from $145 to $270.

Walt Disney World provides shuttle service in Corridors D and E (Osceola and Orange counties) for customers who fly into the Orlando International Airport.

3.10 REFERENCES

1. 2025 Long Range Transportation Plan; Hillsborough County Metropolitan Planning Organization; Tampa, Florida; November 13, 2001.

2. 2025 Long Range Transportation Plan; Polk County Transportation Planning Organization; Adopted December 7, 2000, Amended December 2002.

3. 2020 Long Range Transportation Plan; METROPLAN Orlando; Orlando, Florida; Adopted December 1995, Refined December 2002.

4. National Register of Historic Places; National Park Service; Washington, D.C.; 2001.

5. Cultural Resource Assessment Corridor Level Analysis Report; PBS&J; Tampa, Florida; February 2003, Revised March 2003.

6. Florida Master Site File; http://dhr.dos.state.fl.us/msf/; Department of state, Division of Historic Resources; Tallahassee, Florida.

7. Cultural Resources Technical Study, Florida High Speed Rail, Internal Working Draft;

8.

Air Quality Maintenance Plan (2005-2015) Hillsborough and Pinellas Counties; Florida Department of Environmental Protection; 2002.

9. High-Speed Ground Transportation Noise and Vibration Impact Assessment, Final Draft; Federal Railroad Administration; December 1998.

10. Noise and Vibration Impact Assessment for the Florida High Speed Rail Project; Harris, Miller, Miller and Hansen; Boston, Massachusetts; May 2003.

11. Contamination Screening Evaluation Report, Florida High Speed Rail (U.S. 98) to Orlando International Airport; Geotechnical and Environmental Consultants, Inc.; December 2002.

12. Florida High Speed Rail Draft Contamination Screening & Evaluation Report, Downtown Tampa to Lakeland (U.S. Highway 98); Florida High Speed Rail Authority; January 2003.

13. Report of Geotechnical Data Collection; Geotechnical and Environmental Counsultants, Inc./Professional Service Industries, Inc.; Orlando/Tampa.

14. Preliminary Geotechnical Report; Geotechnical and Environmental Counsultants, Inc./Professional Service Industries, Inc.; Orlando/Tampa.

15. Florida Land Use, Cover and Forms Classification System; Florida Department of Transportation; Tallahassee, Florida; 1999.

16. Florida Statistical Abstract; University of Florida: Bureau of Economic and Business Research, Warrington College of Business Administration; Gainesville, Florida; 2001.

SECTION 4
ENVIRONMENTAL CONSEQUENCES

4.1 COMMUNITY IMPACTS

4.1.1 Community Cohesion

In February 1994, the President of the United States issued *Executive Order 12898* (Environmental Justice) requiring federal agencies to analyze and address, as appropriate, disproportionately high adverse human health and environmental effects of federal actions on ethnic and cultural minority populations and low-income populations. All proposed projects should include measures to avoid, minimize, and/or mitigate disproportionately high and adverse impacts and provide offsetting benefits and opportunities to enhance communities, neighborhoods, and individuals affected by these activities.

Avoidance of impacts to low-income and minority populations was one of the initial study goals as the Florida High Speed Rail Authority (FHSRA) identified alternate alignments. The primary focus was to locate alignments near or within previously disturbed areas, such as the right-of-way (ROW) of limited access roadways and within existing railroad corridors, in order to minimize impacts to all neighborhoods. In most areas, the land uses abutting the roadways are commercial or rural non-residential uses. As detailed in Section 6, community outreach included two series of workshops and a series of public hearings to provide information and opportunity for input from the communities.

The following section addresses land use and population impacts for the No-Build Alternative and the Design/Build Alternatives 1 through 8. Figure 2-7 displays retained corridors and alignments. The various combinations of alignments (routes) within the corridors results in the eight alternatives displayed in Figure 2-8.

Alternatives 1, 2, 5, and 6 contain Alignment A1. Alignment A1 abuts Interstate 275 (I-275) from its western terminus until it turns east at the I-275/Interstate 4 (I-4) interchange. It then runs just south of I-4 until it enters the I-4 median near 18th Street. Alignment A1 is located within the proposed and existing ROW of the "Ultimate" Tampa Interstate (I-4). By locating Alignment A1 within the Tampa Interstate Study Record of Decision[1] ROW, it runs along I-4 and avoids impacts to historic Tampa Heights' residences, the Central Park Village public housing, and the Ybor City Historic Landmark District. The Florida Department of Transportation (FDOT) and the FHSRA have developed a Memorandum of Agreement (MOA) (Appendix B) allowing the Florida High Speed Rail (FHSR) to be in this location until the I-4/I-275 interchange is reconstructed. Alignment A1 would require the relocation of three residences located in two structures that directly abut I-4 in a low-income, minority neighborhood. Three businesses near I-275 would also require relocation. These three residences, as well as others nearby, were previously identified under the Tampa Interstate Study Environmental Impact Statement[2] as needing relocation for the Tampa Interstate Study (TIS) "Ultimate Design." The

FHSR project travels through Census tracts 51.01 and 38 (year 2000 census), which have a median income as $12,772, and $11,217, respectively, and predominantly minority residents.

Alternatives 3, 4, 7, and 8 contain Alignment A2. Alignment A2 heads south and east from the terminus to the former CSX railroad line. The alignment bisects an area of vacant land, parking lots, and small businesses. It requires the relocation of 15 businesses prior to reaching the former CSX tracks. These businesses are west and south of the Central Park Village public housing. The alignment was developed to avoid relocation of residences within the public housing complex or direct impacts to Union Station. These impacts occur in a low-income, minority area. Year 2000 census tract data indicates the median income ranging from $12,772 to $23,889, respectively.

Alternatives 1, 2, 5, and 6 contain Alignment B1. Alignment B1 is located within the median of I-4. Land uses along I-4 are a mixture of commercial, industrial, and minimal residential. There are no relocations in Alignment B1.

Alternatives 3, 4, 7, and 8 contain Alignment B2. Alignment B2 travels along the former CSX Line until it reaches the active CSX tracks and the Uceta Yards. It follows the active CSX Line until near Interstate 75 (I-75), where it is located in the median of I-75. South of the I-75/I-4 interchanges, it turns east and merges into the I-4 median. Land uses along the former and existing CSX tracks are primarily industrial with a scattering of residential uses. Land uses along I-75 are a mixture of vacant, commercial, and residential uses. There are no concentrations of low-income or minority residents. No relocations are required within Alignment B2.

All alternatives contain Alignment C1. Alignment C1 is located in the median of I-4 as it travels through Plant City and eastern Hillsborough County. The land uses are agriculture and commercial. There are no concentrations of low-income or minority residents. There are no relocations in Alignment C1.

All alternatives contain Alignment D1. Alignment D1 is located in the median of I-4 as it travels through Lakeland and Polk County. The land uses are agriculture and commercial. There are no concentrations of low-income or minority residents. There are no relocations in Alignment D1.

Alternatives 1, 3, 5, and 7 contain Alignment E1. Alignment E1 is located in the median of I-4 as it travels north. Land uses adjacent to the roadway are primarily commercial tourist services and developments of middle- and high-income residential uses. As Alignment E1 turns east, it is within the ROW of the Florida Turnpike's Bee Line Expressway (S.R. 528). Land uses are primarily tourist commercial and retail. As Alignment E1 leaves the Bee Line Expressway (S.R. 528) and joins the Taft/Vineland Road ROW, it is located south of the Taft neighborhood. The Design/Build Alternatives 1, 3, 5, and 7 separate the neighborhood from existing and future industrial uses located within the Tradeport Industrial Park. Alignment E1 is located approximately 60 feet (ft.) from the southern edge of the neighborhood. The Taft neighborhood is located in census tracts 168.03 and 168.04. Both tracts are primarily non-minority with median incomes of $57,460 and $33,922, respectively. No relocations or other impacts result from Alignment E1.

Alternatives 2, 4, 6, and 8 contain Alignment E2. Alignment E2 turns west from I-4 and connects to the Central Florida Greeneway (S.R. 417). Design/Build Alternatives 2 and 4 are located within the median of the Central Florida Greeneway (S.R. 417). Design/Build Alternatives 6 and 8 are located on the north side of the existing road within the ROW. There are eight business relocations, all located in a strip commercial center. There are nine neighborhoods that are a part of the Hunter's Creek Community Association, which includes new, middle, and high-income residential subdivisions both north and south of the Central Florida Greeneway (S.R. 417). There are no residential relocations that result from Alignment E2.

The FHSRA has developed this project in accordance with the *Civil Rights Act of 1964*, as amended by the *Civil Rights Act of 1968*, and in accordance with *Executive Order 12898*. The proposed project would not result in any disproportionate adverse impacts to any distinct minority, ethnic, elderly, or handicapped groups and/or low-income households. Alignment A1 is the only alignment that would result in the relocation of any (3) minority/low-income households; however, these were previously scheduled for relocation under the TIS Environmental Impact Statement Record of Decision (FHWA-FL-EIS-95-03-F; January 31, 1997). If a decision is made to proceed with the construction of FHSR, the construction would likely occur prior to the acquisition of these units for the I-4 improvements. Based upon the fact that these relocations have been previously identified and coordinated and that there is suitable housing available for relocation within the neighborhood, the impacts resulting from the relocations to minority and low-income households are considered minimal. Both non-drivers and transit-dependent individuals would benefit from the project and its increase of accessibility to current and future public transportation.

No-Build Alternative

The No-Build Alternative would not bisect an area of the Tampa Central Business District (CBD), nor require 15 business relocations, as would Design/Build Alternatives 3, 4, 7, and 8.

Preferred Alternative

The Preferred Alternative (Design/Build Alternative 1) will result in the relocation of the three minority households; however, these were previously scheduled for relocation under the TIS Environmental Impact Statement Record of Decision (FHWA-FL-EIS-95-03-F; January 31, 1997). If a decision is made to proceed with the construction of FHSR, the construction would likely occur prior to the acquisition of these units for the I-4 improvements. Based upon the fact that these relocations have been previously identified and coordinated and that there is suitable housing available for relocation within the neighborhood, the impacts resulting from the relocations to minority and low-income households are considered minimal. Both non-drivers and transit-dependent individuals would benefit from the project and its increase of accessibility to current and future public transportation.

4.1.2 Community and Land Use Impacts

Land Use

Existing and future land uses, along with adopted land use plans are presented in detail in Sections 3.2 and 3.3 of this report. Section 3.4 indicates where updates are under way and where they are needed for the transportation elements of the adopted comprehensive plans. Most of the proposed station locations are in areas already identified for special developments; therefore, changes to future land uses would be minor and would be accomplished for all stations through minor zoning amendments or site plan approvals. Impacts to existing land uses for all the sites would range from none to minimal. Listed below are current zoning categories:

- The Tampa CBD station site is zoned CBD-1. It likely allows all of the required station uses and contains design standards to create a visual appeal for new structures. No zoning changes are anticipated. The land in the Tampa CBD, where the proposed FHSR station would be located, contains paved parking lots, the former Hillsborough County Jail, and vacant land at this time; therefore, minimal land use impacts are anticipated. Hillsborough County Jail has no equipment in the building and is looking for redevelopment opportunities. There is an abundance of paved parking lots within the area and the CBD. Commercial redevelopment would likely occur as a result of the new station in order to be consistent with local redevelopment goals.
- The Polk Parkway station site is zoned Business Park Center-2. This zoning is for Light Manufacturing and Distribution, which limits commercial use and has suburban intensities; therefore, a change in zoning may be required for this site. The site would be located on and surrounded by vacant land. However, the site is located at the interchange of two major roadways and commercial development is expected to occur. The station may accelerate growth in the area.
- The proposed Kathleen Road station site is zoned as Planned Unit Development (PUD). The PUD is a multi-use approval for multi-family, commercial, light industrial, and office park uses. The site is vacant land and a station at the location would further development and redevelopment goals for the area.
- The proposed station site for the Disney station would fall within the Reedy Creek Improvement District. The site is designated as Mixed Use. This designation likely allows all the uses necessary for the station site. No zoning changes are anticipated. The proposed FHSR Disney station site is vacant at this time and meet the Improvement District's goals for future growth in the area.
- The Orange County Convention Center (OCCC) station site is zoned as Planned Development. It has a Mixed Use designation, as it contains design criteria. No zoning changes are anticipated. The site contains a paved parking lot and a building, both owned by Orange County. The site is identified by Orange County as the preferred inter-modal station site. Current county uses would be moved to other facilities.
- The Orlando International Airport station site is identified within the Airport Master Plan. No zoning changes are anticipated. This proposed station site and maintenance facilities sites would be located on vacant land. The Airport has identified the site as compatible with existing plans and desirable in conjunction with a new terminal.

No-Build Alternative

There would be no transportation-related redevelopment within the Tampa CBD or land development of the identified station sites under the No-Build Alternative.

Preferred Alternative

The preferred station locations throughout the project corridor will not require zoning changes. Minimal land use impacts are anticipated as a result of the Tampa CBD site and commercial redevelopment would likely occur as a result of the new station in order to be consistent with local redevelopment goals.

Community Services

Several community service facilities are located within approximately a ¼ mile (mi.) of either side of the FHSR Design/Build Alternatives 1 through 8. However, with the exception of Perry Harvey Sr. Park (Design/Build Alternatives 1, 2, 5, and 6), none of these facilities are directly impacted by ROW acquisition or access relocation. Of the retained alignments, Alignment A1 (Design/Build Alternatives 1, 2, 5, and 6) with 14 facilities and Alignment C1 (all design/build alternatives) with 15 facilities have the greatest number of community service facilities within a ¼ of a mi. of the proposed ROW. The following text provides a discussion of the community service facilities within a ¼ mi. of the retained alignments for the design/build alternatives.

Design/Build Alternatives 1, 2, 5, and 6

Along Alignment A1, the following 14 community services facilities lie adjacent to I-4: three schools, including Hillsborough Community College in historic Ybor City and Stetson Law School complex; two community facilities, including a post office and the former Hillsborough County Jail; three park and recreation areas, including Perry Harvey Sr. Park; one cemetery; and five churches.

Near Alignment B1, there are four community service facilities: the Florida State Fairgrounds; the Seminole Indian Reservation; and two churches, New Mt. Silla Missionary Baptist Church and Living Water Church.

There are 15 community service facilities near Alignment C1: two schools, Armwood High School and Gordon Burnett Middle School; three community facilities, including the Hillsborough County Landfill, a wastewater treatment plant, and a Hillsborough County Fire Station; two parks and recreation facilities, Evan Neighborhood Park and Sansone Community Park; three cemeteries; and five churches.

Adjacent to Alignment D1, there are nine community service facilities: two schools, Winston Elementary and Watson Elementary Schools; one community facility, Lakeland Municipal Water Plant; one park and recreation area, the proposed Van Fleet Trail Extension; two cemeteries, the New Home Cemetery and Oak Hill Cemetery; and three churches, Victory Assembly of God, Oak Hill Baptist Church, and Lake Gibson Church of God.

There are three community service facilities near Alignment E1: OCCC; a water treatment plant; and one park and recreation area, the Shingle Creek Greenway.

There are eight community service facilities adjacent to Alignment E2; four schools, Hunters Creek Middle School, Meadow Woods Elementary School, Meadow Woods Middle School, and New Vistas Elementary School; one community facility, a water treatment plant; two park and recreation areas, the Shingle Creek Greenway and Bear Creek Recreation Complex; and one church, Peace United Methodist Church.

Design/Build Alternatives 3, 4, 7, and 8

The following five community service facilities are located adjacent to Alignment A2: one school, Shore Elementary; two cemeteries, Fortune Street Cemetery and Oaklawn Cemetery; and two churches, Greater Bethel Baptist Church and St. Paul African Methodist Episcopal (AME) Church.

There are three community service facilities adjacent to Alignment B2: one park and recreation area, Williams Road Park; and two churches, Christian Fellowship Church and First Apostolic Church.

Alignments C1, D1, E1, and E2 are discussed in the previous text.

A summary of the alignments' proximity to community services are aggregated into each of the Design/Build Alternatives 1 through 8 and summarized in Table 4-1.

Table 4-1
Community Service
Evaluation Matrix

	Alternative							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Community Services								
Schools	8	12	5	9	8	12	5	9
Community Facilities	10	9	6	5	10	9	6	5
Parks & Recreation	5	7	5	6	5	7	5	6
Cemeteries	4	6	6	6	4	6	6	6
Churches	15	16	12	13	15	16	12	13

In conclusion, Design/Build Alternatives 1, 2, 5, and 6 require acquisition of ROW from one community facility, Perry Harvey Sr. Park. Design/Build Alternatives 3, 4, 7, and 8 would require acquisition of ROW from the St. Paul AME Church. The acquisition and impacts to Perry Harvey Sr. Park are discussed in detail in Section 5 of this report.

No-Build Alternative

All the community facilities identified in Table 4-1 would remain their current distance from transportation facilities under the No-Build Alternative.

Preferred Alternative

The Preferred Alternative will require acquisition of ROW from Perry Harvey Sr. Park. The acquisition, impacts, and mitigation are discussed in detail in Section 5 of this report.

4.1.3 Economic Impacts

Both direct and indirect beneficial impacts to economic resources would result from the construction of the FHSR system. Direct impacts would include the addition of actual jobs associated with the construction, operation, and maintenance of the FHSR infrastructure. Indirect impacts would include the additional jobs that result from the production of the materials used during construction of the FHSR system. Indirect impacts also include the additional wages earned and recycled into the economy by the suppliers of materials during construction and when FHSR is in operation.

In addition to construction, permanent economic benefits would accrue from the materials needed for the high speed rail trains' operation and maintenance, and, as a result, permanent jobs would be created for individuals to perform those operations.

Many high speed rail studies have been completed in Florida over the last 30 years. In general, these studies have concluded that high speed rail systems would, over time, have benefits that are greater than the costs of these systems. The Florida High Speed Rail Economic Impact Analysis[3] was presented to the FHSRA on August 15, 2002. This study analyzed and compared the anticipated costs and benefits of two previous high speed rail studies and the FHSRA report to the Florida State Legislature. The FHSRA report is entitled Florida High Speed Rail Authority, 2002 Report to the Legislature[4]. The two previous high speed rail studies are: Cross-State Feasibility Final Report[5] and Travel Time, Safety, Energy and Air Quality Impacts of High Speed Rail[6]. The studies concluded:

> That over the past five years, three comprehensive Florida studies of high speed rail have been completed and each study documented the findings that the amount of benefits flowing from the development of a high speed rail project in the evaluated corridor areas generates considerable amounts of benefits well in excess of project costs.

The comparison of high speed transportation systems cost impacts and economic benefits also stated: "In each case, operational revenues exceeded operational costs and deferred a varying percentage of capital costs." Figures 4-1, 4-2, and 4-3 display the benefits each study has predicted resulting from a high speed rail system.

Table 4-2 illustrates the economic benefits and costs from the Florida High Speed Rail Economic Impact Analysis that was presented to the Florida State Legislature.

Table 4-2
Summary of Present Value (PV) of Economic Benefits and Costs
Tampa to Orlando in 2002 $

Total PV of Benefits	$2,401
Total PV of Costs	$2,085
Ratio of Benefits to Costs	1.15
Mid Point Jobs Created-Tampa to Orlando	6,500
PV of FHSR Benefits Created per Corridor Mile (Millions 2002 $)	$28,243,272
Number of Jobs Created per Corridor Mile (Millions 2002 $)	76.5

Source: 2002 Report to the Legislature, Florida High Speed Rail Authority. HNTB Corporation, with Transportation Economics and Management Systems. Public Financial Management, and Booz-Allen and Hamilton, January 2002.

4.1.4 Safety and Public Health

Safety

The FHSR would require a System Safety Program Plan that would also incorporate a system security plan. A system safety program would ensure the security and safety of the passengers, staff, and public for the duration of the development, construction, and operation of the FHSR project. This program would be prepared in conjunction with the selected technology; would be based on Federal Railroad Administration (FRA) and FDOT design, construction, and safety requirements; and would be submitted to FRA for comment and concurrence. At a minimum, the System Safety Program Plan would:

- Establish the safety program and management system for the whole system and would cover all the phases of the development, construction, commissioning, and operation of the FHSR project.
- Provide the framework and system architecture for the implementation of safety policy and the achievement of FHSR safety-related goals and objectives.
- Ensure that FHSR commitment to safety is documented, communicated, and made visible to all.
- Standardize and synchronize all the various elements of the system safety regime throughout the organization.
- Serve as the foundation by which FHSR would plan, manage, and control system safety activities and provide the framework for FHSR to monitor its effectiveness, exercise leadership, and establish control over these activities.
- Provide the methodology and planning process to ensure that all applicable federal and state requirements and best industry standards would be met and establish a system safety organization that:
  - Provides clear lines of communication.
  - Identifies and controls interface between system safety and other functional disciplines.

- Allocates clearly the safety responsibilities and accountabilities within FHSR and to all subcontractors.
- Provides and establishes the structure and framework of authority for safety decision-making and for the resolution of identified hazards.
- Identifies and records the system safety milestones and their relationship to the major program milestones and project phases.
- Establishes an incident and accident investigation and reporting process.
- Provides the process for the identification of safety hazards and the assessment of safety risks, including a risk matrix containing probability and severity thresholds.
- Contains the process for recording all identified safety hazards and their associate risk so that they can be communicated and allocated to the hazard owner(s).

The FHSR project would be subject to the FRA comprehensive railroad safety regulations, 49 Code of Federal Regulations (CFR) Parts 207-244 and any waivers or modifications for this project.

Vehicle

The gas turbine train power car design and coaches have been used for high speed service in the northeast corridor of the United States. The technology is compliant with FRA's Tier II Passenger Equipment Safety Standards for speeds up to 150 miles per hour (mph) and has undergone testing at the United States Department of Transportation's (USDOT) Technology Center in Pueblo, Colorado. The power and passenger car bodies meet the structural requirements of the FRA and Association of American Railroads Standards S-034 and S-580. The passenger coach also meets *Americans with Disabilities Act of 1990* (ADA) requirements.

The electric train technology is the French TGV system that has over twenty years of successful operation. This system is not currently approved for operation in the United States. As part of the request for proposals (RFP) process, the electric train proposer requested clarification on the operational status of the technology. The following text is an excerpt from the FHSRA response:

> The TGV technology does not comply with all FRA safety standards as defined in the USC Title 49. Under the Florida Overland eXpress (FOX) high speed rail program in Florida, the FOX team petitioned FRA to establish safety rules governing the design and operation of a TGV system between Miami and Tampa via Orlando. On December 12, 1997, the FRA issued a proposed Rule of Particular Applicability, 49 CFR Part 243, applying specifically to the FOX program. This rule was never formally approved, as the FOX program was cancelled.
>
> With the establishment of the new FHSR program, under the auspices of the FHSRA, a series of meetings was held with the FRA to discuss design criteria, safety, and regulatory issues. The FRA indicated that they would be able to expedite the approval of the electric train proposal based on the work performed on the previous proposed rule making.

Pedestrian Access

Rail operations of the FHSR would be separated from any vehicle or pedestrian access throughout the corridor. In the 2002 Florida High Speed Rail Authority Report to the Florida State Legislature, the FHSRA found that if high speed rail crosses motor vehicle traffic, crossings should be vertically separated (grade-separated). FHSRA issued the following policy that must be met by the project:

> The Authority reviewed the issue of grade separated from automobile and pedestrian traffic in order to provide reliable and efficient service. However, there may be instances where at-grade crossing may be considered due to factors such as physical constraints, cost, and community impacts. In exceptional cases, the Authority agreed that at-grade crossings could be considered on a case-by-case basis.

The proposed FHSR between Tampa and Orlando includes no at-grade crossings. The pedestrian access at stations would be separated from any track crossings by either elevated tracks with pedestrian access underneath or by pedestrian bridges crossing over the tracks.

System Safety and Security

The criteria to ensure safety and security for the passengers, employees, and the general public, as well as measures for the protection of the FHSR system, would be in accordance with Title 49 Chapter II - FRA, USDOT, Part 200 to 268.

Chapter 7 of National Fire Protection Association's 130 Standard for Fixed Guideway Transit and Passenger Rail Systems (NFPA 130) would apply to emergency procedures for passenger rail systems and would serve as guidance for the development of fire/life safety procedures for the FHSR.

The FHSR system design would ensure a high level of security for patrons and operating personnel. Facility design and operating procedures would promote a sense of well being for patrons and personnel, by discouraging acts of crime, violence, and abuse. Security provisions would also discourage acts of vandalism, theft, and fraud.

Project facilities would include features that enhance patron and personnel security. These would include maximum visibility from surrounding areas, with no hidden corners or alcoves; locks on the doors to any rooms; and landscaping and lighting levels that support the intended means of surveillance. In addition, any surfaces or equipment accessible to the public, such as fare vending machines, station floors, and walls, would be of rugged, vandal-resistant design.

As a minimum, the following security criteria would apply:

- Prevention: Project features to deter breaches of security
  - Barriers to unauthorized intrusions to non-public areas of the project
  - Protective covers to prevent damage or loss

  - Vandal-resistant materials
  - Hazardous materials handling and storage
  - Coordinated lock access and system
- Detection: Project features to permit timely detection of criminal acts
  - Intrusion Detection
  - Fire Alarm
  - Closed Circuit Television
- Restoration: Project features to enable rapid responses to security problems and restoration of normal service
  - Ease of access for non-project emergency personnel and vehicles
  - Emergency procedures training programs
  - Maintenance procedures which minimize repair-in-place time
  - Security training programs

The gas turbine train technology addresses the requirements identified in the FHSR proposal documents, except in the following issues. An intrusion detection system would not be provided, since FRA safety requirements do not identify the need for such a system when the maximum operating speed is 125 mph or less. Access detection would be provided only at access/egress gates in the fencing. The FHSRA identified installation of Test Level (TL)-5 intrusion barriers between the rail system and the parallel highway in tangent sections, and TL-6 intrusion barriers on highway curves and overhead highway structures. The gas turbine train proposal utilizes FDOT Index 410 barriers at retained earth fill sections and TL-5 barriers at other sections on tangent. No overhead highway structure barriers would be replaced except where overpasses are reconstructed. Under 49 CFR 213.361, FRA requires preparation of a barrier plan for systems operating at speeds over 125 mph. The gas turbine train is proposed to operate at 125 mph or less.

The electric train meets the design criteria established by the FHSRA.

Public Health

The health and safety of exposures to extremely low frequency (ELF) electric and magnetic fields (EMF) commonly associated with all electric power transmission and distribution lines, with existing electric transportation systems and facilities, as well as with homes, industrial and office buildings, schools, and urbanized outdoors is an issue subject to research and continued debate. The construction and operation of the FHSR systems may affect the environment along the proposed design/build alternatives by incrementally raising current levels of EMF from existing electric power transmission and distribution along the ROW, or from operating transit, airport, port, etc., facilities.

The proposed gas turbine train technology (Design/Build Alternatives 1 through 4) is non-electrified, and therefore is unlikely to generate EMFs of concern. The stations and maintenance facilities would be provided power through standard electrical systems.

The electric train technology (Design/Build Alternatives 5 through 8) would generate some EMFs. The low frequency EMF associated with the electric train technology, proposed for operation in the FHSR corridors, is documented in the Safety of High Speed Guided Ground Transportation Systems Final Report (USDOT/FRA/ORD-93/03.1) Executive Summary.

The EMF measurements were made using the *MultiWave*™ System instrumentation package originally developed under sponsorship of the Electric Power Research Institute (EPRI). This system quantified both the spatial and temporal characteristics of the magnetic field. By recording the actual waveform of the magnetic field with sensors having frequency responses from 0 to 3 kilohertz (kHz), the *MultiWave*™ system (waveform capture system) makes it possible to examine the temporal characteristic throughout the ELF band. The waveform capture system recorded the electric field at head height and was complemented by recording data on a TEAC Model RD 130 T digital audio tape to capture transient events and with two personal dosimeters to record the root mean square (rms) of the magnetic field. These personal exposure recorders were EMDEX-II's.

The magnetic field and electric field measurements associated with the electric train technology were grouped into four areas: onboard the trains; in the passenger stations; along the track ROW; and near the substations, which supply power to rail system.

Onboard, the train measurements were taken in the passenger coaches and in the engineer's cab. At the stations, EMF measurements were taken at both ends of the platforms at points nearest the track where a person could reasonably stand. Wayside measurements were taken to quantify the field environment in areas open to the general public. Wayside refers to the public accesses along the system of the track ROW. Field measurements were taken with no trains on the track and during times of passing trains. Power substation measurements were taken near the substation fences and under the connected transmission lines.

The EMF effects on the physical environment are predominately from electric current in the catenary, feeder circuit, and track. EMF field levels for the electric train technology are within the ranges of other common environmental EMF sources, but have specific frequency signatures. Findings from the Safety of High Speed Guided Ground Transportation Systems Final Report suggest that EMF effects were found to be comparable to those produced by common home, work, and power lines. Thus, the EMF field levels associated with Design/Build Alternatives 5 through 8 are not expected to have a significant impact on human health.

No-Build Alternative

The No-Build Alternative would result in increased roadway use and congestion, thereby reducing the safety of existing roadways.

Preferred Alternative

The Preferred Alternative (Alternative 1) will have a System Safety Program Plan developed based upon FRA and FDOT design, construction, and safety requirements and will be submitted to FRA for comment and concurrence.

The gas turbine train power car body design and the same coaches have been used for high speed service in the northeast corridor of the United States. The technology is compliant with FRA's Tier II Passenger Equipment Safety Standards for speeds up to 150 mph and has undergone testing at the USDOT Technology Center in Pueblo, Colorado. The power and passenger car bodies meet the structural requirements of the FRA and Association of American Railroads Standards S-034 and S-580. The passenger coach also meets *Americans with Disabilities Act of 1990* (ADA) requirements.

The Preferred Alternative does not include at-grade crossings. The pedestrian access at stations would be separated from any track crossings by either elevated tracks with pedestrian access underneath or by pedestrian bridges crossing over the tracks.

The gas turbine train technology proposed by the Fluor Bombardier Team addresses the design criteria requirements with the exception of the following: no provision of intrusion detection system, only provision for access detection at access/egress gates, and utilization of FDOT Index 410 barriers at retained earth fill sections and TL-5 barriers at other sections on tangent.

The FHSRA will require the Fluor Bombardier Team to meet the design criteria requirements as identified in the RFP process, specifically the intrusion detection system and the barrier system. Any changes and/or revisions to these design criteria requirements will be coordinated and approved through the appropriate agencies including, but not limited to, the FRA, FHWA, FDOT and FHSRA. The barrier requirements for the FHSR, as identified in the RFP, are as follows:

- Meeting requirements of the National Cooperative Highway Research Program (NCHRP) Report 350 TL-5 guidelines shall be installed between the high speed ground transportation system guideway and the parallel roadway. Such barriers shall be installed where the highway is on a tangent.
- Where the highway is on curve and within 100 ft. of a highway curve, reinforced concrete barriers meeting the requirements of NCHRP Report 350 TL-6 guidelines shall be installed between the high speed ground transportation system guideway and the parallel roadway.
- Where the guideway is on earthen fill structure with vertical walls exceeding 4 ft. in height above the roadway shoulder, barrier wall shall be required.
- Where the guideway is on pier supported structures within 100 ft. of the highway, NCHRP Report 350 TL-5 barriers shall be required to protect guideway piers and occupants of highway vehicles.

The gas turbine train technology is not electrified and is not likely to generate EMFs of concern. The stations and maintenance facilities would be provided power through standard electrical systems.

4.1.5 Relocation and Right of Way Impacts

The FHSR project could involve residential and business relocations as a result of ROW acquisitions required for proposed design/build alternatives, stations, and maintenance facilities.

All of the design/build proposals assume use of existing ponds or medians for drainage. Relocations due to unforeseen pond location or expansion cannot be determined until an agreement is reached with FDOT regarding proposed roadway improvements. Despite the project length of approximately 95 mi., there are minimal relocations and reduced ROW costs as I-4 is proposed for use for a significant portion of the distance.

Relocations

In order to minimize the unavoidable effects of ROW acquisition and displacement of people, the FHSRA would carry out a ROW and relocation program in accordance with the *Uniform Relocation Assistance and Real Property Acquisition Policy Act of 1970* (Public Law 91-646 as amended by Public Law 100-17). The FHSRA would provide advance notification of impending ROW acquisition. Before acquiring ROW, FHSRA would appraise all properties on the basis of comparable sales and property values in the area. Owners of property to be acquired would be offered and paid fair market value for their property rights. No person lawfully occupying real property would be required to move without at least 90 days written notice of the intended vacation date, and no occupant of a residential property would be required to move until decent, safe, and sanitary replacement housing is made available. Relocation services and payments are provided without regard to race, color, religion, sex, or national origin.

Financial assistance is available to the eligible relocatee to:

- Reimburse the relocatee for the actual reasonable costs of moving from homes, businesses, and farm operations acquired for a highway project.
- Make up the difference, if any, between the amounts paid for the acquired dwelling and the cost of a comparable decent, safe, and sanitary dwelling available on the private market.
- Provide reimbursement of expenses, incidental to the purchase of a replacement dwelling.
- Make payment for eligible increased interest cost resulting from having to get another mortgage at a higher interest rate. A combined total estimate for replacement housing payments, increased interest payments, and closing costs is approximately $22,500.

A preliminary evaluation matrix has been developed in order to compare the potential impacts of each alternative being considered. Table 4-3 shows a comparison of relocation impacts for Design/Build Alternatives 1 through 8.

Table 4-3
Comparison of Relocations

Residential Relocations		Business Relocations	
Alt. 1	**Alt. 5**	**Alt. 1**	**Alt. 5**
3	3	3	3
Alt. 2	**Alt. 6**	**Alt. 2**	**Alt. 6**
3	3	8	8
Alt. 3	**Alt. 7**	**Alt. 3**	**Alt. 7**
0	0	15	15
Alt. 4	**Alt. 8**	**Alt. 4**	**Alt. 8**
0	0	23	23

The three residential relocations within Design/Build Alternatives 1, 2, 5, and 6 are located in two structures near I-4 and 12th Avenue in the Ybor City area. The residences are located in a low-income minority area.

The three business relocations within Design/Build Alternatives 1, 2, 5, and 6 include the City of Tampa Recreation Department and the former Hillsborough County Sheriff's Office and Jail Complex. The other relocatee is a bail bondsman. The jail has been decommissioned and the Sheriff's office and prisoners moved. Design/Build Alternatives 2 and 6 contain eight business relocations, three were previously noted in the Tampa CBD, and five more are located in a small strip mall near the Central Florida Greeneway (S.R. 417) as it transitions from I-4. These include a restaurant, car repair, and other services. Design/Build Alternatives 3 and 7 have 15 business relocations. Nine of the relocations are within the Tampa CBD and all are State of Florida departments located in the Florida State Office Building. Five of the relocations include the parking lot of the St. Paul AME Church, a vacant building, a hair salon, a bindery, and an auto detailing shop. There is one relocation along the CSX rail line on Adamo Drive, an auto sales company.

Design/Build Alternatives 4 and 8 contain 23 business relocations including the 15 relocations in or near the Tampa CBD for Design/Build Alternatives 3 and 7, as well as the eight relocations contained in Design/Build Alternatives 2 and 6.

No-Build Alternative

No acquisitions would be required under the No-Build Alternative. The two residential structures (containing three households) identified for acquisition for FHSR Design/Build Alternatives 1, 2, 5, and 6 are also identified to be acquired in the future for improvements to I-4 under the TIS. If the construction of FHSR occurs, then acquisition of the structures would likely occur sooner, but would also be acquired if the No-Build Alternative is selected and future plans for I-4 proceed as planned.

Preferred Alternative

The Preferred Alternative would require three residential relocations located in two structures near I-4 and 12th Avenue in the Ybor City area. It would also require three business relocations including the City of Tampa Recreation Department, the former Hillsborough County Sheriff's Office and Jail Complex, and a bail bondsman.

Right of Way Cost

Acquisition impacts relative to ROW requirements and the corresponding acquisition costs were estimated for each alternative. Although each proposal adhered generally to the same alignments, the gas turbine train technology (Design/Build Alternatives 1 through 4) resulted in some slight centerline modifications with additional lands in the Disney area, and therefore resulted in differences in total ROW cost. Also, Design/Build Alternatives 1 through 4 proposed the location of the Bee Line Maintenance Facility on Orlando International Airport property, which resulted in a reduction in cost.

The cost estimate is based on aerial maps with an overlay of the proposed FHSR Design/Build alternatives. Construction plans were not available. For this reason, the fee acquisitions have been considered as 100 percent fee take at grade level. In this worst-case scenario, many of the properties could retain some measure of utility at grade level given certain assumptions that were made for the cost estimates and the railway's elevated design. Exceptions to this assumption were made for various parcels where access, utilities, and drainage would be otherwise severed. These parcels were estimated with consideration of the proposed elevated superstructure. The real estate and business damages considered the most realistic acquisition scenario of air rights (for railway decking) and fee rights (for column footers) to provide continued ingress/egress. This scenario allows for the continuance of the business without a total buy-out (of real estate and business).

The acquisition areas and property impacts were estimated by overlaying the scale drawing onto raster/aerial images and Property Appraiser tax parcel ownership lines utilizing Geographical Information Systems (GIS). For this reason, the acquisition areas, parcel count, and estimated costs are all considered preliminary and are subject to change as more accurate design, survey, and title information becomes available.

A preliminary evaluation matrix has been developed in order to compare the potential ROW cost impacts of each alternative being considered. Table 4-4 shows the comparative cost impacts for Design/Build Alternatives 1 thru 8.

Table 4-4
ROW Costs
Corridors, Stations, and Maintenance Facilities

Alt. 1	Alt. 5
$117,871,000	$101,170,300
Alt. 2	**Alt. 6**
$148,956,200	$128,087,700
Alt. 3	**Alt. 7**
$150,384,700	$133,684,000
Alt. 4	**Alt. 8**
$181,469,900	$160,601,400

No-Build Alternative

The No-Build Alternative would not require the expenditure of funds for ROW identified above. However, it is anticipated that transportation funding for roadway capacity improvements would be required earlier and in greater amounts.

Preferred Alternative

The ROW cost associated with the Preferred Alternative (Alternative 1) with the gas turbine train is $117,871,000.

4.1.6 Environmental Justice

Potential disproportionate impacts to low-income and minority populations were evaluated in accordance with *Executive Order 12898, "Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations."* In response to this Executive Order, the project design/build alternatives were evaluated to identify the presence of low-income and minority residents and potential impacts to them.

An adverse effect on minority and/or low-income populations occurs when: 1) the adverse effect occurs primarily to a minority and/or low-income population; or 2) the adverse effect suffered by the minority and/or low-income population is more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income populations.

Census tracts along the project corridor were mapped and evaluated to determine if there was a disproportionate affect on minority or low-income populations. High concentrations of minorities were identified as tracts in which minorities comprise 50 percent or greater of the population. Low-income tracts were identified as those with 25 percent or greater of the

population living below the poverty level. There is a total population of approximately 285,000 people located in census tracts running along the FHSR Design/Build Alternatives. The population in these tracts is primarily non-minority and not below the poverty level with minorities comprising approximately 26 percent of the population and approximately 5 percent of the population living below the poverty level. However, there are three concentrations of minority and/or low-income residents located in three different counties (Orange, Polk, and Hillsborough).

Orange County tract 170.01 contains a population of 2,367 with minority populations comprising approximately 95 percent and residents living below the poverty level comprising approximately 14 percent. This tract contains the Taft-Vineland neighborhood. FHSR Alignment E1 (Design/Build Alternatives 1, 3, 5, and 7) would run south of this neighborhood within an industrial area. The number of residential noise impacts is expected to range between 15 and 37 sites. Relocation and vibration impacts are not expected to affect this tract.

Polk County tracts 111 and 112.01 have a combined population of 8,218 people with minority populations comprising approximately 78 percent of the population and residents living below the poverty level comprising approximately 33 percent of the population. All eight of the FHSR Design/Build Alternatives would be located in the median of I-4 in rural Polk County; therefore, no identified noise impacts to the area are expected. In addition, no relocation and vibration impacts are expected to affect these tracts.

The largest concentration of minority and low-income residents occurs within the Tampa CBD in tracts 32, 33, 35, 36, and 38 through 41. The tracts contain a combined population of 16,337 people with a minority population of approximately 66 percent. Approximately 35 percent of the population is below the poverty level. Alternatives 1, 2, 5, and 6 would have three residential relocations within this area. Alternatives 3, 4, 7, and 8 would have 15 business relocations. Alternatives 1, 2, 5, and 6 would have 16 noise impacts and Alternatives 3, 4, 7, and 8 would have one noise impact within this area. Alternatives 1, 2, 5, and 6 would have four vibration impacts.

In conclusion, the largest potential for environmental impacts to minority or low-income residents within the FHSR project area occurs in the Tampa CBD. However a comparison of the population and income characteristics of all census tracts, as well as total noise, vibration, and relocation impacts along the design/build alternatives clearly demonstrates there is no adverse effect on minority and/or low-income populations as no effect occurs primarily to a minority and/or low-income population, No effect suffered by the minority and/or low-income population is more severe or greater in magnitude than the adverse effect suffered by the non-minority and/or non-low-income populations.

This project is being developed in accordance with the *Civil Rights Act of 1964*, as amended by the *Civil Rights Act of 1968*, and in accordance with *Executive Order 12898*. The proposed project would not result in any disproportionate adverse impacts to any distinct minority, ethnic, elderly or handicapped groups and/or low-income households.

No-Build Alternative

The No-Build Alternative would not result in impacts to any concentrations of minority or low-income residents.

Preferred Alternative

The largest potential for environmental impacts to minority or low-income residents within the FHSR project area occurs in the Tampa CBD. The Preferred Alternative would result in three residential relocations in this area. It would result in no noise impacts, but would have vibration impacts to four residential sites within this area. However, when these impacts were compared to the overall impacts resulting from the Preferred Alternative to non-minority and minority populations, the Preferred Alternative would not result in any disproportionate adverse impacts to any distinct minority, ethnic, elderly or handicapped groups, or low income households.

4.1.7 Archaeological and Historic Resources

The cultural resource assessment survey for the FHSR study was undertaken to assist in complying with *National Environmental Policy Act* (NEPA) *of 1969* (Public Law 91-190); *Section 106 and 110* of the *National Historic Preservation Act* (NHPA) *of 1966* (Public Law 89-665, as amended), as implemented by *Title 36 Code of Federal Regulations (CFR) Part 800* (*Protection of Historic Properties*, revised January 2001); and Section 4(f) of the *Department of Transportation Act of 1966* (Public Law 89-670, as amended). This study was also conducted in accordance with Chapters 253, 267, and 872 of the *Florida Statutes*. A Cultural Resource Assessment Survey Report[7] (CRAS) (July 2003), is published separately. As part of the CRAS several viable alternatives were surveyed. Seven properties currently listed in the National Register of Historic Places (NRHP); nine properties previously determined NRHP-eligible; and five properties newly determined NRHP-eligible were identified as part of the CRAS. Data gathered from the CRAS report is included in Section 3.6.1 of this EIS. The CRAS Report was submitted by the FHSRA and FRA to the Florida State Historic Preservation Officer (SHPO), Federal Highway Administration (FHWA), and U.S. Army Corps of Engineers (USACE) for review. In a letter dated September 15, 2003, the SHPO concurred with the findings of the CRAS Report and identified two additional historic resources to be potentially eligible for listing in the NRHP (Appendix B). These additional properties are the St. Paul AME Church Parsonage (8HI6757) and the CSX Railroad Depot (8HI8739). They are described briefly below.

St. Paul AME Church Parsonage (8HI6757)/1103 N. Marion Street

The St. Paul AME Church Parsonage (8HI6757), currently located immediately north of the St. Paul AME Church, was constructed around 1925 in the Masonry Vernacular style. The building was moved in 1995 from its original site directly west of the church building, on Harrison Street. This red brick building is two stories in height and has a rectangular exterior plan. The hipped roof is covered with composition shingles and all window openings are covered with plywood. Additionally, the porch supports are currently wood posts. The St. Paul AME Church Parsonage was determined eligible for listing in the NRHP in September of 2003

under NRHP Criteria A in the area of Ethnic History. The building is considered to be significant at a local level based on its associations with the historical development of the African-American community in Tampa. This building is included with the St. Paul AME Church as a City of Tampa Landmark.

CSX Railroad Depot (8HI8739)/5300 Uceta Road

The CSX Railroad Depot (8HI8739) is located in the Uceta Railroad Yard. It was constructed circa 1950 in the International Style. This two-story masonry building has a flat roof, stucco finish and brick windowsills. Cantilevered ledges define the second floor and roof levels. A large brick chimney is located on the west side. The CSX Railroad Depot was determined eligible for listing in the NRHP in September of 2003 under NRHP Criteria A in the areas of Transportation and Commerce.

This section evaluates potential impacts that the proposed FHSR project may have on the NRHP-listed and eligible historic resources located within the FHSR Alternatives Area of Potential Effect (APE). There are no NRHP-listed or eligible archaeological sites associated with the FHSR Alternatives.

FHSRA established a Cultural Resource Committee (CRC) to assist in the evaluation of significant resources, potential effects, and methods for mitigation. The CRC consists of representatives from federal, state, and local agencies and citizen groups. These include FRA, FHWA, SHPO, USACE, City of Tampa, and other local interested parties. Three meetings were held in Tampa on December 6, 2002, February 14, 2003, and December 12, 2003. At the December 2002 meeting, the members were provided background information on the FHSR project and the Section 106 process. Preliminary alignments, as well as those carried forward for further study, were presented. Other topics included the proposed CRAS methodology and the APE. The February 2003 meeting included the Corridor Level Analysis Report results and a bus tour of the NRHP-listed and eligible resources located in downtown Tampa and Ybor City. The committee concurred with the information presented during these two meetings. In September 2003, the Draft Environmental Impact Study (DEIS) was mailed to all of the members of the CRC. At the third and last meeting, in December 2003, the results of the Section 106 consultation were presented and comments were requested. The CRC made the following formal statement at the meeting: "The CRC commended the study team and the FHSRA on designing a project and technology that results in no adverse impacts to historic resources."

The Tribal Historic Preservation Officers (THPOs) were sent letters in January 2003 inviting them to join the CRC and/or submit comments on the project. They were also included in the mailing list for review of the DEIS. No comments have been received from any of the THPOs.

Archeological Resources

Two archaeological sites are recorded as NRHP-eligible within the alignments in Corridors A and B. The first, the Columbus Drive Site (8HI83), was recorded as per "general vicinity." Thus, the exact site location is unknown. As plotted in the Florida Master Site File[8], the site is proximate to I-4 within a severely altered and developed area of Tampa. Based on field reconnaissance, this site

appears to have been destroyed by urban development. Similarly, the Diamond Dairy Site (8HI476), originally recorded within the proposed ROW of I-75, was previously subjected to Phase III mitigative excavation, and subsequently destroyed by construction of the interstate. Thus, neither 8HI83 nor 8HI476 are still extant within the FHSR project APE.

Design/Build Alternatives 1 Through 8

None of the proposed Design/Build Alternatives 1 through 8 have any involvement with NRHP-listed, eligible, or potentially eligible archaeological sites. Therefore, the proposed FHSR project would have no effect on any significant archaeological resources.

Historic Resources

Twenty-two NRHP-listed, eligible, or potentially eligible historic resources were identified along Alignments A1 and A2, located in downtown Tampa and Ybor City. These historic resources are described in further detail in Section 3.6.1 and earlier in this section. As mentioned in Section 3.6.1, the previously recorded Tampa Heights Historic District was found to be outside of the FHSR project APE and is not discussed in this section.

There are no NRHP-listed, eligible, or potentially eligible historic resources within Alignments B1, B2, C1, D1, E1, or E2.

Potential impacts to the historic resources for each alternative are described as follows. Site and map sheet numbers, identified in the tables, correspond to the FHSR concept plans included in Appendix A. These concept plans show the proximity of each significant historic resource to the proposed FHSR Design/Build alternatives.

Design/Build Alternatives 1, 2, 5, and 6

Design/Build Alternatives 1, 2, 5, and 6 use Alignment A1; therefore, the impacts to historic resources would be the same for each of these alternatives. Potential effects for each of the 12 significant historic resources associated with these alternatives are shown in Table 4-5 and discussed in the following paragraphs. In summary, based on the project information available, these alternatives would have no effect on seven historic resources and a conditional no adverse effect on five historic resources. These impacts were evaluated as part of the Section 106 process. There is a direct taking of two contributing historic resources within the Ybor City National Historic Landmark District (NHLD), which would result in an adverse effect; however, these buildings have already been included in a MOA for the TIS project, as described in further detail in the following paragraphs, therefore resulting in a conditional no adverse effect. The other impacts are primarily visual and possible vibration occurring during construction.

There would be no effect to seven NRHP-listed or eligible historic resources within these alternatives, as noted in Table 4-5. This preliminary evaluation of effects is primarily based on the proximity of the significant resources to the proposed alternatives. These resources would

Table 4-5
Potential Impacts to Historic Resources along Alternatives 1, 2, 5, and 6

Alignment	Site No./ Map Sheet No.	FMSF No.	Site Name	Address	City	NRHP Or NHL Status	Potential Impacts
A1	1/1	8HI8536	North Franklin Street Historic District	North Franklin Street, between E. Harrison and E. Fortune Streets	Tampa	NRHP-Listed	Visual (Tampa Station)
A1	7a/1	8HI155	St. Paul AME Church	506 E. Harrison Street	Tampa	NRHP-Eligible, City of Tampa Landmark	None
A1	7b/1	8HI6757	St. Paul AME Church Parsonage	1103 N. Marion Street	Tampa	NRHP-Eligible, City of Tampa Landmark	Visual (Tampa Station)
A1	8/1	8HI5595	Oaklawn Cemetery	606 E. Harrison Street	Tampa	NRHP-Eligible	Visual; Construction Vibration
A1	9/1	8HI3282	Greater Bethel Baptist Church	1206 N. Jefferson Street	Tampa	NRHP-Eligible	None
A1	11/2 & 186	8HI8574	St. James Episcopal Church	1001 India Street/1202 N. Governor Street	Tampa	Potentially NRHP-Eligible	None
A1	12/2	8HI3688, 8HI8575	Allen Temple AME Church and Parsonage	1112-1116 E. Scott Street (Located within Central Park Village	Tampa	Potentially NRHP-Eligible	None
A1	13/2	8HI3659	St. Peter Claver Catholic School	1401 N. Governor Street	Tampa	Potentially NRHP-Eligible	None
A1	17/3	8HI313	Ybor City NHLD	Approximate NHLD Boundaries: 21st Ave., 25th and 26th St., Adamo Dr. and 2nd Ave., Nebraska Ave.	Tampa	NHL, Locally Listed Historic District (different boundaries)	Direct taking of two contributing buildings: 8HI4174/916 E. 12th Avenue, and the rear building at 8HI4178/1006 E. 12th Avenue; Visual; Construction Vibration
A1	18/3	8HI142	German American Club	2105 N. Nebraska Avenue	Tampa	NRHP-Eligible, Contributing Resource within the Ybor City NHLD	Visual; Construction Vibration

Table 4-5
Potential Impacts to Historic Resources along Alternatives 1, 2, 5, and 6

Alignment	Site No./ Map Sheet No.	FMSF No.	Site Name	Address	City	NRHP Or NHL Status	Potential Impacts
A1	19/3	8HI835	Centro Asturiano	1913 N. Nebraska Avenue	Tampa	NRHP-Listed, Contributing Resource within the Ybor City NHLD	None
A1	20/6	8HI4415	I-Type House	2210 N. 31st Street	Tampa	NRHP-Eligible	None

not be directly impacted by ROW acquisitions associated with Design/Build Alternatives 1, 2, 5, and 6. There would be no secondary impacts, such as visual, noise, access, or use impacts to these resources due to their distance from the proposed design/build alternatives. Additionally, in most cases, these historic resources face away from the alternatives, further minimizing the likelihood of visual impacts. The proposed FHSR improvements would be constructed directly adjacent to the present I-4 facility and therefore would be consistent with the existing environment.

There may be potential secondary impacts (noise and visual) to the German American Club, which were evaluated due to the close proximity of this resource to the proposed improvements. This building is currently located directly adjacent to the I-4/I-275 Interchange and its setting has already been compromised; therefore, it was determined that the noise levels and visual impacts would not change significantly due to the construction of the FHSR improvements. The improvements would not require any ROW acquisition from the historic resource. Any potential damaging vibrations that could occur during construction activities would be evaluated and minimized at this location in order to avoid impacts to the historic building.

There may also be potential secondary noise impacts to the Greater Bethel Baptist Church, the St. Paul AME Church, and the St. Paul AME Church Parsonage. It was determined that the noise levels would not increase at these three resources with either the electric or gas turbine engines; therefore, there would be no noise impacts to these resources. The Oaklawn Cemetery is located immediately south of the alignment for Design/Build Alternatives 1, 2, 5, and 6, and about one block east of the proposed Tampa Station location. At this location, the alignment would be north of Laurel Street and elevated on piers and mechanically stabilized earth (MSE) walls approximately 38 to 40 ft. above grade. The FHSR's speed would be greatly reduced. The proposed FHSR improvements would not require any ROW acquisition from the historic cemetery but they would introduce new visual elements within close proximity to the cemetery. Consequently, it appears there may be potential visual impacts to the Oaklawn Cemetery. Any changes in noise would not affect the use of the cemetery, so it does not appear that there would be noise impacts at this location. Any potential damaging vibrations that could occur during

construction activities would be minimized at this location in order to avoid impacts to the historic cemetery wall and markers.

Potential visual impacts to the North Franklin Street Historic District and the St. Paul AME Church Parsonage, resulting from the construction of the proposed Tampa Station, will be minimized or avoided by coordinating with the SHPO during the design phase.

The Ybor City NHLD is located north and south of I-4, between Nebraska Avenue and 26th Street. Improvements related to Design/Build Alternatives 1, 2, 5 and 6 would require the direct use of only two contributing resources located within the Ybor City NHLD: 916 E. 12th Avenue and the rear dwelling unit at 1006 E. 12th Avenue (the main house will remain in place). Because the two contributing properties would be impacted by ROW acquisitions, the Ybor City NHLD would be adversely affected by FHSR improvements proposed for Alternative 1, 2, 5, and 6. However, these two resources were previously identified as being acquired by the TIS project since they are located within the TIS Ultimate ROW. A MOA was prepared at that time to mitigate adverse effects to the Ybor City NHLD and fulfill the Section 4(f) requirements. If a decision is made to proceed with construction of the FHSR, it would likely occur prior to acquisition of these two resources for the I-4 improvements. The MOA is included as an appendix to the Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation[9] (1996) and consists of specific commitments and stipulations, including the documentation, relocation, and rehabilitation of historic structures, plus architectural/historical salvage for structures not relocated and rehabilitated. Therefore, the FHSR project will comply with the requirements of the existing TIS MOA. In addition, due to the proximity of contributing resources within the Ybor City NHLD boundaries located on the south side of I-4 to the proposed FHSR improvements, potential secondary visual and noise impacts were evaluated. Measured ambient (existing) noise level for the first row of houses in this area was 69 decibels (dBA). The predicted noise level for these same houses was also 69 dBA for both electric and gas turbine engines; therefore, there would be no noise impact. For potential visual impacts, it is important to note that their current settings have already been substantially compromised by the presence of the I-4 facility. Consequently, the addition of the FHSR improvements would not qualitatively change their present settings or views to and from the buildings. The character and appearance of E. 12th Avenue's streetscape will remain much the same following the construction of the FHSR improvements. Contributing resources to the Ybor City NHLD north of I-4 would not be affected by the FHSR project because Design/Build Alternatives 1, 2, 5, and 6 are located either within the I-4 median or south of I-4 within the Ybor City NHLD. In addition, noise walls are being constructed along the north side of I-4 as part of the TIS project, which will also serve to avoid potential impacts of the FHSR to the portion of the Ybor City NHLD located north of I-4.

Design/Build Alternatives 1, 2, 5, and 6 are located along the south side of I-4 directly adjacent to the north (side) elevation of the contributing Gonzalez, Fisher and Company Cigar Factory (U-Haul Building) at 2311 N. 18th Street. Due to the close proximity of the FHSR improvements at this location, visual and noise impacts were evaluated, but Design/Build Alternatives 1, 2, 5, and 6 are not expected to cause visual and noise impacts to this contributing resource, since it is used for storage and all of its windows have been enclosed with brick.

Design/Build Alternatives 3, 4, 7, and 8

Design/Build Alternatives 3, 4, 7, and 8 use Alignment A2; therefore, the impacts to historic resources would be the same for each of these alternatives. Potential effects for each of the 16 significant historic resources associated with these alternatives are shown in Table 4-6 and discussed in the following paragraphs. In summary, based on the project information available, it appears that these alternatives would have no effect on seven historic resources, but may have an effect on nine other historic resources, including the Ybor City NHLD. These potential adverse and no adverse effects are primarily due to potential visual and noise impacts but were not evaluated in detail since none of these alternatives was selected as the Preferred Alternative.

Table 4-6
Potential Impacts to Historic Resources along Alternatives 3, 4, 7, and 8

Alignment	Site No./ Map Sheet No.	FMSF No.	Site Name	Address	City	NRHP Or NHL Status	Potential Impacts
A2	1/1	8HI8536	North Franklin Street Historic District	North Franklin Street, between E. Harrison and E. Fortune Streets	Tampa	NRHP-Listed	Visual (Tampa Station)
A2	2/186	8HI8744	First United Methodist Church's Thomas Henderson Memorial Chapel	1001 N. Florida Avenue	Tampa	Potentially NRHP-Eligible	None
A2	3/186	8HI741	Floridian Hotel	905 N. Florida Avenue	Tampa	NRHP-Listed, City of Tampa Landmark	Visual
A2	4/	8HI753	J.J. Newberry Building	815-819 N. Franklin Street	Tampa	NRHP-Eligible	None
A2	5/	8HI752	Kress Building	811 N. Franklin Street	Tampa	NRHP-Listed	None
A2	6/	8HI751	Woolworth Building	801 N. Franklin Street	Tampa	NRHP-Eligible	None
A2	7a/1 & 186	8HI155	St. Paul AME Church	506 E. Harrison Street	Tampa	NRHP-Eligible, City of Tampa Landmark	Visual; Noise; Use of Parking; Construction Vibration

Table 4-6
Potential Impacts to Historic Resources along Alternatives 3, 4, 7, and 8

Alignment	Site No./ Map Sheet No.	FMSF No.	Site Name	Address	City	NRHP Or NHL Status	Potential Impacts
A2	7b/1 & 186	8HI6757	St. Paul AME Church Parsonage	1103 N. Marion Street	Tampa	NRHP-Eligible, City of Tampa Landmark	Direct Taking
A2	8/1 & 186	8HI5595	Oaklawn Cemetery	606 E. Harrison Street	Tampa	NRHP-Eligible	Visual; Construction Vibration
A2	9/1 & 186	8HI3282	Greater Bethel Baptist Church	1206 N. Jefferson Street	Tampa	NRHP-Eligible	None
A2	10/186	8HI124	Fire Station No. 1/ Tampa Firefighters Museum	720 E. Zack Street	Tampa	NRHP-Eligible, City of Tampa Landmark	None
A2	14/186	8HI906	Jackson Hotel	851 E. Zack Street	Tampa	NRHP-Eligible	Visual; Noise; Construction Vibration
A2	15/186	8HI6939	Union Depot Hotel	858-864 E. Zack Street	Tampa	NRHP-Listed, City of Tampa Landmark	Visual; Noise; Construction Vibration
A2	16/186	8HI298	Tampa Union Station	601 N. Nebraska Avenue	Tampa	NRHP-Listed, City of Tampa Landmark	Visual; Noise; Construction Vibration
A2	17/188	8HI313	Ybor City NHLD	Approximate NHLD Boundaries: 21st Ave., 25th and 26th St., Adamo Dr. and 2nd Ave., Nebraska Ave.	Tampa	NHL, Locally Listed Historic District (different boundaries)	Visual; Noise
B2	21/?	8HI8739	CSX Railroad Depot	5300 Uceta Road	Tampa	NRHP-eligible	Visual; Noise; Construction Vibration

As noted in Table 4-6, there would be no effect to seven NRHP-listed or eligible historic resources within these alternatives. This preliminary evaluation of effects is based primarily on the proximity of the significant resources to the proposed alternatives. These resources would not be directly impacted by ROW acquisitions associated with Design/Build Alternatives 3, 4, 7, and 8. It also appears there would be no secondary impacts, such as visual, noise, access, or use

impacts, to these resources. As previously noted, these resources are some distance from the proposed alternatives, which reduces the probability of secondary impacts. In addition, in most cases, these historic resources face away from the alternatives, thereby further minimizing the likelihood of visual impacts.

Due to the 18-story height of the Floridan Hotel, there may be potential secondary visual impacts to this resource, as construction of the FHSR improvements would introduce new visual elements within its sightline. The improvements would not require any ROW acquisition from the historic resource, and they would be located several blocks from the building.

Design/Build Alternatives 3, 4, 7, and 8 would be located directly adjacent to the north and east sides of the St. Paul AME Church and would require a direct taking of the St. Paul AME Church Parsonage. The proposed FHSR improvements would require ROW acquisition from the church property, including the relocated Parsonage building and the church parking lot, but not the historic church building. The taking of land from the parking lot could affect the property's use. These alternatives would also introduce new visual elements within close proximity to the church; therefore, it appears there could be potential visual, noise, and use impacts to the St. Paul AME Church and direct impacts to the Parsonage, which will be evaluated further if any of these alternatives are selected. Any potential damaging vibrations that could occur during construction activities would be minimized at this location in order to avoid impacts to the historic church building. Design/Build Alternatives 3, 4, 7, and 8 would be located west of Morgan Street, southwest of the southwest corner of the Oaklawn Cemetery. The proposed FHSR improvements would not require any ROW acquisition from the historic cemetery, but would introduce new visual elements within close proximity to the cemetery. Consequently, it appears there may be potential visual impacts to the Oaklawn Cemetery. Any changes in noise would not affect the use of the cemetery, so it does not appear that there would be noise impacts at this location. Any potential damaging vibrations that could occur during construction activities would be minimized at this location, in order to avoid impacts to the historic cemetery wall and markers.

The Jackson Hotel and Union Depot Hotel are situated within close proximity to Design/Build Alternatives 3, 4, 7, and 8, which pass directly north of these buildings. The proposed FHSR improvements would not require any ROW acquisition from the two historic properties. In addition, existing CSX railroad tracks are located in the same area as the proposed FHSR tracks. The addition of elevated FHSR tracks, however, would introduce new visual elements to the buildings' immediate surroundings. Therefore, it appears there may be potential visual impacts to the Jackson Hotel and Union Depot Hotel, as well as potential noise impacts. Any potential damaging vibrations that could occur during construction activities would be minimized at these locations, in order to avoid impacts to the historic buildings.

Design/Build Alternatives 3, 4, 7 and 8 would also pass directly north of the Tampa Union Station. The proposed FHSR improvements would require a small amount of ROW from the NRHP-listed boundaries and not from the historic structure itself. The proposed FHSR tracks would be located between the existing CSX railroad tracks and the historic Tampa Union Station. The addition of elevated FHSR tracks would also introduce new visual elements to the

building's immediate surroundings. Therefore, it appears there may be potential visual impacts to the Tampa Union Station, as well as potential noise impacts. Any potential damaging vibrations that could occur during construction activities would be minimized at these locations in order to avoid impacts to the historic building.

Design/Build Alternatives 3, 4, 7, and 8 would be located immediately south of the southernmost boundary of the Ybor City NHLD near Adamo Drive. The portion of the NHLD that is closest to these alternatives is primarily industrial in character with some residential use between 22nd and 24th Streets. This may result in potential secondary visual and noise impacts, primarily for the residences. The impacts, however, should be minimal to the industrial buildings due to their use.

Design/Build Alternatives 3, 4, 7, and 8 would be located within the existing railroad corridor, which passes northeast of the CSX Railroad Depot in the Uceta Railroad Yard, but does not require any ROW from the building's NRHP-eligible boundaries. Therefore, it appears there may be potential visual impacts to the depot, as well as potential noise impacts. Any potential damaging vibrations that could occur during construction activities would be minimized at this location in order to avoid impacts to the historic building.

No-Build Alternative

Under the No-Build Alternative, roadway congestion would increase and resulting roadway improvements would likely impact cultural resources. The two contributing historic structures within the Ybor City NHLD, identified for acquisition within the FHSR Design/Build Alternatives 1, 2, 5, and 6, are also identified to be acquired for future improvements to I-4 under the TIS. If construction of FHSR occurs, acquisition of these two structures would likely occur sooner, but would also be acquired by FDOT under the FHSR No-Build Alternative, if FDOT's improvements to I-4 proceed as planned.

Preferred Alternative

A Section 106 Consultation Case Report[10] for the Preferred Alternative (described in the report as the Proposed Action) was prepared in December 2003 for coordination with the SHPO. A Section 106 consultation meeting was held on December 10, 2003, with representatives from PBS&J, Archaeological Consultants, Inc., Janus Research, and the SHPO. Based on the project information available and consultation with the SHPO, it was agreed at that meeting that the FHSR Preferred Alternative would have no effect on seven historic resources and a conditional no adverse effect on five historic resources. The specific conditions are commitments agreed to by the FHSRA, FRA, and SHPO and will be incorporated into future design, build, operate, maintain and finance contracts in a manner that will be binding to the vendor. The final Section 106 Consultation Case Report was submitted to the SHPO on behalf of FRA on December 24, 2003. A response letter from the SHPO, dated January 5, 2004, concurred with the findings of the report (Appendix B) and agreed to the stipulated conditions for the "conditional no adverse effect" determination. The Section 106 Consultation Case Report was then forwarded to the Advisory Council on Historic Preservation (ACHP) and the National Park

Service (NPS) Atlanta Regional office on February 20, 2004, for their reference and opportunity to comment. No comments have been received from the ACHP or the NPS.

The commitments agreed upon by the FHSRA, FRA, and SHPO are as follows:

1. Provide the FHSR design plans (for the Tampa CBD and Ybor City areas) to the SHPO for review and comment at 30 percent, 60 percent, and 90 percent submittal.

2. Coordinate the design of the Tampa Station with the SHPO to ensure that historic integrity is maintained at the nearby North Franklin Street Historic District and the St. Paul AME Church Parsonage.

3. Implement vibration monitoring during construction adjacent to the Oaklawn Cemetery, German American Club, and within the Ybor City NHLD to determine if damage is likely to occur according to damage criteria described in FRA's guidance manual, *High Speed Ground Transportation Noise and Vibration Impact Assessment*, Chapter 10. If vibration levels approaching the damage criteria are found to occur during construction, immediate coordination with the SHPO will be conducted to determine the use of less destructive methods and/or minimization methods for continuing the construction.

4. The stipulations of the TIS MOA will be fulfilled for any impacts to contributing historic structures within the Ybor City NHLD and the TIS Ultimate ROW.

5. Aesthetic treatment for the FHSR will be compatible with the existing Urban Design Guidelines set up for the TIS within the Tampa CBD and Ybor City areas. At minimum, the color of the concrete should be compatible with the TIS concrete color. The SHPO, City of Tampa, and local community groups, will be included in the development of the FHSR aesthetics.

Based on the Section 106 Consultation Case Report, there will be no effect to seven NRHP-listed or NRHP-eligible historic resources due to the Preferred Alternative, as noted in Table 4-7. These resources include the St. Paul AME Church, Greater Bethel Baptist Church, St. James Episcopal Church, Allen Temple AME Church and Parsonage, St. Peter Claver Catholic School, Centro Asturiano, and I-Type House. This effects analysis is primarily based on the proximity of the significant resources to the Preferred Alternative. These resources would not be directly impacted by ROW acquisitions associated with the Preferred Alternative. There would be no secondary effects, such as visual, noise, access, or use impacts to these resources due to their distance from the Preferred Alternative.

Table 4-7

Effects Analysis for Historic Resources Associated with the FHSR Preferred Alternative

FMSF No.	Site No. / Map Sheet No.	Site Name/Address	NRHP Status	Effects Analysis
8HI8536	1/1	North Franklin Street Historic District/ North Franklin Street, between E. Harrison and E. Fortune Streets	NRHP-Listed	Conditional No Adverse Effect
8HI155	7A/1	St. Paul AME Church/506 E. Harrison Street	NRHP-Eligible, City of Tampa Landmark	No Effect
8HI6757	7B/1	St. Paul AME Church Parsonage /1103 N. Marion Street	NRHP-Eligible, City of Tampa Landmark	Conditional No Adverse Effect
8HI5595	8/1	Oaklawn Cemetery/606 E. Harrison Street	NRHP-Eligible	Conditional No Adverse Effect
8HI3282	9/1	Greater Bethel Baptist Church/1206 N. Jefferson Street	NRHP-Eligible	No Effect
8HI8574	11/2	St. James Episcopal Church/1001 India Street/1202 N. Governor Street	NRHP-Eligible	No Effect
8HI3688, 8HI8575	12/2	Allen Temple AME Church and Parsonage/1112-1116 E. Scott Street	NRHP-Eligible	No Effect
8HI3659	13/2	St. Peter Claver Catholic School/1401 N. Governor Street	NRHP-Eligible	No Effect
8HI835	19/3	Centro Asturiano/1913 N. Nebraska Avenue	NRHP-Listed, Contributing Resource within the Ybor City NHLD	No Effect
8HI142	18/3	German American Club/2105 N. Nebraska Avenue	NRHP-Eligible, Contributing Resource within the Ybor City NHLD	Conditional No Adverse Effect
8HI313	17/3	Ybor City NHLD/Approximate NHLD Boundaries: 21st Avenue, 25th and 26th Street, Adamo Drive and 2nd Avenue, Nebraska Avenue	NHL, Locally Listed Historic District (different boundaries)	Conditional No Adverse Effect
8HI4415	20/6	I-Type House/2210 N. 31st Street	NRHP-Eligible	No Effect

Additionally, in most cases, these historic resources face away from the alignment, further minimizing the likelihood of visual or aesthetic effects. Therefore, the FHSR Preferred Alternative would not alter the characteristics of a historic property qualifying it for inclusion in or eligibility for the NRHP.

As part of the evaluation of effects, further noise analysis for secondary noise effects was conducted for three resources, St. Paul AME Church, St. Paul AME Church Parsonage, and Greater Bethel Baptist Church, because potential secondary noise effects were noted during the preliminary effects evaluation phase in the DEIS. The existing noise conditions for the above mentioned historic resources are the equivalent of 68 dBA, 66 dBA, and 66 dBA respectively per hourly Leq. The hourly Leq is the noise level for a specific one-hour period. It can be considered as the average sound level in dBAs that occurs in a specific hourly period. The future noise conditions for both the gas turbine train technology and electric train technology will not increase at the three historic resources. The three historic resources are too far away from the Preferred Alternative to generate a notable change in noise levels; therefore, there will be no secondary noise effects to these resources. As mentioned previously, there will not be any other primary or secondary effects to these three resources due to their proximity to the Preferred Alternative.

The Preferred Alternative will have no adverse effect, contingent upon certain conditions, on five historic resources. Three of these, the Oaklawn Cemetery, German American Club, and Ybor City NHLD, will have no adverse effect based on the condition that any potential damaging vibrations that could occur during construction activities will be minimized, as described in the conditions listed earlier in this section. For these three resources, vibration monitoring will be implemented during construction to insure that no damage is caused to the historic resources. A more detailed discussion of effects for each of these three properties is provided below. Two other historic resources, the North Franklin Street Historic District and the St. Paul AME Church Parsonage are located near the proposed Tampa Station location, which was included in the FHSR APE. The actual size and configuration of the station is not known at this time. The proposed station, however, will have no adverse effect of these historic properties based on continued coordination with the SHPO during design of the proposed Tampa Station to ensure that historic integrity in maintained, as described in the conditions listed earlier in this section.

The Criteria of Effect has been applied to the Oaklawn Cemetery, the German American Club, and the Ybor City NHLD, as described in further detail in the following paragraphs.

The Oaklawn Cemetery is located immediately south of the FHSR Preferred Alternative and about one block east of the proposed Tampa Station location. At this location, the alignment would be north of Laurel Street and elevated on piers and MSE walls approximately 38 to 40 ft. above grade. The FHSR's speed would be greatly reduced. The proposed FHSR improvements would not require any ROW acquisition from the historic cemetery nor will it affect access to the property. Although the proposed FHSR improvements would introduce new visual elements within close proximity to the cemetery, it would not be significantly impacted. The FHSR Preferred Alternative is located immediately adjacent to the existing I-275 facilities at this location, which already has altered the properties' historic setting. In addition, the cemetery's

current setting is urban and the surrounding environment includes parking lots and modern buildings such as the former Hillsborough County Jail and the Marion Transit Center. The cemetery also contains numerous mature trees, particularly oak trees, which obscure most views of the FHSR structure from within the cemetery boundaries. The modern Morgan Street Jail will be demolished to make way for the proposed FHSR facility. Any change in noise will not affect the use of the cemetery, so there will not be noise impacts at this location. The potential vibration impacts that could occur during construction activities will be minimized based on the conditions described earlier. In summary, the construction of the FHSR improvements will not alter the use, visual and aesthetic qualities, and other characteristics that qualify the cemetery for inclusion in the NRHP, based on the condition to monitor vibration during construction.

The German American Club is currently located about one-half block south of the I-4/I-275 Interchange on the east side of Nebraska Avenue. The FHSR Preferred Alternative would be constructed contiguous to the I-4/I-275 structure, which is currently being improved and expanded. The FHSR Preferred Alternative, located immediately north of 12th Avenue, would be supported on piers at Nebraska Avenue and on MSE retaining walls east and west of Nebraska Avenue. It would be 32 ft. in height, which is actually lower than the I-4 ramp currently being constructed. The Preferred Alternative would not require any ROW acquisition from the German American Club nor will it affect access to this property which is currently accessed from the south and west sides. The building's setting has already been substantially compromised by the presence of the I-4/I-275 structure. The construction of the lower FHSR facility immediately next to the existing structure would not further compromise the quality of the German American Club's setting or the views to and from the building. The existing noise condition for the historic resource is the equivalent of 74 dBA per hourly Leq. The future noise condition will not increase with the gas turbine train technology and will increase by just 1 dBA with the electric train technology. In comparison to the existing noise conditions, both proposed train technologies will not create a noticeable noise increase. Any changes in noise will not affect the use of the building, so there will not be noise impacts at this location. The potential vibration impacts that could occur during construction activities will be minimized based on the conditions described earlier. In summary, the construction of the FHSR Preferred Alternative will not alter the use, visual and aesthetic qualities, and other characteristics that qualify the German American Club for inclusion in the NRHP, based on the condition to monitor vibration during construction.

The Ybor City NHLD is located north and south of I-4, between Nebraska Avenue and 26th Street. The Preferred Alternative would require the direct use of only two contributing resources located within the Ybor City NHLD: 916 E. 12th Avenue and the rear dwelling unit at 1006 E. 12th Avenue (the main house will remain in place). These two resources were previously identified as being acquired by the TIS project since they are located within the TIS Ultimate ROW. A MOA was prepared at that time to mitigate adverse effects to the Ybor City NHLD and fulfill the Section 4(f) requirements. If a decision is made to proceed with construction of the FHSR, it would likely occur prior to acquisition of these two resources for the I-4 improvements. The MOA is included as an appendix to the Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation (1996) and consists of specific commitments and stipulations, including the documentation, relocation, and rehabilitation of historic structures,

plus architectural/historical salvage for structures not relocated and rehabilitated. The two properties, 916 E. 12th Avenue and the rear dwelling unit at 1006 E. 12th Avenue, are subject to the mitigation agreed upon as part of the TIS MOA, and the mitigation will be executed prior to any construction. Therefore, the FHSR Preferred Alternative will comply with the requirements of the existing TIS MOA. Some ROW will be required from the rear of three other contributing resources as part of the improvements, but the historic houses fronting the street should remain in place. These resources include 920 and 921 E. 12th Avenue, which are located on one parcel, and 1004 E. 12th Avenue on another parcel. Due to the minor amount of land needed for the FHSR ROW, this will not prevent the houses from continuing to be used as residences. They will also remain as contributing historic resources in the Ybor City NHLD and the local streetscape. In addition, due to the proximity of contributing resources within the Ybor City NHLD boundaries located on the south side of I-4 to the FHSR Preferred Alternative, potential secondary visual and noise impacts were evaluated. Measured ambient (existing) noise level for the first row of houses in this area was 69 dBA. The predicted noise level for these same houses was also 69 dBA for both electric and gas turbine engines; therefore, there would be no noise impact. For potential visual impacts, it is important to note that their current settings have already been substantially compromised by the presence of the I-4 facility. Consequently, the addition of the FHSR would not qualitatively change their present settings or views to and from the buildings. The character and appearance of E. 12th Avenue's streetscape will remain much the same following the construction of the Preferred Alternative. Potential vibration impacts that could occur during construction activities will be minimized based on the conditions described earlier.

Contributing resources to the Ybor City NHLD north of I-4 would not be affected by the Preferred Alternative because it is located either within the I-4 median or south of I-4 within the Ybor City NHLD. In addition, noise walls are being constructed along the north side of I-4 as part of the TIS project, which will also serve to avoid potential impacts of the FHSR to the portion of the Ybor City NHLD located north of I-4.

The FHSR Preferred Alternative is located along the south side of I-4 directly adjacent to the north (side) elevation of the contributing Gonzalez, Fisher and Company Cigar Factory (U-Haul Building) at 2311 N. 18th Street. Due to the close proximity of the Preferred Alternative at this location, visual and noise impacts were evaluated but would not affect this contributing resource, since it is used for storage and all of its windows have been enclosed with brick.

In summary, the construction of the FHSR Preferred Alternative will not alter the use, visual and aesthetic qualities, and other characteristics that qualify the Ybor City NHLD for inclusion in the NRHP, based on the condition to monitor vibration during construction.

4.1.8 Recreational/Parkland

A Proximity Effects Analysis was conducted for the five parks and recreational facilities (Perry Harvey Sr. Park, Nuccio Parkway Linear Park, Williams/Tanner Road Park, Evans Park, and Shingle Creek Greenway) located adjacent to or in the vicinity of the FHSR Design/Build Alternatives 1 through 8 (Figure 2-8). The analysis addressed projected noise-level increases,

impairment of aesthetic features or attributes, restriction on access to the facilities, vibration impacts, and ecological intrusion at each park based on field observations and analysis using the preliminary design plans. Only one park, Perry Harvey Sr. Park, would be directly affected by project ROW acquisition associated with Alignment A1, Design/Build Alternatives 1, 2, 5, and 6. A Section 4(f) Evaluation for the Perry Harvey Sr. Park is found in Section 5 of this report. None of the alternatives would require ROW acquisition from the other four parks.

Each of these parks is discussed in detail in the following paragraphs.

Perry Harvey Sr. Park

Perry Harvey Sr. Park, approximately 9.2 acres (ac.) in size, is located at 1201 N. Orange Street in the vicinity of Alignments A1 and A2, Design/Build Alternatives 1 through 8. The park is officially designated as a neighborhood park in the City of Tampa Comprehensive Plan. The park contains a variety of active recreational facilities. These include a covered picnic area, tennis courts, basketball courts, playground equipment/sand lot, exercise/jogging path, and a unique "skatebowl" area. There are also restrooms and a wooden deck. Primary access and parking (50 spaces) for Perry Harvey Sr. Park are located at Cass Street and Central Avenue, which would be maintained. Additional access with limited parking is available at Kay Street near the tennis courts (Appendix A, Sheets 2 and 186).

Design/Build Alternatives 1, 2, 5, and 6 would require the acquisition of 0.184 ac. of Perry Harvey Sr. Park; however, the acquisition would not affect park facilities. The Section 4(F) Evaluation of Perry Harvey Sr. Park is included in Section 5 with the park boundaries and proposed acquisition illustrated in Figure 5-1. Design/Build Alternatives 3, 4, 7, and 8 avoid direct impact to Perry Harvey Sr. Park (Section 5.1, Figure 5-3).

Ambient noise monitoring was performed on January 20, 2003. Because the park is located between the I-275 and the CSX corridor, ambient readings were taken at two locations (the northern portion of park nearest to the interstate and the southern portion of the park closest to the CSX corridor). For the area nearest I-275, ambient noise levels were determined to be 77 dBA (decibels [A-weighting]). For the build scenario, Alignment A1 (Design/Build Alternatives 1, 2, 5, and 6) is predicted to have a 77 dBA noise level for Design/Build Alternatives 1 and 2 (gas turbine train) and a 78 dBA noise level for Design/Build Alternatives 5 and 6 (electric train). The high existing ambient noise level in this area, compared to the proposed project noise level, suggests a minimal noise impact to the park. Further discussion of this topic is included in Section 4.2.3 and Section 5.1 of this report. For the area nearest the CSX corridor, ambient noise levels were determined to be 53 dBA. For the build scenario, Alignment A2 (Design/Build Alternatives 3, 4, 7, and 8) is predicted to have a 54 dBA noise level for Design/Build Alternatives 3 and 4 (gas turbine train) and a 55 dBA noise level for Design/Build Alternatives 7 and 8 (electric train), which would result in a 1 and 2 dBA increase, respectively, for the area. Decibel increases below 3 dBA are not perceptible to the average human ear.

The City of Tampa has indicated that park usage ranges from 100 to 150 persons per day. The proposed project would not cause an aesthetic problem for the park users because an existing

transportation corridor is already in place. There are no vibration-sensitive structures associated with the park and no natural connections to any wildlife habitats or wildlife or waterfowl refuges. In a letter dated March 27, 2003 (see Appendix B), the City of Tampa stated the Perry Harvey Sr. Park is considered a significant park. See Figure 3-13 for the location of this park.

Nuccio Parkway Linear Park

Measuring 9.1 ac., Nuccio Parkway Linear Park is officially designated as a neighborhood park in the City of Tampa Comprehensive Plan. The park is located in Tampa on Nuccio Parkway between Nebraska and Palm Avenues. The park is approximately 0.71 mi. in length and lies within the vicinity of Alignment A2, Design/Build Alternatives 3, 4, 7, and 8. From the information gathered to date, the park consists of the green space within the median and either side of Nuccio Parkway between Nebraska and Palm Avenues. The northwest shoulder is a pedestrian walkway with a sidewalk and a landscaped utility strip from Nebraska Avenue to East 7th Street, approximately 0.58 mi. long. There are plans to use the southeast shoulder for an off-road greenway between Nuccio Parkway and the railroad tracks from Nebraska Avenue to the Ybor City Turnaround, which is approximately 0.43 mi. long. Currently, the park is used as a visual parkway as you can travel Nuccio Parkway from downtown Tampa to the Ybor City entertainment district (Appendix A, Sheet 187).

Ambient noise monitoring was performed on January 22, 2003. For this area, ambient noise levels were determined to be 65 dBA. For the build scenario, the area is predicted to have a 66 dBA noise level for Alignment A2, Design/Build Alternatives 3, 4, 7, and 8, which results in a 1 dBA increase for the area. Again, decibel increases below 3 dBA are not perceptible to the average human ear. Predicted noise levels were not considered for Alignment A1, Design/Build Alternatives 1, 2, 5, and 6 due to the long distance between the northern portion of the park and the interstate (approximately 1000 ft.). There are no anticipated noise increases from Design/Build Alternatives 1, 2, 5, and 6 in this area. Usage figures are not available. The proposed project would not cause an aesthetic impact for the park users because an existing transportation corridor is already in place. There are no vibration-sensitive structures associated with the park and there are no natural connections to any wildlife habitats or wildlife or waterfowl refuges. In summary, the proposed project would not substantially impair or diminish the park's activities, features, or attributes. In a letter dated March 27, 2003 (see Appendix B), the City of Tampa stated it is not considered a significant park.

Williams/Tanner Road Park

Williams/Tanner Road Park, approximately 32.7 ac. in size, is located at 10611 Tanner Road in the vicinity of Alignment B2, Design/Build Alternatives 3, 4, 7, and 8 and is owned and operated by Hillsborough County. The park is bordered by Tanner Road to the north; vacant lands and Williams Road to the east, vacant lands to the south, and I-75 to the west. The park is classified as a local park and is currently undeveloped. There is a lake on the property which was a former borrow pit. Parking facilities are not provided (Appendix A, Sheet 203).

I-75 is approximately 270 ft. from the nearest boundary of the park. Ambient noise monitoring

was performed on January 22, 2003. For this area, ambient noise levels were determined to be 70 dBA. For the build scenario, the area is predicted to have a 70 dBA noise level (for Design/Build Alternatives 3, 4, 7, and 8) resulting in neither an increase nor decrease for the area. Usage figures are not available for this park. However, because it is undeveloped, it can be assumed usage is very limited. The proposed project would not cause an aesthetic impact for the park users because an existing transportation corridor is already in place and the park use was not established for aesthetic viewing. The proposed improvements would not change access to the park. There are no vibration-sensitive structures associated with the park and no natural connections to any wildlife habitats or wildlife or waterfowl refuges. In summary, the proposed project would not substantially impair or diminish the park's activities, features, or attributes. A letter requesting significance was sent on March 17, 2003, to Hillsborough County. To date, the County has not responded and, therefore, the park is assumed to be significant.

Evans Park

Evans Park, approximately 17.70 ac. in size, is located at 1004 Kingsway Road in the vicinity of Alignment C1, Design/Build Alternatives 1 through 8 and is owned and operated by Hillsborough County. The park is bordered by I-4 to the north, Kingsway Road to the east, Gordon Burnett Middle School to the south, and Brinwood Drive to the west. The park is classified as a local park and contains a variety of active recreational facilities. These include a picnic area, softball field, basketball courts, soccer field, football field, hockey court, playground equipment, and a community center. In addition, there are shaded rest areas with benches. A parking lot is also provided with access from Kingsway Road (Appendix A, Sheet 24).

Alignment C1 (Design/Build Alternatives 1 through 8) is within the median of I-4, with I-4 being directly adjacent to the park property. Ambient noise monitoring was performed on January 21, 2003. For this area, ambient noise levels were determined to be 66 dBA. For the build scenario, the area is predicted to have a 66 dBA noise level for Design/Build Alternatives 1 through 8, resulting in neither an increase or decrease for the area. Park use varies per month; however, it averages approximately 3,692 persons per month. The soccer/football field, which is the closest recreational facility to the interstate, is approximately 150 ft. from I-4. The proposed project would not cause an aesthetic impact for the park users because an existing transportation corridor is already in place and the park use was not established for aesthetic viewing. The proposed improvements would not change access to the park. There are no vibration-sensitive structures associated with the park and there are no natural connections to any wildlife habitats or wildlife or waterfowl refuges. In summary, the proposed project (Design/Build Alternatives 1 through 8) would not substantially impair or diminish the park's activities, features, or attributes. A letter requesting significance was sent on March 17, 2003, to Hillsborough County. To date, the County has not responded and, therefore, the park is assumed to be significant.

Shingle Creek Greenway

The Shingle Creek Greenway is a portion of the Shingle Creek Swamp that covers more than 7,000 ac. in southern Orange and northern Osceola counties. It is located in the vicinity of

Alignments E1 and E2, Design/Build Alternatives 1 through 8. The swamp is a major receiving body for stormwater runoff from areas south and southwest of Orlando. It is largely isolated, except for its connection to Shingle Creek, which flows along the eastern border of the swamp. The University of Florida, College of Landscape Architecture is working with the South Florida Water Management District (SFWMD) to develop a plan that would address public use for the project as a whole. Orange and Osceola counties, the City of Kissimmee, and the SFWMD are also working cooperatively to establish a 'greenbelt' along Shingle Creek that will link common areas. The plans would create a natural corridor along the Shingle Creek from its origin near Highway 50 in Orange County, extending to Lake Tohopekaliga in Osceola County (Appendix A, Sheets 139 and 163 through 165).

The portion of the property adjacent to the Central Florida Greeneway (S.R. 417) and the Bee Line Expressway (S.R. 528) is owned by SFWMD. Currently, there is limited public access to the Central Florida Greeneway (S.R. 417). A small portion of a trail along the east side of Shingle Creek and a connection to Hoagland Boulevard in Osceola County was completed in 1999 by private developers. The trail, which allows for bicycling, skating, and walking, is 10-ft. wide and extends approximately 2/3 of a mi. with plans for further extension. Public access in Orange County is primarily through the Marriott Hotel, located approximately 5 mi. north of the Central Florida Greeneway (S.R. 417) and 4 mi. south of the Bee Line Expressway (S.R. 528), allowing for access to the interior of the swamp. Currently, there is no public access to the greenway in the area adjacent to the proposed project and estimated usage figures are not available. This portion of the greenway is mainly undeveloped and there are no existing facilities; therefore, usage is anticipated to be low. Various agencies are cooperating to acquire the land and develop the trail network and boardwalk.

The Central Florida Greeneway (S.R. 417) and the Bee Line Expressway (S.R. 528) (Alignments E1 and E2, Design/Build Alternatives 1 through 8) are adjacent to the Shingle Creek property. Ambient noise monitoring was performed January 27, 2003, on the Shingle Creek property adjacent to the Central Florida Greeneway (S.R. 417) (Alignment E2, Design/Build Alternatives 2, 4, 6, and 8). Ambient noise levels were determined to be 59 dBA. For the build scenario, the area is predicted to have a 60 dBA noise level for the gas turbine train (Design/Build Alternatives 2 and 4) resulting in a 1 dBA increase for this area. Also, noise levels ranging from 72 dBA for the portion of the property that lies approximately 25 ft. from the Central Florida Greeneway (S.R. 417) ROW to 61 dBA for the portion of the property that lies approximately 250 ft. from the Central Florida Greeneway (S.R. 417) ROW (Design/Build Alternatives 6 and 8) are expected.

As stated in the previous paragraph, the Shingle Creek property adjacent to Alignment E2 (Central Florida Greeneway [S.R. 417]) is currently undeveloped and there is no access. There are no official site plans yet; however, the vision of the SFWMD is to use the property for passive recreation. There has been discussion concerning connection of the Hunters Creek Middle School, which lays to the east of the Shingle Creek property, to The Vistas, a new residential development to the west of the Shingle Creek property. This potential future trail may be used to travel to and from these two areas. The SFWMD is working with the Orange County School Board to develop a cooperative agreement that would give area students

opportunities for special programming within the Shingle Creek property. Due to the itinerant nature of this trail/greenway system, users will not be on the trail for long enough periods of time to have their use of the greenway's activities, features, or attributes substantially impaired or diminished by the noise level increase.

Ambient noise monitoring was performed March 27, 2003, on the Shingle Creek property adjacent to the Bee Line Expressway (S.R. 528) (Alignment E1, Design/Build Alternatives 1, 3, 5, and 7). Ambient noise levels were determined to be 63 dBA. For the build scenario, the area is predicted to have a 64 dBA noise level (for both the electric and the gas turbine trains, Design/Build Alternatives 1, 3, 5, and 7) resulting in a 1 dBA increase for the area. As mentioned, decibel increases below 3 dBA are not perceptible to the average human ear.

The proposed project would not cause an aesthetic impact for the greenway users because an existing transportation corridor is already in place, and the greenway use was not established for aesthetic viewing. There are no vibration-sensitive structures associated with the Shingle Creek property and there are no natural connections to any wildlife habitats or wildlife or waterfowl refuges. The proposed project is not anticipated to cause a noise level increase that would substantially impair or diminish the greenway's activities, features, or attributes. Therefore, the proposed project would not substantially impair or diminish the Shingle Creek property's activities, features, or attributes. In a letter dated April 14, 2003 (see Appendix B), the SFWMD stated the Shingle Creek project will continue to play a vital role in the District's mission of water resource protection and developing appropriate public use of its lands.

No-Build Alternative

The No-Build Alternative would not require the acquisition of land from the Perry Harvey Sr. Park. The increase in congestion on I-4 and the Central Florida Greeneway (S.R. 417) under the No-Build would also increase future noise levels in the Perry Harvey Sr. Park and the Shingle Creek Park.

Preferred Alternative

The Preferred Alternative would result in the acquisition of 0.184 ac. from Perry Harvey Sr. Park. The acquisition, impacts and mitigation are discussed in detail in Section 5.

4.1.9 Secondary and Cumulative Impacts

Metropolitan Planning Organizations (MPOs) are responsible for developing the Long Range Transportation Plan (LRTP) within an urban area. The primary purpose of the LRTP is to guide the development of transportation systems to serve the travel demands of existing and projected future growth. One of the guiding principles in developing the LRTP is the Future Land Use Plan. This plan identifies the development potential of an area and is also used to identify the transportation facilities and improvements needed to support future growth and development in a region. The Future Land Use Plan indicates the kind and intensity of activity approved for the various land uses. Transportation improvement needs are identified in response to the

development allowed in the Local Government Comprehensive Plans, of which the LRTP and Future Land Use Plan are elements.

Given the projected future growth and land use designations, the implementation of the FHSR project is not expected to substantially alter development patterns along any of the design/build alternatives. The alternatives all occur within or next to existing roadway ROW with only small areas of exception. Undeveloped land near some of the station locations may result in development at a slightly faster rate than without FHSR; however, not building FHSR is unlikely to defer development of the vacant land along I-4 between Orlando and Tampa. All of the other routes of the various alternatives are already developed or are planned to be developed.

The greatest potential for development, economic activity, and job creation is near proposed station sites that are now undeveloped. Those proposed locations are:

- I-4/Polk Parkway, west entry
- I-4/Kathleen Road (S.R. 539) in the City of Lakeland
- I-4 near Walt Disney World

These sites are all in highly developed areas, and growth is anticipated in the near future, according to local future land use plans.

The Tampa CBD station site location has been previously identified as the site of a multi-modal center and is expected to support redevelopment opportunities in the area. The Orlando International Airport station is included in the approved Airport Master Plan. The OCCC station site includes plans for a multi-modal center.

4.2 NATURAL AND PHYSICAL IMPACTS

4.2.1 Visual/Aesthetic

All of the Design/Build Alternatives 1 through 8 are elevated above ground level on structures or on a retaining wall; therefore, all alternatives are visible to surrounding land uses when outside of existing roadway medians. There are no known visual or aesthetic impacts; however, there are design guidelines which may be applicable to station sites, operation and maintenance facilities, piers, or retaining walls. Table 4-8 presents regulations that govern each specific geographical area. All contain some reference to aesthetics.

Table 4-8
Current Visual/Aesthetic Design Standards

Station Site/Alignment	Location	Standards
City of Tampa Station	City of Tampa	City of Tampa Development Regulations[11]: -Development District North (CBD) Urban Design Guidelines[12]
I-4 Alternatives 1, 2, 5, 6 (Alignment A1)	City of Tampa	City of Tampa Development Regulations: -Development District North (CBD) - Urban Design Guidelines
CSX Alternatives 1, 3, 5, 7 (Alignment A2)	City of Tampa	City of Tampa Development Regulations: -Development District North (CBD) -East Office District (CBD) Urban Design Guidelines
Walt Disney World Station	Reedy Creek Jurisdiction (Osceola County)	Reedy Creek Improvement District Guidelines[13]
Orange County Multi-modal Center Station	Orange County	Orange County Development Code[14]: -Ordinance No. 2001-14, Sections 2-9 The Commercial Design Standards Guidebook[15]
Maintenance Facility	City of Orlando: (Orlando International Airport)	Code of the City of Orlando[16]: -Ordinance of May 5, 2003, Document #030505704, (Supp. No. 13), Chapter 16.

It is anticipated that the greatest sensitivity to aesthetics of the FHSR would occur when the FHSR is not located within an existing roadway or when specific official design standards are mandated. Sensitive areas along the proposed FHSR alternatives include the Tampa CBD (all alternatives) and OCCC and Taft/Vineland neighborhood (along Alignment E1, Design/Build Alternatives 1, 2, 5, and 6). The only specific known visual/aesthetic issues occur within the Tampa CBD. For Design/Build Alternatives 1, 2, 5, and 6 (Alignment A1) where the FHSR leaves the I-4 median within the Ybor City area, the City of Tampa has requested future coordination with the FHSRA to ensure the design of FHSR in this location is compatible in height and design with the proposed Ybor City Gateway design at I-4 and 21st Street.

No-Build Alternative

The No-Build Alternative would not change the visual character of the project corridor.

Preferred Alternative

The Preferred Alternative would result in potential visual/aesthetic issues within the Tampa CBD and Taft/Vineland neighborhood. Where the FHSR leaves the I-4 median within Ybor City,

coordination will need to occur with the City of Tampa to ensure design compatibility in height and design with the proposed Ybor City Gateway design at I-4 and 21st Street.

4.2.2 Air Quality

Emissions from the trains, operational/maintenance (O&M) facilities supporting the trains and O&M activities would be a new source that would contribute to the regional pollutant load. Conversely, there would be a reduction in emissions from motor vehicles as travelers use the train as an alternate mode of transportation. Within a region, motor vehicles are typically the single largest source of carbon monoxide, oxides of nitrogen, and volatile organic compounds. These are also the three primary pollutants associated with train operations. An emissions inventory was developed for these three pollutants to determine the net change that would result from the proposed FHSR Design/Build Alternatives 1 through 8.

Motor Vehicle Emissions

The two parameters required to quantify emissions from motor vehicles are vehicle miles traveled (VMT) and emission factors. Based on the 2002 Ridership Study, use of the FHSR would result in an annual reduction of 4,253,000 motor vehicle trips. Regional transportation modeling data was used to convert the vehicle trips to person VMT shown in Table 4-9. Vehicle occupancy rates by trip type shown in Table 4-10 were obtained from highway survey data and were then used to convert the person VMT to motor VMT shown in Table 4-11.

Table 4-9
Annual Person Vehicle Miles Traveled (VMT)

Alternative	Rail Rider Person Vehicle Miles	Person Vehicle Miles to Access Train Station		
		Car Access	Shuttle Access	Taxi Access
1, 3, 5, and 7[1]	59,227,809	8,232,366	3,497,600	635,800
2, 4, 6, and 8[2]	37,212,248	7,711,022	3,311,162	565,361

Notes:
[1] Alternatives using the Bee Line Expressway (S.R. 528).
[2] Alternatives using the Central Florida Greeneway (S.R. 417).

Table 4-10
Vehicle Occupancy Rates

Trip Type	Vehicle Occupancy
Residential Commuter	1.16
Residential Business	1.25
Residential Other	2.26
Non-Residential Business	1.12
Non-Residential Other	3.52

Table 4-11
Reduction/Addition of Motor Vehicle Miles Traveled (VMT)

Alternative	Reduced Rail Rider VMT	Additional Train Station Access VMT	Net Reduction in VMT
1, 3, 5 and 7[1]	25,751,221	4,670,258	21,080,963
2, 4, 6 and 8[2]	20,673,471	4,352,302	16,321,169

Notes:
[1] Alternatives using the Bee Line Expressway (S.R. 528).
[2] Alternatives using the Central Florida Greeneway (S.R. 417).

The motor vehicle emission factors used in preparing the most current maintenance plan for the Hillsborough County ozone maintenance area were developed using the MOBILE6 model. This is the most current emission factor model available from U.S. Environmental Protection Agency (EPA). Therefore, MOBILE6 (version 6.2) was used to develop emission factors for this analysis. Input parameters for MOBILE6 were adjusted for site and project specific conditions as follows:

- Emissions factors were developed for year 2010 to coincide with the planning year for the regional transportation model.
- Consistent with the General Conformity Rule, motor vehicle emissions are calculated on an annual basis; therefore, average daily minimum and maximum temperatures of 64° and 82° (Fahrenheit) were used.
- One measure of fuel volatility is the Reid Vapor Pressure (RVP). The RVP of fuel that can be sold within an area depends on the designated attainment status. All four counties within the project limits are designated as attainment areas, although Hillsborough County is a maintenance area for ozone. Consistent with these designations and *40 CFR Part 80*, an RVP of 9.0 was used.
- The reduction in VMT only applies to passenger type vehicles; therefore, the composite emission factor developed by MOBILE6 only considers the four passenger type vehicles designated within the model at the following percentages: light duty gas vehicles (50.42 percent), light duty gas trucks 1 and 2 (48.80 percent), light duty diesel vehicles (0.05 percent), and motorcycles (0.73 percent).
- Composite emission factors from MOBILE6 include emissions from two main categories: 1) exhaust emissions applicable to carbon monoxide, oxides of nitrogen, and volatile organic compounds and 2) evaporative emissions applicable only to volatile organic compounds. These two main categories are further divided into several subcategories. Only those emission subcategories applicable to a trip type that would be eliminated by use of the FHSR system were included in the composite emission factor. The subcategories included are: running exhaust emissions, running loss emissions, crankcase loss emissions, and refueling loss emissions (fuel displacement and spillage). Other evaporative loss emissions that would not be included are diurnal loss emissions (evaporative emissions caused by daily temperature fluctuations) and resting loss emissions (leaks and seepage) since these emissions would occur even with the elimination of a trip. Additionally, exhaust start emissions (excess emission before

emission control systems are heated and fully functional) and hot soak loss emissions (evaporative emissions after trip end but while engine is still hot) were not included because a rider would still have to drive to and from the train station to access the train.

The emission factors developed through MOBILE6 and the reduction in carbon monoxide, oxides of nitrogen, and volatile organic compounds attributable to the decreased motor VMT are provided in Table 4-12.

Table 4-12
Motor Vehicle Emissions

Pollutant	Emission Factor (grams/mile)	Reduction in Annual Motor VMT		Total Reduction in Emissions (tons per year)	
		Alt. 1, 3, 5, 7[1]	Alt. 2, 4, 6, 8[2]	Alt. 1, 3, 5, 7[1]	Alt. 2, 4, 6, 8[2]
Carbon Monoxide	7.291	21,080,963	16,321,169	169.1	130.9
Oxides of Nitrogen	0.499	21,080,963	16,321,169	11.6	9.0
Volatile Organic Compounds	0.411	21,080,963	16,321,169	9.5	7.4

Notes:
[1] Alternatives 1, 3, 5, and 7 using the Bee Line Expressway (S.R. 528) route.
[2] Alternatives 2, 4, 6, and 8 using the Central Florida Greeneway (S.R. 417) route.

Train Emissions

Parameters required to quantify emissions from the FHSR system depend upon the train technology. Emissions were estimated for two different technologies, the gas turbine train and the electric train. Emission factors vary by train technology. The combustion of fuel in the gas turbine train would produce emissions directly. In contrast, the electric train would produce emissions indirectly (i.e., at the power plant providing electricity).

Gas turbine train emission factors and estimated fuel consumption information provided by the proposer are summarized in Tables 4-13 and 4-14. The annual fuel consumption is based on the proposer's estimate of 4,062,000 gallons for 969,360 annual train-miles. This annual fuel consumption was then adjusted to account for differences in annual train-miles traveled under each alternative.

Table 4-13
Gas Turbine Train Technology Emission Factors

Pollutant	Emission Factor (grams emitted per gallon of fuel burned)
Carbon Monoxide	12.5
Oxides of Nitrogen	43.3
Volatile Organic Compounds	3.9

Table 4-14
Gas Turbine Train Technology Annual Fuel Consumption (2010)

Alternative	Fuel Consumption[1]
1	4,094,000 gallons
2	4,029,000 gallons
3	4,146,000 gallons
4	4,080,000 gallons

Notes:
[1] Proposer's estimate of 4,062,000 gallons for 969,360 annual train-miles adjusted by 2.68 gallons per mile for Tampa-Orlando trains, and 3.42 gallons per mile for Disney shuttles. Fuel consumption at idle assumed to be 100 gallons per hour.

Emissions from the electric train would depend upon power consumption by the train and emission rates for the power plant providing electricity. Estimated annual power consumption by trip type is provided in Table 4-15. As a worst-case, emission factors for a coal-fired power plant were used to calculate annual emissions. Emissions factors provided by the Florida Department of Environmental Protection (FDEP) for a coal-fired facility are summarized in Table 4-16.

Table 4-15
Power Usage for the Electric Train

Trip Type	Annual Gigawatt Hours[1]			
	Alternative 5	Alternative 6	Alternative 7	Alternative 8
Direct Tampa to Orlando International Airport	6.006	5.677	6.236	5.908
Tampa to Orlando International Airport with stops	18.682	18.343	18.845	18.506
Shuttles between Disney and Orlando International Airport	5.940	5.645	5.994	5.699

Notes:
[1] Consumed at the generating station, including transmission and distribution losses.

Table 4-16
Emission Factors for Coal-Fired Facility

Pollutants	Emission Factor (pounds per megawatt hour)
Carbon Monoxide	0.195
Oxides of Nitrogen	1.6
Volatile Organic Compounds	0.016

Train emissions by technology and design/build alternative are provided in Table 4-17. For a particular train technology, the amount of emissions is nearly identical for all of the alternatives.

The minor differences are a result of variations in the train trip length for the alternatives. The results also demonstrate that the electric train technology would produce considerably less emissions of carbon monoxide, oxides of nitrogen, and volatile organic compounds compared to the gas turbine train technology. This is a result of the relatively strict controls and emission reduction measures that are employed by power plants, which would be the source of electricity for the electric train technology.

Table 4-17
Annual Emissions by Train Technology

Alternative	Amount of Pollutant (tons per year)					
	Carbon Monoxide		Oxides of Nitrogen		Volatile Organic Compounds	
	Gas Turbine Train	Electric Train	Gas Turbine Train	Electric Train	Gas Turbine Train	Electric Train
1	56.4	N/A	195.4	N/A	17.5	N/A
2	55.5	N/A	192.3	N/A	17.3	N/A
3	57.1	N/A	197.8	N/A	17.8	N/A
4	56.2	N/A	194.7	N/A	17.5	N/A
5	N/A	2.99	N/A	24.50	N/A	0.25
6	N/A	2.89	N/A	23.73	N/A	0.24
7	N/A	3.03	N/A	24.86	N/A	0.25
8	N/A	2.94	N/A	24.09	N/A	0.24

Operational/ Maintenance Activities and Facilities Emissions

Emissions associated with O&M facilities were divided into two categories 1) exhaust emissions associated with vehicles used by security patrols and maintenance crews, and 2) emissions associated with electric power production to service train stations and maintenance facilities.

The two parameters used to quantify exhaust emissions from vehicles used by security patrols and maintenance crews are VMT and emission factors. Estimated VMT by alternative are provided in Table 4-18.

Table 4-18
Annual Vehicle Miles Associated with O&M Activities

Alternative	Security (miles/year)	Maintenance (miles/year)
1	744,783	181,153
2	734,765	178,720
3	755,592	183,923
4	745,574	181,350
5	744,783	376,078
6	734,765	371,019
7	755,592	381,536
8	745,574	376,478

The model (MOBILE6 version 6.2) and assumptions previously used to develop emission factors for motor vehicles were also used to develop emission factors for security and maintenance vehicles with the following exceptions:

- All security vehicles were assumed to be passenger vehicles traveling on roadways categorized as arterial/collectors at an average speed of 45 mph.
- All maintenance vehicles were assumed to be trucks spread evenly amongst the four light duty truck designations available in MOBILE6. The maintenance vehicles were assumed to travel on roadways categorized as arterial/collectors at an average speed of 35 mph.
- The composite emission factors included all exhaust and evaporative emissions.

The emission factors developed through MOBILE6 are provided in Table 4-19 and the annual amount of carbon monoxide, oxides of nitrogen and volatile organic compounds associated with O&M activities are provided in Table 4-20.

Table 4-19
Motor Vehicle Emission Factors for O&M Activities

Pollutant	Emission Factor for Security Vehicles (grams/mile)	Emission Factor for Maintenance Vehicles (grams/mile)
Carbon Monoxide	9.840	11.574
Oxides of Nitrogen	0.549	0.872
Volatile Organic Compounds	0.667	1.060

Table 4-20
Annual Motor Vehicle Emissions from O&M Activities

Alternative	Pollutant		
	Carbon Monoxide (tons/year)	Oxides of Nitrogen (tons/year)	Volatile Organic Compounds (tons/year)
1	10.4	0.6	0.8
2	10.2	0.6	0.7
3	10.5	0.6	0.8
4	10.4	0.6	0.8
5	12.9	0.8	1.0
6	12.7	0.8	1.0
7	13.1	0.8	1.0
8	12.9	0.8	1.0

Emissions associated with electric power production to service train stations and maintenance facilities would depend upon the amount of power consumed and emission rates for the power plant. As with the electric power consumption associated with the train, emission factors for a coal-fired power plant (see Table 4-15) were used as a worst-case. Estimated electric power consumption for the proposed stations and maintenance facilities are provided in Table 4-21.

Table 4-21
Annual Electric Power Consumption for O&M Facilities

Alternative	Annual Gigawatt Hours
1	5.779
2	5.311
3	5.779
4	5.311
5	12.043
6	10.717
7	12.043
8	10.717

Annual emissions associated with electric power production to service train stations and maintenance facilities are provided in Table 4-22 and total emissions for O&M activities and facilities are provided in Table 4-23. Compared to the gas turbine train alternatives, emissions for O&M activities and facilities are higher for the electric train alternatives. This is a result of the larger stations associated with the electric train alternatives, the fully doubled tracked corridor associated with the electric train which increases maintenance and the electric traction power supply system which also requires additional field maintenance.

Table 4-22
Annual Emissions from Electric Power Consumption at O&M Facilities

Alternative	Pollutant		
	Carbon Monoxide (tons per year)	Oxides of Nitrogen (tons per year)	Volatile Organic Compounds (tons per year)
1	0.56	4.62	0.05
2	0.52	4.25	0.04
3	0.56	4.62	0.05
4	0.52	4.25	0.04
5	1.17	9.63	0.10
6	1.04	8.57	0.09
7	1.17	9.63	0.10
8	1.04	8.57	0.09

Table 4-23
Total Annual Emissions for O&M Activities and Facilities

Alternative	Pollutant		
	Carbon Monoxide (tons per year)	Oxides of Nitrogen (tons per year)	Volatile Organic Compounds (tons per year)
1	11.0	5.2	0.9
2	10.7	4.9	0.7
3	11.1	5.2	0.9
4	10.9	4.9	0.8
5	14.1	10.4	1.1
6	13.7	9.4	1.1
7	14.3	10.4	1.1
8	13.9	9.4	1.1

Change in Regional Emissions

The increase in regional emissions resulting from the operation of the FHSR would be offset by the decrease in emissions resulting from a reduction in miles traveled by motor vehicles. Table 4-24 summarizes the change in emissions using the gas turbine train as the selected technology. Based on the anticipated train ridership, regional emissions of carbon monoxide would be substantially reduced; regional emissions of volatile organic compounds would remain fairly constant; and regional emissions of oxides of nitrogen would show an increase. The increase in oxides of nitrogen is a result of the relatively high emission rate of this pollutant from gas turbine engines.

Table 4-24
Gas Turbine Train Technology Net Change in Emissions

Alternative	Train and O&M Emissions (tons per year)			Reduction in Motor Vehicle Emissions (tons per year)			Net Change in Regional Emissions (tons per year)		
	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]
1	67.4	200.6	18.4	169.1	11.6	9.5	-101.7	+189.0	+8.9
2	66.2	197.2	18.0	130.9	9.0	7.4	-64.7	+188.2	+10.6
3	68.2	203.0	18.7	169.1	11.6	9.5	-100.9	+191.4	+9.2
4	67.1	199.6	18.3	130.9	9.0	7.4	-63.8	+190.6	+10.9

Notes:
[1] CO is carbon monoxide.
[2] NOX is oxides of nitrogen.
[3] VOC is volatile organic compounds.

Table 4-25 summarizes emissions using the electric train as the selected technology. Based on the anticipated train ridership, regional emissions of carbon monoxide and volatile organic compounds would be reduced. As with the gas turbine train technology, regional emissions of oxides of nitrogen would increase. The increase in oxides of nitrogen is a result of the relatively

high emission rate of this pollutant from power plants that produce electricity through the combustion of fossil fuels. The relatively high emission rate for oxides of nitrogen is demonstrated through comparison of emission factors provided by FDEP and previously documented in Table 4-15.

Table 4-25
Electric Train Technology Net Change in Emissions

Alternative	Train and O&M Emissions (tons per year)			Reduction in Motor Vehicle Emissions (tons per year)			Net Change in Regional Emissions (tons per year)		
	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]
5	17.1	34.9	1.4	169.1	11.6	9.5	-152.0	+23.3	-8.1
6	16.6	33.1	1.3	130.9	9.0	7.4	-114.3	+24.1	-6.1
7	17.3	35.3	1.4	169.1	11.6	9.5	-151.8	+23.7	-8.1
8	16.8	33.5	1.3	130.9	9.0	7.4	-114.1	+24.5	-6.1

Notes:
[1] CO is carbon monoxide.
[2] NOX is oxides of nitrogen.
[3] VOC is volatile organic compounds.

General Conformity

The *General Conformity Rule* (*40 CFR Part 93 Subpart B*) is applicable to areas that have been designated as non-attainment or maintenance with respect to the National Ambient Air Quality Standards (NAAQS). The EPA has designated Polk, Osceola, and Orange counties as attainment for all the NAAQS; therefore, the General Conformity Rule is not applicable to these three counties. Hillsborough County is designated as a maintenance area for ozone; therefore, the General Conformity Rule is applicable to the portion of the FHSR project that traverses this county.

The General Conformity Rule contains rates, which if exceeded, require a conformity determination. The rates vary depending on the pollutant and designation of the area. As an ozone maintenance area, the rates applicable to Hillsborough County are 100 tons per year of either volatile organic compounds or oxides of nitrogen. The net change for these two pollutants in Hillsborough County was determined by segregating the train emissions, O&M emissions and reduction in VMT occurring in Hillsborough County from the total train emissions, total O&M emissions and total reduction in VMT attributable to the FHSR.

Emissions within Hillsborough County were based on the percentage of total annual train miles traveled that would occur within the county. The annual train emissions within Hillsborough County are provided by alternative in Table 4-26.

Table 4-26
Train Emissions within Hillsborough County

Alternative	Train Emissions (tons per year)		
	Carbon Monoxide	Oxides of Nitrogen	Volatile Organic Compounds
1	16.0	55.3	5.0
2	16.0	55.5	5.0
3	16.7	57.8	5.2
4	16.7	58.0	5.2
5	0.8	6.1	0.1
6	0.8	6.2	0.1
7	0.8	6.6	0.1
8	0.8	6.5	0.1

For Alternatives 1 through 4, it was determined that 37 percent of the gasoline consumed for O&M activities would occur in Hillsborough County. For Alternatives 5 through 8, 32 percent of the gasoline consumed for O&M activities would occur in Hillsborough County. These percentages were applied to the total annual motor vehicle emissions from O&M Activities (previously provided in Table 4-19). Estimated electric power consumption for the proposed stations and maintenance facilities in Hillsborough County are provided in Table 4-27. Based on the gasoline and electric power consumption within Hillsborough, the total annual emissions for O&M activities and facilities within Hillsborough County were determined and are summarized in Table 4-28.

Table 4-27
Annual Electric Power Consumption for O&M Facilities in Hillsborough County

Alternative	Annual Gigawatt Hours
1	0.974
2	0.974
3	0.974
4	0.974
5	1.495
6	1.495
7	1.495
8	1.495

Table 4-28
Total Annual Emissions for O&M Activities and Facilities in Hillsborough County

Alternative	Pollutant		
	Carbon Monoxide (tons/year)	Oxides of Nitrogen (tons/year)	Volatile Organic Compounds (tons/year)
1	3.9	1.0	0.3
2	3.9	1.0	0.3
3	4.0	1.0	0.3
4	3.9	1.0	0.3
5	4.3	1.5	0.3
6	4.2	1.5	0.3
7	4.3	1.5	0.3
8	4.3	1.5	0.3

The net change in emissions occurring within Hillsborough County for the gas turbine train technology and electric train technology are provided in Tables 4-29 and 4-30, respectively. Regardless of the train technology, the net change in emissions for oxides of nitrogen or volatile organic compounds is below the 100 ton per year rate of increase stipulated in the General Conformity Rule. Therefore, a conformity determination pursuant to the General Conformity Rule is not required for the FHSR project.

Table 4-29
Gas Turbine Train Technology
Net Change in Emissions within Hillsborough County

Alternative	Train and O&M Emissions (tons per year)			Reduction in Motor Vehicle Emissions (tons per year)			Net Change in Emissions (tons per year)		
	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]
1	19.9	56.3	5.2	50.4	3.5	2.8	-30.5	+52.8	+2.4
2	19.9	56.5	5.3	56.1	3.9	3.2	-36.2	+52.6	+2.1
3	20.7	58.1	5.5	50.4	3.5	2.8	-29.7	+54.6	+2.7
4	20.6	58.0	5.5	56.1	3.9	3.2	-35.5	+54.1	+2.3

Notes:
[1] CO is carbon monoxide.
[2] NOX is oxides of nitrogen.
[3] VOC is volatile organic compounds.

Table 4-30
Electric Train Technology
Net Change in Emissions within Hillsborough County

Alternative	Train and O&M Emissions (tons per year)			Reduction in Motor Vehicle Emissions (tons per year)			Net Change in Emissions (tons per year)		
	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]	CO[1]	NOX[2]	VOC[3]
5	4.8	7.6	0.4	50.4	3.5	2.8	-45.6	+4.1	-2.4
6	5.0	7.7	0.4	56.1	3.9	3.2	-51.1	+3.8	-2.8
7	5.1	8.1	0.4	50.4	3.5	2.8	-45.3	+4.6	-2.4
8	5.1	8.0	0.4	56.1	3.9	3.2	-51.0	+4.1	-2.8

Notes:
[1] CO is carbon monoxide.
[2] NOX is oxides of nitrogen.
[3] VOC is volatile organic compounds.

Summary

The following summarizes the results of the air quality evaluation:

- Alternatives associated with the gas turbine train technology (Design/Build Alternatives 1, 2, 3, and 4) would result in a net decrease in regional emissions of carbon monoxide and a net increase in regional emissions of oxides of nitrogen compared to the No-Build Alternative. The net increase in regional emissions of oxides of nitrogen is a result of the relatively high emission rate of this pollutant from gas turbine engines. A very small increase in regional emissions of volatile organic compounds is also predicted compared to the No-Build Alternative.
- Alternatives associated with the electric train technology (Design/Build Alternatives 5, 6, 7, and 8) would result in a net decrease in regional emissions of carbon monoxide and volatile organic compounds compared to the No-Build Alternative. A net increase in regional emissions of oxides of nitrogen is predicted. The increase in oxides of nitrogen is a result of the relatively high emission rate of this pollutant from power plants that produce electricity through the combustion of fossil fuels. This emissions analysis is based on use of coal as the source for power generation resulting in a worst case scenario.
- The net change in emissions for a particular train technology is similar for all alternatives utilizing that same technology.
- Although alternatives associated with the electric train technology consider more train trips, emissions from the electric train technology would be less than emissions from the gas turbine train technology. This is a result of the relatively strict controls and emission reduction measures that are employed by power plants, which would be the source of electricity for the electric train technology.

- EPA has designated Polk, Osceola, and Orange Counties as attainment areas; therefore, the General Conformity Rule is not applicable to these three counties.
- EPA has designated Hillsborough County as a maintenance area for ozone; therefore, the General Conformity Rule is applicable to Hillsborough County. Predicted increases in volatile organic compounds or oxides of nitrogen for the Design/Build Alternatives are less than the de minimis rates documented in the General Conformity Rule; therefore, a conformity determination is not required for this project.

No-Build Alternative

The No-Build Alternative would result in the net amount and proportion of regional emissions dependent on current modes of transportation.

Preferred Alternative

The Preferred Alternative would result in a net decrease in regional emissions of carbon monoxide, a net increase in emissions of oxides of nitrogen, and emissions of volatile organic compounds would remain fairly constant. The net increase in emissions of oxides of nitrogen is a result of the relatively high emission rate of this pollutant from gas turbine engines.

The *General Conformity Rule* (*40 CFR Part 93 Subpart B*) is applicable to areas that have been designated as non-attainment or maintenance with respect to the NAAQS. The EPA has designated Polk, Osceola, and Orange counties as attainment for all the NAAQS; therefore, the General Conformity Rule is not applicable to these three counties. Hillsborough County is designated as a maintenance area for ozone; therefore, the General Conformity Rule is applicable to the portion of the FHSR project that traverses this county. The net change in emissions for oxides of nitrogen or volatile organic compounds is below the 100 ton per year rate of increase stipulated in the General Conformity Rule. Therefore, a conformity determination pursuant to the General Conformity Rule is not required for the FHSR project.

4.2.3 Noise

Noise Impact Assessment for Residential Land Use

A noise impact assessment was conducted to quantify the extent of expected impacts and identify feasible mitigation options where warranted. The analysis was conducted in accordance with the procedures contained in the FRA publication, High-Speed Ground Transportation Noise and Vibration Impact Assessment[17] (Final Draft, December 1998).

Noise Impact Assessment Methodology

Noise levels for the FHSR Design/Build Alternatives 1 through 8 were projected based on the proposed gas turbine train technologies (Design/Build Alternatives 1 through 4) and electric train technologies (Design/Build Alternatives 5 through 8), in addition to the prediction model specified in the FRA guidance manual. Important factors analyzed include:

- Based on the gas turbine train technologies, the predictions assume one power car and four passenger cars with a total length of 420 ft. for the entire gas turbine train. Based on electric train technologies, the predictions assume two power cars and five passenger cars with a total length of 466 ft. for the entire electric train.
- The operating period for both the gas turbine train and electric train vehicles is expected to be between 6:00 AM and 11:00 PM. It is anticipated that the FHSR would operate with headway of approximately 1 hour throughout corridors A, B, C, and D. Along Corridor E, the headway is expected to be approximately ½ hour.
- The vehicle operating speeds are based on the velocity profiles that were provided in the proposals, with maximum operating speeds of 125 mph for the gas turbine train and 162 mph for the electric-powered train.

The following noise impacts are expected for each of the alternatives. Figures 2-7 and 2-8 display the alternatives and their corresponding alignments.

Alternative 1

For Alternative 1, detailed comparisons of the existing and future noise levels are presented in Table 4-31. This table includes results for the Category 2 receptors along all of the alignments with daytime and nighttime sensitivity to noise (e.g. residences, hotels, and hospitals). In addition to the distance to the near track and proposed train speed, the table includes the existing noise level, the projected noise level from the high speed rail, and the impact criteria for each receptor or receptor group. The table compares predicted project noise level with impact criteria. The resulting impact category is shown, along with the predicted total noise level and projected noise increase. Table 4-31 also lists the number of moderate impacts and severe impacts at each sensitive receptor location.

Table 4-31
Residential Noise Impacts for Alternative 1

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment E1	7672	68	110	59	58	57	63	Impact	62	2.4	1	0
Alignment E1	7673	43	110	59	61	57	63	Impact	63	3.7	6	0
Alignment E1	7683	93	112	59	65	57	63	Severe	66	6.8	0	8

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-31 shows noise impacts for a total of 15 residences for Alternative 1, eight with severe impact and seven with moderate impact. All project impacts are located at single-family residential sites along Alignment E1. All of the impacted residences are located in the Taft area near Orlando, Florida. The close proximity (100 ft. or less), the train speed (125 mph), and the

track height (over 20 ft.) all contribute to the potential noise impact at the 15 residences along Alignment E1. No impacts are projected at any Category 3 (institutional) receptors.

Alternative 2

The results of the noise analysis for Alternative 2 are presented in Table 4-32, which contains the same categories of information as the table presented for Alternative 1.

Table 4-32
Residential Noise Impacts for Alternative 2

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment E2	4694	93	76	66	62	61	67	Impact	68	1.6	1 hotel	0
Alignment E2	5196	193	119	61	61	58	64	Impact	64	2.9	4	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-32 shows noise impacts for a total of four residences and one hotel for Alternative 2; all with moderate impact and located along Alignment E2, which follows the Central Florida Greeneway (S.R. 417). The impacted single-family residences are located south of the Central Florida Greeneway (S.R. 417) and east of Landstar Boulevard. The impacted hotel is near the intersection of Kissimmee Vineland Road and World Center Drive. The close proximity (200 ft. or less) and the train speed (76-119 mph) contribute to the potential noise impact at all of the impacted buildings along Alignment E2. No impacts are projected at any Category 3 (institutional) receptors.

Alternative 3

The results of the noise analysis for Alternative 3 are presented in Table 4-33, which contains the same categories of information as the tables for Alternatives 1 and 2. Due to the fact that Alternatives 1 and 3 share some alignments, some of the impacted residences are the same.

Table 4-33
Residential Noise Impacts for Alternative 3

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A2	1016	43	22	62	60	59	65	Impact	64	2.2	1	0
Alignment E1	7672	68	110	59	58	57	63	Impact	62	2.4	1	0
Alignment E1	7673	43	110	59	61	57	63	Impact	63	3.7	6	0
Alignment E1	7683	93	112	59	65	57	63	Severe	66	6.8	0	8

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-33 shows noise impacts for a total of 16 residences for Alternative 3, eight with severe impact and eight with moderate impact. No impacts are projected at any Category 3 (institutional) receptors. One multi-family residence near the west end of the corridor, to the south of I-275, is the only building impacted in Alignment A2, located near the Tampa CBD. The close proximity to the track (less than 50 ft.) and the train speed (22 mph) are the main contributors to the potential noise impact along Alignment A2. Noise impacts are expected to affect eight residences with severe impacts and seven with moderate impacts along Alignment E1. All of the impacted residences are located in the Taft area near Orlando, Florida. The close proximity (100 ft. or less), the train speed (110-112 mph), and the track height (over 20 ft.) all contribute to the potential noise impact at the 15 residences along Alignment E1.

Alternative 4

The results of the noise analysis for Alternative 4 are presented in Table 4-34, which contains the same categories of information as the tables for the previously discussed alternatives. Due to the fact that Alternatives 2, 3, and 4 share some alignments, some of the impacted residences are the same.

Table 4-34
Residential Noise Impacts for Alternative 4

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A2	1016	43	22	62	60	59	65	Impact	64	2.2	1	0
Alignment E2	4694	93	76	66	62	61	67	Impact	68	1.6	1 hotel	0
Alignment E2	5196	193	119	61	61	58	64	Impact	64	2.9	4	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-34 shows noise impacts for a total of five residences and one hotel for Alternative 4, all of them with moderate impact. No impacts are projected at any Category 3 (institutional) receptors. One multi-family residence near the west end of the corridor, to the south of I-275 in Tampa, is the only building impacted in Alignment A2. The close proximity to the track (less than 50 ft.) and the train speed (22 mph) are the main contributors to the potentially moderate noise impact along Alignment A2. Moderate noise impacts would be expected at a total of four residences and one hotel along Alignment E2 in Orlando. The impacted single-family residences are located south of the Central Florida Greeneway (S.R. 417) and east of Landstar Boulevard. The impacted hotel is near the intersection of Kissimmee Vineland Road and World Center Drive. The close proximity (200 ft. or less) and the train speed (76-119 mph) contribute to the potential noise impact at all of the impacted buildings along Alignment E2.

Alternative 5

The results of the noise analysis for Alternative 5 are presented in Table 4-35, which contains the same categories of information as the tables for previously discussed alternatives. Due to the fact that Alternatives 5, 6, 7, and 8 use a different technology than Alternatives 1, 2, 3, and 4, the residences that are impacted would be different, even though the alignments may be the same.

Table 4-35
Residential Noise Impacts for Alternative 5

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A1	6003	43	21	68	65	63	68	Impact	70	2.0	1 hotel	0
Alignment A1	6007	43	22	77	65	65	75	Impact	78	0.3	1	0
Alignment A1	6007	43	22	68	65	63	68	Impact	70	1.9	1	0
Alignment A1	6010	43	24	68	65	63	68	Impact	70	2.0	3	0
Alignment A1	6016	43	27	69	65	64	69	Impact	70	1.6	1	0
Alignment A1	6042	43	42	74	66	65	72	Impact	74	0.7	4	0
Alignment A1	6051	43	45	79	66	65	75	Impact	79	0.2	3	0
Alignment A1	6071	43	57	77	66	65	75	Impact	77	0.4	2	0
Alignment E1	7672	68	137	59	68	57	63	Severe	69	9.3	0	1
Alignment E1	7673	43	137	59	71	57	63	Severe	71	11.8	0	6
Alignment E1	7673	209	137	59	58	57	63	Impact	62	2.5	7	0
Alignment E1	7679	93	132	59	66	57	63	Severe	67	7.4	0	9
Alignment E1	7683	93	130	59	66	57	63	Severe	67	7.4	0	8
Alignment E1	7687	143	126	59	63	57	63	Impact	64	5.2	6	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-35 shows noise impacts for a total of 52 residences for Alternative 5, 24 with severe impact and 28 with moderate impact. Moderate impact is also projected at one hotel. Impacts that are projected at Category 3 (institutional) receptors are displayed later on Table 4-33 of this report. Moderate noise impacts are expected at 15 residences and one hotel along Alignment A1 in Tampa. All of the impacted buildings are south of I-275, but none are further than the I-4/I-275 interchange. The close proximity to the track (within 50 ft.), the track height (over 30 ft.), and the train speed (21-57 mph) all contribute to the potential noise impact along Alignment A1. Along Alignment E1, severe noise impacts are expected at 24 residences and moderate noise impacts are expected at 13 residences. All of the impacted residences are located in the Taft area near Orlando. The close proximity (250 ft. or less), the train speed (126-137 mph), and the track height (over 25 ft.) all contribute to the potential noise impact at the 37 residences along Alignment E1.

Alternative 6

The results of the noise analysis for Alternative 6 are presented in Table 4-36, which contains the same categories of information as the tables for previously discussed alternatives. Due to the fact that Alternatives 5 and 6 share some alignments, some of the impacted residences are the same.

Table 4-36 shows noise impacts for a total of 102 residences for Alternative 6, 80 with moderate impact and 22 with severe impact. Moderate impact is also projected at three hotels. Impacts that are projected at Category 3 (institutional) receptors are discussed in the Noise Impact Assessment for Institutional Land Use section. The following text provides a brief discussion of the impacted Category 2 land use areas. Moderate noise impacts are expected at 15 residences and one hotel along Alignment A1 in Tampa. All of the impacted buildings are south of I-275, but none are further than the I-4/I-275 interchange. The close proximity to the track (within 50 ft.), the track height (over 30 ft.), and the train speed (21-45 mph) all contribute to the potential noise impacts along Alignment A1. The impacted sites along Alignment E2 are mostly single-family residences and apartments on the north side of the Central Florida Greeneway (S.R. 417). The locations of impacted sites extend from two hotels that have a moderate impact (near the intersection of Kissimmee Vineland Road and World Center Drive) east to Meadowwoods subdivision. The close proximity (400 ft. or less), the train speed (88-149 mph), and the track height (over 25 ft.) contribute to the potential noise impact at the 187 residences along Alignment E2.

Table 4-36
Residential Noise Impacts for Alternative 6

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1,2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A1	6003	43	21	68	65	63	68	Impact	70	2.0	1 hotel	0
Alignment A1	6007	43	22	77	65	65	75	Impact	78	0.3	1	0
Alignment A1	6007	43	22	68	65	63	68	Impact	70	1.9	1	0
Alignment A1	6010	43	22	68	65	63	68	Impact	70	2.0	3	0
Alignment A1	6016	43	27	69	65	64	69	Impact	70	1.6	1	0
Alignment A1	6042	43	42	74	66	65	72	Impact	74	0.7	4	0
Alignment A1	6051	43	45	79	66	65	75	Impact	79	0.2	3	0
Alignment A1	6071	43	57	77	66	65	75	Impact	77	0.4	2	0
Alignment E2	4642	143	149	63	64	60	65	Impact	67	3.4	1 hotel	0
Alignment E2	4694	93	149	66	67	61	67	Impact	69	3.4	1 hotel	0
Alignment E2	4827	118	88	61	61	58	64	Impact	64	3.1	6	0
Alignment E2	4827	143	88	64	60	60	65	Impact	65	1.6	6	0
Alignment E2	4838	106	90	65	62	61	66	Impact	67	1.7	3	0
Alignment E2	5118	118	130	67	64	62	67	Impact	69	1.9	10	0
Alignment E2	5153	181	137	58	62	57	63	Impact	63	5.2	4	0
Alignment E2	5153	268	137	53	56	54	60	Impact	58	5.0	4	0
Alignment E2	5158	143	138	59	63	57	63	Severe	65	5.6	0	4
Alignment E2	5158	268	138	54	56	55	61	Impact	58	4.5	4	0
Alignment E2	5159	143	138	60	63	58	63	Severe	65	5.4	0	2
Alignment E2	5159	318	138	54	55	55	61	Impact	58	3.9	4	0
Alignment E2	5162	306	139	53	56	55	61	Impact	58	4.3	3	0
Alignment E2	5163	131	139	60	64	58	64	Severe	66	5.3	0	6
Alignment E2	5165	268	139	54	57	55	61	Impact	59	4.3	4	0
Alignment E2	5167	93	139	62	66	59	64	Severe	67	5.9	0	6
Alignment E2	5168	268	140	55	57	55	61	Impact	59	4.1	4	0
Alignment E2	5171	93	140	61	66	58	64	Severe	67	6.3	0	4
Alignment E2	5172	318	140	53	56	54	60	Impact	57	4.4	3	0
Alignment E2	5184	306	143	56	59	56	62	Impact	61	4.4	10	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Alternative 7

The results of the noise analysis for Alternative 7 are presented in Table 4-37, which contains the same categories of information as the tables for previously discussed alternatives. Due to the fact that Alternatives 5 and 7 share some alignments, some of the impacted residences are the same.

Table 4-37
Residential Noise Impacts for Alternative 7

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A2	1016	43	22	62	65	59	65	Severe	67	4.8	0	1
Alignment E1	7672	68	137	59	68	57	63	Severe	69	9.3	0	1
Alignment E1	7673	43	137	59	71	57	63	Severe	71	11.8	0	6
Alignment E1	7673	209	137	59	58	57	63	Impact	62	2.5	7	0
Alignment E1	7679	93	132	59	66	57	63	Severe	67	7.4	0	9
Alignment E1	7683	93	130	59	66	57	63	Severe	67	7.4	0	8
Alignment E1	7687	143	126	59	63	57	63	Impact	64	5.2	6	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Table 4-37 shows noise impacts for a total of 38 residences for Alternative 7, 25 with severe impact and 13 with moderate impact; no impacts are projected at any Category 3 (institutional) receptors. One multi-family residence near the beginning of the corridor, to the south of I-275 in Tampa, is the only building impacted in Alignment A2. The close proximity to the track (less than 50 ft.) and the train speed (22 mph) are the main contributors to the potentially severe noise impact along Alignment A2. Along Alignment E1, severe noise impacts are expected to affect 24 residences and moderate noise impacts are expected to affect 13 residences. All of the impacted residences are located in the Taft area near Orlando. The close proximity to the track (250 ft. or less), the train speed (126-137 mph), and the track height (over 25 ft.) all contribute to the potential noise impact at the 37 residences along Alignment E1.

Alternative 8

The results of the noise analysis for Alternative 8 are presented in Table 4-38, which contains the same categories of information as the tables for previously discussed alternatives. Due to the fact that Alternatives 6 and 8 share some alignments, some of the impacted residences are the same.

Table 4-38 shows noise impacts for a total of 88 residences for Alternative 8, 65 with moderate impact and 23 with severe impact; moderate impacts are also projected at 2 hotels. Impacts that are projected at Category 3 (institutional) receptors will be discussed in the Noise Impact Assessment for Institutional Land Use section. One multi-family residence near the beginning of the corridor, to the south of I-275, is the only building impacted in Alignment A2. The close proximity to the track (less than 50 ft.) and the train speed (22 mph) are the main contributors to the potentially severe noise impact along Alignment A2. The impacted sites along Alignment E2 are mostly single-family residences and apartments on the north side of the Central Florida Greeneway (S.R. 417). The locations of impacted sites extend from two hotels that have a moderate impact (near the intersection of Kissimmee Vineland Road and World Center Drive)

east to Meadowwoods subdivision. The close proximity (400 ft. or less), the train speed (88-149 mph), and the track height (over 25 ft.) contribute to the potential noise impact at the 187 residences along Alignment E2.

Table 4-38
Residential Noise Impacts for Alternative 8

Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Res. Impacts	
					Predicted[2]	Impact Criteria					Mod	Sev
						Imp	Sev					
Alignment A2	1016	43	22	62	65	59	65	Severe	67	4.8	0	1
Alignment E2	4642	143	149	63	64	60	65	Impact	67	3.4	1 hotel	0
Alignment E2	4694	93	149	66	67	61	67	Impact	69	3.4	1 hotel	0
Alignment E2	4827	118	88	61	61	58	64	Impact	64	3.1	6	0
Alignment E2	4827	143	88	64	60	60	65	Impact	65	1.6	6	0
Alignment E2	4838	106	90	65	62	61	66	Impact	67	1.7	3	0
Alignment E2	5118	118	130	67	64	62	67	Impact	69	1.9	10	0
Alignment E2	5153	181	137	58	62	57	63	Impact	63	5.2	4	0
Alignment E2	5153	268	137	53	56	54	60	Impact	58	5.0	4	0
Alignment E2	5158	143	138	59	63	57	63	Severe	65	5.6	0	4
Alignment E2	5158	268	138	54	56	55	61	Impact	58	4.5	4	0
Alignment E2	5159	143	138	60	63	58	63	Severe	65	5.4	0	2
Alignment E2	5159	318	138	54	55	55	61	Impact	58	3.9	4	0
Alignment E2	5162	306	139	53	56	55	61	Impact	58	4.3	3	0
Alignment E2	5163	131	139	60	64	58	64	Severe	66	5.3	0	6
Alignment E2	5165	268	139	54	57	55	61	Impact	59	4.3	4	0
Alignment E2	5167	93	139	62	66	59	64	Severe	67	5.9	0	6
Alignment E2	5168	268	140	55	57	55	61	Impact	59	4.1	4	0
Alignment E2	5171	93	140	61	66	58	64	Severe	67	6.3	0	4
Alignment E2	5172	318	140	53	56	54	60	Impact	57	4.4	3	0
Alignment E2	5184	306	143	56	59	56	62	Impact	61	4.4	10	0

Notes:
1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

Summary of Noise Impacts

Table 4-39 provides a summary of the total number of residences and hotels where noise impact is projected for each design/build alternative. Table 4-39 shows that out of the four alternatives using the gas turbine train technology, Alternative 3 will have the greatest number of residences and hotels impacted. Eight residences are projected to have moderate impact and eight residences are projected to have severe impact. Table 4-39 also shows that out of the four alternatives using the electric train technology, Alternative 6 will have the greatest number of sites impacted. Eighty residences and three hotels are projected to have moderate impact and twenty-two residences are projected to have severe impact with Alternative 6.

Table 4-39
Residential Noise Impact Summary

Proposal	Alternatives	Number of Residences Impacted		
		Moderate	Severe	Total
Gas Turbine Train	1	7	8	15
	2	4 + 1 hotel	0	4 + 1 hotel
	3	8	8	16
	4	5 + 1 hotel	0	5 + 1 hotel
Electric Train	5	28 + 1 hotel	24	52 + 1 hotel
	6	80 + 3 hotels	22	102 + 3 hotels
	7	13	25	38
	8	65 + 2 hotels	23	88 + 2 hotels

Due to differences in schedules, vertical profiles, distances from tracks, speeds of trains, numbers of power cars, lengths of trains, and numbers of passenger cars, a direct comparison cannot be made between the two technologies as proposed. In order to get a direct comparison, all variables must be made equal except for the technology itself. Moreover, there are two ways to compare the technologies: consider the train consists as proposed, even if they have different numbers of power cars and coaches; and consider the same number of power cars and coaches. Comparison is made possible using the methodology of the FRA Guidance Manual to make the necessary adjustments in the variables. Table 4-40 shows the noise level of each technology expressed in terms of Sound Exposure Level (SEL) with the same train schedule, reference distance, and reference height. Variations in the train length and train consist are made equal in one case, whereas the original proposed train consists are retained in the other. The speed of the train can make a difference, so Table 4-40 also shows the different speed regimes with the respective SEL's. The following train consist assumptions were made in calculating the SEL:

- The proposed electric train consist was two power cars, each 70 ft. in length, with an overall train length of 466 ft.
- The proposed gas turbine train consist was one power car, 70 ft. in length, with an overall train length of 420 ft.
- Comparing only the technologies, and everything else being equal, the train consist was assumed to be one power car, 70 ft. in length, with an overall train length of 440 ft.

In Table 4-40 it can be seen that all things being equal, the electric train technology has a higher SEL when speeds are below 60 mph. However, when speeds are above 60 mph, the gas turbine technology has a slightly higher SEL. When the proposed consists are compared, the electric train technology has a higher SEL when speeds are below 60 mph. However, when speeds are above 60 mph the two technologies have an SEL of 92 dBA.

Table 4-40
Comparison of SEL Noise Level with Technology and Train Consist

Differences	Technology	Speed Regime I (0-60 mph)	Speed Regime II (60-170mph)
Difference in Technology only	Gas Turbine Train	87 dBA	92 dBA
	Electric Train	89 dBA	91 dBA
Difference in Train Consist and Technology (trains as proposed)	Gas Turbine Train	87 dBA	92 dBA
	Electric Train	92 dBA	92 dBA

Table 4-41 provides a summary of the total number of projected impacts in each category for each alternative. Alternative 3 has 16 Category 2 receptors with projected impact, which is the most for any alternative using the gas turbine train technology. There will be no impact for any Category 1 or Category 3 receptors at Design/Build Alternatives 1, 2, 3, or 4. Table 4-41 also shows that Alternative 6 will have 105 Category 2 receptors and 2 parks (Category 3 receptors) with projected impact, which is the most for any alternative using the electric train technology. There will be no impact for any Category 1 receptors at Design/Build Alternatives 5, 6, 7, or 8.

Table 4-41
Evaluation Matrix
Noise Impacts (Moderate & Severe)

ALTERNATIVES	1	2	3	4	5	6	7	8
	Gas Turbine Train Technology				Electric Train Technology			
Category 1 (Buildings and/or parks)	0	0	0	0	0	0	0	0
Category 2 (Residences, hospitals, and hotels)	15	5	16	6	53	105	38	90
Category 3 (Institutional -schools, libraries, churches, active park)	0	0	0	0	1	2	0	1

Noise Comparison of Technologies on Central Florida Greeneway (S.R. 417)

In order to compare the gas turbine train and the electric train technologies, the alignment must be considered. Alignment E2, which follows the Central Florida Greeneway (S.R. 417), is the only location where the proposals for the two technologies differed in alignment. The Fluor Bombardier Team (gas turbine train) proposed an alignment in the median of the Greeneway and the Global Rail Consortium (electric train) proposed an alignment along the northern right of

way limits of the Greeneway. Table 4-42 shows a comparison of the impacts of both technologies on each of the proposed alignments along the Greeneway.

Table 4-42
Comparison of Technology Noise Impact on Alignment E2

Greeneway Alignments Proposed by	Technology	Number of Residences Impacted		
		Moderate	Severe	Total
Fluor Bombardier Team	Gas Turbine Train	4 + 1 hotel	0	4 + 1 hotel
	Electric Train	73 + 1 hotel	10	83 + 1 hotel
Global Rail Consortium	Gas Turbine Train	10 + 2 hotels	0	10 + 2 hotels
	Electric Train	65 + 2 hotels	22	87 + 2 hotels

Noise Impacts for Institutional Land Use

Institutional land use near the corridors includes parks, schools, churches, and libraries. Table 4-43 summarizes the noise impact projections at these locations, based on the planned FHSR operations and the distance to the proposed track. The distances in the table refer to either the location of the closest building, or to the closest point of activity for sites with outdoor land use. For parks where use of the land near the tracks is not well defined, the distance to the ROW line (assumed to be 25 ft.) was used to obtain a conservative estimate of noise impact.

Table 4-43
Noise Impacts for Institutional Land Use

Alternative	Location	Receptor Location	FHSR Survey Station	Dist to Near Track (ft.)	Speed (mph)	Exist. Noise Level[1]	Project Noise Level[1]			Impact Category	Total Noise Level[1, 2]	Noise Level Increase[1, 2]	# of Impacts	
							Predicted[2]	Impact Criteria					Mod	Sev
								Imp	Sev					
5	Alignment A1	Perry Harvey Sr. Park	6029	25	35	77	69	65	75	Impact	78	0.6	1 Park	0
6	Alignment A1	Perry Harvey Sr. Park	6029	25	35	77	69	65	75	Impact	78	0.6	1 Park	0
6	Alignment E2	Shingle Creek Greenway	4881	25	97	59	71	57	63	Severe	72	12.4	0	1 Park
8	Alignment E2	Shingle Creek Greenway	4881	25	97	59	71	57	63	Severe	72	12.4	0	1 Park

Notes:
1. Noise levels are based on Leq for the daytime peak train service hour and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.
2. The reported noise levels represent the highest noise levels for each location.

As Table 4-43 presents, Alternatives 5, 6, and 8 are the only alternatives with projected impact on institutional land uses. These alternatives consist of the electric train technology with

projected impacts on institutional land uses at two parks. The impact is due to the close proximity of the proposed track with the distance being at the closest point of activity for Perry Harvey Sr. Park. Because the Shingle Creek Greenway is undeveloped adjacent to the Central Florida Greeneway (S.R. 417), a conservative distance was used. Currently there is no public access to the Shingle Creek Greenway in the area adjacent to the proposed project. This portion is mainly undeveloped and there are no existing facilities; therefore, usage is anticipated to be low. The proposed project is not anticipated to cause a noise level increase that would substantially impair or diminish the greenway's activities, features, or attributes.

Noise Impact Mitigation

Some potential mitigation measures for reducing noise impacts from the FHSR operations are described below:

- **Noise Barriers -** This is a common approach to reducing noise impacts from surface transportation sources. The primary requirements for an effective noise barrier are: (1) the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver; (2) the barrier must be of an impervious material with a minimum surface density of 4 lb./sq. ft.; and (3) the barrier must not have any gaps or holes between the panels or at the bottom. Because numerous materials meet these requirements, the selection of materials for noise barriers is usually dictated by aesthetics, durability, cost, and maintenance considerations. Depending on the proximity of the barrier to the tracks and on the track elevation, rail noise barriers typically range in height from 4 to 10 ft., providing noise reductions of 5 to 10 dBA.
- **Building Sound Insulation –** Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction has been widely applied around airports, but has seen limited application for rail projects. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where noise barriers are not feasible or desirable, and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to windows, by sealing any holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air conditioning so that windows do not need to be opened.

As discussed in Section 3.7.2, FRA requires that severe impacts be mitigated unless there are no practical means to do so. While mitigation is encouraged at the moderate impact level, the implementation of such mitigation would depend on other project-specific factors. These other factors can include the predicted increase over existing noise levels, the types and number of noise-sensitive land uses affected, existing outdoor-to-indoor sound insulation, and the cost-effectiveness of mitigating noise to more acceptable levels.

Based on the results of the noise assessment, potential mitigation has been evaluated at all locations where severe impacts were identified. The proposed mitigation measure is the construction of sound barrier walls to shield the areas where severe impact is projected. Table 4-44 indicates the approximate noise barrier locations, lengths, and side of track, as well as the number of moderate and severe impacts both with and without the noise barrier for all of the

alternatives. As shown in the table, the proposed noise barriers are expected to eliminate all of the severe impacts. Eliminating the residual moderate noise impacts would require additional and/or enhanced noise barriers, and would also require the application of building sound insulation treatments in some locations.

Table 4-44
Potential Noise Barrier Mitigation Treatments

Alternative	Alignment	Side of Track	Survey Station	Length (ft.)	# of Residences Impacts (w/o N.B.)		# of Residences Impacts (w/ N.B.)	
					Moderate	Severe	Moderate	Severe
No- Build	No mitigation required							
1	Alignment E1	North	7679-7686	700	7	8	7	0
2	No mitigation required							
3	Alignment E1	North	7679-7686	700	7	8	7	0
4	No mitigation Required							
5	Alignment E1	North	7669-7686	1700	13	24	13	0
6	Alignment E2	North	5148-5174	2600	65	22	20	0
7	Alignment A2	North	1014-1016	200	0	1	0	0
	Alignment E1	North	7669-7686	1700	13	24	13	0
8	Alignment A2	North	1014-1016	200	0	1	0	0
	Alignment E2	North	5148-5174	2600	65	22	35	0

The results in Table 4-44 indicate that the largest amount of mitigation to eliminate all of the severe impacts would occur within Alternative 8, where 2,800 ft. of sound barrier wall would be required to eliminate all severe noise impacts. The least amount of mitigation would occur within Alternative 2 or 4, where there are no severe impacts and therefore no mitigation is required.

With regard to potential noise impacts at non-residential locations, the feasibility of noise mitigation would need further evaluation. At Perry Harvey Sr. Park, the projected impact is due to the close proximity of the park to the proposed track and ROW. As the design is finalized, noise mitigation would have to be considered in more detail to determine if the benefit is warranted.

No-Build Alternative

The No-Build Alternative is not expected to result in any noise impacts from rail; however, increases in congestion and from resulting roadway expansion would increase traffic noise levels through out the project area.

The Preferred Alternative

The Preferred Alternative (Alternative 1) will moderately impact a total of 7 residences and severely impact 8 residences, as shown in Table 4-45. The proposed mitigation measure is the construction of sound barrier walls to shield the areas where severe impact is projected. With 700 ft. of sound barrier at the appropriate location, all severe noise impacts will be eliminated.

Table 4-45
Residential Noise Impacts for Preferred Alternative

Technology	Alignment	Number of Residences Impacted		
		Moderate	Severe	Total
Gas Turbine Train	Preferred Alternative	7	8	15

4.2.4 Vibration

Vibration Impact Assessment

Vibration Impact Assessment Methodology

The potential vibration impacts from the proposed FHSR Design/Build Alternatives 1 through 8 were assessed on an absolute basis using the FRA criteria based on the proposed gas turbine train technologies (Design/Build Alternatives 1 through 4) and the proposed electric train technologies (Design/Build Alternatives 5 through 8). The following factors were used in determining potential vibration impacts along the FHSR corridor:

- Vibration source levels were based on FRA-sponsored measurements previously conducted on high speed trains similar to those proposed. Measurements of Amtrak Acela operations on the northeast corridor of the United States were used to obtain the source vibration levels for the gas turbine train. Measurements of TGV operations on the TGV Nord Line in France were used to obtain source vibration levels for the electric train.
- Vibration propagation tests were conducted at 11 sites along the proposed corridors near sensitive receptors. These tests measured the response of the ground to an input force. The results of these tests were combined with the vibration source level measurements to provide projections of vibration levels from vehicles operating on the FHSR alignments.
- The vehicle operating speeds are based on the velocity profiles that were provided by the proposals submitted, with maximum operating speeds of 125 mph for the gas turbine train and 162 mph for the electric train.

For all of the design/build alternatives, the estimated RMS velocity levels (VdB re 1 micro-in./sec.) for sensitive receptors at representative distances are provided in Table 4-38 through Table 4-45. These tables summarize the results of the analysis in terms of anticipated exceedances of the FRA criteria for "infrequent events" (defined as less than 70 events per day). The tables list the locations, the civil station, the distance to the near track, and the projected train speed at each location. In addition, the predicted project vibration level and the impact criterion level are indicated, along with the number of impacts projected for each receptor or receptor group. The criteria are discussed in more detail in Section 3.7.3.

Direct Comparison of Gas Turbine Train and Electric Train Vibration

With regard to ground-borne vibration from train operations, the major contributing factors are the primary suspension, wheel condition, speed, and the weight of the vehicle. The major difference between the vibration characteristics of the electric and the gas turbine train is that the gas turbine train has a higher vibration level at lower frequencies than the electric train. This is most likely due to the difference in weight between the two vehicles; the gas turbine train's consist weighs almost twice as much as the electric train's consist. In addition, when the ground exhibits more efficient vibration propagation characteristics at low frequencies, there is a greater difference in vibration impact between the two technologies.

No-Build Alternative

The No-Build Alternative is not expected to result in any ground-borne vibration impacts.

Alternative 1

Table 4-46 indicates that there are 33 residences, 11 hotels, and 1 commercial building (considered because it has vibration sensitive equipment) with potential vibration impact under Alternative 1. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

A group of four single-family residences is located within 100 ft. of the alignment as the tracks run along I-4 through Alignment A1. These residences, located south of the proposed alignment and just west of 34th Street, would experience vibration impacts.

Two groups of single-family residences located on the north side of I-4 and west of North Bethlehem Road are located within 200 ft. of the proposed Alignment C1. In addition, a group of single-family residences, located east of Branch Forbes Road and south of I-4, is within 200 ft. of the proposed alignment. These 16 residences would experience vibration impacts.

A group of hotels, multi-family residences, and apartments located in the Lake Buena Vista area of Alignment E1 is within 400 ft. of the proposed tracks. The impacted buildings are on both sides of the alignment. In the eastern section of Alignment E1, a group of single-family residences in the Taft area of Orlando is located within 125 ft. of the proposed alignment and these homes are projected to be impacted as well. In addition, a commercial building located just west of Orange Blossom Drive is projected to be impacted based on the use of vibration sensitive equipment there. In total, Alignment E1 potentially impacts 13 residences, 11 hotels, and 1 commercial building.

Table 4-46
Vibration Impacts for Alternative 1

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment A1	6140	93	68	81	80	4
Alignment C1	1980	143	122	81	80	6
Alignment C1	1986	193	122	80	80	5
Alignment C1	2058	193	123	80	80	5
Alignment E1	7124	218	93	81	80	1 hotel
Alignment E1	7131	168	94	83	80	1 hotel
Alignment E1	7134	218	94	81	80	1 hotel
Alignment E1	7137	343	94	80	80	1 hotel
Alignment E1	7109	243	92	82	80	2
Alignment E1	7104	193	91	84	80	1
Alignment E1	7117	293	92	81	80	4
Alignment E1	7147	293	95	81	80	1 hotel
Alignment E1	7152	318	96	81	80	1 hotel
Alignment E1	7170	218	98	81	80	1 hotel
Alignment E1	7183	243	99	81	80	1 hotel
Alignment E1	7194	218	100	82	80	1 hotel
Alignment E1	7203	193	101	85	80	1 hotel
Alignment E1	7274	343	107	81	80	1 hotel
Alignment E1	7530	145	92	66	65	1[3]
Alignment E1	7673	110	93	82	80	6

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.
3. Commercial building that uses lasers which can be sensitive to vibration

Alternative 2

Table 4-47 indicates that there are 20 residences with potential vibration impact under Alternative 2. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

A group of four single-family residences is located within 100 ft. of the alignment as the tracks run along I-4 through Alignment A1. These residences, located south of the proposed alignment and just west of 34th Street, would experience vibration impacts.

Two groups of single-family residences located on the north side of I-4 and west of North Bethlehem Road are located within 200 ft. of the proposed Alignment C1. In addition, a group of single-family residences, located east of Branch Forbes Road and south of I-4, is within 200 ft. of the proposed alignment. These 16 residences would experience vibration impacts.

Table 4-47
Vibration Impacts for Alternative 2

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment A1	6140	93	68	81	80	4
Alignment C1	1980	143	122	81	80	6
Alignment C1	1986	193	122	80	80	5
Alignment C1	2058	193	123	80	80	5

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

Alternative 3

Table 4-48 indicates that there are 29 residences, 11 hotels, and 1 commercial building (considered because it has vibration sensitive equipment) with potential vibration impact under Alternative 3. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

Two groups of single-family residences located on the north side of I-4 and west of North Bethlehem Road are located within 200 ft. of the proposed Alignment C1. In addition, a group of single-family residences, located east of Branch Forbes Road and south of I-4, is within 200 ft. of the proposed alignment. These 16 residences would experience vibration impacts.

A group of hotels, multi-family residences, and apartments located in the Lake Buena Vista area of Alignment E1 is within 400 ft. of the proposed tracks. The impacted buildings are on both sides of the alignment. In the eastern section of Alignment E1, a group of single-family residences in the Taft area of Orlando, Florida, is located within 125 ft. of the proposed alignment and these homes are projected to be impacted as well. In addition, a commercial building located just west of Orange Blossom Drive is projected to be impacted based on the use of vibration sensitive equipment there. In total, Alignment E1 potentially impacts 13 residences, 11 hotels, and 1 commercial building.

Table 4-48
Vibration Impacts for Alternative 3

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment C1	1980	143	122	81	80	6
Alignment C1	1986	193	122	80	80	5
Alignment C1	2058	193	123	80	80	5
Alignment E1	7124	218	93	81	80	1 hotel
Alignment E1	7131	168	94	83	80	1 hotel
Alignment E1	7134	218	94	81	80	1 hotel
Alignment E1	7137	343	94	80	80	1 hotel
Alignment E1	7109	243	92	82	80	2
Alignment E1	7104	193	91	84	80	1
Alignment E1	7117	293	92	81	80	4
Alignment E1	7147	293	95	81	80	1 hotel
Alignment E1	7152	318	96	81	80	1 hotel
Alignment E1	7170	218	98	81	80	1 hotel
Alignment E1	7183	243	99	81	80	1 hotel
Alignment E1	7194	218	100	82	80	1 hotel
Alignment E1	7203	193	101	85	80	1 hotel
Alignment E1	7274	343	107	81	80	1 hotel
Alignment E1	7530	145	92	66	65	1[3]
Alignment E1	7673	110	93	82	80	6

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.
3. Commercial building that uses lasers which can be sensitive to vibration

Alternative 4

Table 4-49 indicates that there are 16 residences with potential vibration impact under Alternative 4. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

Two groups of single-family residences located on the north side of I-4 and west of North Bethlehem Road are located within 200 ft. of the proposed Alignment C1. In addition, a group of single-family residences, located east of Branch Forbes Road and south of I-4, is within 200 ft. of the proposed alignment. These 16 residences would experience vibration impacts.

Table 4-49
Vibration Impacts for Alternative 4

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment C1	1980	143	122	81	80	6
Alignment C1	1986	193	122	80	80	5
Alignment C1	2058	193	123	80	80	5

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

Alternative 5

Table 4-50 indicates that there are 7 residences, 6 hotels, and 1 commercial building (considered because it has vibration sensitive equipment) with potential vibration impact under Alternative 5. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

A group of four single-family residences is located within 100 ft. of Alignment A1 as the tracks run along I-4. These residences, located south of the proposed alignment and just west of 34th Street, would experience vibration impacts.

A group of four hotels near the Celebration area on the south side of I-4, is located within 300 ft. of the proposed Alignment D1. All of these hotels would experience vibration impacts.

A group of hotels, multi-family residences, and apartments located in the Lake Buena Vista area of Alignment E1 is within 325 ft. of the proposed tracks. The impacted buildings are located on both sides of the alignment. In addition, a commercial building, located just west of Orange Blossom Drive, is projected to be impacted due to the use of vibration sensitive equipment on-site. In total, 3 residences, 2 hotels, and 1 commercial building would likely experience vibration impacts.

Table 4-50
Vibration Impacts for Alternative 5

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment A1	6140	93	91	80	80	4
Alignment D1	4470	243	162	83	80	1 hotel
Alignment D1	4534	143	162	85	80	1 hotel
Alignment D1	4536	218	162	82	80	1 hotel
Alignment D1	4540	218	162	82	80	1 hotel
Alignment E1	7131	168	162	82	80	1 hotel
Alignment E1	7109	243	162	81	80	2
Alignment E1	7104	193	162	83	80	1
Alignment E1	7203	193	162	83	80	1 hotel
Alignment E1	7530	143	120	67	65	1[3]

Notes:
1. Vibration levels are measured in VdB referenced to 1 μin/sec.
2. The reported vibration level represents the maximum vibration level for each location.
3. Commercial building that uses lasers which can be sensitive to vibration

Alternative 6

Table 4-51 indicates that there are 4 residences and 1 hotel with potential vibration impact under Alternative 6. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

A group of four single-family residences is located within 100 ft. of Alignment A1 as the tracks run along I-4. These residences, located south of the proposed alignment and just west of 34th Street, would experience vibration impacts.

One hotel near the Celebration area on the south side of I-4, is located within 300 ft. of the proposed Alignment D1. This hotel would experience vibration impacts.

Table 4-51
Vibration Impacts for Alternative 6

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment A1	6140	93	91	80	80	4
Alignment D1	4470	243	162	83	80	1 hotel

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

Alternative 7

Table 4-52 indicates that there are 3 residences, 6 hotels, and 1 commercial building (considered because it has vibration sensitive equipment) with potential vibration impact under Alternative 7. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

A group of four hotels near the Celebration area on the south side of I-4, is located within 300 ft. of the proposed Alignment D1. All of these hotels would experience vibration impacts.

A group of hotels, multi-family residences, and apartments located in the Lake Buena Vista area of Alignment E1 is within 325 ft. of the proposed tracks. The impacted buildings are located on both sides of the alignment. In addition, a commercial building, located just west of Orange Blossom Drive, is projected to be impacted due to the use of vibration sensitive equipment on-site. In total, 3 residences, 2 hotels, and 1 commercial building would likely experience vibration impacts.

Table 4-52
Vibration Impacts for Alternative 7

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment D1	4470	243	162	83	80	1 hotel
Alignment D1	4534	143	162	85	80	1 hotel
Alignment D1	4536	218	162	82	80	1 hotel
Alignment D1	4540	218	162	82	80	1 hotel
Alignment E1	7131	168	162	82	80	1 hotel
Alignment E1	7109	243	162	81	80	2
Alignment E1	7104	193	162	83	80	1
Alignment E1	7203	193	162	83	80	1 hotel
Alignment E1	7530	143	120	67	65	1[3]

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.
3. Commercial building that uses lasers which can be sensitive to vibration

Alternative 8

Table 4-53 indicates that there is 1 hotel with potential vibration impact under Alternative 8. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of the impacted receptor group follows.

One hotel near the Celebration area on the south side of I-4, is located within 300 ft. of the proposed Alignment D1. This hotel would experience vibration impacts.

Table 4-53
Vibration Impacts for Alternative 8

Location	Survey Station	Dist to Near Track (ft.)	Speed (mph)	Project Vibration Level[1,2]	Vibration Impact Criterion[1]	# of Res. Impacts
Alignment D1	4470	243	162	83	80	1 hotel

Notes:
1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.

Summary of Ground-Borne Vibration Impacts

Table 4-54 provides a summary of the total number of residences, hotels, and commercial buildings where ground-borne vibration impact is projected for each design/build alternative. Table 4-54 shows that out of the four alternatives using the gas turbine train technology, Alternative 1 will have the greatest number of residences and hotels impacted by ground-borne vibration. Thirty-three residences, eleven hotels, and one commercial building are projected to have impact with Alternative 1. Table 4-54 also shows that out of the four alternatives using the electric train technology, Alternative 5 will have the greatest number of sites impacted. Seven

residences, six hotels, and one commercial building are projected to have impact with Alternative 5.

Table 4-54
Vibration Impact Summary

Proposal	Alternative	Number of Residences Impacted
Gas Turbine Train	1	33 + 11 hotels + 1 commercial building
	2	20
	3	29 + 11 hotels + 1 commercial building
	4	16
Electric Train	5	7 + 6 hotels + 1 commercial building
	6	4 + 1 hotel
	7	3 + 6 hotels + 1 commercial building
	8	1 hotel

Table 4-55 provides additional detail concerning the categories of impact within each alternative. Alternative 1 has 44 Category, 2 vibration impacts, and one Category 1 vibration impact, which is the most for any alternative using the gas turbine train technology. There will be no impact for any Category 3 receptors at Design/Build Alternatives 1, 2, 3, or 4. Table 4-56 also shows that Alternative 5 will have 13 Category, 2 vibration impacts, and one Category 1 vibration impact, which is the most for any alternative using the electric train technology. There will be no impact for any Category 3 receptors at Design/Build Alternatives 5, 6, 7, or 8.

Table 4-55
Evaluation Matrix
Vibration Impacts

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
	Gas Turbine Train Technology				**Electric Train Technology**			
Category 1 (Buildings and/or parks)	**1**	**0**	**1**	**0**	**1**	**0**	**1**	**0**
Category 2 (Residences, hospitals, and hotels)	**44**	**20**	**40**	**16**	**13**	**5**	**9**	**1**
Category 3 (Institutional -schools, libraries, churches, active park)	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Vibration Comparison of Technologies on the Greeneway

In order to compare the gas turbine train and the electric train technologies, the alignment must be considered. Alignment E2, which follows the Central Florida Greeneway (S.R. 417), is the only location where the proposals for the two technologies differed in alignment. However,

regardless of the technology or the alignment used, no vibration impacts are projected to occur in this area.

Preferred Alternative

The Preferred Alternative (Alternative 1) with the gas turbine train technology will have impact at a total of 33 residences, 11 hotels, and 1 commercial (impacts to 45 structures), as shown on Table 4-56. Forty-four of these impacts will occur at Category 2 receptors and 1 impact will occur at a Category 1 receptor, but no impacts will occur at Category 3 (institutional) receptors.

Table 4-56
Residential Vibration Impacts for Preferred Alternative

Technology	Alignment	Number of Residences Impacted
Gas Turbine Train	Preferred Alignment	33 + 11 hotels + 1 commercial building

Ground-Borne Vibration Impact Mitigation

The assessment assumes that the high speed rail vehicle wheels and track are maintained in good condition with regular wheel truing and rail grinding. Beyond this, there are several approaches to reduce ground-borne vibration from FHSR operation, as described in the following text.

- **Ballast Mats** - A ballast mat consists of a pad made of rubber or rubber-like material placed on an asphalt or concrete base with the normal ballast, ties, and rail on top. The reduction in ground-borne vibration provided by a ballast mat is strongly dependent on the frequency content of the vibration, design, and support of the mat.
- **Floating Slabs** - Floating slabs consist of thick concrete slabs supported by resilient pads on a concrete foundation; the tracks are mounted on top of the floating slab. Most successful floating slab installations are in subways, and their use for at-grade track is less common. Although floating slabs are designed to provide vibration reduction at lower frequencies than ballast mats, they are extremely expensive.
- **Property Acquisitions or Easements** - Additional options for avoiding vibration impacts (and noise impacts) are to purchase residences likely to be impacted by train operations or to acquire easements for such residences by paying the homeowners to accept the future train vibration conditions. These approaches are usually taken only in isolated cases where other mitigation options are infeasible, impractical, or too costly.

Vibration impacts that exceed FRA criteria are considered to be significant and warrant mitigation, if feasible. Table 4-57 indicates specific stations (defined as civil stations) along the alignments within the alternatives where mitigation has been recommended to reduce the vibration levels. The locations of the civil stations are noted along the centerline of the FHSR alignments in Appendices A-1 and A-2. At a minimum, mitigation would require the installation of ballast mats; therefore, the effects of ballast mats are presented in the table. Because the current analysis indicates that the ballast mats would not eliminate all of the projected impacts, more extensive mitigation may be considered. Vibration mitigation would be addressed in more

detail during final design. In particular, due to the unusually high ground vibration response measured in the 12.5 Hertz (Hz) to 20 Hz low-frequency range for the eastern portion of Alignment D1 and the western portion of Alignment E1, further analysis will be needed to confirm the validity of the projected impacts in that area. The additional analysis, conducted during final design, will consist of supplemental vibration propagation tests at sites concentrated in that area, including soil-to building transfer function measurements.

Table 4-57
Recommended Locations for Vibration Mitigation

Alternative	Alignment	Survey Station	Length (ft.)	Total Number of Impacts[1]	Total Number of Impacts[1] after Ballast Mats Installed
No-Build	**No mitigation is required**				
1	A1	6135 - 6142	700	4	0
	C1	1978 - 1982	400	6	0
	C1	1986 - 1990	400	5	0
	C1	2054 - 2062	800	5	0
	E1	7102 - 7119	1700	7	7
	E1	7121 - 7126	500	1 hotel	1 hotel
	E1	7128 - 7139	1100	3 hotels	3 hotels
	E1	7144 - 7154	1000	2 hotels	2 hotels
	E1	7167 - 7172	500	1 hotel	1 hotel
	E1	7180 - 7186	600	1 hotel	1 hotel
	E1	7191 - 7198	700	1 hotel	1 hotel
	E1	7200 - 7205	500	1 hotel	1 hotel
	E1	7272 - 7276	400	1 hotel	1 hotel
	E1	7525 - 7535	1000	1	0
	E1	7671 - 7676	500	6	0
2	A1	6135 - 6142	700	4	0
	C1	1978 - 1982	400	6	0
	C1	1986 - 1990	400	5	0
	C1	2054 - 2062	800	5	0
3	C1	1978 - 1982	400	6	0
	C1	1986 - 1990	400	5	0
	1	2054 - 2062	800	5	0
	E1	7102 - 7119	1700	7	7
	E1	7121 - 7126	500	1 hotel	1 hotel
	E1	7128 - 7139	1100	3 hotels	3 hotels
	E1	7144 - 7154	1000	2 hotels	2 hotels
	E1	7167 - 7172	500	1 hotel	1 hotel
	E1	7180 - 7186	600	1 hotel	1 hotel
	E1	7191 - 7198	700	1 hotel	1 hotel
	E1	7200 - 7205	500	1 hotel	1 hotel
	E1	7272 - 7276	400	1 hotel	1 hotel
	E1	7525 - 7535	1000	1	0
	E1	7671 - 7676	500	6	0

Table 4-57
Recommended Locations for Vibration Mitigation

Alternative	Alignment	Survey Station	Length (ft.)	Total Number of Impacts[1]	Total Number of Impacts[1] after Ballast Mats Installed
4	C1	1978 - 1982	400	6	0
	C1	1986 - 1990	400	5	0
	C1	2054 - 2062	800	5	0
5	A1	6135 - 6142	700	4	0
	D1	4469 - 4472	300	1 hotel	1 hotel
	1	4532 - 4542	1000	3 hotels	3 hotels
	E1	7102 - 7112	1000	3	3
	E1	7128 - 7133	500	1 hotel	1 hotel
	E1	7200 - 7206	600	1 hotel	1 hotel
	E1	7525 - 7535	1000	1	0
6	A1	6135 - 6142	700	4	0
	D1	4469 - 4472	300	1 hotel	1 hotel
7	D1	4469 - 4472	300	1 hotel	1 hotel
	D1	4532 - 4542	1000	3 hotels	3 hotels
	E1	7102 - 7112	1000	3	3
	E1	7128 - 7133	500	1 hotel	1 hotel
	E1	7200 - 7206	600	1 hotel	1 hotel
	E1	7525 - 7535	1000	1	0
8	D1	4469 - 4472	300	1 hotel	1 hotel

Note:
1. Residences, hotels, and commercial buildings are all considered in the total

4.2.5 Wetlands

In compliance with *Presidential Executive Order 11990* entitled *"Protection of Wetlands"* and using assessment methodology, evaluation procedures, and document preparation guidance found in the following: USDOT policy (*USDOT Order 5660.1A, Preservation of the Nations Wetlands*), dated August 24, 1978 and *Title 23, CFR, Part 777,* consideration was given to protect wetland resources. In accordance with this policy, FRA and the FHSRA evaluated the potential wetland impacts of the No-Build Alternative and the proposed FHSR Design/Build Alternatives 1 through 8.

The FHSR study team assessed the potential wetland impacts by identifying jurisdictional wetlands, identifying impacts, and developing measures to avoid, minimize, and mitigate potential impacts to the greatest extent practicable. The effort included literature and field reviews, mapping, assessment of functional values of all existing wetland habitats within the study area, and coordination with the appropriate jurisdictional agencies. An extensive assessment of wetland and environmental resources for the No-Build Alternative and Design/Build Alternatives 1 through 8 is discussed within this section.

Using the resources cited in Section 3.8.2, an inventory of wetland communities and their approximate boundaries were mapped on aerial photography. Because mapping for the Southwest Florida Water Management District (SWFWMD) and National Wetland Inventory

(NWI) is conducted at a relatively coarse level of spatial accuracy (1:24,000 scale), accuracy was increased on the wetland maps by field ground verification and aerial photo-interpretation using the 1:400 scale photography. Each wetland community was then labeled using the Florida Land Use Cover and Forms Classification System[18] (FLUCFCS) and NWI classification systems. Field verification of wetland boundaries was accomplished by implementing the State of Florida wetland delineation methodology (F.A.C. 62-340) and the USACE methodology (*Corps of Engineers Wetlands Delineation Manual).*

Field teams of environmental scientists familiar with Florida wetland communities reviewed wetland communities between September 2002 and March 2003. The teams found a wide range of wetland systems within the FHSR corridor and identified plant species composition for each wetland and adjacent upland habitats.

Based on photo-interpreted aerials and field reviews, the field team identified 1,760 wetland areas represented by 34 individual FLUCFCS categories in the study area. This represents a total of 2,401 ac. of wetland coverage. The FLUCFCS codes present within the 1,000-ft. corridor are shown in Section 3, Tables 3-26. These 34 categories fell under 10 broad wetland community types including water (FLUCFCS 500), streams and waterways (FLUCFCS 510), lakes (FLUCFCS 520), reservoirs (FLUCFCS 530), bays and estuaries (FLUCFCS 540), wetland hardwood forests (FLUCFCS 610), wetland coniferous forests (FLUCFCS 620), wetland forested mixed (FLUCFCS 630), vegetated non-forested wetlands (FLUCFCS 640), and non-vegetated wetlands (FLUCFCS 650).

A Wetland Rapid Assessment Procedure (WRAP) analysis was performed for 60 of the 69 wetlands impacted by Design/Build Alternatives 1 through 8. (Nine of the wetlands are not accessible). The WRAP analysis is used to assist in the regulatory evaluation of wetland areas. To perform the WRAP analysis, each wetland area is evaluated based upon the following criteria: wildlife utilization, wetland overstory/shrub canopy, wetland vegetative ground cover, adjacent upland support buffer field indicators of wetland hydrology, and water quality input and treatment systems. A value is determined for the existing condition and produces a final score between 0 (low quality) and 1 (high quality).

A summary of the WRAP scores for impacted wetlands by FLUCFCS category and total acreage of impact for each alignment/alternative is presented in Table 4-58. This table includes sheet numbers and alignment information for identification of wetland locations. The sheet number references are found in Appendix A.

Table 4-58
Proposed Wetland Impacts for the
FHSR Alignments/Alternatives

Sheet #	FLUCFCS	Alignment	Wetland Number	Acres	WRAP Score
Alternatives 1, 2, 5, and 6					
16	510	B1	2759705_8221027	0.49	0.38
19	630	B1	2800123_8219466	0.23	0.23
19	630	B1	2800241_8232198	0.79	0.41
Alternatives 3, 4, 7, and 8					
196	510	B2	2799508_8235102	0.71	0.38
Alternatives 1 through 8					
85	630	D1	2809487_8147442	1.42	0.17
85	630	D1	2809457_8147677	2.09	0.28
94	621	D1	2811595_8142956	2.09	0.28
96	641	D1	2811805_8142472	0.71	0.17
100	621	D1	2812882_8140419	0.10	0.11
106	631	D1	2814900_8137717	0.09	0.27
106	641	D1	2814981_8137606	0.33	0.28
110	630	D1	2816144_8136144	0.07	0.35
112	510	D1	2816537_8135373	0.15	0.55
115	510	D1	2817544_8134404	0.24	0.50
115	641	D1	2818031_8134317	1.28	0.17
110	510	D1	2816144_8136144	0.09	0.35
110	510	D1	2816272_8136023	0.14	0.55
95	621	D1	2811712_81142663	1.89	0.28
101	621	D1	8139874_2813269	0.16	0.36
106	641	D1	2814685_8137999	0.25	0.20
Alternatives 1, 3, 5, and 7					
118	510/621	E1	282515_812546	1.35	0.90
118	630	E1	281912_8133378	0.10	0.43
118	630	E1	2818551_8133429	0.52	0.49
119	510-630	E1	2819129_8133279	0.07	0.60
119	631	E1	2819255_8133145	0.26	0.18
119	640/510	E1	2819285_8133118	0.23	0.32
123	510	E1	2820467_81320	0.13	0.79
135	622	E1	2825154_8128128	0.29	0.25
137	621	E1	282516_812706	0.01	0.75
139	621	E1	282516_812556	0.41	0.75
140	510	E1	282503_812521	0.08	0.63

Table 4-58
Proposed Wetland Impacts for the
FHSR Alignments/Alternatives

Sheet #	FLUCFCS	Alignment	Wetland Number	Acres	WRAP Score
141	621	E1	2825166_8124480	0.48	0.53
144	510	E1	282516_812310	0.01	0.20
149	621	E1	2824237_8121049	0.89	0.61
152	640	E1	282338_811920	0.57	0.81
153	510	E1	2823442_8119105	0.10	0.63
153	600	E1	282339_811921	0.69	no WRAP/inaccessible
153	621	E1	2823384_8119205	0.01	no WRAP/inaccessible
184	600	E1	2823443_8119106	1.15	no WRAP/inaccessible
185	600	E1	282431_811821	0.62	no WRAP/inaccessible
139	510	E1	282518_812537	0.01	0.24
146	510	E1	2825193_8121595	0.50	0.18
146	510	E1	2825166_8122226	0.03	0.57
144	510	E1	282517_812303	0.05	0.61
119	510/630	E1	2819171_8133233	0.59	0.49
144	617	E1	282516_812303	0.07	0.89
145	617	E1	2825179_8122556	0.08	0.86
136	621	E1	282518_812721	0.14	0.47
151	621	E1	282428_812003	0.54	0.86
187	621	E1	282333_811837	1.17	0.79
183	621	E1	2823382_8119203	4.96	0.76
152	630	E1	282355_811959	0.84	0.94
Alternatives 2, 4, 6, and 8					
155	618	E2	2821296_8130335	0.23	0.31
156	630	E2	2821295_8130334	2.19	0.58
157	630	E2	2821179_813055	1.62	0.56
157	640	E2	2821191_813092	0.09	0.55
158	510	E2	2821164_8129398	0.11	0.30
158	621	E2	2821269_8129264	0.29	0.78
160	621	E2	282114_812826	0.33	0.65
164	621/510	E2	2821322_8126374	0.23	0.74
169	621	E2	282219_812402	1.54	0.64
171	621/641	E2	282206_813207	0.76	no WRAP/inaccessible
173	510	E2	282242_812265	0.69	0.30
173	600	E2	282244-812266	0.01	no WRAP
176	621	E2	282205_812024	0.44	no WRAP/inaccessible

Table 4-58
Proposed Wetland Impacts for the
FHSR Alignments/Alternatives

Sheet #	FLUCFCS	Alignment	Wetland Number	Acres	WRAP Score
178	621	E2	282201_811022	0.70	no WRAP/inaccessible
179	621	E2	282207_811850	0.00	0.44
181	510	E2	282247_811828	0.00	0.10
183	621	E2	282262_811836	0.00	no WRAP/inaccessible
180	617	E2	282245_811836	0.14	no WRAP/inaccessible

Design/Build Alternatives 1, 2, 5, and 6 have 45 wetlands within their alignments. Design/Build Alternatives 3, 4, 7, and 8 have 39 wetlands within their alignments. For the 60 wetland areas evaluated, the WRAP scores ranged from 0.10 to 0.90. The average WRAP score for all FLUCFCS categories (of impacted wetlands) is 0.48. The low WRAP scores indicate that most of the wetlands within the alignments have either been previously impacted or are of very poor quality. The only concentrations of high scores are found in Alignment E2 (Design/Build Alternatives 2, 4, 6, and 8) reflecting the high quality wetlands along the Central Florida Greeneway (S.R. 417). Most of the wetlands within the alignments are located within the median of the existing roadways or are adjacent to major transportation corridors.

While Table 4-59 focused on WRAP score (quality of the wetlands impacted), Table 4-60 summarizes the quantity of impacts by each design/build alternative. The summary Table 4-61 indicates both quantity and quality of impacts.

Table 4-59
Wetland Impact Analysis Matrix

FLUCFCS	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8
	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)
510	3.37	2.34	3.59	2.56	2.1	1.91	2.32	2.13
600	4.8	2.48	4.8	2.48	0.91	2.48	0.91	2.48
617	2.5	0.14	2.5	0.14	0.15	0.14	0.15	0.14
618	0	0.23	0	0.23	0	0.23	0	0.23
621	12.82	9.52	12.82	9.52	15.58	7.49	15.58	7.49
622	0.29	0	0.29	0	0.29	0	0.29	0
630	6.07	7.23	5.05	6.21	0.607	5.07	5.05	4.05
631	0.26	0	0.26	0	0.26	0	0.26	0
640	0.64	4.09	0.64	4.09	1.12	3.44	1.12	3.44
641	2.56	2.56	2.56	2.56	2.36	2.56	2.56	2.56
510/621	1.35	0.21	1.35	0.21	1.35	0.21	1.35	0.21
510/630	1.55	0	1.55	0	0.66	0	0.66	0
621/641	0	0.76	0	0.76	0	0.76	0	0.76
640/510	0.23	0	0.23	0	0.23	0	0.23	0

Table 4-59
Wetland Impact Analysis Matrix

FLUCFCS	Alternative 1	Alternative 2	Alternative 3	Alternative 4	Alternative 5	Alternative 6	Alternative 7	Alternative 8
	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)	Wetland Area Impacted (ac)
500	0.19	1.33	0.19	1.33	0	0.12	0	0.12
530	0.42	0	0.42	0	0	0	0	0
610	2.69	0	2.69	0	0	0	0	0
621/640	0.29	0.44	0.29	0.44	0	0	0	0
Total	**40.03**	**31.33**	**39.23**	**30.53**	**25.62**	**24.41**	**30.48**	**23.61**

Table 4-60
Evaluation Matrix
Natural Environment Impacts (Acres)

	Alternatives							
	1	2	3	4	5	6	7	8
Total Wetland Impacts	**40**	**31.3**	**39.2**	**30.5**	**25.6**	**24.4**	**30.5**	**23.6**
High Quality Wetlands	**11**	**2**	**11**	**2**	**11**	**2**	**11**	**2**

As Table 4-60 shows, the overall low number of wetland impacts in a project of approximately 93 mi. reflects the conceptual design goal of minimizing wetland impacts. The majority of wetlands are located in the alignment near Orlando at the I-4/Bee Line Expressway (S.R. 528) Interchange and the Orlando International Airport.

Alternative 1 (gas turbine train) has the most cumulative impacts and Alternative 3 (gas turbine train) has second greatest amount of impacts. These impacts reflect two factors: the large amount of wetlands within Alignment E1 (along I-4 and the I-4/Bee Line Expressway [S.R. 528] Interchange), as well as the impacts of the proposed gas turbine train alternatives operating within the ROW along the north side of the Central Florida Greeneway (S.R. 417).

Alternative 5, 6, and 8 have the least amount of impacts. This is a result of fewer impacts of the electric train to the wetlands required for the maintenance facilities near the Orlando International Airport.

FRA and FHSRA are considering a full range of mitigation options in the development of this project to avoid long-term and short-term adverse impacts to wetland resources and to avoid new construction in wetlands, wherever there is a practicable alternative. Options for mitigating the loss of wetlands would include mitigation banking, upland and/or wetland preservation, and wetland restoration, enhancement, and creation.

Wetland impacts, which would result from the construction of FHSR, are proposed to be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344. Under this statute, transportation improvement mitigation can be achieved through regional long range planning, rather than a project-by-project basis. The mitigation is carried out by either the FDEP or the Water Management Districts (WMD). Under S. 373.4137 F.S., mitigation of FHSR wetland impacts will be implemented through the FDEP. Each WMD has developed a regional wetland mitigation plan to address the estimated mitigation needs on an annual basis to be approved by the Florida State Legislature. The WMD will then provide wetland mitigation for specific project impacts through a corresponding mitigation project within the overall approved regional mitigation plan. The FHSRA will provide funding to the WMD for implementation of such mitigation projects. An emphasis will be placed on attempting to provide in-kind mitigation in the same local basin and in accordance with the appropriate mitigation ratios.

Under Florida Statute 373.4138, which specifically addresses FHSR, any mitigation requirements and associated costs shall be determined by negotiation between the FDEP and the FDOT, but if agreement on mitigation cost cannot be reached, the project may proceed at the rates determined according to guidance established in the statute.

No-Build Alternative

A No-Build Alternative would result in no wetland impacts. However as congestion increases and roadway improvements are required, there would be wetland impacts from roadway reconstruction.

Preferred Alternative

The Preferred Alternative (Alternative 1) will result in 40.03 ac. of wetland impacts resulting from the gas turbine train technology, of which, 11 ac. are considered high quality wetlands. Wetland impacts, which would result from the construction of FHSR, are proposed to be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344.

4.2.6 Aquatic Preserves

Aquatic Preserves are identified and boundaries are mapped in Part 2, Chapter 19 of the FDOT Project Development & Environment Manual[19]. A review of the FHSR study area indicates there are no aquatic preserves within the FHSR project limits, as defined in the manual.

4.2.7 Water Quality Impact Evaluation

The FHSR study team completed a Water Quality Impact Evaluation (WQIE) for this project. The WQIE determines the surface water and ground water impacts from the proposed FHSR.

Design/Build Alternatives

The FHSR Design/Build Alternatives 1 through 8 would be located primarily within the I-4 median and/or CSX Railroad ROW. Approximately 46 mi. of the railway would be elevated; the remaining portion would be grade-separated via retaining walls or other measures. The existing I-4 median and CSX Railroad ROW proposed for the railway consist mainly of grassed median, drainage systems, and wetlands.

Where the alignment is elevated, runoff from the deck would need to be collected via scuppers or a drainage collection system and discharged to the existing median or an existing stormwater system. The total runoff would not be affected if existing drainage patterns are maintained; however, it is likely that rainfall, currently infiltrating into a specific median area in the existing condition, may drain to a different location in the proposed condition. In such a case, the increased runoff would need to be accounted for in stormwater management facilities or other means. Runoff from the deck would require treatment, as the train is a potential source of pollutant loading.

Where the rail alignment is grade-separated, the railway would be atop open gravel, and additional impervious areas would result from the support poles and outside barrier walls; however, the fill associated with the railway would impact existing drainage patterns. Runoff from interstate lanes that drain to the median in the existing condition would need to be collected by barrier wall inlets or other means in the proposed condition. The railway itself would need to be drained with an underdrain system or other means. Both the barrier wall inlets and underdrain systems would tie into existing systems, and increased discharge at these locations would need to be accounted for. As in the elevated case, runoff from the tracks would require treatment, as the train is a potential source of pollution.

The project lies within the jurisdictions of the SWFWMD, the SFWMD, and the St. John's River Water Management District (SJRWMD). The water quality criteria associated with each agency would apply to the portion of the project within the respective district limits. The FDEP would administer the project water quality requirements.

This project is also located within the boundaries of the Floridan Aquifer and Biscayne Aquifer recharge and streamflow zones. Aquifer recharge impacts associated with this project would be minimal to none. Much of Florida, including central Florida and the FHSR corridors, is underlain by limestone that is susceptible to dissolution (karst) processes. In some areas, karst processes can dissolve sufficient portions of limestone to cause sinkholes and other surface depressions. In addition, the more porous limestone can create direct pathways for surface contaminants to enter the aquifer. Because there are few reported or observed sinkholes or other features indicative of a karst environment in the vicinity of the proposed railway corridor, karst conditions are unlikely to be an issue.

The FHSR Design/Build Alternatives 1 through 8 include seven major watersheds: Tampa Bay, Hillsborough River, Palm River, Alafia River, Peace River, Withlacoochee River, and Kissimmee River. Within these watersheds, the alternatives cross several riverine systems, including Baker Creek, Pemberton Creek, Itchepackesassa Creek, Davenport Creek, Reedy

Creek, and Bonnet Creek. All of these are FDEP Class III waters. None of these, or other project surface water receptors, are classified as Outstanding Florida Waters (OFW), Wild and Scenic Rivers, Aquatic Preserves, or Coastal Barrier Resources. To protect present and future most beneficial uses of the waters, water quality criteria have been established for each classification. The FHSR must meet criteria, which are located in rules 62-302.500 and 62-302.530 of the *Florida Administrative Code (F.A.C.)*. A completed WQIE checklist and specific WMD water quality criteria are attached (Appendix B). Please refer to the checklist for additional information.

No-Build Alternative

The No-Build alternative does not require any changes to the existing and proposed roadway drainage systems.

Preferred Alternative

The Preferred Alternative falls within the jurisdictions of the SWFWMD, the SFWMD, and the SJRWMD. The water quality criteria associated with each agency would apply to the portion of the project within the respective district limits. The FDEP would administer the project water quality requirements. The FHSR must meet criteria, which are located in rules 62-302.500 and 62-302.530 of the *F.A.C.*

4.2.8 Outstanding Florida Waters

Based on a review of the *F.A.C., Chapter 17-302.700, Outstanding Florida Waters (OFW)*, the Econlockhatchee River System and Tributaries are listed as OFW. The Econlockhatchee River System and Tributaries are located in the northeast Orlando area, approximately 9 mi. from Orlando. The OFW designation requires a higher emphasis of minimizing direct wetland impacts and higher water quality treatment standards than would be required for other wetland systems. This OFW designation also provides special protection for the water body due to its ecological and recreational significance. The proposed project does not impact the Econlockhatchee River System or its Tributaries; therefore, there are no OFW impacts.

4.2.9 Contamination

No-Build Alternative

No hazardous materials or petroleum sites would be impacted or cleanup required if the FHSR is not constructed.

Design/Build Alternatives

The FRA and FHSRA prepared two separate Contamination Screening Evaluation Reports (CSERs) in order to determine which sites pose a potential negative environmental consequence based on contamination associated with the proposed construction of the FHSR. The reports are summarized here and references are provided at the end of this section for more detailed review.

Risk rankings were assigned after reviewing data obtained from on-site reviews of the parcels, historical land use, hazardous materials, petroleum regulatory site lists, and other pertinent information. The preliminary assessment of impacts was developed following evaluation of the current project design and the availability of information regarding ROW needs.

Based upon the findings of the survey to date, 19 sites have been identified for potential contamination within the vicinity of Design/Build Alternatives 1 through 8. The sites, located along these alternatives, have the potential to involve petroleum contamination or hazardous materials as defined by FDEP. All sites were evaluated to determine risk potential and risk ratings were assigned to each site based upon field reviews, land use, historical tenancy evaluations, and regulatory agency research. The potential contamination sites within Design/Build Alternatives 1 through 8 are shown on the Concept Plans in Appendix A and Figure 4-4, and span from Hillsborough County through Orange County. Potential contamination sites are listed by alternative from west to east and north to south. The risk rating for each of the sites is also indicated as defined in Section 3.7.8.

Alternatives 1 and 5

Seven potentially contaminated sites are located within Design/Build Alternatives 1 and 5 and shown on Figure 4-4. The alignment in which they are located is also indicated on Table 4-61. Two sites are potential petroleum contamination sites; five sites are potential hazardous material sites and are listed in Table 4-61.

Table 4-61
Potential Hazardous Material Sites for Alternatives 1 and 5

Site Number	Alignment	Potential Contamination Facility	Type of Potential Contamination	Risk Rating
1	A1	Clorox	Hazardous materials	High
2	B1	Florida Chemical	Hazardous materials	High
3	C1	Taylor Road Landfill	Hazardous materials	High
4	C1	Carpenter Company	Hazardous materials	High
5	D1	Furman Landfill	Hazardous materials	High
6	E1	Speedway	Petroleum	High
7	E1	Central Florida Pipeline	Petroleum	High

Alternatives 2 and 6

Five potentially hazardous material contaminated sites (noted in Table 4-62) are located within Design/Build Alternatives 2 and 6 and shown on Figure 4-4. The alignment in which they are located is also indicated on the table. No potentially petroleum contaminated sites were identified within these alternatives.

Table 4-62
Potential Hazardous Material Sites for Alternatives 2 and 6

Site Number	Alignment	Potential Contamination Facility	Type of Potential Contamination	Risk Rating
1	A1	Clorox	Hazardous materials	High
2	B1	Florida Chemical	Hazardous materials	High
3	C1	Taylor Road Landfill	Hazardous materials	High
4	C1	Carpenter Company	Hazardous materials	High
5	D1	Furman Landfill	Hazardous materials	High

Alternatives 3 and 7

Seventeen potentially contaminated sites are located within Design/Build Alternatives 3 and 7 and shown on Figure 4-4. The alignment in which they are located is also indicated in Table 4-63. Four sites are potential petroleum contamination sites, 10 sites are potential hazardous material sites, and three sites are a combination of both hazardous materials and petroleum contamination issues.

Table 4-63
Potential Hazardous Material Sites Alternatives 3 and 7

Site Number	Alignment	Potential Contamination Facility	Type of Potential Contamination	Risk Rating
3	C1	Taylor Road Landfill	Hazardous materials	High
4	C1	Carpenter Company	Hazardous materials	High
5	D1	Furman Landfill	Hazardous materials	High
6	E1	Speedway	Petroleum	High
7	E1	Central Florida Pipeline	Petroleum	High
8	A2	Peoples Gas Systems	Hazardous materials	High
9	A2	Adamo Drive	Petroleum/ Hazardous	High
10	A2	Central Florida Pipeline	Petroleum	High
11	A2	Radiant Food Store	Petroleum	High
12	A2	Brenntag Mid South	Petroleum/ Hazardous	Medium
13	B2	CSX Transportation – Uceta Yard	Petroleum/ Hazardous	High
14	B2	Florida Steel	Hazardous materials	High
15	B2	Alaric Area Groundwater Plume	Hazardous materials	High
16	B2	Helena Chemical	Hazardous materials	High
17	B2	Stauffer Chemical	Hazardous materials	High
18	B2	Reeves Southeast Galvanizing	Hazardous materials	High
19	B2	Peak Oil/Bay Drum	Hazardous materials	High

Alternatives 4 and 8

Fifteen potentially contaminated sites are located within Design/Build Alternatives 4 and 8 and shown on Table 4-64 and Figure 4-4. The alignment in which they are located is also indicated in the table. Two sites are potential petroleum contamination sites, 10 sites are potential hazardous material sites, and three sites are a combination of both hazardous materials and petroleum contamination issues.

Table 4-64
Potential Hazardous Material Sites Alternatives 4 and 8

Site Number	Alignment	Potential Contamination Facility	Type of Potential Contamination	Risk Rating
3	C1	Taylor Road Landfill	Hazardous materials	High
4	C1	Carpenter Company	Hazardous materials	High
5	D1	Furman Landfill	Hazardous materials	High
8	A2	Peoples Gas Systems	Hazardous materials	High
9	A2	Adamo Drive	Petroleum/ Hazardous	High
10	A2	Central Florida Pipeline	Petroleum	High
11	A2	Radiant Food Store	Petroleum	High
12	A2	Brenntag Mid South	Petroleum/ Hazardous	Medium
13	B2	CSX Transportation – Uceta Yard	Petroleum/ Hazardous	High
14	B2	Florida Steel	Hazardous materials	High
15	B2	Alaric Area Groundwater Plume	Hazardous materials	High
16	B2	Helena Chemical	Hazardous materials	High
17	B2	Stauffer Chemical	Hazardous materials	High
18	B2	Reeves Southeast Galvanizing	Hazardous materials	High
19	B2	Peak Oil/Bay Drum	Hazardous materials	High

Stations/Maintenance Facilities

No potentially contaminated sites are associated with the proposed Tampa station, Lakeland stations, Disney station, OCCC station, or the Orlando International Airport station locations.

In addition, no potentially contaminated sites are associated with either of the two proposed maintenance yard locations.

Table 4-65 summarizes potential high ranked hazardous materials and petroleum impacts for each Design/Build Alternative 1 through 8.

Table 4-65
Impact Evaluation Matrix
Potential Contamination Sites

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Potential Petroleum Sites	2	0	7	5	2	0	7	5
Potential Hazardous Materials Sites	5	5	12	12	5	5	12	12

The number of high and medium ranking sites varies by alternative from a total of five sites (Alternatives 2 and 6) to 19 sites (Alternatives 3 and 7). Most of these sites occur near or along the former and existing CSX tracks. Generally the greater the number of high or median risk sites, the greater the final cleanup costs.

Preferred Alternative

The Preferred Alternative contains five potentially hazardous material contaminated sites and two potentially petroleum contaminated sites. There are no potentially contaminated sites associated with the preferred station locations and maintenance yard.

The sites identified will be investigated further prior to any construction. Investigative work will include visual inspection, monitoring of ongoing cleanups, and possible subsurface investigations. At known contamination sites, estimated areas of contamination will be marked on design drawings. Prior to construction, any necessary cleanup plans will be developed. Actual cleanup will take place during construction, if feasible. Special provisions for handling unexpected contamination discovered during construction will be included in the construction plans package.

4.2.10 Wild and Scenic Rivers

The Loxahatchee, Myakka, and Wekiva are the only Wild and Scenic Rivers listed in Florida under *F.A.C. Chapter 62-302.700 (9)(j)*. None of the three rivers are in or near the project limits. A review of the Southeastern Rivers Inventory was also conducted. There are no rivers listed on the Southeastern Rivers Inventory within or near the project limits. The Hillsborough River, Tampa Bypass Canal, Reedy Creek, Shingle Creek, Boggy Creek, and Bonnet Creek are not listed in the National Park Service Southeastern Rivers Inventory; therefore, the coordination requirement for the Wild and Scenic Rivers Act does not apply to this project.

4.2.11 Floodplain and Floodway Impact Evaluation

In accordance with *Executive Order 11988 "Floodplain Management"*, USDOT Order *5650.2 and Chapter 23, CFR 650A*, the FHSR Design/Build Alternatives 1 through 8 were evaluated for

possible impacts to floodplains and floodways. Federal Emergency Management Agency (FEMA) Flood Insurance Maps (FIRM) were used to estimate floodplain impacts. FEMA FIRMs and FEMA Flood Insurance Studies (FIS) were used to estimate floodway impacts. Floodplain and floodway impacts were determined by assuming a railway corridor 44 to 60 ft. wide and multiplying this width by the FEMA FIRM Zone A and B areas crossed by the FHSR alignments within the alternatives.

The floodplain and floodway impacts estimated are conservative as much of I-4 and the associated median is likely above the 100-year floodplain shown on FEMA FIRM maps. In addition, areas of the railway that are elevated would be out of the FEMA designated floodplains and floodways and impacts would be substantially less than estimated. Subsequent to final design, during which impacts would be minimized, floodplain and floodway impacts would again be determined.

Table 4-66 summarizes the location of floodplain and floodway impacts by alignment and the alternatives that contain those alignments. More significant floodplain and floodway impacts occur in Alignments D1, E1, and E2. In Alignment D1, floodplain impacts are primarily associated with the FHSR crossing over Itchepackesassa and Davenport Creeks. Table 4-67 provides an overview of the anticipated impacts to floodplains and floodways for each of the Design/Build Alternatives 1 through 8. The impacts range from 54.5 ac. to a high of 61 ac.

Table 4-66
Potentially Impacted Floodplains and Floodways

Alignment	Floodplain impacted (ac.)	Floodway Impacted (ac.)	Alternative
A1	0.32	0	1, 2, 5, and 6
A2	2.85	0	3, 4, 7, and 8
B1	0.9	0	1, 2, 5, and 6
B2	2.53	0	3, 4, 7, and 8
C1	6.94	0.34	All
D1	28.96	2.68	All
E1	19.76	6.43	1,3, 5, and 7
E2	17.42	3.45	2, 4, 6, and 8

Table 4-67
Summary of Potentially Impacted Floodplains and Floodways

	Alternatives							
	1	2	3	4	5	6	7	8
Base Floodplain Encroachment (ac.)	**56.88**	**54.54**	**61.04**	**58.70**	**56.88**	**54.54**	**61.04**	**58.70**
Base Floodway Encroachment (ac.)	**9.45**	**6.47**	**9.45**	**6.47**	**9.45**	**6.47**	**9.45**	**6.47**

No-Build Alternative

The No-Build Alternative would not impact any floodways or floodplains; however, future construction of planned transportation improvements in this corridor would require floodplain mitigation within the alignment identified for the FHSR.

Preferred Alternative

The Preferred Alternative would impact approximately 56.88 ac. of floodplain and approximately 9.45 ac. of floodway. Subsequent to final design, during which impacts would be minimized, floodplain and floodway impacts would again be calculated and the amount of mitigation would be determined. Coordination with the WMDs will identify areas appropriate for mitigation of the volumetric impacts of the preferred alignment that will not increase or significantly change the flood elevations and/or limits.

4.2.12 Coastal Zone Consistency

The FHSR Design/Build Alternatives are not located near or on barrier islands or coastal areas. Based on information contained in the DEIS and comments provided by the reviewing agencies, the Florida State Clearinghouse, through the FDEP, has determined that the project is consistent with the Florida Coastal Management Program (FCMP) in a letter dated June 3, 2002 (Appendix B). The Florida State Clearinghouse, through FDEP, was provided the opportunity to review project documentation to verify consistency with the FCMP throughout the PD&E Study.

4.2.13 Coastal Barrier Resources

A review of the Coastal Barrier Resource Maps described in Part 2, Chapter 26 of the FDOT Project Development and Environment Manual indicates there are no coastal barrier resource units within the FHSR project limits.

4.2.14 Wildlife and Habitat

In accordance with *Section 7(c) of the Endangered Species Act of 1973* (as amended), the project study area and its alternative alignments have been evaluated for the potential presence of

federally protected plant and animal species. The study also evaluated the occurrence of plant and animal species protected under the *Florida Endangered and Threatened Species Act* (Ch. 372.072 F.S.). A literature search and field evaluations were conducted, and coordination and consultation has been initiated with all regulatory and governing agencies, including U.S. Fish and Wildlife Service (USFWS), the Florida Fish and Wildlife Conservation Commission (FFWCC), and the National Marine Fisheries Service (NMFS). Several data sources were reviewed to determine occurrence and potential occurrence of state and federally protected plant and animal species within the study area. Information sources and databases utilized for this study include the following:

- Florida Natural Areas Inventory (FNAI) county occurrences database
- Previous PD&E Studies of the I-4 Corridor (1994 and 2002)
- State Managed Databases:
  - WMD Land Use Mapping (GIS)
  - Eagle Nest Locations
  - Breeding Atlas of Herons and Their Allies (GIS)
  - Natural Resources Conservation Service (NRCS) Soil Survey for Hillsborough, Polk, Osceola, and Orange counties

The study limits are defined as 500 ft. from the centerline of the proposed FHSR design/build alternatives. Because of the project length, vehicular evaluations were conducted whenever possible, particularly within existing ROWs. Pedestrian evaluations were conducted in areas non-accessible to vehicles. The length of the corridor made it essential to utilize existing databases, knowledge of habitat types, and biologists familiar with the project area to focus the field evaluations in areas most likely to support protected species.

Two teams of biologists performed field evaluations of the project corridors during the months of February and March 2003. Species-specific surveys were not conducted during this study because no areas were identified that would require detailed surveys for determining the occurrence of species, such as the red-cockaded woodpecker or Florida scrub jay. Moreover, species-specific surveys were conducted recently on previous studies (I-4 PD&E Studies) and additional detailed surveys within the same areas would be redundant. Field evaluations produced direct observations of two federally listed plant species, and four state-protected and one federally-protected wildlife species. Table 4-68 presents the potentially occurring protected species for this project along with their status designations. Several species observed during field evaluations include the American alligator, gopher tortoise, Florida pine snake, Southeastern American kestrel, and the Florida sandhill crane. Two federally-protected plant species were observed: scrub plum and Lewton's milkwort.

Table 4-68
Potentially Occurring Listed Wildlife Species

Scientific Name	Common Name	Federal Status	State Status	Hillsborough	Polk	Osceola	Orange
AMPHIBIANS							
Rana capito	Gopher frog		SSC	X	X	X	X
REPTILES							
Alligator mississippiensis	American alligator	T(S/A)	SSC	X	X	X	X
Drymarchon corais couperi	Eastern indigo snake	T	T	X	X	X	X
Gopherus polyphemus	Gopher tortoise		SSC	X	X	X	X
Neoseps reynoldsi	Sand skink	T	T		X	X	X
Pituophis melanoleucus mugitus	Florida pine snake		SSC	X	X	X	X
BIRDS							
Ajaia ajaja	roseate spoonbill		SSC	X	X		X
Aphelocoma coerulescens	Florida scrub-jay	T	T	X	X	X	X
Athene cunicularia floridana	Florida burrowing owl		SSC	X	X	X	X
Egretta caerulea	little blue heron		SSC	X	X	X	X
Egretta thula	Snowy egret		SSC	X	X	X	X
Egretta tricolor	tricolored heron		SSC	X	X	X	X
Eudocimus albus	white ibis		SSC	X	X	X	X
Falco sparverius paulus	Southeastern American kestrel		T	X	X	X	X
Grus canadensis pratensis	Florida sandhill crane		T	X	X	X	X
Haliaeetus leucocephalus	bald eagle	T	T	X	X	X	X
Mycteria americana	wood stork	E	E	X	X	X	X
MAMMALS							
Felis concolor coryi	Florida panther	E	E	X		X	
Ursus americanus floridanus	Florida black bear		T		X	X	X
Podomys floridanus	Florida mouse		SSC	X	X	X	X
Trichechus manatus	Florida manatee	E	E				
Sciurus niger shermani	Sherman's fox squirrel		SSC	X	X	X	X
PLANTS							
Adiantum tenerum	Brittle maidenhair fern		E	X			
Asclepias curtissii	Curtiss' milkweed		E	X	X	X	X
Asplenium auritum	auricled spleenwort		E	X			

Table 4-68
Potentially Occurring Listed Wildlife Species

Scientific Name	Common Name	Federal Status	State Status	Hillsborough	Polk	Osceola	Orange
Bonamia grandiflora	Florida bonamia	T	E	X	X	X	X
Calamintha ashei	Ashe's savory		T		X		X
Cheiroglossa palmata	hand fern		E	X	X		X
Chionanthus pygmaeus	Pygmy fringe tree	E	E	X	X	X	
Chrysopsis floridana	Florida golden aster	E	E	X			
Cladonia perforata	perforate reindeer lichen	E	E		X		
Clitoria fragrans	Pigeon-wing	T	E		X		X
Conradina brevifolia	short-leaved rosemary	E	E		X	X	
Conradina grandiflora	large-flowered rosemary		E			X	X
Crotalaria avonensis	Avon Park rabbit-bells	E	E		X		
Deeringothamnus pulchellus	beautiful pawpaw	E	E				X
Dicerandra frutescens	Scrub mint	E	E		X		
Drosera intermedia	Spoon-leaved sundew		T		X		
Eriogonum longifolium var gnaphalifolium	Scrub buckwheat	T	E			X	X
Eryngium cuneifolium	Wedge-leaved button-snakeroot	E	E		X		
Glandularia tampensis	Tampa vervain		E				X
Hartwrightia floridana	Hartwrightia		T		X		
Hypericum cumulicola	Highlands scrub hypericum	E	E		X		
Hypericum edisonianum	Edison's ascyrum		E		X		
Illicium parviflorum	star anise		E		X		X
Lechea cernua	nodding pinweed		T	X	X	X	X
Lechea divaricata	pine pinweed		E	X	X		
Liatris ohlingerae	Florida blazing star	E	E		X		
Lindera subcoriacea	bog spicebush		E				X
Lupinus westianus var aridorum	Scrub lupine	E	E		X	X	X
Matelea floridana	Florida spiny-pod		E		X		X
Monotropa hypopithys	Pinesap		E				X
Nemastylis floridana	fall-flowering ixia		E		X	X	X
Nolina atopocarpa	Florida beargrass		T			X	X
Nolina brittoniana	Britton's beargrass	E	E		X	X	X
Panicum abscissum	cutthroat grass		E		X	X	
Paronychia chartacea ssp chartacea	Paper-like nailwort	T	E		X	X	X
Peperomia humilis	terrestrial peperomia		E				X
Platanthera integra	Yellow fringeless orchid		E		X	X	X

Table 4-68
Potentially Occurring Listed Wildlife Species

Scientific Name	Common Name	Federal Status	State Status	Hillsborough	Polk	Osceola	Orange
Polygala lewtonii	Lewton's polygala	E	E		X	X	X
Polygonella basiramia	hairy jointweed	E	E		X		
Polygonella myriophylla	Small's jointweed	E	E		X	X	X
Prunus geniculata	Scrub plum	E	E	X	X	X	X
Pteroglossaspis ecristata	wild coco		T		X	X	X
Salix floridana	Florida willow		E		X		X
Schwalbea americana	Chaffseed	E	E	X			
Stylisma abdita	Scrub stylisma		E		X		X
Triphora latifolia	Broad-leaved nodding-caps		E	X			
Warea amplexifolia	clasping warea	E	E		X	X	X
Warea carteri	Carter's warea	E	E		X		
Zephyranthes simpsonii	rain lily		T	X	X	X	X
Ziziphus celata	Scrub ziziphus	E	E		X		

X Species known to occur in county

FEDERAL STATUS
E Endangered: species in danger of extinction throughout all or a significant portion of its range.
T Threatened: species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.
E(S/A) Endangered due to similarity of appearance to a species which is federally listed such that enforcement personnel have difficulty in attempting to differentiate between the listed and unlisted species.
T(S/A) Threatened due to similarity of appearance (see above).

STATE STATUS
E Endangered: species, subspecies, or isolated population so few or depleted in number or so restricted in range that it is in imminent danger of extinction.
T Threatened: species, subspecies, or isolated population facing a very high risk of extinction in the future.
SSC Species of Special Concern is a species, subspecies, or isolated population that is facing a moderate risk of extinction in the future

In addition to the species observed, there is a potential for the eastern indigo snake, sand skink, gopher frog, Florida panther, Florida mouse, Sherman's fox squirrel, manatee, Florida black bear, Florida scrub jay, Florida burrowing owl, bald eagle, and wood stork to occur within the project limits.

Table 4-69 summarizes the results of these evaluations, as well as evaluations performed during other studies. This table identifies species observations and potential species habitat by county, FHSR alignment, and design/build alternative. Detailed location information is provided through cross-referencing the Concept Plan sheet numbers given in this table to the plans located in Appendix A, which identify potential occurrence (based on species habitat requirements) and actual observation areas by species.

In general, the vast majority of species observed or potentially occurring were recorded outside the main area of impact. Where the FHSR is located within existing roadway medians, impacts to natural communities and protected species is almost negligible. Maintenance and station facilities have been proposed for areas outside of any roadway median; therefore, at these locations, some natural communities supporting protected species may be affected.

Protected species involvement is addressed by FHSR alignments and alternatives in the following sections. Table 4-69 presents a summary of the protected species evaluation.

Amphibians and Reptiles

A total of six species of protected reptiles and amphibians may occur, or have suitable habitat, within the FHSR study area. These include the American alligator, Eastern indigo snake, gopher tortoise, sand skink, Florida pine snake, and gopher frog.

American Alligator

An alligator was observed only once in Alignment E1, Design/Build Alternatives 1, 3, 5, and 7 in Orange County. This species can occur in any wetland system, including ditches, throughout the study area. Although some wetland systems may be affected by the proposed project, required compensation for wetland impacts would offset any effects to alligator habitat. Therefore, the FHSR project would have "no effect" on the American alligator.

Eastern Indigo Snake

The Eastern indigo snake may occur in almost any habitat at any time, and therefore may be affected by the FHSR construction in all of the alignments within Design/Build Alternatives 1 through 8. Special construction precautions would be implemented to minimize harm to this species. During final design and permitting, further coordination with the USFWS would occur to determine if a federal Incidental Take Permit (ITP) would be needed. This process was discussed with Mr. Jeff Weller, during the September 5, 2002, meeting with the USFWS, as a potential alternative to protect the indigo snake. Considering these efforts, the proposed FHSR project "may affect, but is not likely to adversely affect" the Eastern indigo snake.

Table 4-69
Protected Species Evaluation Summary

Scientific Name	Common Name	Observed	Other Evidence	Suitable Habitat	County	Alignments	Alternatives	Plan Sheet	Comments
Amphibians and Reptiles									
Alligator missipiensis	American alligator	Y	N	Y	Orange	E1	1, 3, 5, 7	164	
Drymarchon corias couperi	Eastern indigo snake	N	N	Y	All		All alternatives		Assume presence in any natural systems of the study area.
Gopherus polyphemus	gopher tortoise	Y	Y	Y	Hillsborough	C1	All alternatives	26-27	
Gopherus polyphemus	gopher tortoise	Y	N	Y	Hillsborough	C1	All alternatives	45	
Gopherus polyphemus	gopher tortoise	N	Y	Y	Hillsborough	C1	All alternatives	35-36	
Gopherus polyphemus	gopher tortoise	N	N	Y	Hillsborough	B2	2, 4, 6, 8	199	
Gopherus polyphemus	gopher tortoise	N	N	Y	Hillsborough	C1	All alternatives	35	
Gopherus polyphemus	gopher tortoise	Y	N	Y	Polk	D1	All alternatives	79, 105, 106, 87	
Gopherus polyphemus	gopher tortoise	Y	Y	Y	Polk	D1	All alternatives	107	
Gopherus polyphemus	gopher tortoise	N	N	Y	Polk		All alternatives	57, 58, 69-71, 74-77, 79-86, 97-100, 102, 103, 106, 107	
Gopherus polyphemus	gopher tortoise	N	Y	Y	Polk	D1	All alternatives	65, 84, 85, 93, 102, 104, 105	
Gopherus polyphemus	gopher tortoise	Y	N	Y	Osceola	D1,E1	All alternatives	108-115	
Gopherus polyphemus	gopher tortoise	N	N	Y	Osceola	D1, E1	All alternatives	108-122	
Gopherus polyphemus	gopher tortoise	Y	N	Y	Orange	E1, E2	All alternatives	130, 131, 177-180	
Gopherus polyphemus	gopher tortoise	N	N	Y	Orange	E1, E2	All alternatives	124-142, 152-154	
Neoseps reynoldsi	sand skink	Y	Y	Y	Polk	D1	All alternatives	105	Skinks located during surveys for I-4 expansion (pond site) in spring 2000
Neoseps reynoldsi	sand skink	N	N	Y	Osceola	E1,E2	All alternatives	113-114	Potential habitat identified

Table 4-69
Protected Species Evaluation Summary

Scientific Name	Common Name	Observed	Other Evidence	Suitable Habitat	County	Alignments	Alternatives	Plan Sheet	Comments
Pituophis melanleucus mugitus	Florida pine snake	Y	N	Y	Polk	D1	All alternatives	105, 106	
Pituophis melanleucus mugitus	Florida pine snake	N	N	Y	Polk	D1	All alternatives	95, 106, 107	
Rana capita	gopher frog	N	N	Y	Polk	D1	All alternatives	74-77, 86, 87, 97-99, 106-108	
Birds									
Aphelecoma courelescens	Florida scrub jay	Y	Y	Y	Polk	D1	All alternatives	107, 108	Birds documented previously (I-4 expansion studies in 1994 and 2000). Jays cross I-4.
Athene cunicularia	Florida burrowing owl	N	N	Y	Polk	D1	All alternatives	57, 58, 69-71, 74-77, 79-87, 95, 97-99, 102-107	
Falco sparverius paulus	Southeastern American kestrel	Y	N	Y	Hillsborough	C1	All alternatives	35, 36	
Falco sparverius paulus	Southeastern American kestrel	N	N	Y	Hillsborough	C1	All alternatives	32, 43-45, 49	
Falco sparverius paulus	Southeastern American kestrel	N	Y	Y	Polk	D1	All alternatives	87	
Falco sparverius paulus	Southeastern American kestrel	N	N	Y	Polk	D1	All alternatives	73-77, 79, 80, 86, 89, 91, 92, 95, 97-101, 106, 107	
Falco sparverius paulus	Southeastern American kestrel	N	N	Y	Osceola	D1	All alternatives	110-111	
Grus canadensis pratensis	Florida sandhill crane	Y	Y	Y	Hillsborough	C1	All alternatives	49	
Grus canadensis pratensis	Florida sandhill crane	Y	N	Y	Hillsborough	C1	All alternatives	46	
Grus canadensis pratensis	Florida sandhill crane	N	N	Y	Hillsborough	B1, C1	All alternatives	14, 15, 25-27, 53	
Grus canadensis pratensis	Florida sandhill crane	Y	N	Y	Polk	D1	All alternatives	74-76, 79, 80, 100	
Grus canadensis pratensis	Florida sandhill crane	N	N	Y	Polk	D1	All alternatives	57, 58, 69-71, 73-78, 81-84, 87-89, 95-99, 106, 107	
Grus canadensis	Florida sandhill	Y	Y	Y	Orange	E1	1, 3, 5, 7	130-132,	

Table 4-69
Protected Species Evaluation Summary

Scientific Name	Common Name	Observed	Other Evidence	Suitable Habitat	County	Alignments	Alternatives	Plan Sheet	Comments
pratensis	crane							137, 141, 143, 146-148, 151	
Haliaeetus leucocephalus	bald eagle	N	Y	Y	Polk	D1	All alternatives	68	Eagles abandoned nest because the tree is dead; osprey observed in tree, not nest.
Mycteria americana	wood stork	N	N	Y	All		All alternatives		Species may forage in any wetland system, including ditches, throughout the study area
Mammals									
Felis concolor coryi	Florida panther			N	Hillsborough	B1		20	Roadkilled cat (UCFP51) was recorded on I-4 March 10, 2003 by the FFWCC.
Felis concolor coryi	Florida panther	N/A	Y	N	Osceola/ Orange	D1	All alternatives	Not known	
Podomys floridana	Florida mouse	N	Y	Y	Polk	D1	All alternatives	86, 87, 106-108	
Podomys floridana	Florida mouse	N	N	Y	Polk	D1	All alternatives	107	
Podomys floridana	Florida mouse	Y	N	Y	Orange	E1	1, 3, 5, 7	130, 131	
Podomys floridana	Florida mouse	N	N	Y	Orange	E2	All alternatives	123-138, 152-154	
Sciurus niger shermani	Sherman's fox squirrel	N	N	Y	Hillsborough	C1	All alternatives	43, 44, 46, 49, 53	
Sciurus niger shermani	Sherman's fox squirrel	N	N	Y	Polk	D1	All alternatives	74-77, 95, 97, 101, 102, 106, 107, 108	
Sciurus niger shermani	Sherman's fox squirrel	N	N	Y	Osceola	E1, E2	All alternatives	110, 111	
Plants									
Polygala lewtonii	Lewton's milkwort	Y	N	Y	Polk	D1	All alternatives	105, 106	
Prunus geniculata	Scrub plum	Y	N	Y	Polk	D1	All alternatives	105	Scrub plum located during surveys for I-4 expansion (pond site) in spring 2000

Gopher Tortoise, Florida Mouse, and Gopher Frog

Aside from creating a shelter for its own protection, the gopher tortoise burrow provides shelter for the protected Florida mouse and gopher frog, as well. Evidence of gopher tortoise occurrence, direct observations, or suitable habitat was identified within Alignments B2, C1, D1, E1, and E2. Because of this, all proposed design/build alternatives have the potential to affect these three species. To avoid adverse affects to the gopher tortoise, an ITP would be acquired from the FFWCC prior to any construction activity in areas were tortoises are known to occur. Although the permit is issued for the gopher tortoise, the permitting process provides protection for the Florida mouse and gopher frog. Through this effort, the proposed project "may affect, but is not likely to adversely affect" the gopher tortoise, Florida mouse, and gopher frog.

Sand Skink

This lizard occurs exclusively along Florida's Central Ridge System in xeric scrub habitat, or areas that were historically scrub, but converted to other uses such as pasture. During field evaluations, sand skink habitat was identified in Alignment E1 and E2 within Osceola County only. Under a previous study (spring 2000) that evaluated proposed stormwater management sites for the I-4 expansion in Polk County, sand skinks were observed in Alignment D1 (Polk County) at the southeastern quadrant of the U.S. 27 interchange. Based upon the identification of sand skink habitat within Alignments D1, E1 and E2, surveys will be conducted during the design/build phase and prior to permitting. The surveys will be conducted, in potentially suitable habitat, between March 1st and May 15th in accordance with the USFWS' draft protocol. Further coordination with the USFWS will take place prior to the initiation of the surveys and to coordinate any potential impacts during the design/build phase of the FHSR project. The proposed project "may affect, but is not likely to adversely affect" the sand skink.

Florida Pine Snake

During field evaluations, one pine snake was observed and other suitable habitat was identified within Alignment D1 along I-4 in Polk County. None of the proposed design/build alternatives would impact these areas; therefore, the proposed project would have "no effect" on the Florida pine snake.

Birds

A total of six species of birds have been identified to occur, or have suitable habitat within the FHSR study area. These include the Florida scrub jay, Florida burrowing owl, Southeastern American kestrel, Florida sandhill crane, bald eagle, and wood stork.

Florida Scrub Jay

Recent PD&E studies of the I-4 corridor in Polk County within Alignment D1 recorded scrub jays that utilize habitat areas on either side of the interstate at the crossing of C.R. 54. The FDOT has committed to providing mitigation for potential impacts to the scrub jay associated with the proposed expansion of I-4. The FDOT Highlands County mitigation bank would be

used to accomplish this mitigation. Because the FDOT would provide mitigation for impacts to scrub jay habitat and no additional habitat occurs along any of the proposed design/build alternatives, the FHSR project would have "no effect" on the Florida scrub jay.

Florida Burrowing Owl

Suitable burrowing owl habitat has been identified in Polk County, outside of the I-4 ROW, but no owl or evidence of occurrence was located along Alignment D1 within any of the proposed design/build alternatives. Because the FHSR project is planned to be within the I-4 median in Polk County, the project would have "no effect" on the Florida burrowing owl.

Southeastern American Kestrel

Kestrels are a small species of falcon that occur throughout much of North America. Suitable habitat for the kestrel was reported within Hillsborough, Polk, and Osceola counties (Alignments C1 and D1) along the I-4 ROW. Some of these areas also supported potential nest sites (cavity tree), although no birds were recorded nesting. A kestrel was observed in Hillsborough County within Alignment C1, but it could not be confirmed if this bird was the protected Southeastern American subspecies or the more northern, non-protected migratory American kestrel, which occurs in Florida during this period (February and March).

Impacts to kestrel habitat would only occur through the removal of an active nest site. It is not anticipated that suitable kestrel habitat or potential nest sites would be impacted by any of the proposed FHSR Design/Build alternatives. Therefore, the FHSR project would have "no effect" on the Southeastern American kestrel.

Florida Sandhill Crane

Florida sandhill crane habitat is abundant along all of the proposed alignments for the FHSR Design/Build alternatives, especially in Hillsborough and Polk County, with some suitable habitat areas in Orange County. Cranes were also observed in all three counties, with active nesting recorded from within the study area in Hillsborough County. Disruption of an active nest is illegal; therefore, nest sites are protected from construction activities. To eliminate any adverse affect to suitable nesting habitat proximal to any proposed construction, those areas would be surveyed during the breeding season (January – June) to determine nesting activity. If nesting is observed, the FFWCC would be contacted for further instruction on how to proceed with construction. By following this procedure, the proposed project "may affect, but is not likely to adversely affect" the Florida sandhill crane.

Bald Eagle

Protecting eagles from construction projects requires that certain activities be restricted within the Secondary and Primary Protection Zones (SPZ and PPZ, respectively) of the nest tree. The PPZ limit is set at a distance 750 ft. out from the nest tree, while the SPZ limit is set at a distance of 1,500 ft. Allowable activities in the PPZ are more restrictive than activities allowed within the SPZ. Both zones limit constructions activities.

The FFWCC manages a database of known eagle nest locations for the entire state. A review of this data identified several nests within 1 mi. of the FHSR study area. Nearly all of these nests are greater than 1,500 ft. from any of the proposed alignments for FHSR design/build alternatives, except for nest PO-50 in Alignment D1, Polk County, which is less than 300 ft. from the I-4 southern ROW limit. Several field reviews of this nest tree determined that it is inactive because the tree has died. No eagles were observed in the nest vicinity during several site visits. According to federal eagle protection guidelines, a nest tree is still provided protection up to five years after the last use by eagles. Because this nest was active last nesting season (2002/2003), the nest tree is still provided protection by the USFWS, but its current condition indicates that it is not a viable site. The USFWS would be contacted during the remainder of this study to discuss the viability of this nest site. If the nest site is considered viable, then standard construction precautions would be implemented to assure the nest and any nesting activity would be protected from construction. Also, prior to construction, the selected FHSR alternative would be re-evaluated to determine if any new nests have been established in proximity to the construction corridor. Considering these efforts, the proposed project "may affect, but is not likely to adversely affect" the bald eagle.

Wood Stork

The wood stork nests in colonies, typically in swamps that are proximal to seasonally isolated wetlands. These colony sites may also be used for roosting during the non-nesting season, resulting in year-round use by the wood stork. The USFWS has recently implemented changes to its wood stork colony protection guidelines. These new guidelines state that impacts to appropriate wetland systems within an 18.6-mi. radius of a colony may directly affect colony productivity. The radius area, known as the Core Foraging Area (CFA), is defined as the distance storks may fly from the colony to capture prey for their young. According to the new guidelines, appropriate wetlands that are impacted within the CFA must be mitigated within that same CFA.

No colonies or wood stork roosts were identified within the study area during surveys. However, the FFWCC maintains a colony location database, which reports seven active wood stork colonies within 18.6 mi. of the project corridor in Hillsborough (three), Polk (three) and Orange (one) counties. These colony locations would affect all of the proposed FHSR Design/Build Alternatives. Table 4-70 presents colony location data in relation to the FHSR project study area.

Table 4-70
Wood Stork Colonies within 18.6 Miles
(Core Foraging Area) of the Proposed Corridors

County	Colony Number	Township	Range	Quarter Section	Number Of Individuals	Distance To Closest Alignment(Miles)
Hillsborough	611310	27S	19E	SW03	33	11.79
Hillsborough	615105	30S	22E	NE16	60	10.76
Hillsborough	615333	Key	Key	Key	30	7.44
Polk	612316	28S	24E	SE32	90	5.66
Polk	616114	30S	23E	SW01	90	10.29
Polk	616117	29S	25E	SE09	20	12.17
Orange	612320	22S	31E	NE20	40	11.31

During the permitting phase of final design, a more comprehensive determination of wetland involvement would be developed. During this time, impacts to CFA wetlands would be quantified. Coordination with the USFWS would continue to assure that appropriate mitigation would be provided for impacts to these CFAs. With these efforts, the proposed project "may affect, but is not likely to adversely affect" the wood stork.

Protected Wading Birds

The snowy egret, little blue heron, tricolored heron, white ibis, and roseate spoonbill are protected as State Species of Concern (SSC). During the breeding season, these birds also nest in aggregations known as colonies. The state provides specific protection to wading bird colonies in order to prevent disturbances in nesting productivity. These species also rely primarily on wetland systems, including ditches, as foraging habitat.

The FFWCC maintains a database of wading bird colony locations. This data was evaluated to determine potential involvement with the project. No wading bird colonies were located in the project vicinity during the field evaluations, nor were any identified in the project vicinity when the database was reviewed. Moreover, no protected wading birds were observed during the field evaluations.

Because no colonies occur proximal to any of the FHSR alignments within the proposed design/build alternatives, none would be disrupted by the construction and operation of the FHSR. Additionally, although wetlands would be impacted by construction, required wetland mitigation would compensate for impacts to foraging habitat. Therefore, the FHSR project "may affect, but is not likely to adversely affect" state protected wading bird species.

Mammals

Five species of protected mammals have been identified to occur, or have suitable habitat within the FHSR study area. These include the Florida panther, Florida mouse, Sherman's fox squirrel, manatee, and the Florida black bear.

Florida Panther

The USFWS recognizes viable habitat for this species as occurring only in extreme southwest Florida; however, some panthers have been dispersing northward recently. A radio-collared panther (cat 62) crossed I-4 near the Osceola/Orange County line (Alignments E1 and E2) in March 2000, which is an area shared by all the proposed design/build alternatives. On March 10, 2003, while attempting to cross I-4 in Hillsborough County, a male panther was killed by a vehicle 0.25 mi. east of the I-75 interchange (Alignment C1). Although both crossings of I-4 raise concerns about the possibility of panthers attempting to cross this roadway in the future, the FHSR project should not inhibit any possible future crossings of I-4 or any other roadway associated with this project because the railway would be elevated. Moreover, the wildlife agencies do not consider any part of the proposed FHSR alignments as panther habitat. In fact, the March 2003 crossing occurred in a highly developed part of Hillsborough County with little natural area or prey availability.

Although vehicle-caused mortality may raise concerns for panthers crossing I-4 in the future, the proposed FHSR design would not increase this concern because it would be elevated. Moreover, the USFWS does not consider any areas along the proposed FHSR Design/Build alternatives as important to the future existence of the panther. Therefore, the proposed project would have "no effect" on the Florida panther.

Sherman's Fox Squirrel

No Sherman's fox squirrels were observed during the field evaluations, but suitable habitat is located within Alignments C1, D1, E1, and E2 of the proposed FHSR Design/Build Alternatives 1 through 8 (Hillsborough, Polk and Osceola counties). The FFWCC prohibits the removal of active fox squirrel nests. No suitable fox squirrel nesting habitat occurs within any roadway median or ROW, or railroad ROW; therefore, surveys for nest sites would occur only at impact areas outside of any existing transportation ROW. In an effort to minimize or eliminate any adverse affects to the fox squirrel, areas supporting suitable habitat outside of existing transportation ROWs would be surveyed for nests just prior to construction in those areas. If an active nest is located during these surveys, the FFWCC would be contacted for guidance on assuring no adverse effect. Therefore, the proposed FHSR project "may affect, but is not likely to adversely affect" the Sherman's fox squirrel.

Manatee

Impacts to the manatee could occur through the construction of bridges over waterways utilized by the manatee. The only waterway within the study area that is known to support the manatee is the Tampa Bypass Canal located in Alignments B1 and B2 in Hillsborough County. Water

control structures, however, are located downstream of the proposed crossing for the alignments, preventing manatees from reaching the project study area. Therefore, the proposed project would have "no effect" on the manatee.

Florida Black Bear

In the Green Swamp, a large wetland ecosystem with a southern boundary adjacent to I-4 in eastern Hillsborough and Polk counties (Alignments C1 and D1), a small black bear population occurs. The FFWCC does not recognize this population as viable due to its size. The FFWCC focuses bear management strategies on eight other, more substantial populations, which occur throughout Florida. Furthermore, the FFWCC recognizes several bear Strategic Habitat Conservation Areas (SHCA) throughout the state and has prioritized land acquisition to secure these areas for bear conservation. No black bear SHCA are identified in the vicinity of any of the proposed FHSR Design/Build alternatives. Additionally, no black bears, or evidence of their occurrence, were observed during field evaluations. Therefore, the proposed project would have "no effect" on the Florida black bear.

Protected Plants

The FNAI database identified 50 plant species that may occur in all four counties of this study. State and federal law protects 24 of these plants, while the remaining 26 are protected by state law only. Results of the current field evaluation and those conducted for the FDOT I-4 PD&E Study (pond site study) located two federally endangered plant species. In the same area that supports the only known sand skink population of this study, scrub plum was documented. Also in Polk County (Alignment D1), Lewton's milkwort was observed. These two areas, however, would not be impacted by any of the proposed FHSR Design/Build Alternatives. Therefore, the proposed project would have "no effect" on protected plant species.

Design/Build Alternatives

As discussed in the previous subsections, the proposed FHSR design/build alternatives potential impact to protected animals, plants or their habitat are identified.

No-Build Alternative

Under the No-Build Alternative, protected species would not be impacted, and no plant or animal habitat would be removed by construction of the FHSR.

Preferred Alternative

The Preferred Alternative will have "no effect" on the following species: American alligator, Florida pine snake, Florida scrub jay, Florida burrowing owl, Southeastern American kestrel, Florida panther, manatee, Florida black bear, and protected plant species. The Preferred Alternative "may effect, but is not likely to adversely effect" the following species: Eastern indigo snake, gopher tortoise, Florida mouse, gopher frog, sand skink, Florida sandhill crane, bald eagle, wood stork, state protected wading bird species, and Sherman's fox squirrel. As part

of mitigation commitments, FHSRA will continue to coordinate with USFWS, the WMDs, and FFWCC to develop design and construction methods to avoid and minimize impacts to these species.

4.2.15 Farmlands

In accordance with *7 CFR Part 658*, the Comprehensive Plans and Future Land Use Maps for Hillsborough, Polk, Osceola, and Orange counties; the cities of Tampa, Plant City, Lakeland, and Orlando; and the Reedy Creek Improvement District were reviewed as part of the farmlands assessment process. Land uses in the vicinity of the proposed FHSR Design/Build Alternatives 1 through 8, station locations, and maintenance facilities include mixed use, commercial, industrial, all densities of residential, and rural/agricultural. Coordination with the NRCS was initiated in April 2003. The NRCS requested a letter be submitted, along with the farmlands conversion form, in order for the NRCS to give concurrence that no farmlands (including prime or unique) as defined by *7 CFR Part 658* are located in the project vicinity. The letter and the farmlands conversion form were mailed to the NRCS on April 17, 2003. In a letter dated April 25, 2003, the NRCS concurred that, ". . . there is no prime or unique farmland which would impact this proposed project." A copy of the letter is included in Appendix B.

There are no farmlands, as defined by *7 CFR Part 658,* located in the project vicinity. Therefore, the provisions of the *Farmland Protection Act of 1984* do not apply to this project.

4.2.16 Energy

This section describes the net energy resource consumption estimated for the analysis year 2010 for each of the proposed design/build alternatives. The net energy consumption represents the total estimated direct annual energy consumption of each alternative for train propulsion, station operation, and system maintenance, less the reduction in motor fuel consumption from the estimated reduction in VMT on Florida's highways. Indirect energy (e.g., energy expended by the initial construction activities or the energy content of the vehicles or infrastructure) is not included in these estimates. Fuel consumption rates were not adjusted for localized changes in congestion, so it is possible that some relatively small additional fuels savings might occur. The majority of the travelers diverted to the FHSR are longer-distance travelers from automobiles; therefore, savings from overall highway VMT reduction should represent most of the fuel savings.

The estimates are discussed in separate subsections for train propulsion, highway travel, and O&M.

Energy Methodology

For the gas turbine train, Alternatives 1 through 4, the propulsion energy (gallons of diesel fuel) was based on information provided in the proposal, as discussed in the Vehicle Emissions subsection, with minor adjustments for alignment length. For the electric train, Alternatives 5 through 8, the electric energy required for train propulsion was estimated by simulating train operation for Alternative 6, with mileage-based adjustments for the other alternatives. To derive

energy requirements at the generating station, a power factor of 0.91 was assumed, as well as transmission and distribution losses of 8 percent. The estimates of the effective heat equivalent of the power electric power required assumed a thermal efficiency of 45 percent at the generating station. Power requirements for mileage adjustments were made on the basis of per-mile energy consumption for 100-mph operation on tangent track. Overall allowances of 17.8 percent and 10.5 percent, in addition to the energy requirements for revenue train service, were made for non-revenue train movement and train idle hours for the gas turbine and electric trains, respectively.

Highway energy savings were limited to automobile passenger travel and, therefore, are expressed in gallons of gasoline. Energy requirements were estimated based on 25 VMT per gallon for the trips being diverted to FHSR, and at 20 VMT per gallon for the auto access portion of trips using FHSR.

Energy requirements for O&M were made from unit consumption rates of electricity for station operation and system maintenance for Alternatives 2 (gas turbine train) and 6 (electric train), and making mileage- and station-related adjustments for the other alternatives. Quantities (station and platform areas, route-miles, and track-miles) for the year 2010 were derived from information submitted by the proposers.

Energy estimates are expressed in millions of British Thermal Units (MBTUs) per year. One MBTU is the energy equivalent of 1.05506×10^9 joules (SI) or 25,200 grams of oil equivalent (often used by European energy agencies).

Train Propulsion Energy

The energy estimates for train propulsion in Table 4-71 include all energy necessary to propel the trains and operate on-board amenities and equipment (i.e., ”hotel power”), both for revenue service and for all other train operation, including standing in the terminals between scheduled trips, yard moves, and equipment moves.

Direct propulsion energy requirements for the fossil-fueled gas turbine train are estimated to be considerably greater than for the electric train alternatives. When thermal losses for power generation are included, this difference is less pronounced, but still substantial. It should be borne in mind that the electric train alternatives provide about 25 percent more service (in terms of train-miles) than the gas turbine alternatives. On a train-mile basis, the total heat energy required per train-mile for the gas turbine is estimated to be about three times that for the electric train.

Table 4-71
Summary of Estimated Train Propulsion Energy Consumption for the Year 2010

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Electricity (GWH)[1]	0.000	0.000	0.000	0.000	30.628	29.665	31.076	30.114
Diesel Fuel (thousands of gallons)	4,094	4,029	4,146	4,080	0	0	0	0
MBTU[2] excluding thermal losses from generation	540,540	531,828	547,272	538,560	104,507	101,221	106,035	102,753
MBTU including thermal losses from generation[3]	540,540	531,828	547,272	538,560	232,237	224,935	235,634	228,340

Notes:
1 Gigawatt hours (millions of KWH) at the generating station
2 Diesel fuel converted at 132,000 British Thermal Units (BTU) per gallon; electricity at 3412 BTU per kilowatt hour (KWH).
3 Thermal efficiency of 45 percent assumed for electric power generation

Highway Energy Consumption

The diversion of highway travelers to FHSR is estimated to cause a net decrease in gasoline consumption on Florida's highways, as indicated in Table 4-72. Decreases are indicated in parentheses. The estimated gasoline savings for the "Bee Line" Alternatives (1, 3, 5, and 7) are higher than for the "Greeneway" Alternatives (2, 4, 6, and 8).

Table 4-72
Summary of Estimated Highway Energy Consumption Change for the Year 2010

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
'Rider' VMT at 25 mpg (millions)	(25.751)	(20.673)	(25.751)	(20.673)	(25.751)	(20.673)	(25.751)	(20.673)
'Access' VMT at 20 mpg (millions)	4.670	4.352	4.670	4.352	4.670	4.352	4.670	4.352
Gasoline (thousands of gallons)	(796.5)	(609.3)	(796.5)	(609.3)	(796.5)	(609.3)	(796.5)	(609.3)
MBTU[1]	(90,403)	(69,156)	(90,403)	(69,156)	(90,403)	(69,156)	(90,403)	(69,156)

Notes:
1 Gasoline converted at 113,500 BTU per gallon.

Operations and Maintenance (O&M) Energy Consumption

The O&M estimates include all direct project requirements, other than train propulsion energy, which is described in the subsection Train Propulsion Energy. These estimates (including thermal losses for electric power generation) are shown in Table 4-73 for the following general categories:

- Station operations, including: station Heating, Ventilation, and Air Conditioning (HVAC) (electric) and lighting and parking lot illumination. The difference in energy consumption from station operations is due entirely to differences in the proposed stations proposed by the gas turbine and electric train alternatives. The stations proposed for the gas turbine alternatives are relatively small; platforms are relatively narrow and only a modest amount of station parking is provided. The stations proposed for the electric train alternatives provide 1.5-2 times as much space per passenger in the stations, almost three times as much on platforms, and about 2.5 times as much parking capacity.
- Maintenance of equipment (MOE), including operation of the central maintenance facility and train washing operations. The difference between the gas turbine and electric train alternatives here is due to the significantly larger maintenance facility proposed by the electric train alternatives (170,000 vs. 115,000 sq. ft.).
- Maintenance of way (MOW), consisting chiefly of fuels for ROW security patrols and transport of crews, material, and equipment to wayside sites. The requirement for the electric train alternatives is higher because of the need to maintain the overhead traction power supply system, and because of the higher-capacity full double-track configuration of the electric train alternatives.

Overall, energy requirements for O&M are to be about twice as high for the electric alternatives as for the gas turbine alternatives. This is primarily a result of higher capacity 'built in' to the electric train alternatives, in the form of larger stations and maintenance facilities.

Table 4-73
Summary of Estimated O&M Energy Consumption (MBTU per year)

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Electricity (GWH) excluding thermal losses	5.779	5.311	5.779	5.311	12.043	10.717	12.043	10.717
Gasoline (thousands of gallons)	43.1	42.6	43.8	43.2	58.7	57.9	59.6	58.8
Station Operation MBTU (including thermal losses)	20,946	17,391	20,946	17,391	57,563	47,510	57,563	47,510
MOE MBTU (including thermal losses)	22,876	22,876	22,876	22,876	33,757	33,757	33,757	33,757
MOW MBTU (including thermal losses)	4,896	4,830	4,967	4,901	6,666	6,576	6,763	6,673
Total MBTU (including thermal losses)	48,718	45,098	48,789	45,169	97,986	87,844	98,082	87,940

Total Energy Consumption

Table 4-74 presents the energy subtotals from the preceding subsections and combines them into a project net total for each of the design/build alternatives. The estimated change in net energy consumption for 2010, including thermal losses for electric power generation, ranges between 239,820 and 514,574 MBTUs, with the electric train alternatives' net consumption being considerably lower than the gas turbine train alternatives'. The total change is a very small fraction (less than $1/20^{th}$ of one percent) of Florida's total energy consumption for surface transportation (all non-military vehicle operation on highways, railroads, and fixed-guideway public transportation), which is estimated to reach one quadrillion BTUs (i.e., 1,000,000,000 MBTU) by 2010.

Table 4-74
Summary of Estimated Net Energy Consumption (Change from 2010 No-Build in MBTU), including thermal losses for electric power generation

	Alternatives							
	1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Propulsion	540,540	531,828	547,272	538,560	232,237	224,935	235,634	228,340
Highway	(90,403)	(69,156)	(90,403)	(69,156)	(90,403)	(69,156)	(90,403)	(69,156)
Operations	48,718	45,098	48,789	45,169	97,986	87,844	98,082	87,949
TOTAL	498,855	507,770	505,658	514,574	239,820	243,623	243,314	247,124

No-Build Alternative

Under the No-Build Alternative, no additional energy needs would be required for the propulsion or operations of the train due to the construction of the FHSR. The net decrease in gasoline consumption on Florida's highways of 90,403 MBTU would also not occur with the No-Build Alternative.

Preferred Alternative

The Preferred Alternative would result in a net increase of energy consumption by 498,855 MBTU, accounting for the propulsion and operation of the FHSR as well as the reduction of gasoline consumption by diverting automobile ridership.

4.2.17 Utilities

The locations of major utilities within the FHSR study area were assessed by contacting all of the utility companies with existing facilities in the study area. To determine what facilities exist within the project limits, all utilities were provided with sets of aerial maps of the study area for identifying the location of existing and planned facilities. All information received from the various utility companies is located in the project file. Major utilities were determined to be those utilities that could influence the location and design of the FHSR project. The utility companies and the types of utilities located within proposed Design/Build Alternatives 1 through 8, station locations, and maintenance facilities are identified in Table 4-75.

The proposed FHSR design/build alternatives may require the relocation of some of the existing utilities. The majority of the existing utilities cross the FHSR alignments and would require provision of adequate depth beneath the tracks or vertical clearance over the tracks to accommodate for appropriate utility lines and equipment. Coordination with all affected utilities would be completed during final design.

Table 4-75
Utilities within Alternatives 1 through 8

Utility	Address	City	State	Zip	Type
ACSI Network Technology	4181 E. Lake Meadow Lane P.O. Box 307	Hernando	FL	34442	Telecommunications
Adelphia	1202 Tech Blvd. Suite 205	Tampa	FL	33619	Television
Adelphia Business Solutions	Two Harbour Place 302 Knights Run Ave. Suite 1025	Tampa	FL	33602	Telecommunications
Adelphia Cable Communications of Orlando	4305 Vineland Road Suite G-2	Orlando	FL	32811	Television
AT&T, C/O PEA	5422 Carrier Dr., Suite 203	Orlando	FL	32819	Telecommunications
BellSouth of Orlando	5100 Steyr St.	Orlando	FL	32819-9522	Telecommunications

Table 4-75
Utilities within Alternatives 1 through 8

Utility	Address	City	State	Zip	Type
Broadwing Communications	1122 Capitol of Texas Highway South	Austin	TX	78746	Telecommunications
Broadwing Communications	5915 S. Rio Grande Ave. Suite 200	Orlando	FL	32809	Telecommunications
Business Telecom	4300 Six Forks Road	Raleigh	NC	37609	Telecommunications
Central Florida Gas	1705 7th Street S.W.	Winter Haven	FL	33880	Gas
Central Florida Pipeline	2101 Gaty Dr.	Tampa	FL	33605	Gas
City Of Auburndale	P.O. Box 186	Auburndale	FL	33823	Municipality
City of Davenport	P.O. Box 125	Davenport	FL	33836	Municipality
City of Haines City	P.O. Box 1507	Haines City	FL	33845	Municipality
City of Kissimmee Dept. of Water Resources	101 North Church St.	Kissimmee	FL	34741-5054	Water
City of Lake Alfred	155 East Pomelo St.	Lake Alfred	FL	33850	Municipality
City of Lakeland Electric & Fiber	501 E. Lemon St.	Lakeland	FL	33801	Power
City of Lakeland - Water Department	501 E. Lemon Street MC-A33	Lakeland	FL	33801	Water
City of Lakeland Gas	501 E. Lemon St.	Lakeland	FL	33801	Gas
City of Orlando Bureau of Wastewater	5100 L.B. McLeod Rd.	Orlando	FL	32811	Sewer
City of Plant City Engineering Division	302 W. Reynolds St.	Plant City	FL	33566	Municipality
City of Tampa Dept. of Sanitary Sewers	306 E. Jackson St. 6N	Tampa	FL	33602	Sewer
City of Tampa Water Department	306 E. Jackson St., 5E	Tampa	FL	33602	Water
Colorado Boxed Beef Company	P.O. Box 899	Winter Haven	FL	33882	Rail
Cutrale Citrus Juices USA, Inc.	602 Mckean St.	Auburndale	FL	33821	Rail
E.Spire Communications	400 N. Tampa St. Suite 900	Tampa	FL	33602	Telecommunications
Epik Communications	3501 Quadrangle Blvd	Orlando	FL	32817	Telecommunications
FL Governmental Utilities Authority	614 N. Wymore Rd.	Winter Park	FL	32789	Water
Florida Gas Transmission Lakeland	1544 N. Combee Rd.	Lakeland	FL	33801	Gas
Florida Gas Transmission Lines Orlando	7990 Steer Lake Rd.	Orlando	FL	32835	Gas
Florida Gas Trasmission	601 South Lake Destiny Dr., Suite 450	Maitland	FL	32751	Gas
Florida Power Corp.	3250 Bonnet Creek Rd. P.O. Box 10000	Lake Buena Vista	FL	32830	Power
Florida Water Services Intercession City	P.O. Box 609520	Orlando	FL	32860	Water
Florida Water Services Windsong					Water
FPL FiberNet	FN-GO 9250 W. Flagler St.	Miami	FL	33174	Telecommunications

Table 4-75
Utilities within Alternatives 1 through 8

Utility	Address	City	State	Zip	Type
Frontier Communications International	435 W. Commercial St.	E. Rochester	NY	14445	Telecommunications
Hillsborough County Water	601 E. Kennedy Blvd. 19th Floor	Tampa	FL	33602	Water
Intermedia Communications of FL, Inc.	4200 W. Cypress Suite 680	Tampa	FL	33609	Telecommunications
Kissimmee Utility Authority	1701 West Carroll St.	Kissimmee	FL	34741	Municipality
Level 3 Communications	1025 El Dorado Ave 13C04	Broomfield	CO	80021	Telecommunications
MCI Worldcom	69 W. Concord St.	Orlando	FL	32801	Telecommunications
Orange County Utilities Engineering	109 E. Church St. Suite 300	Orlando	FL	32817	Municipality
Orlando Orange County Expressway Authority Fiber	525 S. Magnolia Ave.	Orlando	FL	32801	Telecommunications
Orlando Utilities Commission	500 South Orange Ave.	Orlando	FL	32802	Municipality
Polk County Utilities	305 N. Jackson Ave. P.O. Box 2019	Bartow	FL	33831	Municipality
Progress Telecom	362 13th Ave. South	St. Petersburg	FL	33701	Telecommunications
Sprint Florida	33 N. Main St.	Winter Garden	FL	34787	Telecommunications
Tampa Bay Water	2535 Landmark Dr Suite 211	Clearwater	FL	33761	Water
Tampa Electric Company	P.O. Box 111	Tampa	FL	33601	Power
TECO / People Gas	1400 Channelside Drive	Tampa	FL	33605	Gas
Teleport Communications Group/ ATT Local Services	6015 Benjamin Road Suite 306	Tampa	FL	33634	Telecommunications
Time Warner Communications	525 Grand Regency Blvd.	Brandon	FL	33510-3933	Television
Time Warner Communications	844 Maguire Road	Ocoee	FL	34761	Television
Verizon Florida, Inc.	10402 N. 56th St.	Temple Terrace	FL	33617	Telecommunications
Vista United Telephone Company	751 Back Stage Lane	Lake Buena Vista	FL	32830-1000	Telecommunications
Walt Disney Dig Permitting					Telecommunications
Williams Communications, LLC	One Technology Center. Mail Drop TC-11A	Tulsa	OK	74121-2064	Telecommunications

No-Build Alternative

Under the No-Build Alternative, no utilities would be disrupted or relocated.

Preferred Alternative

The Preferred Alternative would require the relocation of some of the existing utilities. The majority of the existing utilities cross the Preferred Alternative and would require provision of adequate depth beneath the tracks or vertical clearance over the tracks to accommodate for appropriate utility lines and equipment. Coordination with all affected utilities would be completed during final design.

4.3 TRANSPORTATION IMPACTS

4.3.1 Impacts to Freight Rail Operations

This section discusses the potential impacts to freight rail operations by the proposed FHSR stations and O&M facilities in Design/Build Alternatives 1 through 8.

Design/Build Alternatives 1, 2, 5, and 6

Design/Build Alternatives 1, 2, 5, and 6 begin in downtown Tampa and follow I-275 until reaching the I-4 interchange. From there, Design/Build Alternatives 1 and 5 follow I-4 into Orange County traveling along the Bee Line Expressway (S.R. 528) and Design/Build Alternatives 2 and 6 follow I-4 into Orange County traveling along the Central Florida Greeneway (S.R. 417) with the terminus at the Orlando International Airport. Because the alternatives follow I-4, the Bee Line Expressway (S.R. 528), and the Central Florida Greeneway (S.R. 417), there are no impacts to freight rail operations from the proposed rail lines, station locations, or maintenance facilities.

Design/Build Alternatives 3, 4, 7, and 8

Design/Build Alternatives 3, 4, 7, and 8 begin in the Tampa CBD and are parallel to the former CSX A-line until near the Uceta Yard where they run parallel to existing CSX freight lines until west of I-75. From I-75, the alternatives are located in the I-75 median until they reach I-4 where they run into the I-4 median. The alternatives are elevated above the existing CSX rail lines and are not expected to impact the CSX Uceta Yard or its operation or freight service.

Coordination with CSX Railroad Company, the freight operator within the FHSR corridors, identified the following issues:

- FHSR should be constructed on separate dedicated track with no interference with freight operations.

- The dedicated FHSR track should be grade-separated at high speeds with at-grade crossings permitted at lower speeds.

- CSX would sell ROW unnecessary for a two-track freight system and would not be adverse to realignment of their freight tracks to provide clearance for two FHSR tracks. The cost for track realignment would be borne by the FHSRA.

- Adequate separation between freight and passenger services would be required, plus the consideration of potential barrier system between the two operations.

This coordination resulted in the identification of the existing CSX ROW for operation of the FHSR. Any proposed FHSR alignment would require the purchase of additional ROW. The realignment of freight tracks, in order to utilize more of the existing CSX ROW, was determined to be financially unfeasible due to maintaining a two-track freight system and the minimal ROW that would become available by this potential realignment.

No-Build Alternative

The No-Build Alternative would have no effect on freight rail operations.

Preferred Alternative

The Preferred Alternative is Design/Build Alternative 1, which begins in downtown Tampa and follow I-275 until reaching the I-4 interchange. From there, it follows I-4 into Orange County traveling along the Bee Line Expressway (S.R. 528) with the terminus at the Orlando International Airport. Because the alternative follows I-4 and the Bee Line Expressway (S.R. 528), there are no impacts on freight rail operations.

4.3.2 Impacts to Highway Operations

The highway traffic demand within the proposed design/build alternatives in Tampa and Orlando is forecasted to increase in the opening year 2008. This increase in traffic would be associated with population growth, tourism, and land use development, and not with an increase in traffic due to FHSR. The FHSR line would be elevated over the roadway network in a major portion of the alternatives. Therefore, FHSR would not disrupt the operation of the roadway systems in Design/Build Alternatives 1 through 4 or Design/Build Alternatives 5 through 8, as discussed in the following paragraphs.

Design/Build Alternatives 1, 2, 5, and 6

These design/build alternatives traverse from downtown Tampa, then northeast along I-4 to Orlando. Alternatives 1 and 5 follow the Bee Line Expressway (S.R. 528) east to Taft/Vineland Road, then to Boggy Creek Road and the Orlando International Airport.

The traffic demand forecasted through the Tampa CBD exceeds an Annual Average Daily Traffic (AADT) of 170,000 vehicles per day (vpd) for I-275 and an AADT of 140,000 vpd for I-4. Although I-4 will be 6-laned through the Tampa CBD, it will remain deficient with LOS F. Vehicle trips using the interstate system to access the station in downtown Tampa would add to this deficiency.

With Alternatives 1 and 2, Laurel Street, located at the Tampa multi-modal station, would be closed between Florida Avenue and Marion Street to accommodate the rail tracks. The closing

of Laurel Street would not significantly impact traffic circulation. There is a network of collector streets and arterials surrounding the station to provide adequate circulation and access. Traffic on the surrounding local roadway network would increase, however, as a result of the vehicle trips attracted by the station. With Alternatives 5 and 6, Laurel Street would remain open.

I-4, through eastern Hillsborough County, will also be deficient as the AADT ranges from 110,000 vpd to 140,000 vpd. The interstate is forecasted to operate within acceptable conditions throughout Polk County, from Lakeland to south of Celebration. The traffic demand forecasts on I-4 in this area ranges between an AADT of 60,000 vpd to 100,000 vpd.

A station is proposed in Lakeland, with two possible sites being considered. One site is proposed north of I-4, near the Polk County Parkway. Swindell Road and Alderman Road would serve the station. These roadways and intersections would be impacted by vehicle trips attracted by the station. The other station in Lakeland is proposed northwest of I-4 and bordered by Kathleen Road (S.R. 539) and Griffin Road. These facilities are 4-lane collectors, which provide much needed travel routes between the urbanized area and suburban Lakeland. These facilities cross I-4 and would remain operational. These roadways and intersections would be impacted by vehicle trips attracted by this proposed station.

The LOS on I-4 is forecasted to be deficient through Osceola and south Orange County. The traffic demand forecasts range in AADT from 140,000 vpd to 180,000 vpd. Vehicle trips using the interstate and expressway systems to access the surrounding stations would add to this deficiency.

A station is proposed at Walt Disney World, west of I-4 between Osceola Parkway and U.S. 192. A platform would be located in the median of I-4 and a pedestrian flyover to the station would be constructed northwest over the westbound lanes of I-4 in order to link the station to a vacant parcel within Walt Disney World. This vacant parcel would then be developed into a transit stop and parking facility in order to access the FHSR station. The median of I-4 would also be reconstructed. There is no current access to the proposed station site. A new roadway approximately ½ mi. in length would need to be constructed to connect the parking area to the existing roadway network.

Along the Bee Line Expressway (S.R. 528), the traffic forecasts range from an AADT of 62,000 vpd to 64,000 vpd. This facility has reserve capacity and is expected to operate at an acceptable condition with the vehicle trips accessing the OCCC station.

The Canadian Court Intermodal Center (CCIC), proposed in the northeast corner of International Drive and the Bee Line Expressway (S.R. 528), would serve as a coordination and transfer center for multiple modes of transportation. A FHSR station is proposed at this facility. The station location, referred to as the OCCC station, would have direct access to International Drive. Extensive planning and committed roadway improvements for the CCIC project would add new roadway connections, improve operation to the area, and provide an integrated roadway network.

A maintenance facility is proposed off Boggy Creek Road between Tradeport Drive and Wetherbee Road or off of Airport Boulevard (South Access Road) near Wetherbee Road. The facility employees would generate some additional traffic; however, this would only be a minor impact to the local roadways because there is excess capacity on local roads.

Airport Boulevard is the primary artery to the multi-modal station located at the Orlando International Airport. The station would be integrated within the airport expansion to serve its multi-modal demand. A roadway system would be constructed at the airport, serving the station, as well as the airport terminal. The roadway system would stem from Airport Boulevard.

Alternatives 2 and 6 are similar to Alternatives 1 and 5 with the exception of utilization of the Central Florida Greeneway (S.R. 417) corridor, instead of the Bee Line Expressway (S.R. 528) corridor. Furthermore, the OCCC station at International Drive is not proposed with this alternative.

The travel demand forecasts for the Central Florida Greeneway (S.R. 417) range from an AADT of 34,000 vpd to 39,000 vpd. This facility has reserve capacity and is not impacted by FHSR vehicle trips traveling to the airport station.

The maintenance facility for Alternatives 2 and 6 is proposed near Airport Boulevard (South Access Road) and Wetherbee Road. The facility employees would generate few vehicle trips, resulting in only minor impact to the roadways.

Design/Build Alternatives 3, 4, 7, and 8

These alternatives are similar to Design/Build Alternatives 1, 2, 5, and 6 except in Tampa, where the corridor crosses through northern downtown to Adamo Drive and runs parallel to the Lee Roy Selmon Expressway. The alternatives continue eastward crossing to Broadway Avenue and continuing northeast to I-75. The alternatives continue north along I-75, then east along I-4 to Lakeland and Orlando. The alternatives would be elevated and would not interrupt roadway traffic. The station locations and maintenance facilities are the same as the previously described alternatives.

The travel demand forecasted for Adamo Drive ranges from an AADT of 27,000 vpd to 32,000 vpd with LOS C. The travel demand forecasted for the Lee Roy Selmon Expressway ranges from an AADT of 54,000 vpd to 59,000 vpd with LOS B/C. On Broadway Avenue, the AADT ranges from 5,000 vpd to 14,000 vpd with LOS B/C. The AADT on I-75 is forecasted at 103,000 vpd with LOS D. These facilities have reserve capacity and are expected to operate at acceptable conditions.

Although these alternatives avoid the I-275 and I-4 interchange, vehicle trips would utilize these facilities to access the downtown Tampa station. Impacts to the surrounding roadway network in Tampa would remain the same as discussed in Design/Build Alternatives 1, 2, 5, and 6. As with Alternatives 5 and 6, Laurel Street would remain open for Alternatives 7 and 8.

Diversion

The FHSR system would divert vehicle traffic from the interstate system, primarily from the I-4 corridor. Annual ridership for the FHSR was forecasted for 2010 within the study corridor. It is projected that 11 percent of the 4.5 million people that annually travel between Tampa and Orlando would be diverted to FHSR. In addition, 9 percent of the 3.4 million people that annually travel between Tampa and Lakeland, as well as 9 percent of the 3 million people that annually travel between Lakeland and Orlando, would also be diverted to FHSR.

The ridership forecasts show a reduction in the number of vehicles annually traveling on I-4 by over 750,000, based on an average of 1.4 persons per vehicle. However, this reduction would not be sufficient to significantly improve the LOS on I-4, as many segments of the roadway would still be over capacity. Further details on the diversion and candidate passengers can be found in the ridership study.

No-Build Alternative

Under the No-Build Alternative, no diversion to FHSR would occur. The absence of the diversion, which would occur under the design/build alternatives primarily on I-4 means congestion on I-4 would occur sooner. As a result, LOS would decrease sooner and the "Ultimate improvements" to I-4 would be needed earlier. The need for more immediate improvements would also occur on the Central Florida Greeneway (S.R. 417) and the Bee Line Expressway (S.R. 528).

Preferred Alternative

The Preferred Alternative is Alternative 1. Impacts to existing highway operations would be the closure of Laurel Street at the multi-modal station in downtown Tampa. A new roadway approximately ½ mi. in length would need to be constructed to connect the Walt Disney World station to the existing roadway network.

4.3.3 Ridership and Revenue

In July 2002, the FHSRA initiated investment grade ridership studies for the first phase of the FHSR project, from St. Petersburg to Orlando. The ridership study consists of four separate reports and various addenda that were issued by the FHSRA. These are:

- Summary Report (Tampa - Orlando) November 20, 2002
- Supplemental Materials November 22, 2002
- Operating Plan November 22, 2002
- Summary Report (St. Petersburg - Tampa) December 16, 2002

All four reports are included as Appendix W to the FHSRA's RFP to design, build, operate, and maintain Part 1 of the first phase of the project (i.e., Tampa to Orlando). This section summarizes the key assumptions and findings from the ridership reports. The proposals submitted for Design/Build Alternatives 1 through 4 (gas turbine train) and 5 through 8 (electric

train) both stated their ridership estimates were more conservative than those used in the FHSRA reports. Ridership revenues, not passenger estimates, are included in the two proposals. The proposals contained different operational plans as discussed in Section 2 of this FEIS.

Forecasting Process

The ridership forecasts are characterized by the FHSR as investment grade with respect to accuracy, reliability, and credibility. To meet the criteria of an investment grade, the scope of work was developed in consultation with a steering committee specifically formed to review this work and based on criteria established by the High Speed Ground Transportation Association. The criteria used to prepare these estimates include:

- Two independent opinions of ridership and revenue prepared by experienced, unbiased demand forecasting consultants.
- A peer review process using independent experts to review forecasting assumptions and procedures.
- Current surveys designed to measure characteristics of existing demand in the corridor and trip maker's attitudes and perceptions of the proposed new travel mode.
- A critical assessment of economic growth projections that are used to estimate the overall increase in travel demand.
- Adoption of conservative assumptions regarding factors affecting FHSR usage.
- Alternative model estimates (sensitivity testing) intended to quantify the impacts of different assumptions of key forecasting inputs on forecast results.
- Anticipation of "ramp-up" effects (gradual behavior change) in response to the availability of a new travel mode.
- Emphasis on near term forecasts.

Ridership Revenue Estimates

The intercity travel market between Tampa and Orlando is estimated to be 50 million trips per year. Of this total market, the candidate market (travelers in the corridor who would consider FHSR as an alternative) was estimated by the two consultants to range from 15.6 to 16.2 million trips per year in 2010. FHSR system ridership estimates for the Tampa to Orlando corridor, for intercity travel and airport access travel, are summarized in Table 4-76. This table includes ridership and revenue for both choice and captive markets in the FHSR corridor.

Design/Build Alternatives

Neither technology included ridership estimates in their proposals. Both technologies did provide revenue estimates and stated their assumptions regarding the FHSRA ridership estimates, as shown in Table 4-76.

The ridership revenues used in the gas turbine train proposal (Design/Build Alternatives 1 through 4) were adjusted based on the sensitivity analyses furnished in the FHSRA's ridership study. These adjustments were made to account for longer travel times, increased train

frequency and operating hours, higher fares, and fare increases keeping pace with inflation (2.7 percent per year).

The electric train proposal (Design/Build Alternatives 5 through 8) used conservative fare box revenues that were developed by the team based on the FHSRA's forecasts. For each of the market segments (i.e., choice and captive) and origins, a series of discount factors were developed and applied. Depending on route and market segment, these discount factors ranged from 68 to 80 percent of the FHSRA's choice and captive ridership.

Table 4-76
2010 Tampa-Orlando Ridership and Revenue Estimates

Route/Market	Annual Ridership	Annual Revenue[3]	Operating Cost
The Bee Line Expressway (S.R. 528)			$26.2 - $36.8 million[4]
Choice[1] Market	1.9 to 2.3 million	$32.9 to $35.4 million	
Captive[2] Market	0.5 million	$6.3 million	
Total	2.4 to 2.8 million	$39.3 to $41.8 million	
The Central Florida Greeneway (S.R. 417)			
Choice Market	1.7 to 1.9 million	$27.9 to $29.9 million	
Captive Market	2.1 million	$26.3 million	
Total	3.8 to 4.1 million	$54.2 t $56.0 million	

1. The choice market is that segment of the market using the corridor and diverting to FHSR based upon an independent decision of price and time competitiveness among the available modes of transportation.
2. Captive markets from the International Drive and Disney areas are estimated based on survey data. The actual value of these markets is dependent on negotiations with entities and providers currently serving these markets. The estimates of captive markets in this table assume Disney will agree to offer this ridership to the FHSR operator only if the Central Florida Greeneway (S.R. 417) alignment is selected.
3. Annual revenues are 2002 $'s.
4. Operating costs are from the FSHRA 2002 Report to the Legislature.

Key Inputs and Assumptions

Key inputs and assumptions were used in the ridership and revenue forecasts to describe the existing transportation system, socio-economic growth, station access, and rail service characteristics. Characteristics of the existing transportation system were expanded into the travel surveys and to describe competitive modes. These include:

- Highway traffic and class counts conducted continuously during the highway intercept study.
- Historic and seasonal traffic counts from FDOT data.
- Existing and future highway travel times based on FDOT urban area models with adjustments based on travel times studies conducted as part of the ridership study.
- Existing air travel in the corridor based on Federal Aviation Administration (FAA) records.
- Highway travel costs (excluding value of time) include the actual tolls paid and $0.36 per mi. for business travelers or $0.12 for non-business travelers.

Socio-Economic Growth Factors

Socio-economic growth factors were used for expanding the existing market to estimate the future travel market size in 2010 and 2025. These forecasts were taken from MPO forecasts, which were compared and found to be consistent with the forecasts prepared by the University of Florida Bureau of Economic and Business Research (BEBR).

- Population in the corridor is expected to increase 33 percent between 2002 and 2025, or 1.4 percent per year.
- Employment in the corridor is expected to increase 46 percent from 2002 to 2025, or an average of 2 percent per year.
- Hotel room growth in the corridor is expected to increase 83 percent from 2002 to 2025, or an average of 3.6 percent per year.
- Orlando International Airport passenger traffic is expected to increase from 27.1 million in 2002 to 34.8 million in 2010. These estimates of airport traffic are taken from the most recent forecasts prepared by the airport for bond financing purposes.

Station Access

Two alternative alignments were evaluated in the Orlando area studies. One of these alternatives uses the Central Florida Greeneway (S.R. 417) route from I-4 to the Orlando International Airport. The second uses the Bee Line Expressway (S.R. 528) route.

Stations along the Tampa to Orlando segment of the project were evaluated at downtown Tampa, Lakeland, Disney, the proposed Orange County Multi-modal Center, and at the Orlando International Airport. Station access characteristics were developed for each of these stations that describe access time and cost assumptions.

- Daily parking costs range from $2 to $6 per day depending on location.
- Public transportation was assumed to be free of charge to/from the OCCC / International Drive area and to/from Walt Disney World resorts and hotels. The public transportation cost for all other station locations ranged from $1.00 to $1.25 per trip.
- Station service areas were generally defined as a 5-mi. radius around each station.
- Walk times, while in the station (i.e., from curb to platform), were 10 minutes entering the station and 5 minutes exiting the station. At the Orlando International Airport, additional time was added to represent travel on the people mover and randomly arriving passenger traffic.

Rail Service Characteristics

The rails service inputs and assumptions describe key aspects of a base case operating plan that was used in the preparation of the ridership estimates. These characteristics include speed, frequency (the number of trains), and fares.

- Average speed used in the base case analysis is 113 mph based upon 150 mph technology.
- Intercity rail frequency is 14 round trip trains over a 16-hour operating day (i.e., 6 AM to 10 PM).
- Orlando area shuttle service provides 8 additional round trips per day.
- Full fares for intercity travel range from $10 (Orlando International Airport to the OCCC) to $32 (Orlando International Airport to St. Petersburg).
- Discount fares for commuters (requiring advance purchase) range from $3.25 to $11.25 per trip.
- Average travel time from Orlando to Tampa (non-stop) is 45 minutes in the base case (150 mph technology) based on an average running speed of 113 mph. Higher and lower travel times were examined as part of sensitivity analyses.
- Taxi fares ranged from $3.00 to $3.25 for the first mi. of travel and $1.75 per mi. thereafter.

4.3.4 Impact to Other Travel Modes

The impacts of the FHSR proposed Design/Build Alternatives 1 through 8 to other travel modes are determined by factors such as route, destination, cost, time, and convenience. Other modes of travel include Amtrak service, Greyhound bus, airline service, and taxi and shuttle services to and from attractions within the area of the No-Build and proposed FHSR Design/Build Alternatives 1 through 8. All travel modes are consistent throughout Design/Build Alternatives 1 through 8 and a description of the travel modes are provided below.

Amtrak

For Amtrak service, the overall operation of its passenger rail services would be affected only for the destinations that terminate in Orlando or Tampa. This would primarily affect Amtrak's bus service provided to patrons traveling between Tampa, Lakeland, and Orlando. The primary reason this route would be affected is due to the savings in cost and time that FHSR service would provide over that of Amtrak.

In Orlando, the impact could be lessened due to a door-to-door service offered by Amtrak. For those travelers ending their stop at the Orlando terminal, Amtrak offers a van service to area attractions and hotels. There is a one-way fee determined by the drop-off or pick-up location.

Travelers going beyond the Orlando or Tampa stop would presumably remain with the bus service provided by Amtrak to avoid unnecessary connections needed to transfer from a train or bus terminal. For Amtrak routes served outside the proposed FHSR Design/Build alternatives, no impacts are anticipated.

Greyhound Bus

Greyhound bus services are likely to experience similar impacts as Amtrak. Because Greyhound has a similar route and destination stops as those offered by Amtrak between Tampa and

Orlando, Greyhound bus would likely be impacted for the same reasons, savings of time and cost.

Air Travel

Air travel between Tampa and Orlando is currently served by one round trip per day departing Tampa in mid-morning and returning in the early evening. The scheduled flight between the two cities is approximately 45 minutes. However, additional time for check-in and travel to the Orlando destination from the airport, make the total trip approximately 2 hours and 45 minutes. With round trip fares ranging from $145 to $270 and lengthy estimated travel time, air travel between Tampa and Orlando is not considered to be a comparable alternative to either road or rail travel.

Taxi and Shuttle Service

The cruise industry in the Port of Tampa is growing and it provides shuttle service to and from the Tampa International Airport. Because there is no FHSR station location proposed at Tampa International Airport, little impact would be seen in the taxi and shuttle service between the airport and the cruise ships located at the Port of Tampa.

Taxi service is not likely to be competition for FHSR as the user of taxi services generally has a specific destination in mind. Shuttle services maybe impacted if FHSR destinations are the same as shuttle destinations. Shuttle services with "captive" riders or those provided transportation as part of their travel package would only be impacted if the vendor chooses to use FHSR.

No-Build Alternative

If the FHSR is not built, air service and Amtrak would continue to function at current levels, however increased congestion would likely require more travel time for bus, taxi and shuttle services.

Preferred Alternative

The Preferred Alternative would affect the Amtrak and Greyhound bus services between Tampa and Orlando due to a potential savings in cost and travel time resulting in diversion of passengers to FHSR. No impacts to other travel modes are anticipated with the Preferred Alternative. Additional local bus, taxi and/or shuttle service will likely be required at proposed stations.

4.3.5 Station Access and Traffic Impacts

The proposed stations associated with the Design/Build Alternatives 1 through 8 in Tampa, Lakeland, and Orlando would attract vehicle trips on the surrounding roadway network. Passengers would arrive at or depart from the stations by automobile and utilize the stations' parking or rental car return facilities. Other passengers would be dropped off or picked up in

automobiles, taxicabs, charter buses, or by local transit services. These impacts result from residents and tourists traveling on the FHSR system.

Tampa Station

At the station proposed as part of Design/Build Alternatives 1, 2, 3, and 4 (gas turbine train), automobile access to the curbside location by private vehicles and taxicabs is proposed on Scott Street between Tampa Street and Florida Avenue. Bus and streetcar access is proposed into the center of the multi-modal station on Franklin Street, located between Tampa Street and Florida Avenue. Parking is proposed on site north of Fortune Street between Florida Avenue and Marion Street.

At the station proposed as part of Design/Build Alternatives 5, 6, 7, and 8 (electric train) access to the station is from Laurel Street between Tampa Street and Morgan Street. Parking is proposed on-site south of Scott Street between Tampa Street and Morgan Street.

For all design/build alternatives, a number of roadways and intersections in the Tampa CBD would experience an increase in vehicle trips as a result of the Tampa station. Specifically, the roadways are Tampa Street, Florida Avenue, Marion Street, Morgan Street, Fortune Street, and Scott Street. The expressways that would experience an increase in vehicle trips are I-275, I-4, and the Lee Roy Selmon Expressway, along with their associated downtown interchanges. The percent increase in traffic on the expressways would be minor compared with the percent increase associated with population growth and tourism.

Lakeland Station

Two possible sites are being considered for the station in Lakeland. All of the Design/Build Alternatives 1 through 8 proposed a station located at the Polk County Parkway. This site has access from Swindell Road and Alderman Road. The access is proposed for all modes of vehicle travel. On-site parking is also proposed. Roadway and intersection impacts are anticipated primarily on Swindell Road and Alderman Road. I-4 and the Polk County Parkway would experience some increase in vehicle trips, along with the I-4 interchanges with County Line Road and the Polk County Parkway.

None of the design/build alternatives propose the use of the alternate site proposed as a viable site by FHSR at Kathleen Road and I-4 in Lakeland. At this site, access would occur from Kathleen Road and Griffin Road. Roadway and intersection impacts are anticipated primarily on Kathleen Road and Griffin Road. I-4 and the Polk County Parkway would also experience some increase in vehicle trips, along with the I-4 interchanges with Kathleen Road and the Polk County Parkway. The percent increase in traffic on the expressways in Lakeland would be minor compared with the percent increase associated with population growth and tourism.

Disney Station

A station is proposed at Disney on I-4, between Osceola Parkway and U.S. 192. There is no current access to the proposed station. A new roadway would be constructed to connect the site

to the existing roadway network. The expressways and associated interchanges that would experience a traffic increase are I-4, U.S. 192, and the Osceola Parkway. The station site proposed in the Disney World area for Design/Build Alternatives 1-8, is located in the median of I-4 with parking located on the north side of I-4.

Convention Center Station

The OCCC station is proposed in the northeast corner of International Drive and the Bee Line Expressway (S.R. 528). The station would coordinate and transfer passengers with the Canadian Court Intermodal Center, which connects to International Drive by way of Canadian Court. These two roadways would be impacted by the station traffic. Orange County has planned and committed extensive roadway improvements for the CCIC project that would add new roadway connections and improve operation to the area. The expressways and associated interchanges that would experience an increase in traffic are the Bee Line Expressway (S.R. 528) and I-4.

Orlando International Airport Station

For all design/build alternatives, automobile access to the Orlando International Airport station is proposed from Airport Boulevard, by way of Boggy Creek Road and the Central Florida Greeneway (S.R. 417). This access is proposed for all modes of vehicle travel with parking proposed on site. Access to the station is shared with access to the expanded airport terminal. The roadways and intersections impacted by the station are Airport Boulevard and Boggy Creek Road. The Central Florida Greeneway (S.R. 417) would experience an increase in vehicle trips, along with the interchange with Boggy Creek Road.

Maintenance Facility

Design/Build Alternatives 1, 3, 5, and 7 include proposed maintenance sites off of Airport Boulevard (South Access Road) and Wetherbee Road or a proposed site off of Boggy Creek Road. Access to the facility is proposed from Wetherbee Road. Design/Build Alternatives 2, 4, 6, and 8 include a proposed site at Airport Boulevard (South Access Road) and Wetherbee Road only. Traffic impacts to the surrounding roadways would be minor based on the projected low number of employees at the maintenance facility.

No-Build Alternative

The No-Build Alternative would result in no need for new train stations, avoiding any additional traffic accessing the stations from local highway networks, additional bus, taxi and/or shuttle service or local permits and/or approvals for station construction.

Preferred Alternative

The Preferred Alternative would locate stations and facilities with local traffic impacts per the following description:

- Tampa Station – located between Tampa Street and Morgan Street from west to east and between Fortune Street and Scott Street from south to north. Access for the station would require the closing of Laurel Street between Florida Avenue and Marion Street to accommodate the rail tracks. The closing of Laurel Street would not significantly impact traffic circulation. There is a network of collector streets and arterials surrounding the station to provide adequate circulation and access.

- Lakeland Station – northwest quadrant of the Polk Parkway and I-4 interchange. The station would have access from Swindell Road and Alderman Road. The access is proposed for all modes of vehicle travel with on-site parking. Roadway and intersection impacts are anticipated primarily on Swindell Road and Alderman Road.

- OCCC Station – northeast corner of International Drive and the Bee Line Expressway (S.R. 528). The station would coordinate and transfer passengers with the Canadian Court Intermodal Center, which connects to International Drive by way of Canadian Court.

- Disney Station – located either in the median or north of I-4 between U.S. 192 and the Osceola Parkway. A new roadway would be constructed to connect the site to the existing roadway network.

- Orlando International Airport – located at the future South Terminal expansion with access integrated with airport transportation operations from Airport Boulevard via Boggy Creek Road and the Central Florida Greeneway (S.R. 417).

- Maintenance Facility – located near Boggy Creek Road and Wetherbee Road, south of the airport. Traffic impacts to the surrounding roads would be minor.

4.4 CONSTRUCTION IMPACTS

4.4.1 Design/Build Alternatives

Construction activities for the FHSR build alternatives may have short-term air quality, noise, vibration, water quality, traffic flow, and visual effects for those residents and travelers within the immediate vicinity of the project. All of the construction impacts would be of short duration in any given location because the construction would proceed in a scheduled sequence along the chosen alternative.

The air quality impact would be temporary and primarily in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles would be effectively controlled through the use

of watering or the application of other controlled materials in accordance with the FDOT's Standard Specifications for Road and Bridge Construction[20].

Noise and vibration effects would be from the heavy equipment movement and construction activities, such as pile-driving and vibratory compaction of embankments. Noise control measures would include those contained in FDOT's Standard Specifications for Road and Bridge Construction. Specific noise level problems that may arise during construction of the project would be addressed by the FHSRA's Construction Engineer.

Water quality effects resulting from erosion and sedimentation would be controlled in accordance with FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices.

The amount of mitigation required for floodway and floodplain impacts will not be determined until later in the EIS process when MOAs are developed with the FDOT and the OOCEA regarding existing and future compensation and treatment locations.

Maintenance of traffic along the abutting and intersecting roadways and the sequence of construction would be planned and scheduled to minimize traffic delays throughout the project. Signs would be used as appropriate to provide notice of road closures and other pertinent information to the traveling public. The local news media would be notified in advance of road closings and other construction-related activities in order to provide information to motorists and residents to minimize inconvenience to the community. All provisions of the FDOT's Standard Specifications for Road and Bridge Construction would be followed.

Construction of the railroad track and associated structures requires excavation of unsuitable material (muck), placement of embankments, and use of materials, such as limerock and concrete. Demucking is anticipated at most of the wetland sites and would be controlled by Section 120 of the FDOT's Standard Specifications for Road and Bridge Construction. Disposal of unsuitable materials would be on-site in detention areas or off-site. The removal of debris would be in accordance with local and state regulatory agencies permitting this operation. The contractor is responsible for his or her methods of controlling pollution on haul roads, in borrow pits, in other material pits, and in areas used for disposal of waste materials from the project. Temporary erosion control features, as specified in the FDOT's Standard Specifications for Road and Bridge Construction, Section 104, would consist of temporary grassing, sodding, mulching, sandbagging, slope drains, sediment basins, sediment checks, artificial coverings, and berms.

4.4.2 No-Build Alternative

The No-build Alternative would not result in any of the short term construction activities described above. Roadway congestion would require roadway improvements in a shorter timeframe resulting in similar impacts to FHSR.

4.4.3 Preferred Alternative

Impacts may result to residents and travelers in the immediate vicinity of the project due to the construction of the Preferred Alternative; however, they would be of short duration in any given location since the construction would proceed in a scheduled sequence. All construction will be conducted in accordance with the FDOT's Standard Specifications for Road and Bridge Construction as described in Section 4.4.1.

4.5 THE RELATIONSHIP BETWEEN LOCAL SHORT-TERM USES AND MAN'S ENVIRONMENT AND THE MAINTENANCE AND ENHANCEMENT OF LONG-TERM PRODUCTIVITY

Environmental impacts associated with the FHSR Design/Build Alternatives would result in short- and long-term impacts, some positive and some negative, but all similar in kind and magnitude. All significant short- and long-term environmental impacts identified during the development of all of the FHSR Design/Build alternatives are quantified in light of: (1) avoidance, (2) minimization, and (3) compensation for unavoidable negative impacts on resources. Impacts to wetlands, wildlife, air quality, noise, water quality, farmland, historic land use, archaeological land use, and societal resources were quantified. These analyses included an evaluation of secondary and cumulative impacts.

The development of each design/build alternative is based on planning that considers transportation needs within the context of present and future land use. The evaluation of the short-term impacts of all alternatives and the use of resources, coupled with environmentally sound design and construction best management practices (cited elsewhere is this document), result in the enhancement of the long-term productivity of the FHSR corridor, as well as the region.

In summary, the long-term enhancement that is the result of FHSR would occur at the expense of short-term construction impacts on nearby residents and businesses. These short-term effects would include localized noise, air pollution, and water pollution, in addition to roadway traffic delays. Based on the commitments to be made during this EIS process and specifications included in construction contracts, any long-term impacts would be mitigated.

Short-term employment gains during construction, as well as long-term employment opportunities as described in Section 4.1.3 of this report, would result from a FHSR system. The FHSR is consistent with the maintenance and enhancement of long-term productivity at the local, regional, state, and national level.

4.6 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Irretrievable resources that would be committed to this project include the land needed to construct FHSR. However, most of this land within Alignments A1, B1, C1, D1, E1, and E2 is located within the ROW of existing roadways. Within Alignments A1, B1, C1, and D1, the land is located within the median of I-4. Within Alignment E1, most of the FHSR ROW needed is located on the north side of the Florida Turnpike and the Bee Line Expressway (S.R. 528) and

within the existing Taft/Vineland ROW. Within Alignment E2, most of the ROW is located on the north side of the Central Florida Greeneway (S.R. 417) ROW or on Orlando International Airport vacant land.

All of the land within existing roadway ROW has been disturbed in the construction of that facility. The existing natural systems are not of high quality within the medians and on the shoulders of the roads where much of FHSR would be located. The ROW to be used by FHSR within each facility is generally earmarked for future roadway expansion. Construction of FHSR is not an irretrievable commitment because that land could be converted into another use in the future, if necessary. At present, however, there is no reason to believe such a conversion would ever be necessary or desirable.

Fossil fuels, labor, and highway construction materials such as steel, cement, aggregate, and bituminous material would also be expended. In addition, large amounts of labor and natural resources are used in the fabrication and preparation of construction materials that are not retrievable. These resources are not in short supply, and their use would not have an adverse effect upon continued availability of these resources.

The residents and travelers in the area would benefit from the commitment of these resources by the improved quality and capacity of the transportation system. The improved transportation system would improve accessibility, safety, and air quality to offset the commitment of resources.

4.7 SUMMARY OF IMPACTS AND MITIGATION

4.7.1 Evaluation Matrix

The evaluation matrix summarizes the quantifiable impacts of the proposed FHSR Design/Build Alternatives 1 through 8 discussed in Section 4. The matrix provides an assessment of impacts for each alternative, providing the opportunity to effectively evaluate the consequences of each alternative. See Table 4-77 for the matrix. The No-Build Alternative would not affect the resources listed in Table 4-77. The Preferred Alternative (Alternative 1) is highlighted in Table 4-77.

Design/Build Alternatives 1 through 4 represent the four alignment combinations with the gas turbine train technology. Design/Build Alternatives 5 through 8 represent the four alignment combinations with the electric train technology. Figure 2-8 in Section 2 displays the alternatives and Figure 2-11 in Section 2 displays the Preferred Alternative.

Wetlands

Total wetland impacts vary from 40 ac. in Alternative 1 to 23.6 ac. in Alternative 8. The majority of the impacts are disturbed wetlands of poor quality located in the median and ditches within the ROW of I-4, I-75, the Central Florida Greeneway (S.R. 417), and the Bee Line Expressway (S.R. 528). Lesser quality wetlands also occur along the CSX tracks. High quality wetlands, which generally result in greater mitigation requirements, are impacted the greatest in

Alternatives 1, 3, 5, and 7. These wetlands primarily occur on undeveloped land along I-4 and the Bee Line Expressway (S.R. 528).

The Preferred Alternative (Alternative 1) will result in 40.03 ac. of wetland impacts, of which 11 areas are considered high quality wetlands. Wetland impacts, which would result from the construction of FHSR, are proposed to be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344.

Wildlife and Habitat

There are 17 federal and state protected species that have the potential or are known to occur within the FHSR study area. Six of those species are reptiles and amphibians, six are birds, three are mammals, and the remaining two are plants. The evaluation matrix indicates which design/build alternatives have the greatest number of potential sites. All of the design/build alternatives have potential sites because of their crossing the undeveloped areas near the Green Swamp in Alignments C1 and D1. Alternatives 2, 4, 6, and 8 have the most potential sites as they also include the additional ROW on the north side of the Central Florida Greeneway (S.R. 417).

The Preferred Alternative will have "no effect" on the following species: American alligator, Florida pine snake, Florida scrub jay, Florida burrowing owl, Southeastern American kestrel, Florida panther, manatee, Florida black bear, and protected plant species. The Preferred Alternative "may effect, but is not likely to adversely effect" the following species: Eastern indigo snake, gopher tortoise, Florida mouse, gopher frog, sand skink, Florida sandhill crane, bald eagle, wood stork, state protected wading bird species, and Sherman's fox squirrel. As part of mitigation commitments, FHSRA will continue to coordinate with USFWS, the WMDs, and FFWCC to develop design and construction methods to avoid and minimize impacts to these species.

Floodplains and Floodways

Impacts to floodplains vary minimally from the lowest impact of 54.5 ac. for Alternatives 2 and 6 to 61 ac. for Alternatives 3 and 7. Floodway impacts are minimal with the lowest impacts for Alternatives 2, 4, 6, and 8, and only 3 additional ac. for the rest of the alternatives. The majority of the floodway impacts are along I-4 in western Hillsborough County (Pemberton Creek), and between the Central Florida Greeneway (S.R. 417) and Orlando International Airport (Boggy Creek).

The Preferred Alternative would impact approximately 56.88 ac. of floodplain and approximately 9.45 ac. of floodway. Subsequent to final design, during which impacts would be minimized, floodplain and floodway impacts would again be calculated and the amount and type of mitigation would be determined.

Table 4-77
Design/Build Alternatives
Impact Evaluation Matrix
(Preferred Alternative Highlighted)

	Alternatives							
	1	2	3	4	5	6	7	8
NATURAL ENVIRONMENT IMPACTS (AC.)								
Total Wetland Impacts (AC.)	40	31.3	39.2	30.5	25.6	24.4	30.5	23.6
High Quality Wetlands (AC.)	11	2	11	2	11	2	11	2
Protected Species Sites	9	15	10	16	9	15	10	16
FLOODPLAIN AND FLOODWAY (AC.)								
Base Floodplain Encroachment	56.88	54.54	61.04	58.70	56.88	54.54	61.04	58.70
Base Floodway Encroachment	9.45	6.47	9.45	6.47	9.45	6.47	9.45	6.47
CONTAMINATION SITES (RANKED H)								
Potential Petroleum Sites	2	0	7	5	2	0	7	5
Potential Hazardous Materials Sites	5	5	12	12	5	5	12	12
SECTION 4(f) IMPACTS								
Recreation Facilities	1	1	0	0	1	1	0	0
Historic/Archaeological Sites	0	0	2	2	0	0	2	2
COMMUNITY SERVICES								
Schools	8	12	5	9	8	12	5	9
Community Facilities	10	9	6	5	10	9	6	5
Parks & Recreation	5	7	5	6	5	7	5	6
Cemeteries	4	6	6	6	4	6	6	6
Churches	15	16	12	13	15	16	12	13
NOISE IMPACTS (MODERATE & SEVERE)								
Category 1 (Buildings and/or parks)	0	0	0	0	0	0	0	0
Category 2 (Residences, hospitals, and hotels)	15	5	16	6	53	105	38	90
Category 3 (Institutional – schools, libraries, churches, active park)	0	0	0	0	1	2	0	1
VIBRATION IMPACTS								
Category 1 (Buildings and/or parks)	1	0	1	0	1	0	1	0
Category 2 (Residences, hospitals, and hotels)	44	20	40	16	13	5	9	1
Category 3 (Institutional – schools, libraries, churches, active park)	0	0	0	0	0	0	0	0
AIR QUALITY EMISSIONS (Net Change in Tons/Year)								
CO	-101.7	-64.7	-100.9	-63.8	-152.0	-114.3	-151.8	-114.1
NOX	+189.0	+188.2	+191.4	+190.6	+23.3	+24.1	+23.7	+24.5
VOC	+8.9	+10.6	+9.2	+10.9	-8.1	-6.1	-8.1	-6.1
ENERGY CONSUMPTION (Change from 2010 No-Build)								
Millions BTU	498,855	507,770	505,658	514,574	239,820	243,623	243,314	247,124
SECTION 106 IMPACTS								
Historic Sites	5	5	7	7	5	5	7	7
Archaeological Sites	0	0	0	0	0	0	0	0
RELOCATIONS								
Residential	3	3	0	0	3	3	0	0
Business	3	8	15	23	3	8	15	23
COST								
ROW (Non-public)	$118M	$149M	$150M	$181M	$101M	$128M	$134M	$161M
Infrastructure	$1,900M	$2,033M	$1,881M	$2,015M	$2,177M	$2,306M	$2,154M	$2,284M
Mitigation	$30M	$30M	$30M	$30M	$30M	$30M	$30M	$30M
TOTAL COST	$2.048B	$2.212B	$2.061B	$2.226B	$2.308B	$2.464B	$2.318B	$2.476B

Contamination Sites

Impacts to hazardous materials sites are minimal within the alternatives, which include the CSX tracks (Alternatives 3, 4, 7, and 8). Design/Build Alternatives 3, 4, 7, and 8 have the highest impact at 12 sites. The other alternatives each impact five or fewer sites.

The Preferred Alternative contains five potentially hazardous material contaminated sites and two potentially petroleum contaminated sites. There are no potentially contaminated sites associated with the preferred station locations and maintenance yard. The sites will be investigated further prior to any construction. Prior to construction, any necessary cleanup plans will be developed. Actual cleanup will take place during construction, if feasible.

Section 4 (f) Sites

The number of Section 4(f) sites impacted varies by alternative. Design/Build Alternatives 1, 2, 5, and 6 have one potential Section 4 (f) site, as they require 0.184 ac. from the Perry Harvey Sr. Park. Design/Build Alternatives 3, 4, 7, and 8 impact two historic sites; the St. Paul AME Church, which is NRHP-eligible, and Union Station, which is NRHP-listed.

The Preferred Alternative would result in the acquisition of 0.184 ac. from Perry Harvey Sr. Park. The Section 4(f) process is documented in Section 5 of this report.

Community Services

All of the design/build alternatives have a range of 34 to 50 different facilities within a quarter mi. of the FHSR alternative alignments; however, with the exception of acquisition of ROW from Perry Harvey Sr. Park for Design/Build Alternatives 1, 2, 5, and 6, no community services are acquired as the result of construction of any of Design/Build Alternatives 1 through 8. The majority of facilities within a quarter mile of the alternatives are churches.

The Preferred Alternative would require acquisition of ROW from Perry Harvey Sr. Park as previously discussed. No other community services would be acquired.

Noise Impacts

Noise impacts occur primarily in Category 2, residential areas, particularly with the electric train in Alternatives 6 and 8 with 105 and 90 sites impacted, respectively. Alternatives 6 and 8 are located on the north side of the Central Florida Greeneway (S.R. 417) closer to the Hunter's Creek residences. Alternatives 5 and 7, also with the electric train, have 53 and 38 sites impacted, respectively. These impacts to residences occur along the Bee Line Expressway (S.R. 528).

The Preferred Alternative would have 15 Category 2 noise impacts. The proposed mitigation measure is the construction of sound barrier walls to shield the areas where severe impact is projected. With 700 ft. of sound barrier, all severe noise impacts will be eliminated.

Vibration Impacts

The most significant vibration impacts are for Alternatives 1 through 4; the highest impacts are the result of the technology (gas turbine) within the Tampa CBD. The number of sites impacted in Alternatives 1, 2, 3, and 4 were as follows: 44, 20, 40, and 16, respectively.

The Preferred Alternative would have vibration impacts at a total of 44 residences (Category 2 receptors) and 1 Category 1 receptor. The Preferred Alternative would have no impacts at Category 3 (institutional) receptors. At a minimum, mitigation will require the installation of ballast mats near the impact sites; however, because the current analysis indicates that the ballast mats would not eliminate all of the projected impacts, more extensive mitigation will be considered. Vibration mitigation would be addressed in more detail during final design.

Air Quality

There will be no overall negative impact to regional air quality with any of the design/build alternatives, as regulated under the EPA's rules for clean air standards. However, there are differences in air emissions between the alternatives due to train technology. There is very little difference in emissions between alternatives with the same technology.

All alternatives result in CO emissions reductions because auto travel is diverted to trains. CO emissions reductions are slightly lower with the gas turbine trains, which also emit CO. VOCs also increase slightly with gas turbine trains. NOX also increase with this technology because gas turbine engines have a relatively high rate of NOX emissions. Thus, Design/Build Alternatives 1 through 4 (gas turbine train) show a substantial decrease in CO emissions, a slight increase in VOCs, and a substantial increase in NOX emissions.

The electric train technology (Design/Build Alternatives 5 through 8) results in a net decrease in CO and VOC emissions. NOX emissions increase because of the relative high emission rate of this pollutant from power plants that produce electricity from fossil fuel combustion.

The Preferred Alternative would result in a net decrease in regional emissions of CO and a net increase in emissions of NOX. Regional emissions of VOCs would increase with the gas turbine engines.

Energy

All of the design/build alternatives result in increased energy consumption compared to the No-Build Alternative. However, energy requirements for fossil fuel consumption for the gas turbine engines (Alternatives 1 through 4) are substantially higher than the fossil fuel required to generate electricity for the electric trains (Alternatives 5 through 8). Highway energy consumption decreases for all alternatives because of diverted automobile ridership. Additional energy required for operating and maintaining an additional station at the OCCC (Design/Build Alternatives 1, 3, 5, and 7) is reflected in the analysis of estimated energy consumption.

The estimated change in net energy consumption for 2010, including thermal losses for electric power generation, ranges between 239,820 and 514,574 MBTU, with the electric train alternatives net consumption being considerably lower than the gas turbine train alternatives. The total change is a negligible fraction of Florida's total energy consumption for surface (all non-military vehicle operation on highways, railroads, and fixed-guideway public transportation) transportation, which is estimated to reach one quadrillion BTUs (i.e., 1,000,000,000 MBTU) by 2010.

The Preferred Alternative, compared to the No-Build Alternative, would result in an increased energy consumption estimated at 498,855 MBTU.

Section 106 Impacts

All of the potential Section 106 impacts occur to historic structures near the Tampa CBD. Alternatives 1, 2, 5, and 6 each impact five historic resources, one of which is the Ybor City NHLD, where there is a direct taking of two contributing historic structures. The other four historic resources only have proximity impacts. Alternatives 3, 4, 7, and 8 each impact nine structures, one is a direct taking and eight are proximity impacts.

The Preferred Alternative would have impacts to five historic resources; however, through Section 106 coordination with the SHPO, conditions have been established so these impacts will result in no adverse effect. The Preferred Alternative would require property from two contributing historic structures within the Ybor City NHLD, which have already been included in a MOA for the TIS project. Therefore, no additional impacts to the NHLD will result from the Preferred Alternative. Proximity impacts could occur at four other sites but would be minimized or avoided based on conditions developed during the Section 106 coordination. No archeological resources would be affected.

Relocations

The greatest number of residential relocations required is 3, which are associated with Alternatives 1, 2, 5, and 6. The three structures are near I-4 at 12th Avenue in Tampa. Alternatives 3, 4, 7, and 8 do not require any relocation of residential structures.

The greatest number of business relocations, 23, occurs with Design/Build Alternatives 4 and 8. The majority of all business relocations occur in two areas: where the alignment transitions from I-4 toward the Central Florida Greeneway (S.R. 417) and within the Tampa CBD as it travels towards the CSX tracks. Alternatives 3 and 7 have 15 business relocations, while Alternatives 2 and 6 have 8.

The Preferred Alternative would require three residential relocations located in two structures near I-4 and 12th Avenue in the Ybor City area. It would also require three business relocations including the City of Tampa Recreation Department, the former Hillsborough County Sheriff's Office and Jail Complex, and a bail bondsman.

Total Cost for Construction

Total costs vary between $2.048 and $2.476 billion, with Alternative 1 having the lowest cost and Alternative 8 having the highest cost. The difference between the two alternatives is $4.26 million.

The Preferred Alternative gas turbine train technology cost is $2.048 billion.

4.7.2 Required Permits and Review Agencies

In order to proceed into the design phase, the FHSRA would determine the permit requirements in consultation with relevant state and federal agencies. The USACE, FDEP, SWFWMD, SFWMD, and SJRWMD regulate wetlands within the project area. Pursuant to the Operating Agreement between the FDEP and the WMDs, the FDEP will be conducting the review of the Environmental Resource Permit (ERP) application for this project. The USFWS, EPA, NMFS, and the FFWCC review and comment on federal and state wetland permit applications. It is currently anticipated that the following permits would be required for this project:

Permit	Issuing Agency
Environmental Resource Permit (ERP)	WMD/FDEP
Section 404 Dredge and Fill Permit	USACE
National Pollutant Discharge Elimination System Permit (NPDES)	FDEP

The complexity of the permitting process depends greatly on the degree of the impact to jurisdictional wetland areas. The WMDs require an ERP when construction of any project results in the creation of a water management system or in impacts to "Waters of the State" or isolated wetlands. An Individual Permit (and wetland mitigation) would be required with mitigation for wetland impacts because impacts would be greater than 1 ac.

For the USACE, an Individual Permit would also be required. An Individual Permit requires compliance with Section 404(b)(1) guidelines of the Clean Water Act, including verification that all impacts have first been avoided to the greatest extent possible, that unavoidable impacts have been minimized to the greatest extent possible, and that unavoidable impacts have been mitigated in the form of wetlands creation, restoration, preservation, and/or enhancement.

Any project which results in the clearing of 5 or more ac. of land would require a NPDES permit from the FDEP, pursuant to *40 CFR Parts 122, 124*. In association with this permit, a Storm Water Pollution Prevention Plan (SWPPP) would be required and implemented during the construction of the project by implementing such measures as Best Management Practices (BMPs). The primary function of the NPDES requirements is to assure that sediment and erosion control during construction of the project takes place.

All stations and maintenance operation sites would require building permits from the governing jurisdictions. Once the application(s) are submitted, the permitting process period may range from 30 to 240 days.

4.8 REFERENCES/NOTES

1. Tampa Interstate Study Record of Decision; FHWA-FL-EIS-95-03-F, January 31, 1997.

2. Tampa Interstate Study Environmental Impact Statement; Greiner, Inc.; Tampa, Florida; 1997.

3. The Florida High Speed Rail Economic Impact Analysis; Tim Lynch, PhD, Florida State University; Tallahassee, Florida; August 15, 2002.

4. Florida High Speed Rail Authority, 2002 Report to the Legislature; HNTB Corporation, with Transportation Economic and Management Systems, Public Financial Management, and Booz-Allen and Hamilton; January 2002.

5. Cross-State Feasibility Final Report; Florida Department of Transportation; Tallahassee, Florida; June 2001; Economic Benefits of High Speed Rail on the I-4 Corridor, AECOM Consulting Transportation Group March 15, 2001.

6. Travel Time, Safety, Energy and Air Quality Impacts of High Speed Rail, T. Lynch, N. Sipe, S. Polzin and Zuechao Chu, for Florida Department of Transportation and Florida Overland Express; June 1997.

7. Cultural Resource Assessment Survey Report; Archeological Consultants, Inc., Sarasota, Florida; Janus Research, St. Petersburg, Florida; July 2003.

8. Florida Master Site File; http://dhr.dos.state.fl.us/msf/; Department of state, Division of Historic Resources; Tallahassee, Florida.

9. Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation; Greiner, Inc.; Tampa, Florida; 1996.

10. Section 106 Consultation Case Report; Archeological Consultants, Inc., Sarasota, Florida; Janus Research, St. Petersburg, Florida; December 22, 2003.

11. Development Regulations – Central Business District and Channel District; City of Tampa; Tampa, Florida; May 1999.

12. Urban Design Guidelines; City of Tampa; Tampa Urban Design Section; Tampa, Florida.

13. Reedy Creek Improvement District Guidelines;

14. Orange County Development Code; Sections 2-9; Orange County, Florida; June 2001.

15. Commercial Design Standards Guidebook; Orange County, Florida; October 2001.

16. Code of the City of Orlando; City of Orlando, Florida; Document #030505704 (Supp. No. 13), Chapter 16.

17. High-Speed Ground Transportation Noise and Vibration Impact Assessment; Federal Railroad Administration; December 1998.

18. Florida Land Use, Cover and Forms Classification System; Florida Department of Transportation; Tallahassee, Florida; 1999.

19. Project Development and Environment Manual; Part 2, Chapter 19; Chapter 26; Florida Department of Transportation; Tallahassee, Florida; October 1991.

20. Standard Specifications for Road and Bridge Construction; Florida Department of Transportation; Tallahassee, Florida; 2002.

4.9 REFERENCES CITED

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. *Classification of Wetlands and Deepwater Habitats of the United States*. U.S. Department of the Interior, Fish and Wildlife Service, Office of Biological Services. Technical Publication FWS/OBS-79/31. 131 pp

Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. U.S. Army Engineers Waterways Experiment Station, Vicksburg, MS. *Technical Report* Y-87-1. 169 pp.

Florida Department of Transportation. 1999. *Florida Land Use, Cover and Forms Classification System*. Third Edition. 91 pp.

Miller, Jr., R.E. and B.E. Gunsalus. 1997. *Wetland Rapid Assessment Procedure*. South Florida Water Management District. Technical Publication REG-001. 57 pp.

Nelson, Gil. 1994. *The Trees of Florida*. Pineapple Press, Inc. Sarasota, Florida. 338 pp.

Tobe, J.D., et al. 1998. *Florida Wetland Plants: An Identification Manual*. Florida Department of Environmental Protection. 598 pp.

SECTION 5
SECTION 4(F) EVALUATION

Section 5 of this report presents a Section 4(f) Evaluation with respect to the possible use of Perry Harvey Sr. Park in accordance with the provisions of Section 4(f) of the *Department of Transportation Act of 1966* (*Title 49, USC, Section 1653 (f), amended and recodified in Title 49, USC, Section 303, in 1983*). Section 4(f) requires that, "special effort be made to preserve the natural beauty of the countryside and public park and recreation lands, wildlife and waterfowl refuges, and historic sites." Based on available right-of-way (ROW) information, the Preferred Alternative (Design/Build Alternative 1) would require acquisition of property from the Perry Harvey Sr. Park. Section 5.1 presents the impacts to the Perry Harvey Sr. Park.

Although the Florida High Speed Rail (FHSR) proposed action would require the acquisition of two contributing historic structures within the Ybor City National Historic Landmark District (NHLD), this action would not result in a Section 4(f) involvement for the FHSR. This conclusion was reached, in consultation with the Federal Railroad Administration (FRA) and the Federal Highway Administration (FHWA), due to the fact that these two historic structures are located within the Tampa Interstate Study (TIS) Ultimate ROW and have already been determined to have Section 4(f) involvement with the previously approved TIS project. The use of these two historic structures has already been evaluated in the TIS Section 4(f) Evaluation and mitigation measures are included in a Memorandum of Agreement (MOA). The MOA is included as an appendix to the Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation[1] and consists of specific commitments and stipulations, including the documentation, relocation, and rehabilitation of historic structures, plus architectural/historical salvage for structures not relocated and rehabilitated. Because the TIS Interim Alternative is currently being constructed, rather than the Ultimate approved alternative, the MOA has not been completely fulfilled. However, mitigation for the structures located in the TIS Ultimate ROW will remain in the MOA until that portion is constructed. Because the TIS Ultimate approved alternative included provisions for multi-modal transportation, the existing MOA would apply to the FHSR project. Therefore, the FHSR project will comply with the requirement of the existing TIS MOA and a new Section 4(f) Evaluation for common resources will not be required. These historic resources will not be discussed further in this section.

5.1 SECTION 4(F) EVALUATION OF PERRY HARVEY SR. PARK

The acquisition of property from Perry Harvey Sr. Park is also required under the TIS Project; therefore, a Section 4(f) Evaluation was previously prepared by the Florida Department of Transportation (FDOT) and the FHWA for the park as part of the Tampa Interstate Study Environmental Impact Statement[2]. Impacts to the park, resulting from the proposed interstate improvements, are listed in a report entitled, Tampa Interstate Study Section 4(f) Parks and Recreational Analysis[3], dated April 1994. The Interim Improvements for the TIS project, which do not affect the park, are currently under construction. The Ultimate improvements for the TIS project, which would affect the park, are not scheduled in the foreseeable future. Since the FHSR would likely precede the Ultimate TIS improvements if a decision is made to proceed

with one of the build alternatives for FHSR, the FHSR would impact the park first. Thus, a Section 4(f) Evaluation for Perry Harvey Sr. Park is prepared under this Environmental Impact Statement (EIS).

5.1.1 Proposed Section 4(f) Action

The proposed action, to construct and operate high speed passenger rail between Tampa and Orlando, is described in Section 2 of this EIS. The affected Section 4(f) resource is located in Corridor A, which begins at the western terminus of the project area and travels east and north along Interstate 275 (I-275). Proposed Design/Build Alternatives 1, 2, 5, and 6 (see Figure 2-8), en route from the Tampa station location, travel northeasterly along I-275 connecting to the Interstate 4 (I-4) median. Proposed Design/Build Alternatives 3, 4, 7, and 8 (see Figure 2-8) travel southeasterly from the Tampa station and connect to the CSX rail ROW.

5.1.2 Description of Perry Harvey Sr. Park

Owned by the City of Tampa, Perry Harvey Sr. Park is managed by the City of Tampa Parks Department. The park is officially designated as a neighborhood park in the City of Tampa Comprehensive Plan. It is bordered to the north and northwest by I-275, to the east and south by a public housing complex (Central Park Village), and to the west by Orange Street/Avenue, Perry Harvey Sr. Park is located within downtown, directly west of the Ybor City NHLD, a highly urbanized area of Tampa. See the Perry Harvey Sr. Park aerial location map in Figure 5-1. The Perry Harvey Sr. Park site is composed of four distinct parcels, totaling 9.2 acres (ac.). Perry Harvey Sr. Park is an accumulation of several properties deeded to the City of Tampa by individual property owners, as well as a small number of deeds that were never located. Of the available deeds, none contained clauses that would require the property to revert to the prior owners upon any land use change.

Though an exercise/jogging path wraps around the entire park site (all four parcels), the majority of recreational attractions are located in the two southernmost park parcels. With the Central Park Village housing complex positioned directly adjacent and central to the recreational facilities, the park usage ranges from approximately 100 to150 persons per day. In addition to meeting the recreational needs of the housing complex community, Perry Harvey Sr. Park provides recreational opportunities for 75 to 100 additional people per week from the City of Tampa's intramural recreational leagues. The Perry Harvey Sr. Park facilities include: a restroom, basketball courts, covered pavilions, a "skatebowl," playground, sand lot, and asphalt tennis courts. The City of Tampa has plans to demolish a restroom facility located on the parcel nearest the interstate, and re-roof the existing restroom located adjacent to the park office (see Figure 5-1).

Perry Harvey Sr. Park is divided into four distinct parcels due to a pre-existing roadway pattern. With a retaining wall (I-275) and dead-end roads (Estelle Street and Kay Street) creating divisions, the parcels to the north are fairly remote with no recreational facilities. Access into the park is available through Scott Street, which bisects the park property while providing entry into the Central Park Village housing complex. Primary access and parking (50 spaces) for Perry Harvey Sr. Park are located at Cass Street and Central Avenue. These will be maintained.

Additional access with limited parking is available at Kay Street near the tennis courts. However, the only designated parking spaces are those, located at Cass Street and Central Avenue, within the southernmost parcel.

Due to its proximity to the Central Park Village housing complex, Perry Harvey Sr. Park is easily accessible for young park attendees. The park also attracts skateboarding enthusiasts from throughout the city and Hillsborough County due to its unique paved skateboarding bowl, located within the southernmost parcel. Of the 155 parks within the City of Tampa limits, Riverfront Park, located 1.1 miles (mi.) southwest, offers similar recreational facilities, as well as the only other skateboarding facility within the City of Tampa.

5.1.3 Impacts on Perry Harvey Sr. Park

The construction of Alternatives 1, 2, 5, and 6 would require the acquisition of 0.184 ac. of Perry Harvey Sr. Park. The alternatives impact the northwest edge of Perry Harvey Sr. Park as shown in Figure 5-1. The existing exercise/jogging path located in the northernmost section of the park (north of Estelle Street) would be terminated approximately 40 feet (ft.) east of its current terminus at Henderson Avenue.

During the evaluation of retained alignments, Perry Harvey Sr. Park was also reviewed for constructive use impacts, referred to as proximity effects, resulting from the design/build alternatives. It was determined that there would be a potential for moderate noise level increases (proximity effects), as discussed in Section 4.2.3. An evaluation of vibration, access, aesthetics, and ecological encroachment indicates that the project will not substantially impair or diminish the use of the park and a determination was made that there will be no constructive use.

5.1.4 Avoidance Alternatives

No-Build Alternative

The No-Build Alternative assumes that a FHSR system would not be built between Tampa and Orlando. The requirements of the legislative mandate for the Florida High Speed Rail Authority (FHSRA) to build a high speed ground transportation system would not be met. The No-Build Alternative, which leaves all existing infrastructure as is, with no introduction of high speed passenger rail service, avoids Section 4(f) impacts and would not require the use of Perry Harvey Sr. Park. The No-Build Alternative, however, would not meet the project purpose and would not achieve the benefits of addressing vehicular congestion on I-4 or provide convenient transportation alternatives for commuter, business, and tourist traffic. With the No-Build Alternative, existing modes would have to satisfy all travel demand.

The No-Build Alternative includes planned and programmed transportation projects within the study area that are on the financially constrained "needs" plan. Those projects are summarized in Section 1, Purpose and Need. Although roadway demand continues to grow, the No-Build Alternative would not offer diversion from the roadway to FHSR. As a result, capacity and level of service (LOS) would decrease sooner than if FHSR was built. The resulting need to improve capacity and the LOS of the Tampa to Orlando transportation corridor will likely result in the

alignment identified for the FHSR being utilized for additional travel lanes. This will result in similar environmental consequences identified with the proposed project.

Design/Build Alternatives

The potential FHSR routes were previously compared and documented in the Florida High Speed Rail Corridor Screening Report (October 2002)[4]. For the Tampa area, these routes were the I-4 median and the CSX A- and S-Rail Lines. In order to effectively examine all alternatives to reach the I-4 median or the CSX A- and S-Lines from the western terminus (Central Business District [CBD] station site), the FHSRA developed and evaluated seven alignments. Of the initial study alignments**,** five avoid Perry Harvey Sr. Park. These alignments, A, B, C, D, and E, are summarized in the following paragraphs (See Figure 5-2).

Alignment A (Dark Green)

Alignment A, located on the north side of I-4, was developed early in the FHSR study in September 2002. Numerous social impacts eliminated this fatally flawed alignment prior to a detailed evaluation. Specifically, this proposed northern alignment would have traveled through the Ybor City NHLD, Tampa Heights Historic District, Mobley Park Apartments, a newly constructed Section 8 (partial) housing project, and changed the access into the recently constructed Stetson Law School complex (imminent construction date). It also would have required a fourth or fifth level to cross the I-275/I-4 interchange. Given its substantial Section 4(f) uses and the significant impacts, Alignment A was determined as not a feasible or a prudent alternative.

Alignment B (Blue)

Alignment B was found to be fatally flawed and eliminated during the initial study. Alignment B was to be located within the "Ultimate" reconstructed median through the I-275/I-4 interchange between the CBD and 18th Street. There is currently no envelope or space for FHSR within the median from North Boulevard (west of the Hillsborough River) east through the I-275/I-4 interchange to 18th Street and I-4. Interim improvements have just been initiated for the I-275/I-4 interchange area. An envelope will be available within the "Ultimate" reconstruction of I-275. Proposed Alignment B was eliminated because the FHSR would be implemented prior to the "Ultimate" reconstruction and is not accommodated in the near term (Interim) interstate improvements. No schedule has been set or funds identified for the very costly "Ultimate" reconstruction. Alignment B was determined as not a feasible or a prudent alternative.

Alignment C (Red)

Alignment C was found to be fatally flawed and eliminated early in the study (during the Screening Process, October 2002) due to impacts to the community of Ybor City. Proposed Alignment C begins at the Hillsborough River and crosses over I-275 moving in a southeasterly direction until reaching Morgan Street and Cass Street. The alignment follows Cass Street in an easterly route until reaching Union Station. At Union Station, Alignment C moves adjacent to the

CSX A-Line along 8th Avenue curving in a northeasterly angle along the CSX ROW, reaching the median at U.S. 41.

Ybor City contains an overlap of historic district boundaries, including National Register of Historic Places (NRHP) listed, NHLD, and local designated district (Barrio Latino). Traveling adjacent to Union Station, Alignment C could possibly affect the continued or future use of the NRHP-listed station, and would take the parking lot of the historic St. Paul African Methodist Episcopal (AME) Church. Passing just south of Central Park Village, Alignment C would also change the access to this public housing community. Given the significant impacts to the community of Ybor City, the Central Park Village, and two historic structures, Alignment C was determined as not a feasible or a prudent alternative.

Alignment D (Purple)

Alignment D is considered viable for further evaluation. Proposed Alignment D would leave the CBD station moving eastward along Fortune Street curving southeasterly at Marion Street. The alignment then curves eastward onto Cass Street and continues due east until reaching Union Station. This alignment passes just south of the Central Park Village housing complex. At Union Station, Alignment D moves adjacent to the CSX S-Line along Adamo Drive, until reaching Interstate 75 (I-75). Alignment D stretches northward within the median of I-75 until reaching the I-4 median. Located adjacent to Union Station, Alignment D could possibly affect the continued or future use of the NRHP-listed station, and would demolish the parking lot of the historic St. Paul AME Church. Passing just south of Central Park Village, Alignment D would also change the access to this public housing community. In comparison to Alignments A, B, C, and E, Alignment D has the least impacts, avoids the NHLD, was considered a viable avoidance alternative, and received further evaluation during this Project Development & Environment Study. Design/Build Alternatives 3, 4, 7, and 8 (Alignment A2) fall within the area of Alignment D in the vicinity of Perry Harvey Sr. Park as described in the Florida High Speed Rail Corridor Screening Report (October 2002).

Design/Build Alternatives 3, 4, 7, and 8 (Alignment A2) avoid impacts to Perry Harvey Sr. Park. However, these alternatives impact three historic sites in Tampa where the alignment passes through a commercial urban area to connect to the CSX rail line. The alignment passes through the parking lot of the St. Paul AME Church and directly impacts the adjacent parsonage, both of which are eligible for listing on the NRHP. The church would not be directly affected. However, the taking of land from the parking lot and the taking of the Parsonage could affect its use. The alignment for Design/Build Alternatives 3, 4, 7, and 8 also passes directly north of the Tampa Union Station, which is listed on the NRHP, and requires a small amount of ROW from the historic boundary. Given the impacts to the three historic sites, these alternatives were determined as not a feasible or a prudent alternative to the use of 0.184 ac. of the Perry Harvey Sr. Park in the Preferred Alternative.

Alignment E (Yellow)

Alignment E was found to be fatally flawed and was eliminated early in the initial study process (see the Florida High Speed Rail Corridor Screening Report, October 2002). Proposed

Alignment E leaves the CBD station area moving eastward along Fortune Street and curves southeasterly at Marion Street. Shifting to an eastward movement at Morgan Street and Cass Street, Alignment E continues southeasterly until reaching the CSX ROW at Jefferson Street. The alignment continues along the CSX ROW until reaching Union Station. At Union Station, Alignment E moves adjacent to the CSX A-Line along 8th Avenue, curving in a northeasterly angle along the CSX ROW, reaching the median at U.S. 41.

Due to impacts to the northern edge of the newly designated Franklin Street Historic District; potential ROW acquisitions, noise, and visual impacts to Ybor City; the taking of the parking lot of the historic St. Paul AME Church; and potential impacts to the NRHP-listed Union Station, Alignment E was determined as not a feasible or a prudent alternative.

5.1.5 Measures to Minimize Harm

Design/Build Alternatives 1, 2, 5, and 6 originally required acquisition of 1.071 ac. of the Perry Harvey Sr. Park. In order to minimize impacts caused by the alignment, a refinement to the conceptual design was developed. Certain design speed refinements reduce the impacts to the park and, as a result, only 0.184 ac. of the park would be impacted.

5.1.6 Coordination

City of Tampa Parks Department

Early efforts to coordinate with property owners and interested parties included collecting parcel deeds, verifying parcel ownership, documenting existing park facilities, verifying proposed park improvements, and researching park demographics.

Meetings were held with the City of Tampa, Perry Harvey Sr. Park administrators, and other interested parties early in the project to present the FHSR project and to obtain comments and suggestions. As a result, a letter from the City of Tampa Parks Director suggests that although there are improvements planned for the Perry Harvey Sr. Park, they do not consist of any new structural improvements, or any improvements to the area where acquisition is necessary. The City Parks Director further states "this **is** a significant park for the citizens of the downtown Tampa area" (See City of Tampa Parks Director letter in Appendix B).

Final Agency Coordination Meeting

Coordination meetings were held with the FDOT, FRA, and the FHWA to discuss measures to minimize harm to Perry Harvey Sr. Park. The Design/Build Alternatives were reviewed and discussed resulting in minimization of impacts to the park as identified in Section 5.1.5. The impact minimization efforts have been coordinated with the City of Tampa.

Department of Interior

The Draft Environmental Impact Statement (DEIS) was provided to the Department of Interior in August 2003 for their review and comment. No comments have been received to date. The Final Environmental Impact Statement (FEIS) will be provided for their review and comment.

5.1.7 Preferred Alternative

The Preferred Alternative (Design/Build Alternative 1) is described in Section 2.6. Within the vicinity of the Perry Harvey Sr. Park, the Preferred Alternative begins in Tampa at the proposed Tampa Downtown Station (south of I-275/I-4 Interchange) and runs south of, and parallel to, I-275 and I-4 to approximately $14^{th}/15^{th}$ Streets where the alignment crosses into the I-4 median, as shown in Figure 5-3. For the most part, Alignment F falls within the FHWA approved TIS ROW, however, a minor amount of additional land will be required from the northwest edge of the Perry Harvey Sr. Park for the FHSR. Based upon available ROW information, the construction of the Preferred Alternative will require 0.184 ac. of Perry Harvey Sr. Park. The ROW requirements will be further refined during design and ROW mapping when detailed information is available. The following numbers are clarifications of the amount of land needed for the FHSR and the previously FHWA approved TIS:

- Original TIS taking = 0.66 ac.
- Amount of TIS take needed for FHSR = 0.041 ac.
- Additional amount needed for FHSR = 0.143 ac.
- Total Section 4(f) impact = 0.041 + 0.143 = 0.184 ac.

The Preferred Alternative impacts the northwest edge of Perry Harvey Sr. Park as shown in Figure 5-1. The existing exercise/jogging path located in the northernmost section of the park (north of Estelle Street) would be terminated approximately 40 ft. east of its current terminus at Henderson Avenue.

5.1.8 Mitigation

As a result of continuing coordination, the FHSRA requested through a letter to the City of Tampa that it concur in writing with the proposed mitigation that provides for compensation for the impacts to Perry Harvey Sr. Park, which will be determined during the ROW phase of the FHSR project. Response from the City of Tampa indicates that compensation for impacts to the park can be accomplished through the eminent domain process (See City of Tampa Parks Director letter dated March 11, 2004, in Appendix B).

As stated previously, the TIS Ultimate ROW includes provisions for multi-modal transportation that applies to the FHSR project. The FHSR project will comply with the specific commitments and stipulations identified in the existing TIS MOA for the Ultimate ROW requirements.

Conclusion

The acquisition of 0.184 ac. of ROW at Perry Harvey Sr. Park is an unavoidable impact of the project, since a prudent and feasible alternative does not exist. Measures to minimize harm were evaluated and implemented to the greatest extent possible.

It was determined that there would be a potential for moderate noise level increases (proximity effects), as discussed in Section 4.2.3. An evaluation of vibration, access, aesthetics, and ecological encroachment indicates that the project will not substantially impair or diminish the use of the park and a determination was made that there will be no constructive use.

Based on the above considerations, there is no feasible and prudent alternative to the use of land from the Perry Harvey Sr. Park and the proposed action includes all possible planning to minimize harm to the park resulting from such use.

5.2 REFERENCES

1. Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation; Greiner, Inc.; Tampa, Florida; November 1996.
2. Tampa Interstate Study Environmental Impact Statement; Greiner, Inc.; Tampa, Florida; 1993.
3. Tampa Interstate Study Section 4(f) Parks and Recreational Analysis; Greiner, Inc.; Tampa, Florida; April 1994.
4. Florida High Speed Rail Corridor Screening Report; PBS&J; Tampa, Florida; October 2002.

SECTION 6
COMMENTS AND COORDINATION

This section documents the Public Involvement Program, including the techniques and methodologies used during the Florida High Speed Rail (FHSR) project, and summarizes comments received regarding the project.

6.1 COORDINATION WITH AGENCIES

6.1.1 Notice of Intent

The Notice of Intent was published in the Federal Register on March 27, 2002. (See Notice of Intent in Appendix B.)

6.1.2 Advance Notification

An Advance Notification (AN) package was distributed to federal, state, and local agencies on April 3, 2002. These agencies were identified as having permitting, environmental, or other interests in the FHSR project. Additionally, the AN package was provided to the appropriate United States and Florida State senators and representatives. The AN package included a fact sheet that defined the need for and description of the project, a summary of existing environmental information, a listing of potentially occurring species, and a mailing list (Appendix B). A summary of the written comments that were received from the agencies are listed below and included in Appendix B.

- Federal Aviation Administration (FAA): Review the reporting requirements contained in the Federal Aviation Regulations, Part 77, Objects Affecting Navigable Airspace, as to whether a FAA Form 7460-1 may need to be submitted depending on the proximity of the project relative to any public use airports. The FAA would primarily be concerned with structure elevations and associated high-mast lighting in the vicinity of an airport.
- Department of Environmental Protection (DEP): The FHSR project should avoid direct impacts where possible and minimize impacts to: the Green Swamp Megasite, the Lake Wales Ridge Ecosystem, and any of the natural resource conservation lands owned by Southwest Florida Water Management District (SWFWMD).
- Florida Department of Environmental Protection (FDEP): Regarding construction staging areas, stormwater treatment areas, depot stations, parking lots, and commercial centers, the FHSR project team should contact the districts' offices and the Water Management Districts (WMD), early in the project regarding conservation lands, site plan design, stormwater treatment, and permitting requirements.
- Florida Fish and Wildlife Conservation Commission (FFWCC): The Preferred Alternative should avoid or minimize impacts to the Green Swamp, Reedy Creek, and the Hillsborough River. A Mitigation Plan will need to be prepared for unavoidable impacts.

- Florida Department of Transportation (FDOT): The FDOT notes several areas of concern: (1) the Interstate 4 (I-4) reconstruction in Polk County; (2) a multi-modal envelope with the I-4 median; and (3) safety issues relating to the Gulfstream natural gas pipeline. The FHSR project should coordinate closely with the FDOT, District One, regarding state highway system impacts and permitting requirements.
- Department of State, Division of Historical Resources: Supply survey results with significant archaeological and historic sites for review and to consult on avoidance and mitigation efforts.
- Florida Division of Forestry (DOF): Sections of the CSX rail lines located within Polk County are vulnerable to wildfires. The DOF will need access to cross tracks to fight fires. The DOF also recommends the implementation of track maintenance standards to minimize fire risks.
- U.S. Department of Commerce, National Oceanic and Atmospheric Administration: No comment at this time.
- Department of Health and Human Services, Centers for Disease Control: No specific comment at this time. However, Mitigation Plans should address the following topics wherever warranted: Air Quality, Water Quality/Quantity, Wetlands and Flood Plains, Hazardous Materials/Wastes, Non-Hazardous Solid Waste/Other Materials, Noise, Occupational Health and Safety, Land Use and Housing, and Environmental Justice.
- City of Orlando: The City of Orlando suggested the following steps to be more consistent with the Florida Transportation Plan, the Amtrak Network Growth Strategy, and the Florida Intercity Passenger Rail Service Vision Plan:
  - Re-evaluate the recommended study strategies with increased sensitivity to existing land use and development intensities.
  - Evaluate a direct connection to the downtown Orlando Amtrak Station via CSX.
  - Address Amtrak's Network Growth Strategy for Florida and the goals of the Florida Transportation Plan.
  - Include as a study element the impact on vehicle miles of travel (VMT), since the selection of a corridor away from the highest density population and employment centers of Central Florida may result in increased vehicle miles of travel for automobile or bus access to proposed rail terminals.
  - Hold public meetings in the urban core of the city, as well as the southwestern locations where meetings in May 2002 were conducted.
  - Provide Cultural Resources Assessment Summary for the City of Orlando to review.
  - Contact the City of Orlando Transportation Planning Bureau staff prior to neighborhood contacts so that we may be informed and involved in the communication of any environmental impacts, including noise.

6.1.3 Agency Coordination Meetings

First Agency Scoping Meeting

Thirty-two agency representatives attended an agency scoping meeting held April 30, 2002, in Orlando, Florida. This meeting was the first in a series of agency coordination meetings. The scoping meeting provided a setting for the agencies to identify potential issues and concerns early in the study process. The FHSR project folder, provided with the letter of invitation, included an Executive Summary, Study Area Location Map, Florida High Speed Rail Authority (FHSRA) Members List, Technology Overview, Meeting Schedule, and the proposed FHSR project schedule. Representatives from the following agencies were present at this meeting:

- Federal Highway Administration (FHWA)
- FDEP
- SWFWMD
- FDOT
- U.S. Coast Guard
- St. Johns River Water Management District (SJRWMD)
- FFWCC
- Federal Railroad Administration (FRA)
- Environmental Protection Commission
- Universal Studios
- Walt Disney World
- U.S. Army Corps of Engineers (USACE)
- Department of State – Division of Historical Resources
- U.S. Environmental Protection Agency (EPA)

After a brief overview of the FHSR project, team members reviewed the inclusion of the Request for Proposal (RFP) process within the Environmental Impact Statement (EIS) development phase and also reviewed the opportunities for agency coordination within the FHSR schedule. Project team members then presented the project's history.

A 30-minute break for review of corridor aerial maps provided attendees with an opportunity for one-on-one questions and comments with project team members. Two series of aerial corridor alternatives maps at a scale of 1:600' were on display. The first map series displayed potential social and physical impacts, while the second map series displayed potential natural impacts located within ¼ miles (mi.) of the centerline of each alternative. Social and physical impacts included community facilities, churches, schools, cemeteries, contamination sites, parks, and historic sites and districts. Natural impacts included wetlands, floodways, wildlife crossings, and threatened and endangered species habitat areas. Aerials exhibiting alternatives and engineering features were displayed at 1:1,000' supported by technology and typical section boards.

After review of the maps, the project team discussed the following high speed rail issues: current corridor analysis, technologies, engineering alignments, costs, environmental analysis,

permitting issues, the Investment Grade Ridership Study[1], scheduled public involvement meetings, and the schedule of upcoming agency coordination meetings. The meeting was then opened for questions and answers.

The agency scoping meeting provided the forum to establish a problem-solving and efficient project development process for the FHSR project. Attendees had an opportunity to speak with FHWA, FRA, and FDOT officials and project team members about their corridor concerns and their preferred analytical methods for issue evaluation.

Second Agency Coordination Meeting

Twenty-one agency representatives attended an agency coordination meeting held July 30, 2003, in Orlando, Florida. The meeting provided a FHSR project update on the Florida High Speed Rail Corridor Screening Report[2] to all interested agencies. Each agency representative received the following: PowerPoint presentation copy, Alternative Corridors Map, Implementation Schedule, and a Corridor Impact Evaluation Matrix. Representatives from the following agencies were present at this meeting:

- FHWA
- FDEP
- SWFWMP
- FDOT
- SJRWMD
- FRA
- USACE
- Department of State – Division of Historical Resources
- U.S. Fish and Wildlife Service
- FFWCC

After introductions and a project overview, the project team provided a PowerPoint presentation to summarize findings to date of the study, followed by an overview of the engineering analysis and an update on the RFP effort.

Attendee issues were primarily focused on the potential environmental impacts caused by the differing proposed technologies. Project team members noted that any additional areas required outside of the existing right-of-way (ROW), such as for station locations or stormwater pond areas, would be cleared environmentally.

Non-Governmental Organizations

Seven non-governmental organization representatives attended the coordination meeting held December 12, 2002, in Orlando, Florida. The meeting provided a FHSR project update to all interested organizations. Each attendee received the following: PowerPoint presentation copy, Public Information Workshop Schedule, Rail Technology Overview, Executive Summary of FHSR, Alignments for Further Study with Potential Station Locations Map, Implementation

Schedule, and a Corridor Impact Evaluation Matrix. Representatives from the following agencies were present at this meeting:

- Florida Trail Association
- The Nature Conservancy
- Sierra Club
- Audubon of Florida

The project team opened the meeting with an introduction of team members and provided a brief project history and status. The project team then discussed the EIS process, FRA and FHWA involvement, the streamlined process to meet the mandated November 2003 date, and the significance of Design, Build, Operate, Maintain, and Finance (DBOM&F) proposals within the constrained schedule.

The project team provided a summary of the previous studies as background for the current study corridor alignments. A PowerPoint presentation provided attendees with an overall project update, a listing of dates and locations for the upcoming Public Workshops, and key project future dates, including the DBOM&F proposals in February, critical Legislative action in March, a Public Hearing in August, and the vendor selection in November. The meeting was then opened for comments. Each organization representative was given an opportunity to identify potential issues and concerns. Attendee issues included the following:

- The amount and type of potential environmental impacts
- Requested that the project use a federal Wetland Rapid Assessment Procedure (WRAP)
- Requested that the project use a consolidated mitigation process
- Requested that the project reestablish the wildlife corridors along I-4.
- Project team members heard from attendees that they expect the EIS to analyze emission rates and heat impacts on the environment.
- Concern was expressed regarding species within proximity of the rail.

Cultural Resource Committee (CRC)

A Cultural Resource Committee (CRC) was established early in the project to assist in the evaluation of significant resources, potential effects, and methods for mitigation. The CRC consists of representatives from federal, state, and local agencies and citizen groups. These include FRA, FHWA, State Historic Preservation Officer, USACE, City of Tampa, and other local interest parties. Three meetings were held in Tampa on December 6, 2002; February 14, 2003; and December 12, 2003. At the December 2002 meeting, the members were provided background information on the FHSR project and the Section 106 process. Preliminary alignments, as well as those carried forward for further study, were presented. Other topics include the proposed Cultural Resource Assessment Survey (CRAS) methodology and the Area of Potential Effect (APE). The February 2003 meeting included the Corridor Level Analysis Report results and a bus tour of the *NRHP*-listed and *NRHP*-eligible resources, located in downtown Tampa and Ybor City. The committee concurred with the information presented

during these two meetings. In September 2003, the Draft EIS was mailed to all of the members of the CRC. At the third and last meeting, in December 2003, the results of the Section 106 consultation were presented and comments were requested. The CRC made the following formal statement at the meeting: "The CRC commended the study team and the FHSRA on designing a project and technology that results in no adverse impacts to historic resources."

The Tribal Historic Preservation Officers (THPOs) were sent letters in January 2003 inviting them to join the CRC and/or submit comments on the project. They were also included in the mailing list for review of the Draft EIS. No comments have been received from any of the THPOs.

A Section 106 consultation meeting was held on December 10, 2003, with the SHPO. Based on the project information available and consultation with the SHPO, it was agreed at that meeting that the FHSR Proposed Action would have no effect on seven historic resources and a conditional no adverse effect on five historic resources. The specific conditions agreed to by the FHSRA, FRA, and the SHPO are listed below and are included as commitments in the Final EIS. These commitments will also be incorporated into future DBOM&F contracts in a manner that will be binding to the vendor.

1. Provide the HSR design plans (for the Tampa CBD and Ybor City areas)to the SHPO for review and comment at 30%, 60% and 90% submittal.

2. Coordinate the design of the Tampa Station with the SHPO to ensure that historic integrity is maintained at the nearby North Franklin Street Historic District and the St. Paul AME Church Parsonage.

3. Implement vibration monitoring during construction adjacent to the Oaklawn Cemetery, German American Club and within the Ybor City National Historic Landmark District to determine if damage is likely to occur according to damage criteria described in FRA's guidance manual, *High Speed Ground Transportation Noise and Vibration Impact Assessment*, Chapter 10. If vibration levels approaching the damage criteria are found to occur during construction, immediate coordination with the SHPO will be conducted to determine the use of less destructive methods and/or minimization methods for continuing the construction.

4. The stipulations of the Tampa Interstate Study (TIS) Memorandum of Agreement (MOA) will be fulfilled for any impacts to contributing historic structures within the Ybor City National Historic Landmark District and the TIS Ultimate right-of-way.

5. Aesthetic treatment for the HSR will be compatible with the existing Urban Design Guidelines set up for the TIS within the Tampa CBD and Ybor City areas. At minimum, the color of the concrete should be compatible with the TIS

concrete color. The SHPO, City of Tampa, and local community groups, will be included in the development of the HSR aesthetics.

6.2 COMMUNITY OUTREACH

6.2.1 Metropolitan Planning Organizations and Committees

Throughout the project study, key project team members met with transportation and planning officials within the four counties along the FHSR corridors. The first series of presentations to the Tampa-Hillsborough Metropolitan Planning Organization (MPO), Polk County Transportation Planning Organization (TPO), and the METROPLAN Orlando Board and their respective technical and citizen advisory committees occurred during the corridor evaluation stage of the project from November 2001 through May 2002. The purpose of the meetings was to provide information regarding the FHSR project and to explain the study process and schedule. The FHSR project folder distributed at the meeting included an Executive Summary, Location Map, FHSRA Member List, Technology Overview, and the Project Schedule.

The second series of presentations to these same agencies and their respective technical and citizens advisory committees began in May 2002 and continued through November 2003. The purpose of this series of meetings is to provide project updates including FHSR corridor analysis results, alternative analysis, proposal information, upcoming activities, and gather comments. A list of meetings that have been held is provided in Table 6-1. There were no significant issues raised by the MPO boards and their committees. The following provides a summary of the most recent meeting discussion:

- **Hillsborough County:** Issues ranged from station location decisions to questions about events in Tallahassee regarding funding and the legislature.
- **Polk County:** Issues ranged from locating a station at U.S. 27 and I-4 to discussion about whether the legislature would kill high speed rail or send it back to the voters.
- **Osceola/Orange County**: A key concern was who would make the vendor recommendation and when will the vendor be selected. The project team explained the decision process and schedule.

Table 6-1
Metropolitan Planning Organization Meetings

Date	Organization
February 25, 2002	Hillsborough County–Technical Advisory Committee
March 5, 2002	Hillsborough County–MPO
April 10, 2002	Hillsborough County–Citizens Advisory Committee
May 28, 2002	Hillsborough & Pinellas County–Citizens Advisory Committee
July 15, 2002	Hillsborough County–Technical Advisory Committee
August 6, 2002	Hillsborough County–MPO
August 14, 2002	Hillsborough County–Citizens Advisory Committee
March 19, 2003	Hillsborough County–Citizens Advisory Committee

Table 6-1 (cont.)
Metropolitan Planning Organization Meetings

Date	Organization
March 24, 2003	Hillsborough County–Technical Advisory Committee
April 15, 2003	Hillsborough County–MPO
February 28, 2002	Polk County–Technical Advisory Committee
April 11, 2002	Polk County–Transportation Planning Organization
April 23, 2002	Polk County–Citizens Advisory Committee
July 23, 2002	Polk County–Citizens Advisory Committee
July 25, 2002	Polk County–Technical Advisory Committee
August 8, 2002	Polk County–Transportation Planning Organization
March 25, 2003	Polk County–Citizens Advisory Committee
March 27, 2003	Polk County–Technical Advisory Committee
May 8, 2003	Polk County–Transportation Planning Organization
March 7, 2002	Orange, Osceola & Seminole Counties–Municipal Advisory Committee
March 22, 2002	Orange, Osceola & Seminole Counties–Transportation Technical Committee
March 27, 2002	Orange, Osceola & Seminole Counties–Citizens Advisory Committee
March 27, 2002	Orange, Osceola & Seminole Counties–Bicycle & Pedestrian Advisory Committee
April 10, 2002	METROPLAN Orlando Board Meeting
April 24, 2002	Orange, Osceola & Seminole Counties–Citizens Advisory Committee
July 24, 2002	Orange, Osceola & Seminole Counties–Citizens Advisory Committee
July 24, 2002	Orange, Osceola & Seminole Counties–Bicycle & Pedestrian Advisory Committee
July 26, 2002	Orange, Osceola & Seminole Counties–Transportation Technical Committee
August 1, 2002	Orange, Osceola & Seminole Counties–Municipal Advisory Committee
August 14, 2002	METROPLAN Orlando Board Meeting
March 26, 2003	Orange, Osceola & Seminole Counties–Citizens Advisory Committee
March 26, 2003	Orange, Osceola & Seminole Counties–Bicycle & Pedestrian Advisory Committee
March 28, 2003	Orange, Osceola & Seminole Counties–Transportation Technical Committee
April 3, 2003	Orange, Osceola & Seminole Counties–Municipal Advisory Committee
April 9, 2003	METROPLAN Orlando Board Meeting
September 6, 2002	Central Florida MPO Chairs Coordinating Committee

6.2.2 Elected Officials and Small Group Meetings

Project team members received numerous requests to present to key organizations and committees throughout the FHSR project study area. These meetings were considered an important part of the public awareness program. The goal of the first series of local briefings,

from November 2001 through May 2002, was to provide information regarding the FHSR project, including the study process and schedule. Special meetings were held with city and county staff located adjacent to the proposed corridors. The purpose of these meetings was to discuss potential station locations and to coordinate with local transit plans.

The second series of local presentations began in May 2002 and continued through November 2003. The purpose of this series of meetings is to provide project updates including public comments to date, corridor analysis results, alternatives analysis, proposal information, upcoming activities, and gather additional input. A list of meetings that have been held or are planned is provided in Table 6-2. The general nature of comments by county were:

Hillsborough County: The major question asked by the Board of County Commissioners was why Tampa International Airport wasn't a station location? Tampa International Airport is outside the project area.

Polk County: Concern was expressed about locating a station at the west entry to the Polk Parkway for the following reasons: not centrally located, not tied into the transit or local circulation patterns, and located outside of the urban service area. The station is retained in the EIS evaluation because both proposers selected that specific station location.

- **Osceola/Orange County:** No key concerns were raised in meetings.

Table 6-2
Local Briefings

Date	Organization
March 11, 2002	City of Tampa & Hillsborough County Staff
March 21, 2002	City of Lakeland Staff
March 21, 2002	FDOT-District 1
March 28, 2002	FDOT-District 7
April 16, 2002	Orange County Coordination Meeting
April 18, 2002	Expressway Authority Meeting – Staff
April 18, 2002	Hartline Meeting – Staff
April 24, 2002	City of Tampa Parks Department Staff
April 26, 2002	Tampa Rail Community Resource Committee
April 29, 2002	City of Orlando Staff
May 2, 2002	City of Tampa & Hillsborough County Staff
May 28, 2002	Plant City–Historic Resources Board
May 28, 2002	Plant City–City Commission
July 30, 2002	FDOT-District 5
September 16, 2002	FDOT-District 7
September 25, 2002	Tampa Downtown Partnership
October 17, 2002	Regional Air Quality Committee
October 29, 2002	Pinellas County Staff

Table 6-2 (cont.)
Local Briefings

Date	Organization
November 5, 2002	Barrio Latino Commission
December 4, 2002	Hillsborough County Board of County Commissioners
January 8, 2003	Hillsborough County Board of County Commissioners
February 20, 2003	City of Tampa City Council
February 20, 2003	International Electrical and Electronic Engineers – Suncoast Section
February 25, 2003	Plant City Lion's Club
March 5, 2003	Hillsborough County–MPO/ Planning Commission Staff
March 5, 2003	Suncoast Chapter, National Railway Historical Society
March 10, 2003	Hillsborough County Planning Commission
March 19, 2003	Central Florida Development Commission
March 21, 2003	Tampa Chamber/Downtown Partnership
March 31, 2003	Tampa Electric Engineering Staff
April 16, 2003	Leadership Brandon 2003
May 12, 2003	Plant City Commission

The Barrio Latino Historic District is a local district, encompassing most of Ybor City, which was established by the City of Tampa. As created by Article VIII (Ybor City Historic District) of the City of Tampa Zoning Code, the Barrio Latino Commission (BLC) has the responsibility of preserving the historic fabric of the District and maintaining its architectural integrity. To uphold this responsibility, projects within the Barrio Latino Local Historic District are required to be reviewed by the BLC for a Certificate of Appropriateness. As a courtesy, the FHSR project was presented to the BLC in its early conceptual stages at a meeting on November 5, 2002. The members of the BLC were also invited to participate on the CRC and received mailings about the CRC meetings, meeting minutes, and handouts. The FHSRA made a commitment to continue coordination with the BLC during the design phase.

6.3 PUBLIC INFORMATION WORKSHOPS

Two series of Public Information Workshops were held in each of the four counties located within the proposed FHSR corridors.

6.3.1 Public Notification

A letter of invitation to attend any of the scheduled Public Information Workshops was mailed to agencies, state and local officials, and property owners adjacent to the corridor. This notification process was used for the May 2002 and January 2003 series of Public Information Workshops. Additional concerned individuals or groups identified during the study were added to the mailing list database throughout the course of the study.

To ensure notification to all of the interested public, a ¼-page legal newspaper advertisement was placed in the Tampa Tribune, Lakeland Ledger, the Orlando Sentinel – Orange and Seminole Editions, and Orlando Sentinel - Osceola Edition. Each advertisement ran approximately one week in advance of its respective May 2002 and January 2003 Public Information Workshop, announcing the specific public meeting date, location, and time. The announcement also provided a brief FHSR project explanation. News releases were distributed to the print media one week in advance of public meetings.

6.3.2 First Series of Public Information Workshops

The first series of Public Information Workshops were held in May 2002 in each of the four counties located within the FHSR corridors. A list of meetings is provided in Table 6-3. The purpose of this first series of public meetings was to provide the attendees with an opportunity to review the proposed conceptual corridors, engineering design concepts, and high speed rail technologies that were being considered. The meetings also provided an opportunity to obtain comments on these conceptual corridors and technology alternatives early in the study process.

Table 6-3
High Speed Rail
Public Information Workshops

County	Date	Location	Attendees
Hillsborough	May 2, 2002	Blake High School Tampa, Florida	100
Polk	May 6, 2002	The Lakeland Center Lakeland, Florida	86
Osceola	May 7, 2002	Celebration School Celebration, Florida	19
Orange	May 9, 2002	Sheraton World Resort Center Orlando, Florida	46

Each Public Information Workshop, held from 5:00 PM – 8:00 PM, was organized in an informational open-house format. Attendees had an opportunity for one-on-one questions and comments with the multi-disciplinary project team. Two series of aerial corridor alignment maps at a scale of 1:600' were displayed to assist the public in understanding the characteristics and impacts of the proposed FHSR project. The first map series displayed potential social and physical impacts located within ¼ mi. of the centerline of each alignment. The second map series displayed potential natural impacts located within ¼ mi. of the centerline of each alignment. Social and physical impacts included community facilities, churches, schools, cemeteries, contamination sites, public recreation facilities, and historic sites and districts. Natural impacts included wetlands, floodways, wildlife crossings, and threatened and endangered species habitat areas. Aerials with the engineering alternatives were displayed at 1:1,000' scale supported by technology and typical section boards.

FHSR project materials available at the sign-in desk included: Executive Summary, FHSRA Member List, Technology Overview, Project Schedule, and Segment Impact Evaluation Matrix.

Following the Public Information Workshop, the project team recorded and classified all comments received at the workshop. The majority of comments received at the workshops focused on corridor preference and the desirability of high speed rail service. Most comments expressed a preference for high speed rail service and constructing it in the I-4 corridor. A summary of the additional comments is as follows.

- **Hillsborough County Public Workshop:** The public expressed concerns regarding noise, providing connecting transit systems, impacts to the environment, and ticket costs.

- **Polk County Public Workshop:** The public expressed concerns regarding station locations, ridership study validity, impacts to the small towns along CSX, and providing wildlife crossings on I-4 and at Reedy Creek

- **Osceola County Public Workshop:** The public expressed concern regarding provision of connecting transit systems to increase usage and public acceptance of FHSR.

- **Orange County Public Workshop:** The public expressed concerns regarding providing a commuter rail, limiting stops, using the route with the highest sustained speed, and going directly to the Orange County Convention Center (OCCC).

After each workshop, the public had ten days to respond with comments. By May 20, 2002, 882 total comments were received. Of these, 882 total additional comments, 838 were generated by the Hunter's Creek homeowner association located in Orange County. These comments uniformly expressed a preference for the Bee Line Expressway (S.R. 528) rather than the Central Florida Greeneway (S.R. 417) route to the Orlando International Airport. This preference is due to the fact that Central Florida Greeneway (S.R. 417) is a perimeter of Hunter's Creek.

Many of the remaining 44 comments included several preferences. Of the six that specifically stated a route preference, two preferred I-4, one preferred CSX, three preferred the Bee Line Expressway (S.R. 528), and none preferred the Central Florida Greeneway (S.R. 417). Of the comments expressing station location preference, 17 preferred the OCCC, 19 preferred the Intermodal Center, and 4 preferred International Drive. Of these station location preferences, ten were expressed by International Drive area businesses.

Comments received from the workshops were documented through a Public Involvement Comments Summary prepared under separate cover. Written responses were prepared for 48 public requests for more information.

6.3.3 Second Series of Public Information Workshops

The second series of Public Information Workshops were held in January 2003 in each of the four counties located along the I-4 and CSX rail line corridors. A list of meetings is provided in Table 6-4. The purpose of this second series of public meetings was to provide the attendees with an opportunity to review the corridors with the retained alignments, the alignments that had been eliminated, the high speed rail technologies being considered, the construction schedules, and to gather public comments.

Table 6-4
High Speed Rail
Public Information Workshops

County	Date	Location	Attendees
Hillsborough	January 7, 2003	Armwood High School Seffner, Florida	116
Polk	January 9, 2003	The Lakeland Center Lakeland, Florida	106
Orange	January 14, 2003	Sheraton World Resort Center Orlando, Florida	71
Osceola	January 16, 2003	Celebration School Celebration, Florida	45

Each Public Information Workshop, held from 5:00 PM - 8:00 PM, was organized in an informational open-house format. Attendees had an opportunity for one-on-one questions and comments with the multi-disciplinary project team. A single aerial corridor alignment map at a scale of 1:600' was displayed to assist the public in understanding the characteristics and impacts of the proposed FHSR project. The aerial map displayed the potential social, physical, and natural environmental impacts located within ¼ mi. of the centerline of each retained alignment. Aerials with the engineering alternatives for the retained alignments were displayed at 1:1,000' scale supported by technology and typical section boards.

FHSR materials available at the sign-in desk included: Executive Summary, FHSRA Member List, Technology Overview, Project Schedule, Alignments for Further Study with Potential Stations Map, Project Schedule, and Rolling Update I Newsletter.

6.3.4 Second Series of Public Information Workshops Results

Following each Public Information Workshop, the project team recorded and classified all comments that were received. The four workshops attracted 338 attendees, and generated a total of 87 written comments. Verbal comments and questions typically focused on alignment and station locations, as well as technology explanations. Written comments were focused in the following key categories:

- FHSR Desirability
- Station Location

- Technology
- Corridor/Alignment Preference

Of the 59 that addressed the desirability of high speed rail, 51 were in favor and eight were against. A summary of each of the workshops and the comments received follows.

Hillsborough County Public Workshop

Nineteen total comments were received. Many attendees supported the FHSR, with two preferring I-4 and four preferring a corridor somewhere other than I-4, preferably the CSX alignment. Written comments addressed the following key issues:

- **FHSR Desirability Comments** that included: noise level concerns and recommending more meetings to educate the public and excite interest.
- **Station Location Comments** that included: locating a station at U.S. 27 and I-4; planning for a Westshore station; utilizing Union Station as a station; locating stations at Tampa International Airport, Port of Tampa, and Orlando International Airport for tourism purposes; and providing every city with a stop.
- **Technology Comments** that included: trains should operate at least 200 miles per hour (mph) and using French trains is a catastrophic blunder.
- **Corridor Preference Comments** that included: locating the project corridor further south in the rural, cow pasture areas; keeping the existing land open in I-4 for expansion; upgrading the existing CSX tracks for FHSR; and staying in I-4 as it will not destroy any more land or trees.

Polk County Public Workshop

Twenty-five comments were received that evening. Written comments addressed the following key issues:

- **FHSR Desirability Comments** that included: there is not enough diversity or concentration of passengers to feed the train, and there is not enough distance between Tampa and Orlando to divert travelers from cars.
- **Station Location Comments** that included: providing a Lakeland station for access to Tampa International Airport or Orlando International Airport; allow communities to select stations based on viable alternatives; Kathleen Road to U.S. 98 is a good area for a station; the west end of the Polk County Parkway is a more convenient location; station locations can impact communities; and locating stations away from existing communities.
- **Technology Comments** that included: recommend Maglev, a preference for hydrogen-powered electricity, and consider fuel-cells for local stations and rental cars.
- **Safety Comments** that included: a cement barrier a must; the impact on highway congestion will be of utmost concern; where is vehicular refuge if interstate median is occupied by rail; what is the effect on road maintenance; the FHSRA has responsibility to NOT increase traffic hazards; FHSR will cause noise and

visual distractions for motorists; and the I-4 median through Lakeland is not wide enough to accommodate FHSR.

- **Connecting Transit Systems Comments** that included: provide supportive means of transportation to and from the stations; concerned with how to get to the stations; hoping for light rail connections at stations; and will the FHSR offer a train-car or auto-train option?

Orange County Public Workshop

Twenty-six total comments were received that evening. Eight total corridor/alignment preference comments were received: six favored the Bee Line Expressway (S.R. 528) alignment, while two favored the Central Florida Greeneway (S.R. 417). Many attendees supported the FHSR, providing written comments that addressed the following key issues:

- **FHSR Desirability Comments** that included: hurry up and build it; provide more communication with taxpayers and voters; build light rail first, supplement later with FHSR; the citizens of Central Florida not adequately informed to vote; assure ridership; create a multi-use track and run light-rail on the FHSR track to gain route flexibility and increased capitalization; and consider the emergency evacuation benefit of FHSR.
- **Station Location Comments** that included: the official position of the International Drive Resort Area Chamber of Commerce is that there must be a high speed rail station at the Orange County Intermodal Station; one station is cheaper than two – locate station midway between International Drive and Disney and interface this stop with light rail; station location should distribute users/tourists to all three theme parks; an International Drive/Convention Center station is an innovative use of land; and plan for two Orlando International Airport stations, one each at the north and south terminals.
- **Technology Comments** that included: diesel locomotive technology is too dirty; vote for Maglev; and if a Disney-compatible train is adopted for the Orange County light rail system, part of the infrastructure already exists.
- **Corridor Preference Comments**: A large number of comments were received opposing the Central Florida Greeneway (S.R. 417) due to perceived impacts on property values and the quality of life in adjacent subdivisions. A detailed summary of the public information meetings is available in the project files. The following is a sampling of these comments received at the public workshop: support for a Central Florida Greeneway (S.R. 417) route with a stop at Disney; against Central Florida Greeneway (S.R. 417) alignment – it would pass within 200 yards of homes; the Central Florida Greeneway (S.R. 417) alignment is a detriment to Hunter's Creek resulting in decreased property values, intrusion on a safe, quiet community, loss of large trees along roadway; opposed to the Central Florida Greeneway (S.R. 417) - go to convention center which benefits the City of Orlando; stop at Convention Center with light rail system to Orlando; use the Bee Line Expressway (S.R. 528) alignment, not the Central Florida Greeneway (S.R. 417).

Osceola County Public Workshop

Seventeen total comments were received that evening. Many attendees supported the FHSR, providing written comments that addressed the following key issues:

- **FHSR Desirability Comments** that included: I would pay higher taxes for this service; FHSR will increase tourism and trade immensely; FHSR is a great step in bringing Florida's transportation system to a level for future needs; FHSR is vital to our future - support its continued development; and use landscaping and berming to hide fences and retention ponds.
- **Station Location Comments** that included: prefer a Disney station in I-4 median that allows other entities opportunities for advertising and sales; prefer a station at I-4 and U.S. 27; FHSR brings a boost to Polk County economy with resulting business growth; and plan for growth in the Four Corners area.
- **Technology Comments** that included: central power and electrical drive trains are a must; and Maglev is the fastest technology.
- **Corridor Preference Comments** that included: a resolution of the Kissimmee City Commission urging the FHSRA to adopt the Central Florida Greeneway (S.R. 417) route for FHSR; a resolution of the Board of County Commissioners of Osceola County urging the FHSRA to adopt the Central Florida Greeneway (S.R. 417) route for FHSR; the Board of Directors of the Kissimmee/Osceola County Chamber of Commerce resolves that the FHSRA adopt the Central Florida Greeneway (S.R. 417) route for FHSR in Central Florida. We support a Light Rail Transit Connection linking Orlando International Airport, the OCCC and Walt Disney World; general recommendation for the Central Florida Greeneway (S.R. 417); preference for either of the northern routes on the Bee Line Expressway (S.R. 528); and agree with most economically effective route if it, in fact, also provides for greatest participation by Disney.

Comments received from the Public Information Workshops were documented through a Public Involvement Comments Summary prepared under separate cover. Written responses were prepared for 16 public requests for more information.

6.3.5 Newsletter and Web Page

In December 2002, a newsletter was mailed to all property owners, interested citizens, and local and state officials. The newsletter summarized the first series of Public Information Workshops, provided a summary of project activities, announced the second series of upcoming January 2003 Public Information Workshops, and listed upcoming events and key project dates.

The FHSRA developed a web page (www.floridahighspeedrail.org) to provide updated information on the FHSR. The following FHSR study information was supplied for on-line display: The Florida High Speed Rail Corridor Screening Report, Project Schedule, Public Workshop Announcements, Schedule of Elected Officials and Small Group Meetings, Schedule of MPOs and Committee Meetings, Public Information Workshops Results, and a Series of

Handout Materials including an Executive Summary, Technology Overview, and Segment Impact Evaluation Matrix.

The website also provides a list of frequently asked questions, meeting minutes of all public meetings, and offers viewers the opportunity to submit questions and comments to the project team.

6.4 DRAFT ENVIRONMENTAL IMPACT STATEMENT COORDINATION

6.4.1 Public Hearings

A series of Public Hearings were held in October 2003 in three of the four counties at locations along the FHSR corridor. A list of meetings is provided in Table 6-5. The purpose of this series of public hearings was to solicit public comment on the Draft EIS, the proposed FHSR alternatives under consideration, the technologies being considered, construction schedules, and other issues related to the development of a high speed rail system.

Table 6-5
High Speed Rail
Public Hearings

County	Dates	Location	Attendees
Hillsborough	October 7, 2003	Armwood High School Seffner, Florida	75
Polk	October 8, 2003	The Lakeland Center Lakeland, Florida	112
Orange/Osceola	October 9, 2003	Hyatt Orlando International Airport Orlando, Florida	260

Each Public Hearing provided an informational open-house format from 5:00 PM - 6:00 PM, followed by a formal hearing from 6:00 PM - 8:00 PM. During the informal portion of the meeting, attendees had an opportunity for one-on-one questions and comments with the multi-disciplinary project team. A single aerial corridor alignment map at a scale of 1:600' was displayed to assist the public in understanding the characteristics, impacts, and proposed alignments of the proposed FHSR project. The aerial map displayed the potential social, physical, and natural environmental impacts located within ¼ mi. of the centerline of each proposed alignment. Aerials with the engineering alternatives for the proposed alignments were displayed at 1:1,000' scale supported by technology and typical section boards.

FHSR materials available at the sign-in desk included a Welcome Letter from Chairman Frederick Dudley, an Impact Matrix, and Design/Build Alternatives Maps. A newsletter provided an Executive Summary, Library Locations for Viewing the Draft Environmental Impact Statement (Draft EIS), Technology Alternatives, FHSRA Member List, Public Hearings Meeting Agenda, FHSR Web Site Address, What's Next After the Public Hearings, and Contact Information.

Public Hearings Results

Following each Public Hearing, the project team recorded and classified all comments that were received. The three workshops attracted 447 attendees, and generated a total of 88 written, and 36 verbal comments. Comments were focused in the following key categories:

- Desirability of a Rail System
- Alternative/Route Preference
- Station Location
- Cost
- Technology
- Environmental Impacts
- Maintenance Facility Location

Specific preferences for alternatives were evaluated through the written and verbal comments received during the three public hearings. The No-Build Alternative comments stated either an agreement for or against the FHSR project without alignment or station specifics, as shown in Table 6-6. The Build Alternative comments, also recorded in the table, specifically indicated either a preference for an alignment or against an alignment.

Table 6-6
Comment Tabulation

Specific Local Preferences	Location	Alignments/Stations	For	Against	Total
No-Build Alternatives			10	18	28
Build Alternatives					
Alignments	Orlando	Bee Line Expressway (S.R. 528) (Alternatives 1,3,5,7)	32		32
		Central Florida Greeneway (S.R. 417) (Alternatives 2,4,6,8)	3	26	29
	Tampa	I-4 (Alternatives 1,2,5,6)	2		2
		CSX (Alternatives 3,4,7,8)	3		3
Stations	Orlando	Disney	4		4
		Orange County Convention Center	15		15
		Downtown Orlando	1		1
	Lakeland	Kathleen Road		1	1
		West Polk Parkway and I-4			
		East Polk Parkway and N.E. I-4	5		5
		Clark Road	1		1
	Tampa	Downtown			
		Pinellas County	1		1
		Tampa International Airport	2		2

Hillsborough County Public Hearing

Ten total comments were received that evening. More than one written/verbal comment was received from attendees. Comments addressed the following key issues:

- **FHSR Desirability Comments** that included: recommending that decision makers should go to Europe and see how high speed rail works; reworking existing CSX tracks and stations for FHSR; opposed to FHSR, prefer a light rail system located on existing CSX tracks; if you give them the train, they will use it; high speed rail can better our lives…less cars, less accidents, and less pollution; and FHSR will prove itself essential to Florida's future.
- **Alternatives/Routes Comments** that included: system should go to Pinellas County; and prefer Alternative 4 or 8.
- **Costs Comments** that included: nice if the average person can afford it; and if the government subsidized the railroad instead of building more tire tracks, it would be a good deed for the citizens of Florida.
- **Technology Comments** that included: prefer Global Rail Consortium: faster, more trains, longer hours; and environmental habitats will not be affected as much.
- **Environmental Impacts Comments** that included: Florida cannot afford to pave over our green space; and the Interstate can accept the loud noise level.

Polk County Public Hearing

Twenty total comments were received that evening. More than one written/verbal comment was received from attendees. Comments addressed the following key issues:

- **FHSR Desirability Comments** that included: opposed to FHSR, prefer a light rail system; happy to see it completed; no advantages over rental cars; I-4 cannot possibly keep up with the growing demands; in favor of FHSR, preferring Alternative 5; and it's a great idea.
    - **Alternatives/Routes Comments** that included: prefer Alternative 8; and connecting Orlando International Airport to the OCCC to Disney is important for economic growth.
    - **Costs Comments** that included: it must be cheaper to use than to drive a car; great idea…more jobs, more money, economy expands; need incentives/assistance on Federal/National level; and private money only.
    - **Technology Comments** that included: prefer electric; what plans will be in place in case of grid failure?; and recommend electric because of lower emissions and least amount of environmental impacts.
    - **Station Location Comments** that included: do not build at Kathleen Road, it is already congested; locate a station at Tampa International Airport; and locate at northeast "terminus" of Polk Parkway; and Clark Road is the best location.

Orange/Osceola County Public Hearing

Fifty-nine total comments were received that evening. More than one written/verbal comment was received from attendees. Comments addressed the following key issues:

- **FHSR Desirability Comments** that included: mass transportation saves time and money; and we need it…from downtown Orlando to downtown Tampa.
- **Alternatives/Routes Comments** that included: the Bee Line route will impact fewer schools, split fewer neighborhoods, and support more businesses; as a Hunter's Creek resident, I am strongly opposed to the Greeneway route; Bee Line makes sense because it is more commercial, and less residential; the Bee Line route is a win-win; and FHSRA is legally precluded from putting a railroad along the Greeneway.
- **Costs Comments** that included: used taxpayer dollars to build OCCC, and now the FHSR will bypass and use taxpayer dollars to build connection to Disney?; where will money come from?; and taxpayers who support the train vote for the Bee Line.
- **Technology Comments** that included: prefer electric as gas is more polluting, less efficient, and slower.
- **Station Location Comments** that included: must stop at the OCCC; stopping at OCCC, Disney, and Lakeland defeats the purpose of the system; stop at OCCC to serve our entire community and the public at large; and it's counter productive to align along a route that bypasses the OCCC transportation hub.

Additional Comments

Thirty-five total comments were received through mail or e-mail by October 24, 2003. Comments addressed the following key issues:

- **FHSR Desirability Comments** that included: FHSR technology is our next new frontier; vast improvement over I-4; please stop the FHSR; as Hunter's Creek resident, not against FHSR, only the Greeneway route; and support FHSR with wildlife crossings along I-4.
- **Alternatives/Routes Comments** that included: please consider the Bee Line route; constructing FHSR in the I-4 median is an accident waiting to happen; and emphatically opposed to the Greeneway.
- **Costs Comments** that included: jet train may be cheaper to start, but will cost more in the long run; and why should taxpayer's pay for a Disney train?
- **Technology Comments** that included: electric would serve our state the best; and for national security reasons…electric trains are the trains of choice.
- **Station Location Comments** that included: I-4 and east entrance to the Polk Parkway.

Comments received from the Public Hearings were documented through a Public Hearing Comments Summary prepared under separate cover. Written responses were prepared for four public requests for more information.

6.4.2 Agency Comments

Federal Agency Comments

Environmental Protection Agency

Alternatives - The electric train technology has not been approved for use in the United States, even though it has been used in Europe for the last twenty years. Consequently, the Final EIS should clearly state whether the electric train alternatives are viable at this time.

Response: *The FRA has stated that final approval of the electric train technology (specifically TGV) can be expedited if this technology is selected. A draft Rule Of Applicability had been prepared by the FRA staff associated with a previous project that proposed to use TGV technology*
in Florida.

Alternatives - In addition, the Draft EIS does not include an environmentally Preferred Alternative. All of the alternatives result in varying degrees of potential noise, vibration, wetland, floodplain, and hazardous waste impacts. Given the number of alternatives examined in the Draft EIS, the Final EIS should include an environmentally Preferred Alternative.

Response*: The analysis of impacts documented in the Draft EIS indicated that all the build alternatives demonstrated environmental impacts of similar magnitude. The environmental impacts documented in the Draft EIS were considered by the FHSRA to assist them in identifying a Preferred Alternative. The Final EIS includes a discussion of the social, natural, and physical environmental impacts along with engineering and operations considerations that were analyzed to determine the Preferred Alternative. In addition, each of the subsections in Section 4, Environmental Consequences, is summarized to identify the specific impacts of the Preferred Alternative.*

Aquatic Resources - It is unclear how [many] linear feet of stream impacts are expected since the stream impacts are included in the total wetland impacts and quantified in acres (ac.). The Final EIS should quantify stream impacts and quantify in linear feet.

Response*: Typically, all wetland impacts are quantified in ac. for the permit agencies and mitigation ratios are negotiated in ac. Based upon further clarification with EPA (conference call of January 7, 2004), the quantification of stream impacts in linear feet is not required.*

Aquatic Resources - Given the nature and the scope of the proposed project, the impacts appear to be within acceptable limits. However there is insufficient analysis in the Draft EIS of potential mitigation strategies for addressing aquatic resource impacts. The Final EIS should address sequence: avoidance, minimization, and then suitable mitigation. It should include a well-developed compensatory mitigation plan for the project impacts. Mitigation should be in-kind, and within the same hydrologic corridor as the impacts to the extent practicable.

***Response**: The process of avoidance, minimization, and mitigation is further addressed in the Final EIS, Sections 4.2.5 and 4.2.11. This will also continue to be a significant consideration during the permitting phase of this project. This process was critical for the justification of the chosen Preferred Alternative. The alignments discussed in the Final EIS have been revised several times in an effort to avoid various environmental concerns (historical, wetlands, contamination etc.).*

Avoidance was not a significant issue for the portions of the alignments located in the median area of I-4 due to limited areas containing wetlands. However, the western and eastern termini of the alignments (especially those outside of existing roadway medians) were evaluated to minimize wetland impacts. The Florida High Speed Rail Screening Report, Parsons/PBSJ, September 2002, specifically considered avoidance and minimization in eliminating a number of build alternative segments with unacceptable levels of environmental impact. The western end of the project (including any of the alternatives) is located in a very urban area, with little to no wetlands within the proposed alignments. The eastern end of the proposed alignment (along I-4 and Bee Line Expressway [S.R.528]) contains significantly more wetlands than the western end. The process of avoidance will be evaluated further for alignment modification during final design. This is documented in Section 4.2.5 of the Final EIS. During the permitting and final design phase of the project, the Preferred Alternative may be further refined to reduce and/or avoid impacts.

At this time, proposed wetland mitigation will be pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344. Under S. 373.4137 F.S., mitigation of FHSR wetland impacts will be implemented by the appropriate WMD where the impacts occur. Each WMD develops a regional wetland mitigation plan on an annual basis to be approved by the Florida State Legislature that addresses the estimated mitigation needs. The WMD will then provide wetland mitigation for specific project impacts through a corresponding mitigation project within the overall approved regional mitigation plan. FHSRA will provide funding to the WMD for implementation of such mitigation projects. An emphasis will placed on attempting to provide in-kind mitigation in the same local basin and in accordance with the appropriate mitigation ratios. Section 4.2.5 Wetlands, of the Final EIS includes this discussion.

Noise and Vibration - Table 4-23 presents the existing noise level for Alignment E1 of Alternative 1 (59 dBA Ldn) versus the predicted noise level (58 dBA). The metric used for the predicted value is unclear (Ldn or Leq?). The two values should be the same for comparison and calculation of cumulative (total) noise (project plus ambient). We also note that ambient measurements were made in Ldn and/or Leq (Table 3-19). While Ldn is more representative over 24 hours, a 1 hr Leq (Leq(1)) would be better suited for project sites located near existing highways, with ambient measurements taken during rush hour for worst-case levels.

***Response**: Table 4-31 is updated in the Final EIS to clarify which metric is being used in the projections. In addition, the Draft EIS stated in the Noise Criteria section which metric is used for specific cases. As stated, the Ldn is used for residences (Category 2) and the Leq is used for other noise sensitive land uses (Category 1 and Category 2).*

Impact Levels (pg. 3-34) – We note that noise levels defined as "impact" and severe" vary based on the ambient noise levels (pg. 3-34). EPA does not agree with such a sliding scale as depicted on Table 3-18; instead, we believe that a discrete noise level for a moderate and for severe impacts should be selected regardless of the ambient level.

***Response**: As stated in the Draft EIS, the noise criteria are "based on the criteria defined in the FRA guidance manual High-Speed Ground Transportation Noise and Vibration Impact Assessment (Final Draft, December 1998)". This guidance manual states that ambient based impact criteria are established and used for all transit project assessments.*

Train Technologies - It is unclear why implementation of the project with electric trains would be noisier than with gas turbine trains (Table 4-31). This seems counterintuitive. The Final EIS should verify this and provide reasons (e.g., wheel, engine, and conveyance noise). In general, EPA would prefer electric trains to reduce air emissions (especially in a maintenance area), but would also want to minimize noise (especially where considered severe).

***Response**: As mentioned in the descriptions of each alternative in the Noise section of the Draft EIS, noise levels are affected by the proximity of the receiver to the track, the train speed at the specific receiver, and the track height at the specific receiver. The combinations of these factors, the two power sources for operation, and consideration of the additional trips proposed in the operations plan cause the Electric Train to have more overall noise impacts than the Gas-Turbine Train. Additional discussion identifying the various factors that influenced the findings of the noise analysis and the influence of these factors on the specific technology are included in Section 4.2.3 of the Final EIS (see Table 4-40).*

Noise Mitigation - The Final EIS should discuss what authority FRA and the FHSRA have regarding the funding and implementation of noise mitigation.

***Response**: During further development of the project, the FHSRA, in consultation with FRA and applicable Code Federal Regulations, will be developing a number of policies and additions to Florida Administrative Code (FAC) that will address this issue and other similar issues. The FHSRA, in coordination with the FRA and any other applicable agencies, will identify all Federal and FAC requirements, including any updates, that address noise impacts to be mitigated in the design and construction phase(s) of the Florida High Speed Rail project. FRA's authority regarding the funding and implementation of noise mitigation will depend on the nature and scope of the program from which funding for the overall project is derived. There presently is no Federal program that authorizes FRA to fund a high speed rail project.*

Noise Mitigation - With regard to noise barriers, we note that barriers are predicted to be capable of attenuating all predicted severe impacts (Table 4-35). It is unclear, however, what alternatives, project sections, or residences would indeed be mitigated for noise. The Final EIS should provide such information.

***Response**: Feasible noise mitigation measures, including noise barriers with sound absorbing surfaces, and locations are discussed in the Final EIS. The discussion for the Preferred Alternative in Section 4.2.3 of the Final EIS include the residences that meet or exceed*

abatement consideration criteria and this information has been clarified for each of the alternatives in this section as well. As mentioned in the Draft EIS:

"...potential mitigation measures for reducing noise impacts from the FHSR operations are described below:

Noise Barriers *- This is a common approach to reducing noise impacts from surface transportation sources. The primary requirements for an effective noise barrier are: (1) the barrier must be high enough and long enough to break the line-of-sight between the sound source and the receiver; (2) the barrier must be of an impervious material with a minimum surface density of 4 lb/sq. ft.; and (3) the barrier must not have any gaps or holes between the panels or at the bottom. Because numerous materials meet these requirements, the selection of materials for noise barriers is usually dictated by aesthetics, durability, cost, and maintenance considerations. Depending on the proximity of the barrier to the tracks and on the track elevation, rail noise barriers typically range in height from 4 to 10 ft., providing noise reductions of 5 to 10 dBA.*

Building Sound Insulation *- Sound insulation of residences and institutional buildings to improve the outdoor-to-indoor noise reduction has been widely applied around airports, but has seen limited application for rail projects. Although this approach has no effect on noise in exterior areas, it may be the best choice for sites where noise barriers are not feasible or desirable, and for buildings where indoor sensitivity is of most concern. Substantial improvements in building sound insulation (on the order of 5 to 10 dBA) can often be achieved by adding an extra layer of glazing to windows, by sealing any holes in exterior surfaces that act as sound leaks, and by providing forced ventilation and air conditioning so that windows do not need to be opened."*

The FHSRA has committed (see Section S.13 Commitments) to comply with all applicable State and Federal noise standards, criteria, and guidelines in the construction phase and in the operations of rail service. The reasonableness and feasibility of noise mitigation measures will be reevaluated during the design phase consistent with FDOT policy and as coordinated with FRA.

Vibration Mitigation – Three potential treatments to compensate for vibration are provided. Potential mitigation sites are also provided (Table 4-46). However, no commitments are made.

Response*: The Final EIS, in Section 4.2.4, presents the mitigation commitments as part of the Preferred Alternative discussion.*

Vibration Mitigation - The Final EIS should provide commitments to compensate for noise and vibration impacts, including the methods to be used and the mitigation sites. If any residences are not scheduled for mitigation but are predicted to be severely impacted for noise, the Final EIS should discuss why these sites would not be mitigated. Similar discussion for vibration impacts should also be provided.

***Response**: Sections 4.2.3, 4.2.4, and S.13 of the Final EIS include a commitment for reasonable and feasible noise and vibration mitigation considerations during design.*

Air Quality - In addition, the air impacts analysis relates the electric locomotion alternative to increases in coal-fired generation emissions. However, much of Florida's electric generation is nuclear and combustion turbine fired by natural gas. Consequently, the Final EIS should explain the validity of considering just coal-fired emissions in the air quality analysis.

***Response**: The primary objective of the air quality evaluation was to demonstrate that the FHSR project would not require a conformity determination in accordance with the General Conformity Rule (40CFR Part 93 Subpart B). For the purpose of demonstrating that a conformity determination would not be required, a worst-case approach was used in the air quality evaluation. Hillsborough County, which is currently designated as an ozone maintenance area, has experienced improved air quality in recent years. Conversion of a TECO (i.e., public utility in Hillsborough County) power plant from coal to natural gas has been identified as major contributor to the reduction because of decreased emissions. Since the specific source of power for the electric train technology cannot be identified at this time, the worst-case approach used emissions factors (provided by FDEP) for a coal-fired power plant. The premise of the approach is that if a conformity determination is not required under worst-case conditions, then electricity provided from an electric power source with lower emissions would also not require a conformity determination. This approach did not affect a secondary objective of the air quality evaluation, which was comparison of the two train technologies. Even when using worst-case for increased regional emissions associated with electric power production, the emissions associated with the electric train technology are substantially less than the emissions associated with the gas turbine train technology.*

Contamination - The Draft EIS does not state under which statutes that potential contaminated sites are regulated. The Final EIS should include this information. In addition, what database does this information come from? This should also be included in the Final EIS. The Final EIS should include more detailed information regarding how FRA will comply with existing State and Federal regulations if the proposed property is acquired.

***Response**: The FDEP statutes which regulate potential contamination are found primarily in 62-770, 62-771, 62-773, and 62-701 F.S. The EPA statute which covers RCRA and CERCLA is 42 USC, Sections 6901 and 9601.*

There are numerous databases on the city, county, state, and federal levels used to track contamination issues. The databases used in preparation of the Contamination Screening Evaluation Report were the National Priority List, Comprehensive Environmental Response Compensation and Liability Information System, Resource Conservation and Recovery Information System, Emergency Response Notification System, Facility Index System, Toxic Release Inventory System, National Pollution Discharge Elimination System, Superfund Hazardous Waste Sites, State Funded Action Sites, Solid Waste Facilities, Leaking Underground Storage Tanks, Stationary Tank Inventory System List, and Cattle Dipping Vats.

At this phase of the project, it is too early to tell what FRA involvement would be with each potentially contaminated property, and to what extent the project would have an effect on site conditions or which regulations would be involved. In subsequent design phases, a Level II screening will be performed that will indicate which regulations will be used and the best course of action for the FHSRA.

Noise Barrier Construction - The Draft EIS suggests that the attenuation capability for materials used for noise barrier construction do not differ greatly. One exception might be the use of rubberized barrier walls that tend to absorb noise rather than reflect it. The Final EIS should discuss the feasibility of such noise barriers.

***Response**: Feasible noise mitigation measures are discussed in Section 4.2.3 of the Final EIS, including noise barriers with sound absorbing surfaces. The reasonableness and feasibility of noise mitigation measures will be reevaluated during the design phase consistent with FDOT policy and as coordinated with FRA.*

Editorial - Page 4-51 refers to "…Alternative 2 and 3, where there are no severe impacts and therefore no mitigation is required." Based on Table 4-35, this should presumably read "…Alternative 2 and 4, where there are no severe impacts and therefore no mitigation is required."

***Response**: The Final EIS text is revised.*

Other- A big ancillary impact not addressed is the need for fill material for new RR bed. Some estimate of fill material should have been given for each major alternative and where such quantities could (not necessarily would) be obtained.

***Response**: The FHSRA has not identified a source of borrow although did identify the necessary quantity and availability of fill for embankments. The selected proposer will be responsible for acquiring the necessary amount of fill material and any approvals necessary for the use of this fill material (i.e. permits). The Commitments and Recommendations section (Section S.13 of the Final EIS) identifies that any borrow areas identified by the Design/Build Contractor will require the necessary permits.*

Overall, EPA rates this Draft EIS as a EC-1; that is, the document has identified potential environmental impacts to noise, vibration, hazardous waste sites, air quality, wetlands, floodplains and other aquatic resources that need to be addressed more completely in the Final EIS. Since many of the impacts have already been avoided and minimized with the proposed project, mitigation of the project's impacts becomes a very important issue. Therefore, all mitigation measures and commitments to the extent feasible should be disclosed in the Final EIS. Where needed, provisions for monitoring of mitigation actions should also be included.

***Response**: As indicated in the responses above, further discussion of mitigation measures and commitments are provided in applicable subsections of Section 4 in the Final EIS, to the extent feasible. Final wetland mitigation will be determined during the permitting process. At this time, proposed wetland mitigation will be S. 373.4137 F.S. and monitoring will therefore be the*

responsibility of the WMDs. A Commitments Section (S.13) has been added to the Executive Summary outlining the measures that FHSRA has committed to for project implementation.

Federal Highway Administration

General There will be a continued need to coordinate with the FHWA and FDOT for safety, traffic operations, and funding issues for construction, operations and maintenance activities when there is proposed use of Interstate ROW.

Response: *The FHSRA is committed to working with its transportation partners (FHWA and FDOT) in the development of this project, and will continue to coordinate all aspects of the project with these agencies. As you are aware, the design/build consultant must follow FDOT Design and Specifications to meet requirements for maintenance of traffic plans during construction of the High Speed Rail. Coordination with Districts I, V, and VII will include any concurrent construction along the I-4 corridor. The design/build consultant will coordinate meetings for the development of the maintenance of traffic plans and the outcome of these meetings will be an acceptable plan to both FDOT and FHWA prior to approved use of the interstate ROW for the High Speed Rail.*

1. FHWA must take a federal action to approve the use of the I-4 median for high speed rail before the FHSRA can construct any rail system within the Interstate ROW. The FDOT must make an application to the FHWA for such use, FHWA will act on such a petition after the FRA issues a record of decision, as that document will serve as our environmental evaluation for the decision to approve the use the median. Major issues such as barrier configuration/fencing and shoulder encroachment design exceptions must be resolved before FHWA can approve the use of the interstate ROW. We stress the importance of resolving some of the design issues such as the barrier type chosen by the selected proposer, but we recognize that some of these issues may be addressed and resolved after completion of the ROD.

Response: *The FHSRA would be required to determine protective measures necessary to prevent intrusions of vehicular traffic, unauthorized persons, large animals, and objects into the rail alignment from the surrounding highway system and overpasses. FHSRA is further required to obtain any and all associated approvals for the barrier, fencing, and intrusion detection systems, in addition to any protective measures that would be required from all Federal and State agencies having jurisdiction within the corridors proposed for use by the FHSR.*

Coordination is on-going and will continue through the design/build phase with the Fluor-Bombardier Team in developing an acceptable barrier plan including any fencing and minimizing any shoulder encroachments.

2. The approval for the use of the median is addressed in 23 CFR 710.405 Interstate Air Rights and 23 CFR 810.200 making Highway ROW Available for mass Transit project. The steps are as follows: 1) The FHSRA submits a request for the proposed use of ROW to FDOT, 2) If acceptable, FDOT submits request for FHWA approval to make ROW available to FHSRA for the proposed mass transit project. The request is to include evidence (e.g., maps, plans,

proposed use and occupancy agreement) that the proposed facility will not impair future highway improvements or the safety of highway users, 3) FHWA approval (a Federal action) can be given after the environmental process is completed (in this case, a ROD has been issued by FRA), 4) After FHWA approval, FDOT enters into written use and occupancy agreement (including the conditions set forth in 23 CFR 810.210 (a) (1-3)) with the FHSRA and provides a copy to FHWA.

Response: *This process will be followed through the design/build phase in coordination with FHWA/FDOT.*

3. FHWA will require that the FHSRA and FDOT-District 7 complete a memorandum of agreement on the I-4/Interstate 275 (I-275) interchange in Tampa where the rail line is proposed to be placed in the future ultimate Interstate ROW, prior to FHWA agreement on the Final EIS.

Response: *The Memorandum of Agreement (MOA) with FDOT and the FHSRA has been completed and is included in Appendix B. The MOA has not been signed by FHWA or FRA.*

4. The FHWA agrees with and supports the barrier requirements as defined in the RFP Design Criteria. Not only does the taller barrier configuration provide additional crashworthiness, but it will provide glare protection/reduce the startle factor for the train. We note that the GRC team had agreed to provide barriers as defined in the RFP Design Criteria, generally TL-5 barriers on a tangent and TL-6 barriers on curves, but the FB team offered a mix of FDOT index 410 barriers and TL-5 barriers. The FHWA believes that the function of the barriers is to keep motor vehicles outs of the fixed guideway, not to keep trains constrained to the guideway. FHWA will evaluate the barrier concept of the selected proposer, but what is proposed by the FB team may not be acceptable. The barrier strategy must be acceptable to FHWA. The barrier strategy must be acceptable to FHWA in order for FHWA to approve the use of the I-4 median.

Response: *The FHSRA has identified the barrier requirements for the FHSR, as identified in the RFP documents, and as stated in the Final EIS. The barrier requirements are as follows:*

- *Meeting requirements of NCHRP Report 350 Test Level (TL) 5 guidelines shall be installed between the high speed ground transportation system guideway and the parallel roadway. Such barrier shall be installed where the highway is on tangent.*

- *Where the highway is on curve and within 100 feet (ft.) of a highway curve, reinforced concrete barriers meeting the requirements of NCHRP Report 350 TL 6 guidelines shall be installed between the high speed ground transportation system guideway and the parallel roadway.*

- *Where the guideway is on earthen fill structure with vertical walls exceeding 4 ft. in height above the roadway shoulder, barrier wall shall not be required.*

- *Where the guideway is on pier supported structures within 100 ft. of the highway, NCHRP Report 350 TL 5 barriers shall be required to protect guideway piers and occupants of highway vehicles.*

Coordination is on-going and will continue through the design/build phase with the Flour-Bombardier Team in developing an acceptable barrier plan including any fencing and minimizing any shoulder encroachments.

The FHSRA would be required to determine protective measures necessary to prevent intrusions of vehicular traffic, unauthorized persons, large animals, and objects into the rail alignment from the surrounding highway system and overpasses. FHSRA is further required to obtain any and all associated approvals for the barrier, fencing, and intrusion detection systems, in addition to any protective measures that would be required from all Federal and State agencies having jurisdiction within the corridors proposed for use by the FHSR.

5. FHWA remains concerned with any proposal to mount chain link or other types of fencing on the top of barrier walls and strongly prefers that the fence be mounted between the track and the barrier. FHWA does not believe that barriers with an attached fence will pass the NCHRP 350 test requirements and will require that if fencing is placed on top of the barrier it will have to be shown to pass NCHRP 350 test criteria to be acceptable. Before FHWA will approve the use of the I-4 median, the barrier and fencing strategy must be acceptable to FHWA. Both the GRC and FB proposals depict the fence mounted on top of the barrier.

Response: *Although the Preferred Alternative identifies a fencing solution similar to what was originally proposed in the RFP, continued analysis and coordination of fencing locations will be undertaken. The FHSRA recognizes FHWA's jurisdiction in this issue.*

6. The median railroad alignment encroaches on roadway shoulders in curves due to the use of spirals on the railroad alignment. FHWA has requested that the data be provided in detailed plan views, depicting the location and extent of the shoulder encroachment for FHWA review. It is understood that the encroachments may not occur until the inside HOV lanes are constructed. FHWA considers any reduction in the 10 ft inside shoulder to be a design exception, rather than a variance, as the AASHTO guidelines require 10 ft inside shoulders on multilane highways, and must be approved prior to approval for use of the median.

Response: *At the preliminary engineering effort, conservative design criteria were used when preparing the alignment included in the RFP documents. It is anticipated that the design/build team will minimize shoulder encroachment through the design phase. This will be coordinated with FHWA/FDOT prior to seeking FHWA approval for use of the median.*

7. FHWA has concerns about emergency and maintenance access to the guideway, construction access and construction staging. FHWA has stated that normally it would wish to see specific plans addressing these issues prior to approving the FDOT application for rail use of the median. We understand that under this DBOM procurement process, the proposers were advised that coordination with FDOT and standard FDOT maintenance of traffic procedures are required. Similarly, the proposers must address system safety and security in accord with joint FTA and APTA standards. However, the details will not be available until later in the design process, well after issuance of the ROD.

Response: *FRA will require the submittal and approval of specific plans addressing emergency and maintenance access to the guideway, construction access, and construction staging. The design/build process will address specific system safety and security in accord with FRA regulations through development of a Safety Plan during final design and these plans will be provided to FHWA.*

General The Pre-draft EIS contains information pointing out that one of the two responsive design/build proposals would not provide for a commitment to provide future animal crossings in Polk County. The information is first presented in the summary on page S-11 where it is stated "Furthermore, the FDOT is committed to providing wildlife crossings along I-4 during construction of the ultimate interstate improvements. The GRC electric train proposal includes wildlife crossings to be consistent with future I-4 reconstruction, while Fluor Bombardier gas turbine technology does not." Information is also included on page 2-20 pointing out that the gas turbine train proposal identifies a vertical alignment following the interstate vertical alignment, not allowing for these (wildlife) crossings. The FHWA will not accept foreclosure of the wildlife crossings without justification and coordination without resource agencies that is documented and acceptable.

Response: *FHSRA commits to providing wildlife crossings in accordance with FDOT commitments to provide wildlife crossings along I-4 during construction of the ultimate interstate improvements.*

General The Draft Section 4(f) Evaluation contains information that is not clear about whether the additional ROW needed from Perry Harvey Park will be sufficient for both the High Speed Rail and the TIS Ultimate ROW. It appears that the additional acreage from Perry Harvey Park includes only what is needed for the high Speed Rail, and does not incorporate combined ROW needs for both the TIS Ultimate ROW. This may also be the situation adjacent to Ybor City. The Final EIS and Section 4(f) Evaluation should provide clear information about interim and ultimate ROW, impacts and mitigation, including which parties are responsible.

Response: *Information regarding the ROW requirements for both the TIS Ultimate improvements and High Speed Rail project are further clarified in the Final EIS and Section 4(f) evaluation. This has also been updated with mitigation requirements and the responsible parties.*

U.S. Army Corps of Engineers

1. Based on the submitted information, there appear to be alternatives that have less overall wetland impact acreage and less 'high quality' wetland impact acreage. Our regulations require that a project avoid and minimize impacts to the greatest extent practicable. If a route/technology alternative with higher impacts is chosen, the applicant would have to document why this was the most practicable alternative. This explanation should include an in-depth discussion of the impacts associated with construction of support facilities for the project, including the Operational and Maintenance Facility, stations, and stormwater facilities, and how those impacts were avoided and minimized.

Response: *The process of avoidance, minimization and mitigation has been discussed in the Draft EIS and has been further addressed in Section 4.2.5 of the Final EIS. This will also continue to be a significant consideration during the permitting phase of this project. This process was critical for the justification of the chosen Preferred Alternative. The alignments discussed in the EIS have been revised several times in an effort to avoid various environmental concerns (historical, wetlands, contamination, etc.).*

2. The Draft EIS describes using the mitigation program set up in Section 373.4137 of the Florida Statutes for this project. In order to better document how a project's mitigation offsets the wetland impacts associated with that project, the Corps typically requests that an applicant perform a functional analysis of both the wetland impacts and the mitigation. As this is often not part of mitigation proposed under Section 373.4137, F.S., the Corps will request that you perform a functional analysis when we review the project.

Response: *A WRAP analysis was conducted for each wetland within the study area for the Draft EIS. However, it should be noted that the new State Unified Mitigation Assessment Method became effective February 2004.*

3. Please note that a crossing of the Tampa Bypass Canal, a federal project, will require review by other Jacksonville District elements. The Regulatory Division would coordinate this activity with those other elements as part of the permit application review process.

Response: *The Tampa Bypass Canal crossing will be upstream from a flood control weir, within the non-navigable portion of the Tampa Bypass Canal. The FHSR alignment will be between the existing bridge structures over Tampa Bypass Canal, within the median of I-4. As the FHSR project moves into the design/build phase, coordination for required permits will be conducted with applicable agencies.*

Federal Aviation Administration

1. The FAA understands that a rail corridor and station would be located at the Orlando International Airport. The project sponsor will need to coordinate with the Orlando International Airport during the design of project components and location of the corridor station in order to minimize any impacts to existing and future airport development. All development on the airport is subject to the review and approval of the FAA.

Response: *The FHSRA is committed to working with the Greater Orlando Aviation Authority (GOAA) and the FAA in the development of this project, and will continue to coordinate all aspects of the project with these agencies, especially in relation to the design of project components and stations in the vicinity of the Orlando International Airport.*

The proposed FHSR alignment has been coordinated with the GOAA staff for consistency on the location of the rail alignment as identified in the Orlando International Airport Master Plan. The proposed FHSR station, at the future South Terminal, is located on the rail alignment and issues have been identified relating to the phased construction of this terminal.

2. In accordance with the airport's owner Federal Aviation Grant Assurances, any use of the airport lands would have to be through a lease agreement with the airport subject to FAA approval.

Response: *The FHSRA understands that under the provisions of the FAA Advisory Circular 150/5100-16A Airport Improvement Program Grant Assurances Number One-General Federal Requirements and the Airport and Airway Improvement Act of 1982 (49 USC 2201, et seq.), the airport owner (Greater Orlando Aviation Authority) is not authorized to sell, lease, encumber, or otherwise transfer or dispose of any part of its title or other interests in properties, if portions of the property were acquired utilizing Federal funds, for the duration of the terms, conditions, and assurances in the grant agreement without the approval by the FAA and the Secretary of the Department of Transportation. The FHSRA will coordinate with the Greater Orlando Airport Authority and the FAA throughout the duration of the project's design phase and identification of proposed use of land in the vicinity of the Orlando International Airport.*

State Agency Comments

Florida Department of Transportation, District Five

1. The FDOT is currently approving the 100 percent design plans for the reconstruction of the I-4/US 192 Interchange in Osceola County (FM#242531-1-52-01). Reconstruction of the I-4 mainline will be included as a part of this project. Once reconstruction occurs, the median of I-4 will be as shown in the attached typical sections. Please note that there are sections of the median that will be 40' wide from face of guardrail to face of guardrail (see typical section #1, #2, #5). There are other sections of the median that will be reduced to 28' (see typical section #3, #4). The minimum median width required by the proposers for high speed rail appears to be 44'.

Response: *The proposed high speed rail typical section identifies a 44-ft. envelope through the median of I-4 from face to face of a concrete barrier. It is anticipated that in some areas a 10-ft. paved inside shoulder would be approved with construction of the high speed rail project. This 44-ft. horizontal envelope is consistent with FDOT policy guidance identifying rail envelope clearances for I-4 from the Howard Frankland Bridge in Hillsborough County to Michigan Street in Orange County and from Par Avenue in Orange County to I-95 in Volusia County. As provided in the referenced policy guideline, "exemptions from this policy must provide for the ultimate restoration of the envelope or provide engineering studies demonstrating the adequacy*

of an alternative envelope suitable for the rail line." As discussed with District 5, the current I-4 improvements stated above are an interim improvement. When the high speed rail project enters the construction phase, the 44-ft. rail envelope will incorporate I-4 roadway improvements that have been agreed upon by FDOT. Continuing coordination will be required as the high speed rail project receives funding and moves into the design/build phase.

2. The FDOT has let project 242523-1-52-01 that will 6-lane I-4 from the Polk County line up to US 192. Typical section #2 shows a 64' median with 24' consumed by inside shoulders leaving a 40' median.

Response: *See response to Comment 1.*

3. As noted in the Draft EIS, there are existing bridges that do not provide vertical clearance for the train and will need to be reconstructed. Please identify those in the report.

Response*: Within District 5, CR 545 is identified as not having adequate vertical clearance; 17.5 ft. was identified in the previously referenced FDOT policy guideline. The preliminary engineering conducted for the RFP identified a vertical profile that was depressed from the existing ground to provide the target 17.5-ft. vertical clearance. The proposer ranked number 1 by the FHSRA (Flour-Bombardier) identified replacement of the structure at this crossing, including a cost allowance, as part of their proposal.*

4. Construction of this rail facility will greatly impact I-4 users. An approach to the actual construction on I-4 would need to be discussed in great detail as it is not in the Draft EIS.

Response*: The design/build consultant will be required by FHSRA to use FDOT Design and Specifications to meet requirements for maintenance of traffic plans during construction of high speed rail. Coordination with District 5 will include any concurrent construction along the I-4 corridor. The design/build consultant will coordinate meetings for the development of the maintenance of traffic plans and the outcome of these meetings will be an acceptable plan to both FDOT and FHWA prior to approved use of the interstate ROW for high speed rail.*

5. District V is concerned about how incidents will be managed on I-4 and the appropriate response routes for emergency vehicles accessing the incident. In addition, what is the impact to the interstate when an incident occurs on the high speed rail? How are incidents responded to and what will be the impact on the interstate?

Response*: FRA will require the submittal and approval of specific plans addressing emergency and maintenance access to the guideway, construction access, and construction staging. The design/build process will address specific system safety and security in accordance with FRA regulations through development of a Safety Plan during final design.*

6. Barrier separation from the high speed rail and the interstate is a concern for this District. We have not seen adequate documentation on the type of barrier proposed or if it is

acceptable for this type of separation. We would like to see detailed documentation on this barrier and examples of its use.

***Response**: The FHSRA has identified the barrier requirements for the FHSR, as identified in the RFP documents, and as stated in the Final EIS. The barrier requirements are as follows:*

- *Meeting requirements of NCHRP Report 350 Test Level (TL) 5 guidelines shall be installed between the high speed ground transportation system guideway and the parallel roadway. Such barriers shall be installed where the highway is on tangent*

- *Where the highway is on curve and within 100 ft. of a highway curve, reinforced concrete barriers, meeting the requirements of NCHRP Report 350 TL 6 guidelines, shall be installed between the high speed ground transportation system guideway and the parallel roadway.*

- *Where the guideway is on earthen fill structure with vertical walls exceeding 4 ft. in height above the roadway shoulder, barrier walls shall not be required.*

- *Where the guideway is on pier supported structures within 100 ft. of the highway, NCHRP Report 350 TL 5 barriers shall be required to protect guideway piers and occupants of highway vehicles.*

FHWA has stated that the function of the barriers is to keep motor vehicles out of the fixed guideway, not to keep trains constrained to the guideway. FHWA, in coordination with FDOT, will evaluate the barrier concept that must be accepted in order for FHWA to approve the use of the I-4 median. Coordination with the Fluor-Bombardier team is on-going and will continue throughout the design/build phase to develop an acceptable barrier plan.

The FHSR would be required to determine protective measures necessary to prevent intrusions of vehicular traffic, unauthorized persons, large animals and objects into the rail alignment from the surrounding highway system and overpasses. FHSRA is further required to obtain any and all associated approvals for the barrier, fencing, and intrusion detection systems, in addition to any protective measures that would be required from all Federal and State agencies having jurisdiction within the corridors proposed for use by the FHSR.

<u>Florida Department of Transportation, District Seven</u>

1. Section S.9.1, page S-22: This section, in addition to the MOA itself, will need to be revised/updated based on the recent meeting held with the FHSRA consultants (HNTB/Parsons) on October 8, 2003. During the meeting, we discussed the preliminary engineering analysis our District requested that was required to properly address the potential impacts of the FHSR alignment alternative in the vicinity of the Tampa Interstate Study (TIS) I-4/I-275 interchange (ultimate ROW footprint). Their proposal is to construct the rail line structure spanning over the I-4/I-275 interchange (and all of it's ramps), aligned within the

median, which would avoid impacts/revisions to our TIS/EIS interchange concept. We agreed that this proposal was acceptable.

We also agreed that an optional alignment located south of the interchange could potentially work, but it would require additional in-depth engineering analysis to assure the proposed structures would avoid additional R/W acquisition from the Ybor City Historic Landmark District. This analysis could be pursued as part of a future re-evaluation of the FHSR EIS. Given their proposal to span the interchange and avoid any adverse effects to the TIS/EIS I-4/I-275 ultimate interchange concept, we would recommend that Secretary Abreu sign the MOA once this proposal is documented within the MOA and the FHSR Draft EIS. Also, the third sentence of this paragraph, the FHSRA should be added since they are a signatory on the MOA along with FDOT, FHWA, and FRA.

Response: *This FEIS includes the revised Memorandum of Agreement (MOA) reflecting the interchange engineering analyses, see Appendix B. Analysis presented to FDOT District 7 staff identified the coordination issues involving an alignment within the ultimate interchange for the I-275/I-4 corridor. Based on this additional coordination, the FEIS, with a MOA, has been prepared with the understanding that the FHSR alignment within the ultimate ROW footprint will not adversely affect current construction operations and improvements, and continued coordination will occur to minimize slight revisions to the design concepts for the ultimate improvements that may occur. The MOA includes a commitment to avoid impacts or additional ROW to the Ybor Historic District during final design. The FHSRA and FDOT have signed the MOA, and it is included in Appendix B of this FEIS.*

2. Section S.2, S.6.11, S.9.1, 1.2, 4.1.7 (p 4-20), 5.2: Within these sections it is stated that the I-4 Master Plan and the TIS set aside R/W to accommodate high speed rail. This is not true. The I-4 Master Plan and TIS set aside an envelope within the median for lightrail transit or HOV lanes, and it was always the intent that when these modes of transportation were developed further that another environmental document would be necessary to document the environmental impacts of that proposed facility. Again, the TIS MOA did not anticipate the impacts (e.g. noise, vibration, etc.) of a high speed rail facility. The FHSR EIS will need to document these impacts. This language throughout the document must be changed/reworded because it is inaccurate and misleading.

Response: *Sections S.2, S.9.1 and 1.2 have been modified to reflect that the median is for light rail transit or HOV lanes. Section S.6.11 and 4.1.7 (pages 4-20) were not changed. Impacts documented in the Draft EIS, due to the FHSR, were evaluated independently from the previous TIS project. The agreements and documentation contained within both the Draft and Final EIS address impacts to historic structures based upon the high speed rail analysis of proposed alternatives.*

All editorial comments have been noted and the Final EIS has been revised to reflect these comments.

Florida Department of Environmental Protection

[FDEP] staff advises the applicant to provide additional information on potential impacts to public conservation lands adjacent to the proposed project corridor. Coordination with FDEP Central and Southwest Regulatory District staff regarding waste disposal, potential groundwater impacts, air quality attainment status, and Environmental Resource Permitting issues is also highly recommended.

Response: *Comment noted. Additional information on potential impacts to public conservation lands are provided in Sections 4.2.5 of the Final Environmental Impact Statement (Final EIS). FHSRA will coordinate as needed with the FDEP Central and Southwest Regulatory District regarding the issues outlined above.*

Based on the information contained in the Draft EIS and comments provided by the reviewing agencies, the state has determined that, at this stage, the subject project is consistent with the Florida Coastal Management Program (FCMP). The applicant must, however, address the concerns identified by FDEP, FDOT, DOS, SWFWMD, and SFWMD staff as described in the enclosed comments. All subsequent environmental documents prepared for this project must be reviewed to determine the project's continued consistency with the FCMP. The state's continued concurrence with the project will be based, in part, on the adequate resolution of any issues identified during this and subsequent reviews.

Response: *Comment noted. Currently, the FHSRA is addressing the concerns identified by the agencies referenced and is responding to each of them individually. FHSRA will provide FDEP with a copy of the individual agency letters. The FHSRA is committed to resolving any issues identified in the review of the Draft EIS. Resolution of such issues are reflected in the Final Environmental Impact Statement (Final EIS).*

Representative Andy Gardiner, Florida State House of Representatives, District 40

As the State Representative for District 40, I represent a large portion of Orange County through which the high speed train would travel. Therefore, I have responsibility to once again state my position in support of the Bee Line Expressway (S.R. 528) route and against the Greeneway (S.R. 417).

This constitutional mandate should serve the best interests of the taxpayers that voted for it. As a publicly funded project, it should serve the entire community and not just one private entity. The Orange County Board of Commissioners has stated the high speed rail project should serve the convention center and I agree. Therefore, the Bee Line Expressway is the only reasonable option as it connects the Orlando International Airport to the OCCC.

Response*: The FHSRA revised the Preferred Alternative to a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology) on November 10, 2004.*

The Greeneway route presents safety and logistical issues that must not be ignored during the route decision process. Several schools directly abut the 417 ROW, including Meadow Woods Middle School, Hunter's Creek Middle School, Primrose School, Endeavor Elementary School, Meadow Woods Elementary School and the new Vistas Elementary School. Putting a major rail system in the backyards of our schools near the Greeneway could potentially lead to hazardous conditions for our school children. This is not an acceptable risk.

Moreover, there are unanswered questions about the High Speed Rail Authority's use of the Greeneway. Have the true costs of using the Orlando-Orange County Expressway Authority's corridor been analyzed? What will be the long term cost of using the Expressway's ROW? Which organization will be responsible for design features (i.e. sound walls, retained earth walls, etc.) that may have to be added to compensate for changes in the environment as a result of the project's implementation? Who will be responsible for liability issues if a train accident occurs on the corridor? What will be the cost of compensation to the Expressway for lost revenues caused by the placement of the train on the corridor? There are many issues that have not been addressed concerning the usage of the Greeneway.

Response: *The FHSRA revised the Preferred Alternative to a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology). The Preferred Alternative does not use the Greeneway.*

South Florida Water Management District

1. Bee Line Expressway (S.R. 528) Corridor – The SFWMD has fee title to the wetlands adjacent to and west of Shingle Creek, south of the existing S.R. 528 ROW. The wetland system is part of the SFWMD's Save Our Rivers Shingle Creek Project. To date, the SFWMD has acquired approximately 1700 ac. within the 7600 ac. project. These lands are managed by the SFWMD's Land Stewardship Department. SFWMD ownership within the Shingle Creek Project extends from S.R. 528 to the Orange/Osceola County line. If this corridor is selected as the final route, the proposed rail project should be constructed within the existing ROW. Any proposed impacts to the wetlands associated with Shingle Creek should be avoided. Despite increased development in the vicinity of the creek, the creek corridor is still used by many wildlife species. On any given day, deer, otter, raccoon, and other tracks are visible in the mud beneath the S.R. 528 bridge. The wetlands along Shingle Creek at S.R. 528 extend approximately 3 mi. to the north and nearly 12 mi. to the south, all the way to Lake Tohopekaliga.

Response: *The FHSRA's Preferred Alternative is a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology).*

The process of avoidance will be evaluated further for alignment modification during final design. This is documented in Section 4.2.5 of the Final EIS. In addition, a continuing process of avoidance, minimization, and mitigation will be a significant effort performed during the permitting phase of this project. This process will be critical for the justification of the chosen alignment. Avoidance and minimization was, however, addressed during the development of

alternatives and Draft EIS process. The alignments have been revised several times in an effort to avoid various environmental concerns (historical, wetlands, contamination etc.).

At this time, proposed wetland mitigation will be pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all mitigation requirements of Part IV, Chapter 373, F.S. and 33 U.S.C.s 1344. Under S. 373.4137 F.S., mitigation of FHSR wetland impacts will be implemented by the appropriate WMD where the impacts occur. Each WMD develops a regional wetland mitigation plan on an annual basis to be approved by the Florida State Legislature that addresses the estimated mitigation needs. The WMD will then provide wetland mitigation for specific project impacts through a corresponding mitigation project within the overall approved regional mitigation plan. FHSRA will provide funding to the WMD for implementation of such mitigation projects. An emphasis will placed on attempting to provide in-kind mitigation in the same local basin and in accordance with the appropriate mitigation ratios. Section 4.2.5 Wetlands, of the Final EIS includes this discussion.

2. Central Florida Greenway (S.R. 417) Corridor - The SFWMD has fee title to the wetlands adjacent to Shingle Creek (east and west sides) both north and south of the existing S.R. 417 ROW. The SFWMD's property ownership extends north of S.R. 417 along Shingle Creek to about 4.5 mi. south of S.R. 528. Any proposed acquisition and additional ROW for the proposed rail project would fragment the wetlands along the creek and jeopardize the wildlife species using the creek corridor.

Response: *The FHSRA's Preferred Alternative is a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology). Thus, no wetlands will be affected in the Greenway Corridor.*

3. In previous correspondence on this project, the applicant was advised that, pursuant to the Operating Agreement between the FDEP and the SFWMD, the FDEP will be conducting the review of the Environmental Resource Permit (ERP) application for this project. However, there are various references in the Draft EIS to both agencies being involved in the ERP review process.

Response: *Comment noted. The Final EIS is amended to reflect this comment.*

4. Section 4.7.2 of the Draft EIS (page 4-114) should indicate that a Water Use Permit may be required from the SFWMD for certain construction dewatering activities.

Response*: Comment noted. That change is reflected in the Final Environmental Impact Statement (Final EIS).*

Southwest Florida Water Management District

1. Pursuant to Chapter 62-113, F.A.C. and the Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S. Between SWFWMD and Department of Environmental Protection, Section II.A.1.(q) and (r), the FDEP has regulatory authority over wetland resources and surface water management for the FHSR project. Therefore, the DEP will be

the agency responsible for the issuance of any required Environmental Resource Permits in the project study area occurring within the District.

Response: *Comment noted. Section S.12 of the Final EIS provides a summary of the agencies who will be overseeing the permitting process.*

2. A "Works of the District" permit may be required to cross the Tampa By-Pass Canal. This will depend on where the crossing would occur and whether any impacts would occur outside of the Department of Transportation Right of Way. This crossing will also require coordination with the District's Land Resources and Operations Departments and the USACE, which must approve any projects involving the Tampa By-Pass Canal.

Response: *The Tampa Bypass Canal crossing will be upstream from a flood control weir, within non-navigable Tampa Bypass Canal. The FHSR alignment will be between the existing bridge structures over Tampa Bypass Canal, within the median of I-4. As the FHSR project moves into the design/build phase, coordination for required permits will be conducted with applicable agencies.*

3. Any wells requiring abandonment due to construction in the railway corridor, within the District, will require abandonment by a Florida certified well driller and a permit from the District. Also, water supply wells, or other potable sources, associated with stations located within the District may require a Water Use Permit as well.

Response*: Comment noted. The need for either permit will be identified during the Design and Permitting phases of the FHSR project.*

Local Agency Comments

City of Auburndale and Town of Polk City

The City of Auburndale and the Town of Polk City strongly suggest that the Polk County terminal be located in East Lakeland at the I-4/Polk Parkway East interchange. The two local governments cite various reasons why a terminal at this location should be considered including: proximity to the newly selected site for the University of South Florida; a majority of the County population resides on the east side of the Polk Parkway; more central location that provides easier access to residents on both sides of the County via the Polk Parkway thereby increasing travel on the Polk Parkway; and there is large amount of land available for a rail terminal at this location.

Response: *The ridership analysis included detailed origin-destination questionnaires throughout the corridor. The proposed station locations identified in the Draft EIS included both the Kathleen Road interchange and the West Polk Parkway interchange as potential sites for the Polk County station. The Kathleen Road interchange area will require that the mainline of the high speed rail alignment leave the median of I-4 unless the interstate is reconstructed to allow additional median width. Under either scenario this is additional cost versus locating the station in the median as the area at the West Polk Parkway site would allow. The West Polk*

Parkway site provides a strong indication of attracting riders from the Lakeland/Polk County area currently utilizing Polk Parkway into Tampa/Hillsborough County. The West Polk Parkway station utilizes this ridership attraction as a park and ride facility. The Kathleen Road interchange area provides an existing population center and proximity to local transit that will provide a ridership base for a potential station. With consideration of these factors, the Final EIS documents the environmental impacts of both sites as a potential station. This will allow for additional coordination by the City of Auburndale and Polk County with the Design, Build, Operate, Maintain and Finance (DBOM&F) Team and the FHSRA for concurrence on a final station site.

City of Lakeland, Community Development Department

The City of Lakeland Community Development Department made the following comments to be included in the record for the FHSR public hearing.

Comment A Of the final two vendors for the high speed rail system, one proposed a system driven by what appears to be similar to jet engines. While each system is sure to have various advantages and disadvantages, we are quite concerned about the noise impacts from a system that would utilize jet-engine type power. Even without a station near residential uses, to have such a train traverse residential areas along the corridor could be disruptive to residents and potentially have an adverse effect upon the value of impacted properties.

Response: *Based on the comparative noise analysis of the gas turbine system and the electrified system, the noise impacts of the gas turbine train are similar if not less than the electric train. This analysis results from the consideration of a number of variables that are specific to each proposed system including: proximity of the receiver to the track, the train speed at the specific receiver, and the track height at the specific receiver. The combinations of these factors, the two power sources for operation, and the consideration of additional trips proposed in the operations plan of the electric train cause the electric train to have more overall noise impacts than the gas turbine train. The FHSRA has committed to mitigating noise impacts that exceed the FRA's criteria for severe impacts. Mitigation will be coordinated with local communities during the final design phases of the project.*

On the other hand, it would seem crucial that any electric-driven system have substantial back-up systems for reliability during the frequent storm events that Central Florida experiences that include high frequency lightning events to potential hurricane-force events. Given that residents and businesses frequently experience electricity outages during storm events, electric-based systems may be perceived to be vulnerable to these same events. The reliability of the train is important for daily users of the train as well as those who might use the train during an emergency and/or coastal evacuations situation.

Response: *Power would be supplied from three substations along the route from Tampa to Orlando so that even if one of the substations is unable to supply power, the others will take over.*

Comment B We understand that the high speed rail system route will be within the I-4 corridor, not CSX rail, in the Lakeland area. We also understand from both vendors that an issue of the I-4 corridor as regards any station location is the width of the median, i.e. width of land available upon which to build the Lakeland area station site. *We would appreciate confirmation of the interchange locations at which an adequate median width exists for a high speed rail station within the vicinity of the City of Lakeland.* The vendors contend it only exists at the I-4/West Polk Parkway interchange (excepting perhaps US 98 interchange since it is being built to the 10 lane master plan design for I-4.) Also, it is not clear if it might be economically feasible to design the proposed interchange on I-4 for the Williams DRI property and possible USF campus to accommodate a station in the median at that location.

Response: *The I-4 median does not provide adequate width for a station within the vicinity of the City of Lakeland unless the I-4 mainline is redesigned. The preliminary engineering phase of the FHSR project accounts for the approved future buildout of I-4 to the proposed ultimate improvements. The I-4 interim phase currently under construction is based on this ultimate plan with respect to drainage and ROW requirements. Any revisions to the current ultimate plans and the interim improvements, including accommodation of a median station within the proposed interchange associated with the Williams DRI/USF Campus, will result in additional reconstruction of the I-4 mainline and the acquisition of additional ROW.*

We remain concerned that both vendors seem decided about this Western Polk Parkway station location even though it is fairly removed from much of the City and County's residential populations and is not located where future densities are likely or suitable. After all, station location proximate to a population/ridership base would seem to correlate strongly to ridership numbers and financial feasibility of the system.

Response: *The ridership analysis included detailed origin-destination questionnaires throughout the corridor. The proposed station locations identified in the Draft EIS included both the Kathleen Road interchange and the West Polk Parkway interchange as potential sites for the Polk County station. The Kathleen Road interchange area will require that the mainline of the high speed rail alignment leave the median of I-4 unless the interstate is reconstructed to allow additional median width. Under either scenario this is additional cost versus locating the station in the median as the area at the West Polk Parkway side would allow. The West Polk Parkway site provides a strong indication of attracting riders from the Lakeland/Polk County area currently utilizing Polk Parkway into Tampa/Hillsborough County. The West Polk Parkway station utilizes this ridership attraction as a park and ride facility. The Kathleen Road interchange area provides an existing population center and proximity to local transit that will provide a ridership base for a potential station. With consideration of these factors, the Final EIS documents the environmental impacts of both sites as a potential station. This will allow for additional coordination by the City of Lakeland and Polk County with the Design, Build,*

Operate, Maintain and Finance (DBOM&F) Team and the FHSRA for concurrence on a final station site.

In addition, we have the following concerns about any station location:

- Proximity to existing fixed route transit and costs to extend transit facilities to the station;

Response: *Issues of extending modal connectivity to the proposed station site include extension of route service (i.e. bus service). The cost associated with extending local bus service to the station, for example, and the benefits to the service provider will require further coordination with the FHSRA and the operator of the High Speed Rail as design of station and specific operational plan and requirements are identified. This coordination will include the DBOM&F Team (Fluor-Bombardier) in the design/build phase.*

- Cost to the City (or County) to make any roadway improvements necessary for station accessibility.

Response: *Station locations were identified that anticipated minimal local roadway improvements. As stated in the RFP documents, proposers were required to consider design modifications and costs for improvements to local roads for the Kathleen Road interchange and the West Polk Parkway station sites. It is anticipated that roadway improvements in the immediate area of any station will be required as part of the FHSR and further coordination will identify specific roadway improvements in the design/build phase. Any roadway improvements will be coordinated with local agencies, including the City of Lakeland.*

- Visual impact of a high speed rail station if located vertically at a high point within the I-4 median; and any operational impact of the station on the interchange itself.

Response: *Visual impacts of a station will be coordinated with various agencies, including the City of Lakeland, through the design/build phase of the project. Based on ridership estimates, the station locations will have minimal impact on interchange operations.*

<u>Pinellas County MPO</u>

We believe the initial phase from Pinellas County to Orlando should be reviewed at one time in this environmental impact evaluation. The decisions contained in the document as to the placement of stations could be affected by the additional information of the corridor west of downtown Tampa and across Tampa Bay to Pinellas County. The study had to presume a station in the vicinity of the downtown Tampa area and there was not an option to evaluate how that location might be affected with a broader perspective. Also, this broader perspective would also affect the selection of technology with respect to which company is selected. It is not documented as to which technology is better suited to proceed west through Tampa and across Tampa Bay to Pinellas County.

Response: *The FHSRA, in consultation with the FRA, determined the Tampa to Orlando segment represented logical termini for the first phase. In 2002, the FHSRA indicated the phase of the system to be built (Phase 1, Part 1) would be from Tampa to Orlando with an extension to St. Petersburg. The FHSRA completed the Draft EIS as part of the PD&E process for the Phase 1, Part 1 project from Tampa to Orlando. The corridor west of downtown Tampa and across Tampa Bay extending to St. Petersburg would be included in Phase 1, Part 2 of the project implementation. The proposed station location in Tampa does allow flexibility to potentially extend the tracks to the west. As of this date, Phase 1, Part 2 has been the subject of a preliminary planning level study, which was presented in the FHSRA's 2002 Report to the Legislature. According to the FHSRA 2004 Report to the Governor and Legislature, Phase 1, Part 2 from Tampa to St. Petersburg will be evaluated in more detail by the FHSRA subject to funding in fiscal year 2004-05. The selection of appropriate technology for the corridor from Tampa across Tampa Bay to Pinellas County was not within the scope of the preliminary planning level study; however, it should be addressed as part of Phase I, Part 2.*

Tampa Bay Regional Planning Council

The Planning Council's finding states the Draft EIS is consistent with the Strategic Regional Policy Plan (SRPP); but also notes the referenced project does not extend into Pinellas County.

Response: *In 2002, the Authority indicated the first phase of the system to be built (Phase 1, Part 1) would be from Tampa to Orlando with an extension to St. Petersburg. The extension to St. Petersburg is Phase 1, Part 2 of the project implementation. As of this date, Phase 1, Part 2 has been the subject of a preliminary planning level study, which was presented in the Authority's 2002 Report to the Legislature.*

Environmental Protection Commission of Hillsborough County

1. Wetlands appear to exist within the portion of the project within Hillsborough County and have not been delineated by the staff of the EPC. A formal determination of the wetland boundary is necessary to determine the avoidance of wetland impacts during site development.

Response: *A formal wetland jurisdictional survey will be produced during the permitting effort. Review and approval of these lines will be conducted by appropriate local, state and federal agencies.*

2. Once the EPC Wetland Line is established, it must be surveyed by a surveyor registered in the State of Florida. The surveyed wetland line must be approved by the EPC staff and incorporated into the site plan for the project. Prior to a recommendation of construction plan approval from this agency, the wetland delineation for this property must be completed through the submittal of Specific Purpose Wetland Delineation Surveys to this agency for review and approval. The approved wetland lines must be shown on all future plan submittals.

Response: *Comment noted. The FHSRA will comply with the procedure as outlined above.*

3. Wetland lines, wetland areas and wetland setback lines must be labeled "EPC Wetland Line", "Wetland Conservation Area" or "Wetland Preservation Area", and "30-ft. Wetland Conservation Area Setback Line" or 50-ft. Wetland Preservation Area Setback Line" respectively. Failure to properly label these features on future plans may result in a recommendation of denial from this agency.

Response: *Comment noted. All future plans will be labeled as outlined above.*

4. A 30-ft. setback must be maintained around Wetland Conservation Areas and a 50-ft. setback must be maintained around Wetland Preservation Areas, with no land alteration therein. Land alterations within this setback are restricted, as per the Hillsborough County Land Development Code. Exceptions are allowed only with specific recommendation of the EPC and with approval of Hillsborough County's Natural Resources Review Team of the Planning and Growth Management Department, and/or the Land Use Hearing Officer. The setback line must also be shown on all future plan submittals.

Response: *Comment noted. Setbacks from wetland boundaries will need to be coordinated during the permitting phase. Setback lines will be shown on all future plan submittals.*

5. Chapter 1-11.01, The EPC Wetland Rule, states that development requiring mitigation be an avenue of last resort when reasonable use of the property is otherwise unavailable. The applicant shall seek to first avoid all impacts to wetlands. If avoidance is impossible, then minimization of the impact to the least amount of encroachment necessary will be considered. A wetland impact justification and mitigation proposal must be submitted to the EPC along with the appropriate review fee. The encroachment/mitigation plan should be for the project in its entirety. In addition, Chapter 1-11.08, Wetlands, Rules of the EPC requires at a minimum "acre for acre replacement of the same or better type of wetland."

Response*: A formal wetland jurisdictional survey will be produced during the permitting effort. Review and approval of these lines will be conducted by appropriate local, state and federal agencies. At this time, wetland impacts, which will result from the construction of this project, will be mitigated pursuant to S. 373.4137 F.S. (Senate Bill 1986) to satisfy all wetland mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C.s. 1344. Under this statute, transportation improvement mitigation can be achieved through long range planning, rather than a project-by-project basis. The mitigation is carried out by either the FDEP or the WMD. Under S. 373.4137 F.S., mitigation of FHSR wetland impacts will be implemented through the FDEP. Each WMD has developed a regional wetland mitigation plan to address the estimated mitigation needs. This plan is updated on an annual basis and approved by the Florida State Legislature.*

Informational Comments: The Hillsborough EPC also submitted comments regarding impact justification and mitigation, construction plans and other comments of a general nature.

Response: *Comments have been noted.*

Air Division Comments:

Dust – FHSRA is responsible for minimizing the generation of dust and effectively addressing all nuisance complaints that may arise during both the construction and operational phases of the project.

Response: *Comment noted.*

Noise – Several of the proposed corridor alignments pass through noise sensitive areas of Hillsborough County. During the rail construction phase, FHSRA must adhere to the noise standards set forth in Chapter 1-10, Rules of the EPC. We also request the opportunity to review and comment on any studies/reports detailing the project noise impacts to surrounding areas. FHSRA is additionally required to comply with the noise criteria and guidelines set forth by the Federal Transit Administration during the operation of rail service.

Response: *Comment noted. FHSRA, in coordination with the FRA (as the lead federal agency) and EPA, will comply with all applicable Federal noise standards, criteria and guidelines in the construction phase and in the operation of rail service.*

Building demolition/ renovation – FHSRA must comply with State regulations set forth in F.A.C. 62-204 and the Federal NESHAP standards, as adopted by EPC, regarding building demolitions and renovations.

Response: *Comment noted. FHSRA will comply with all applicable State and Federal standards and regulations.*

Asbestos – FHSRA must timely submit to EPC all required asbestos notifications, inspection reports and applicable fees.

Response: *Comment noted. FHSRA will comply with all applicable asbestos requirements.*

Open Burning – FHSRA must obtain authorization to conduct any open burning as it relates to land clearing activities. FHSRA should be made aware that open burning for purposes other than land clearing is not permitted in Hillsborough County. FHSRA is also responsible for all applicable inspection fees.

Response: *Comment noted. FHSRA will comply with all applicable requirements regarding open burning.*

Additional Comments

Several designated site are expected to be severely impacted with noise by rail operations. A map of noise contours detailing the noise levels and the extent to which they are expected to emanate from the rail line would be a beneficial visual in understanding the noise impact.

Response: *Comment noted.*

It should be noted that Hillsborough County is moderately attaining the National Ambient Air Quality Standards. Nationally, oxides of nitrogen (NOX) is the predominate ozone precursor, and it has proven to be the most difficult to control. Based on the Draft EIS methodology used to calculate net emissions of high speed rail implementation, Hillsborough County should expect a net increase in NOX emissions using either the gas turbine or electric technology as a power source.

Response*: The primary objective of the air quality evaluation was to demonstrate that the FHSR project would not require a conformity determination in accordance with the General Conformity Rule (40CFR Part 93 Subpart B). For the purpose of demonstrating that a conformity determination would not be required, a worst-case approach was used in the air quality evaluation for both the gas turbine and electric technologies. The FHSRA has recommended the Fluor-Bombardier Team as the First Preferred Proposer utilizing the gas turbine technology. Based on the worst case approach, the NOX emissions net increase for the Preferred Alternative is 52.6 tons per year. EPA has designated Hillsborough County as a maintenance area for ozone; therefore, the General Conformity Rule is applicable to the portion of the FHSR project in Hillsborough County. Predicted increases in VOC or NOX for the design/build alternatives are less than the de minimis rates (100 ton per year rate of increase) documented in the General Conformity Rule; therefore, a conformity determination is not required for this project.*

<u>School Board of Orange County</u>

The School Board of Orange County submitted comments expressing strong opposition to the proposed Greeneway route and cited a number of reasons including: the route goes through residential neighborhoods and is adjacent to several Orange County public schools; the noise and vibrations of any technology being considered is likely to have a negative impact on the residential communities and schools and therefore on the quality of life of residents and quality of the learning environment for students; and unforeseen safety issues. Further, the School Board expressed concerns regarding route service to the OCCC and Disney World, considering the significant investments made by local taxpayers. The School Board also noted that a stop at both OCCC and Disney World would provide an opportunity for increased ridership and revenues because Disney and the International Drive businesses could market visitor packages that include rail transportation as an amenity. The School Board urged the High Speed Rail Authority to consider the Bee Line Expressway route as a viable option. The School Board stated the Bee Line Expressway route would be the most economically feasible and least intrusive route if Disney fully participates.

Response*: The FHSRA's Preferred Alternative is a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology).*

Regarding noise and vibrations, the noise impacts of the gas turbine train, based on the comparative noise analysis of the gas turbine system and the electrified system, are similar if not less than the electric train. Noise impacts for all of the design/build alternatives that were considered are attributed to track proximity and height, as well as train speed. The noise and vibration analysis completed as part of the environmental documentation for FHSR included schools. The FHSRA has committed to mitigating noise impacts that exceed the FRA's criteria for severe impacts. Mitigation will be coordinated with local communities during the final design phases of the project.

The FHSRA shares the concern regarding public safety and considers this the highest priority as we proceed with this project. The design/build process will address specific system safety and security in accordance with FRA standards through development of a safety plan following approval of the environmental process.

Polk Group of Sierra Club, Florida Chapter

The Polk Group of Sierra Club, Florida Chapter submitted written comments to be included in the record for FHSR project public hearing.

The Polk Group of Sierra Club, Florida Chapter would like indicate to the FHSRA its preference for the Global Rail Consortium Electric (GRC) Train System alternative.

Response: *Comment noted and has been made known to the FHSRA. FHSRA has selected the technology based on project costs, systems operation, and environmental considerations; however, the selected design/build firm has been directed to identify costs for a potential future transition to electric technology.*

The Polk Group of Sierra Club, Florida Chapter strongly supports both rail alternatives including the wildlife corridors in their part of the I-4 alignment.

Response: *The FDOT has committed to providing wildlife crossings along I-4 during construction of the ultimate interstate improvements. Since the High Speed Rail is considered to be a viable portion of the ultimate I-4 corridor, the selected proposer will include wildlife crossings in its final design.*

The Polk Group of Sierra Club, Florida Chapter also supports the preferred route alternative through the I-4 corridor as proposed.

Response: *Comment noted.*

It should also be noted that the Draft EIS didn't appear to clearly describe the impact avoidance and cost differential by the trip rate reductions to the Interstate system against the cost and impacts providing for these trip rates through interstate expansion.

Response: *The ridership forecasts, completed for year 2010, indicated a reduction of over 750,000 vehicles annually traveling on I-4. This reduction is not sufficient to significantly*

improve the level of service on I-4 with many segments of the roadway remaining at over capacity. The ultimate I-4 improvements envisioned, with the addition of an alternative mode of transportation within the interstate corridor, will still be required for acceptable levels of service for interstate operations. Additional information on the ridership analysis is found in the Investment Grade Ridership Study.

League of Environmental Organizations

The League of Environmental Organizations (LEO) submitted written comments to be included in the record for the FHSR project public hearing.

1. The LEO supports the statements made on behalf of the Sierra Club, Polk Group.

Response: *Comment noted.*

2. It should be noted that the design criteria for the wildlife corridors are water-centered. While the primary function of these corridors is the safe movement of wildlife through the Interstate system that has been cut off since its construction, the secondary function is to make an effort to provide a more effective reconnection of the surface hydrology through these corridors.

   The environmental advantages are the reintroduction of water to the Peace River System east of S.R. 33 and I-4. The SWFWMD is proposing a recovery plan for the Peace River system and the reconnection of historic flows through the wildlife corridor will have a significant effect on its recovery.

   While there are environmental advantages to the reconnection of surface hydrology through eastern Green Swamp wildlife corridors, one of the principal advantages to the Green Swamp water centered wildlife corridors is flood hazard mitigation. Currently there are flood impact stemming from the Lake Lowery area of Polk County and through the southern portions, and to a lesser degree, the median of, I-4. This area demonstrates a mixed basin surface hydrology and the flows will benefit the Withlacoochee River System as well as the Palatlakaha/Ocklawaha River system.

Response: *Comment noted.*

3. The LEO study was the basis of a (MOA) between the SWFWMD, the FDEP, and the Florida DOT. This provided a consolidated mitigation area for all I-4 ROW including the acquisition required for the "ultimate expansion." Nothing limits the FHSR system from participating in any additional mitigation required for the High Speed Rail Project. We recommend that the High Speed Rail Authority participate, as much as feasible, with the consolidated mitigation project.

Response: *It is the intent of the FHSR to provide wetland mitigation through Senate Bill 1986 (F.S. Chapter 373.4137 Mitigation Requirements) and provide funding to the SWFWMD for the construction of new wetlands of equal or better function and value.*

4. The LEO provided Florida DOT design criteria when constructing the wildlife corridors for the I-4 expansion. The LEO strongly recommends following these recommendation during its portion of construction in the I-4 ROW. A copy of these recommendations can be made available to the FHSRA by contacting John Ryan at the address or phone number listed above.

Response: *The FDOT has committed to providing wildlife crossings along I-4 during construction of the ultimate interstate improvements. Since the High Speed Rail is considered to be a viable portion of the Ultimate I-4 corridor, the successful proposer will include wildlife crossings in its final design.*

Sierra Club, Florida Chapter

The Florida Chapter of the Sierra Club urges the commission to choose the electric technology of the Global Rail consortium over the diesel technology of Bombardier. This technology would be faster, less polluting, more energy efficient, and quieter. The electric train would be faster than diesel (150 mph versus 125 mph) between Orlando and Tampa. Although the time variation between the two modes is slight, speed difference will be more pronounced as this system is expanded to cities such as Miami where electric trains could travel there in one hour in fifteen minutes versus two hours and a half by diesel. An Electric Train would provide a real speed incentive for people to take mass transit instead of their SUV's and automobiles.

Response: *Comment noted. The Sierra Club's preference for the electric technology was made aware to the FHSRA. FHSRA has selected the technology based on project costs, systems operation, and environmental considerations; however, the selected design/build firm has been directed to identify costs for a potential future transition to electric technology.*

Travel by high speed rail pollutes less than air or automobile transportation. When comparing the electric vs. diesel locomotion, electric emits fewer greenhouse gasses: Electric emits 30 percent of Nitrous oxides vs. diesel engine. Carbon Monoxide gasses are reduced by 20 percent by using electric. Finally, Volatile Organic Compounds are reduced by 9.1 tons per year by electric locomotive use.

Response: *Comparing train technologies, the amount of emissions from a gas turbine train is higher than the amount of emissions from an electric train. This is a result of the relatively strict controls and emission reduction measures employed by power plants, which would be the source of electricity for the electric train technology. Overall, the FHSRA identified the gas turbine proposal as the Preferred Alternative with consideration of the environmental impacts, project costs, ridership, input received at the public hearing, and potential revenue.*

Electric-Powered trains will reduce foreign oil dependency because electric is twice as efficient as diesel. The comparison of electric vs. diesel consumption in BTU's is 195,864 million BTU (electric) versus 373,029 million BTU (diesel) from Orlando to Tampa.

Response: *Energy requirements for fossil fuel consumption for the gas turbine engines are substantially higher than the fossil fuel required togenerate electricity for the electric trains. Highway energy consumption decreases for all alternatives due to diverted automobile ridership.*

The total change, however, is a negligible fraction of Florida's total energy consumption for surface transportation (which includes all non-military vehicle operation on highways, railroads, and fixed-guideway public transportation).

Electric technology integrates better in a community than diesel technology as it has thirty (30) percent less vibration impacts as diesel. Utilizing electric eliminates intrusive, overbearing mass transit systems. Businesses, residents, and mass transit will be come holistically integrated through 21st century community planning.

Response: *Comment noted.*

The Global Rail bid has more carrying capacity than the Bombardier bid. This is reflected within the artificially low Bombardier price. They have a lower price for their transit system because they use only a single track from Tampa to Disney compared to a dual track for the Global Rail bid. This makes the Global route safer and easier to increase head ways as demand increases.

Response: *As stated previously, the FHSRA identified the gas turbine technology as the Preferred Alternative. At the subsequent December 2003 FHSRA Board meeting, the Authority directed the preferred proposer to include further options to the Preferred Alternative. These options include:*

- *Double track for the entire alignment*
- *Provisions for future electrification.*

The FHSRA considered the ridership and revenue projections of each proposal in identifying the preferred proposer.

While the Sierra Club is concerned about the technology chosen for the above reasons, we are also concerned that the route serves the maximum number of people. The people of Florida passed the High Speed Rail Constitutional Amendments for the purpose connecting the major urban centers in the state with each other. The alignments going along the Bee Line Expressway to the OCCC would serve the citizens of Tampa and Orlando very well. However, the Greenway alignments straight to Disney effectively bypasses most of the people living in central and west Orange counties and major tourist destinations such as Sea World, Universal Studios and the OCCC. The Bee Line Expressway route would easily serve Disney and Osceola County as well as Sea World, Universal Studios and the OCCC. The Sierra Club questions why the citizens of Florida should fund or pay for a system that serves one customer?

***Response**: The FHSRA's Preferred Alternative is a combination of the I-4 alignment in Hillsborough and Polk counties and the Bee Line Expressway (S.R. 528) alignment in Orange County (gas turbine technology).*

The Sierra Club supports the building of a high speed rail system in Florida. However, if the public is expected to support the building of this system, it is critical that it be built in a manner that best serves the residents of Florida. This can only be done by selecting the Global Rail Consortium bid.

***Response:** Comment noted. FHSRA took into consideration environmental impacts, financial aspects of the proposal, strength of the Design/Build team and the proposed design/build costs. The FHSRA has recommended the Fluor-Bombardier Team as the First Preferred Proposer utilizing the gas turbine technology.*

East Polk Committee of 100

The East Polk Committee of 100 submitted written comments regarding the FHSR project.

I attended the High Speed Rail Meeting on October 8, 2003 in Lakeland, Florida and in my remarks stated that it was unreasonable for the High Speed Rail Authority to throw out the possibility of a stop at the Polk Parkway and NE I-4 interchange. Our organization has gone on record in the past in this regard and want to again support a stop at the Polk Parkway and Northeast I-4 interchange. We strongly feel that this stop would benefit the entire county for the following reasons:

- Better than 53 percent of the entire population of Polk County lives on the east side of the parkway.
- The Polk Parkway provides easy access to both businesses and residents of both sides of the county. The other proposed locations would limit access from the entire eastern and southern sides of the county. The further removed from the Polk Parkway and East I-4 interchange, the less the High Speed Rail will be used.
- Increased travel on the Polk Parkway would significantly increase tolls helping to fund the expansion to full four-lanes on the NE leg.
- This proposed stop would still be considered a Lakeland address due to recent annexation.
- There is a great deal of open land in this area, which would provide well for parking lots, retail space, restaurants and car rental facilities.
- It just makes sense that a revolutionary High Speed Rail System would be connected to a High Speed Roadway such as the Polk Parkway rather than obscure two-lane roads.
- The University of South Florida has now picked the Northeast area of the parkway for their new campus.
- The Williams' Companies are in the process of getting ready to apply for an interchange, which would put a second interchange at the station.

We urge you to consider the stop, which ultimately would be the best thing for all of Polk County and the High Speed Rail system.

Response: *The ridership analysis included detailed origin-destination questionnaires throughout the corridor. The proposed station locations identified in the Draft EIS included both the Kathleen Road interchange and the West Polk Parkway interchange as potential sites for the Polk County station. The Kathleen Road interchange area will require that the mainline of the High Speed Rail alignment leave the median of I-4 unless the interstate is reconstructed to allow additional median width. Under either scenario this is additional cost versus locating the station in the median, as the area at the West Polk Parkway site would allow. The West Polk Parkway site provides a strong indication of attracting riders from the Lakeland/Polk County area currently utilizing Polk Parkway into Tampa/Hillsborough County. The West Polk Parkway station utilizes this ridership attraction as a park and ride facility. The Kathleen Road interchange area provides an existing population center and proximity to local transit that will provide a ridership base for a potential station. With consideration of these factors, the Final EIS includes the environmental impacts of both sites as a potential station, allowing for more than one site results in additional coordination by the cities of Lakeland, Auburndale, Polk City and Polk County with the Design, Build, Operate, Maintain and Finance (DBOM&F) Team for concurrence on a final station site during the design phase.*

6.5 REFERENCES

1. Investment Grade Ridership Study; AECOM and Wilbur Smith Associates; November 20, 2002.

2. Florida High Speed Rail Corridor Screening Report, PBS&J; October 2002.

SECTION 7
LIST OF PREPARERS

Federal Railroad Administration (FRA)	**Education and Experience**
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PBS&J

Document Preparers

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Brad Isler Engineering Technician	Working toward B.S. in Civil Engineering at the University of South Florida and 2 years of experience in civil engineering.
Kelly Jordan Graphic Designer	B.A. in Management and 9 months of graphic design experience.
Luz Melendez Senior Secretary	16 years of administrative, managerial and database administration experience.
Scott Shaw Graphic Designer	10 years of experience in graphic design.
Karol Sihite, C.P.S. Senior Planning Technician	Certified Professional Secretary (C.P.S) and 14 years of administrative experience.
Dana Tirrell Administrative Assistant	M.S. in Child Psychology, B.A. in Psychology and 7 years of administrative experience.

Parsons Transportation Group

Data Collection and Analysis

Duncan Allen Senior Technical Consultant	M.S.E. in Civil Engineering with 29 years of experience in rail/transit engineering.

Robert De Santo Principal Technical Consultant	Ph.D. in Environmental Studies with 35 years of environmental stewardship.
William Neville Vice President	M.S.E. in Civil Engineering with 29 years of experience in rail/transit engineering

PSI

Data Collection and Analysis

Larry Moore, P.E. Vice President	B.S. in Civil Engineering with 16 years of experience in geotechnical studies.
Don Polanis Vice President	B.S. in Civil Engineering with 14 years of experience in geotechnical studies.

GEC

Data Collection and Analysis

Gary Kuhns, P.E. Senior Geotechnical Engineer	M.S.E. in Civil Engineering with 20 years experience in geotechnical studies.
Mark Canty, P.E. Senior Project Manager	B.S. in Civil Engineering with 18 years experience in geotechnical and contamination studies.

HNTB

Document Preparers

Caron Kloser Senior Planner NEPA Support	M.S. in Horticulture, B.S. in Agronomy with 18 years experience in environmental document preparation.

Data Collection and Analysis

Thomas R. Biggs, Jr., P.E. General Consultant Deputy Program Director, Transportation Planning	Florida Professional Engineer with over 25 years experience in the area of transportation planning.

Kate Brady, E.I. Staff Engineer Transportation Planning	B.S. in Civil Engineering with 3 years of experience in transportation engineering.
Charles H. Quandel, P.E. Vice President – Rail Rail Engineering	M.S. and B.S. in Civil Engineering with over 32 years experience in rail and transportation projects.
Adrian B. Share, P.E. Senior Vice President General Consultant Program Director	B.S. in Civil Engineering with 19 years of experience in major transportation projects.
Kevin J. Thibault, P.E. Vice President – Orlando Office PD&E Project Manager	B.S. in Civil Engineering with 18 years of experience in major transportation projects.

Archeological Consultants Inc (ACI)

Data Collection and Anaylsis

Marion Almy President	M.A. in Anthropology and 28 years of experience in cultural resource management.
Joan Deming Vice President	M.A. in Anthropology and 28 years of experience in cultural resource management.
Kimberly Hinder Architectural Historian	M.H.P. in Historic Preservation and 11 years of experience in cultural resource management.
Carrie Scupholm Architectural Historian	M.A. in Historic Preservation Planning and 15 years of experience in cultural resource management.
Elizabeth Horvath Senior Project Archaeologist	M.A. in Anthropology and 17 years of experience in cultural resource management.
Lee Hutchinson Senior Staff Archaeologist	M.A. in Anthropology and 12 years of experience in cultural resource management.

Janus Research

Data Collection and Analysis

Ken Hardin President and CEO	M.A. in Anthropology and 26 years of experience in cultural resource management.

Amy Streelman Preservation Planner Senior Architectural Historian	M.H.P. in Historic Preservation and 8 years of experience in cultural resource management.
John Whitaker, Project Archeologist	M.A. in Anthropology and 6 years of experience in cultural resource management.

Harris, Miller, Miller, & Hanson

Data Collection and Analysis

Gregory M. Barr Consultant	B.S. in Mechanical Engineering and 3 years experience in acoustics and engineering.
Carl E. Hanson, Ph.D., P.E. Senior Vice President Supervisory Consultant	Ph.D. in Acoustics, M.S. in Mechanical Engineering, B.S. in Aeronautical Engineering and 35 years experience in acoustics.
David A. Towers, P.E. Principal Engineer	M.S. and B.S. in Mechanical Engineering and 30 years experience in acoustics.

SECTION 8
LIST OF AGENCIES, ORGANIZATIONS, AND PERSONS TO WHOM COPIES OF THE STATEMENT ARE SENT

8.1 FEDERAL AGENCIES

United States Representatives
United States Senators
Advisory Council on Historic Preservation – Office of Cultural Resources Preservation
U.S. Department of Health and Human Services – National Center for Environmental Health
U.S. Department of Health and Human Services – Office of Management Analysis and Systems
U.S. Department of Agriculture – Southern Region, Regional Forester
U.S. Department of Agriculture – Natural Resources Conservation Service, State Conservationist
U.S. Department of Housing and Urban Development, Regional Environmental Officer
Federal Aviation Administration – Airports District Office
Federal Aviation Administration – Regional Director
Federal Emergency Management Agency – Mitigation Division, Chief
Federal Emergency Management Agency – Region IV Office, Regional Director
Federal Highway Administration, Tallahassee, Division Administrator
Federal Transit Administration – Region IV – United States Department of Transportation, Regional Administrator
U.S. Army Corps of Engineers – Regulatory Branch, District Engineer
U.S. Army Corps of Engineers – Regulatory Division, Chief
U.S. Army Corps of Engineers – North Permits Branch, Chief
U.S. Army Corps of Engineers – South Permits Branch, Chief
U.S. Army Corps of Engineers – West Permits Section, Branch Chief
U.S. Army Corps of Engineers – Merritt Island Regulatory Office
U.S. Army Corps of Engineers – Tampa Regulatory Office
U.S. Department of Interior – Bureau of Land Management - Eastern States Office, Director
U.S. Department of Interior – Bureau of Land Management - Jackson Field Office, Field Manager
U.S. Department of Interior – Office of Environmental Policy and Compliance, Director
U.S. Department of Interior – U.S. Fish and Wildlife Service - South Florida Field Office, Field Supervisor
U.S. Department of Interior – U.S. Fish and Wildlife Service - Jacksonville Field Office, Field Supervisor
U.S. Department of Interior – National Park Service – Southeast Regional Office
U.S. Department of Interior – U.S. Geological Survey - Review Unit, Chief
U.S. Department of Interior – Bureau of Indian Affairs – Office of Trust Responsibilities
U.S. Environmental Protection Agency – Region IV, Regional Administrator
U.S. Environmental Protection Agency – Region IV, Deputy Regional Administrator
U.S. Environmental Protection Agency – Region IV, Water Management Division, Director

U.S. Environmental Protection Agency – Region IV, Wetlands Section, Chief
U.S. Department of State – Office of Environment - Health and Natural Resources
U.S. Department of Commerce – National Marine Fisheries Service – Habitat Conservation Division
U.S. Department of Commerce - National Marine Fisheries Service – Southeast Regional Office
U.S. Department of Commerce – National Oceanic and Atmospheric Administration - Ecology and Conservation Office, Director
U.S. Coast Guard – Commander (obr) – Eighth District
U.S. Coast Guard – Commander (oan) – Seventh District
Colorado State University – The Libraries, Documents Librarian
U.S. Environmental Protection Agency, Washington, D.C.
Miccosukee Tribe of Indians of Florida
Muscogee (Creek) Nation
Poarch Band of Creek Indians
Seminole Tribe of Florida
Seminole Nation of Oklahoma

8.2 STATE AGENCIES

Florida State Representatives
Florida State Senators
Office of the Governor - Florida State Clearinghouse - Department of Community Affairs, Coordinator
Florida Department of Environmental Protection - Central District Office, Director
Florida Department of Environmental Protection - Southeast District Office, Director
Florida Department of Environmental Protection - Southwest District Office, Director
Florida Department of Environmental Protection - Land and Recreation Department, Deputy Secretary
Florida Department of Community Affairs
Florida Department of Commerce
Florida Fish and Wildlife Conservation Commission - Northeast Region
Florida Fish and Wildlife Conservation Commission - North Central Region
Florida Fish and Wildlife Conservation Commission - Office of Environmental Services
Florida Fish and Wildlife Conservation Commission - South Region
Florida Fish and Wildlife Conservation Commission - Southwest Region
Florida Department of Health and Rehabilitative Services
Florida Department of State - Division of Historical Resources - Tallahassee
Florida Department of State - Division of Historical Resources - West Central Regional Office
Florida Department of Transportation, Secretary of Transportation
Florida Department of Transportation - Districts 1, 5, and 7, District Secretary
Florida Department of Transportation - Environmental Management Office, Manager
Florida Department of Transportation, Federal Aid Program Coordinator
Florida Department of Transportation - Planning Division

8.3 LOCAL AGENCIES

8.3.1 Regional Planning Councils

Central Florida Regional Planning Council
East Central Florida Regional Planning Council
South Florida Regional Planning Council
Tampa Bay Regional Planning Council

8.3.2 Water Management Districts

St. Johns River Water Management District, Executive Director
South Florida Water Management District, Executive Director
Southwest Florida Water Management District, Executive Director

8.3.3 Local Planning Agencies

Hillsborough County/City –County Planning Commission
Hillsborough County Environmental Protection Commission

8.3.4 Metropolitan Planning Organizations

Hillsborough County Metropolitan Planning Organization
METROPLAN Orlando
Pinellas County Metropolitan Planning Organization
Polk Transportation Planning Organization

8.4 OTHER AGENCIES

1000 Friends of Florida
Agency on Bay Management
Amtrak
Audubon Society Clearwater Chapter
Citrus Connection
City of Auburndale, Mayor
City of Bartow, Mayor
City of Clearwater, Mayor
City of Davenport, Mayor
City of Haines City, Mayor
City of Kissimmee, Mayor
City of Lake Alfred, Mayor
City of Lakeland, Mayor
City of Orlando, Mayor
City of Plant City, Mayor
City of St. Petersburg, Mayor
City of Tampa, Mayor

City of Temple Terrace, Mayor
City of Winter Haven, Mayor
CSX Transportation
Defenders of Wildlife - Orlando
Defenders of Wildlife, Transportation and Wildlife Ecology Coordinator
Florida Audubon Society - Florida State Office
Florida Central Railroad
Florida Native Plant Society - Pinellas Chapter
Florida Public Interest Research Group
Florida Trail Association - Central Florida Chapter
Florida's Turnpike
Greater Orlando Aviation Authority
Great Horizon Land Trust
Green Swamp/Big Cypress Field Office
Hillsborough Area Regional Transit Authority
Hillsborough County Aviation Authority
Hillsborough County, County Administrator
Lakeland Linder Regional Airport
Lake Region Audubon Society
LYNX
National Audubon Society - Main Office
Orange Audubon Society
Orange County, County Administrator
Osceola County, Acting County Manager
Osceola County Parkway, Project Manager
Pinellas County, County Administrator
Polk County, County Manager
Polk County Natural Resources Division - Environmental Lands Program
Polk County Transit Services Division
Polk Parkway Turnpike District
Reedy Creek Improvement District
Ridge Audubon Society
Sierra Club – Central Florida Group
Sierra Club – Polk County Group
Sierra Club – Suncoast Group
Sierra Club – Tampa Bay Group
Sierra Club of Florida - Regional Field Office
St. Petersburg Audubon Society
Tampa Audubon Society
Tampa-Hillsborough County Expressway Authority
The Nature Conservancy, Altamonte Springs
The Nature Conservancy, Tallahassee
UCF, UACTA
Wilderness Trekkers

Appendix A
(Under Separate Cover)

A1: Conceptual Plans
A2: Technology Differences
A3: Corridor Impact Matrix
A4: Typical Sections, Stations, and Maintenance

APPENDIX B

Agency Coordination

B-1: SHPO Concurrence Letter-CRAS Methodology (February/March 2003)
B-2: SHPO Concurrence Letter-Corridor Study CRAS Findings (April 2003)
B-3: MOA for Use of I-4/I-275 ROW (FDOT/FHWA/FRA/FHSRA)
B-4: SHPO Concurrence Letter-PD&E CRAS Findings (September 2003)
B-5: SHPO Concurrence Letter-Section 106 Findings (January 2004)
B-6: City of Tampa-Letter of Park Significance for Perry Harvey Sr. Park (March 2003)
B-7: City of Tampa-Letter of Park Significance for Nuccio Parkway Linear Park (March 2003)
B-8: SFWMD-Letter of Significance for Shingle Creek Greenway (April 2003)
B-9: WQIE Checklist and Water Quality Criteria
B-10: FDEP (State Clearinghouse) Coastal Zone Consistency Letter (October 2003)
B-11: NRCS Concurrence Letter-Farmlands (April 2003)
B-12: Notice of Intent
B-13: Advance Notification Package
B-14: Advance Notification Comments
B-15: Orange County-Letter of Preference for OCCC Station Site (October 2002)

Appendix B-1

SHPO Concurrence Letter - CRAS Methodology

(February/March 2003)

ACE-FLA
66-USDOT - FRA
2003 - 1865

U.S. Department
of Transportation

**Federal Railroad
Administration**

1120 Vermont Ave., N.W.
Washington, D.C. 20590

Dr. Janet Snyder Matthews
State Historic Preservation Officer
Division of Historical Resources
R.A. Gray Building, 4th Floor
500 S. Bronough Street
Tallahassee, FL 32399-0250

Mr. James St. John
Federal Highway Administration
Florida Division Office
227 N. Bronough Street, Suite 2015
Tallahassee, FL 32399-0250

Mr. Ronald Silver, Branch Chief
U.S. Army Corps of Engineers
West Permits Branch
P.O. Box 4970
Jacksonville, FL 32232-0019

Nazih Haddad, Staff Director
Florida High Speed Rail Authority
Florida Department of Transportation
605 Suwannee Street, MS 67
Tallahassee, Florida 32399-0450

RE: Florida High Speed Rail Project Development & Environment (PD&E) Study
Financial Project ID No.: 4112531
Concurrence with Cultural Resource Assessment Survey (CRAS) methodology and Area of Potential Effect (APE) for the Environmental Impact Statement (EIS)

Dear Sirs and Madam:

From 1996 through 1999, the Florida Department of Transportation was engaged in the preparation of a Draft Environmental Impact Statement (DEIS) for the construction of the Florida High Speed Rail (FHSR) between Miami, Orlando and Tampa. At that time, the project consisted of three distinct corridors: South, Central, and East-West. In November 1998, the Area of Potential Effect (APE) and the cultural resource assessment survey methodology for the project were agreed upon through consultation between the Florida State Historic Preservation Officer (SHPO), the Federal Highway Administration (FHWA), the Federal Railroad Administration (FRA), and the Florida Department of Transportation (FDOT). A methodology was subsequently developed for the evaluation of alternative alignments to have been addressed in the DEIS. In 1999, work on the FHSR was suspended.

In November 2000, Florida voters approved the *Constitutional Amendment on High Speed Rail* and in 2001, the Florida Legislature enacted the *Florida High Speed Rail Authority Act*. The Florida Legislature identified initial study areas linking the major urban areas of St. Petersburg, Tampa and Orlando. The constitutional amendment requires that construction begin by November 2003. As a result, work on a new Environmental Impact Statement (EIS) was initiated, expanding upon the information gathered and alternatives evaluated in previous studies.

The current project focuses on the corridor formerly known as East-West between Tampa and Orlando. As a result of preliminary environmental evaluations, which are presented in a Screening Report (October 2002), one alignment along I-4 has been retained for further evaluation (see enclosure). Two alternatives remain viable for evaluation in both Tampa (along I-4 and along the

CSX corridor) and Orlando (along the Greeneway [SR 417] and along the Bee Line Expressway [SR 528]). Potential station locations are being evaluated for Tampa, Lakeland, Walt Disney World, Orlando (multi-modal), and Orlando International Airport.

The FHSR Environmental Team concluded that a Corridor Level Analysis and detailed Cultural Resources Assessment Survey (CRAS) should be prepared for the Alternatives being evaluated in the EIS. Building upon the 1998 agreement, a project CRAS methodology and APE have been prepared in order to comply with the requirements of the National Historic Preservation Act of 1966, as implemented in 36 CFR 800.4 (Identification of Historic Properties). The APE and CRAS methodology for the project are provided below for your review and concurrence.

Archaeological Methodology and APE

Survey Requirements

1. The APE for the archaeological survey is designated as the existing right-of-way for each alternative alignment and the footprint of each proposed pond, station, and other ancillary facility.

2. Standard archaeological predictive models will be used to identify zones of high, medium, and low probability for the occurrence of archaeological sites within the APE. Selected zones of high and medium site probability will be subjected to subsurface archaeological testing on a systematic (where feasible) or judgmental basis.

3. Archaeological subsurface testing will be sufficient to characterize each resource.

4. Locations within the APE that have been subjected to prior archaeological survey that meets professional standards need not be resurveyed. Locations within the APE demonstrated to have been severely altered by development or other impacts either will not require survey or will be subjected to judgmental examination.

5. A surface inspection of portions of the APE will be conducted on a judgmental basis.

Documentation Requirements

1. All NRHP-listed, determined eligible, and potentially eligible archaeological sites will be described in the Corridor Analysis.

2. A Florida Master Site File (FMSF) number will be obtained for each newly identified archaeological resource, and FMSF forms will be completed.

3. FMSF forms for previously recorded archaeological sites will be included in an appendix and in a table listing all archaeological sites.

4. A table and map depicting the locations of all previously and newly recorded archaeological sites will be included in the CRAS Report.

5. A digital photograph will be taken of the newly recorded archaeological resources on a judgmental basis.

Historical Methodology and APE

Survey Requirements

1. The APE for the historical survey is designated as 500 feet (or two blocks) to either side of the centerline of the FHSR right-of-way west of I-75.

2. Areas of the APE that are obscured from the FHSR by both lanes of I-4 will not be surveyed unless the FHSR is elevated above I-4.

3. East of I-75, the APE will include the areas within the ROW and immediately adjacent.

4. The APE for ponds and station locations will include the proposed site as well as properties immediately adjacent.

Documentation Requirements

1. A Corridor Analysis will be prepared which will describe and note on project maps the location of NRHP-listed resources, resources previously considered eligible, and resources which appear potentially eligible for listing in the NRHP.

2. Updated FMSF forms for previously recorded resources will be prepared only if the property has changed substantially; otherwise the most recent FMSF form will be included in an appendix and in a table listing all historic resources.

3. Documentation for properties and districts previously listed or determined eligible for listing in the NRHP will be included in an appendix.

4. FMSF forms for all previously unrecorded properties constructed prior to 1954 will be prepared and included in an appendix. Each historic resource will be listed in a table in the CRAS.

5. An expanded FMSF form will be completed for all properties that appear NRHP eligible and included in an appendix.

6. A Cultural Resource Committee (CRC) will be established to assist in the evaluation of significant resources, potential effects, and methods for mitigation.

7. The FHSR Environmental Team will prepare a detailed CRAS, which will include a table and map depicting all resources within the APE constructed prior to 1954.

8. The CRAS will include a description, digital photograph, and sketch map displaying boundaries for all individual properties and districts listed or determined eligible for listing in the NRHP. The CRAS also will include sections detailing the environmental setting, regional history and prehistory, research methods and considerations, and site descriptions of all NRHP-listed or eligible resources and evaluations consistent with federal and state standards.

Conclusion

Professional archaeologists and historians, in consultation with a representative of the SHPO, developed the methodology and techniques described above. They have been designed to satisfy the requirements of the National Historic Preservation Act as related to the completion of the EIS for this project. Please join the FRA in concurrence with this process, which may be indicated by your signature below.

CONCURRENCE: _____ 3/13/03
Dr. Janet Matthews, State Historic Preservation Officer — Date

CONCURRENCE: _____ 3/20/03
James St. John, Federal Highway Administration — Date

CONCURRENCE: _____ 3/21/03
John R. Hall, U.S. Army Corp of Engineers — Date

CONCURRENCE: _____ 3/31/03
Nazih Haddad, Florida High Speed Rail Authority — Date

CONCURRENCE: _____ 2/24/03
Mark Yachmetz, Federal Railroad Administration — Date

Please forward this letter to the next recipient for signature. Mailing labels have been enclosed for your convenience. Upon completion, please return the letter to FRA and we will distribute copies to all signatories. Should you have any questions or if we can be of any other assistance to you concerning the completion of this document, please contact Mr. David Valenstein at (202) 493-6368. Thank you for your cooperation.

Sincerely,

Mark E. Yachmetz
Associate Administrator
for Railroad Development

Enclosure
CC W/O Enclosure: Kevin Thibault, HNTB
Howard Newman, PTG
Sharon Phillips, PBS&J

03 MAR -3 AM 11:30

Appendix B-2

SHPO Concurrence Letter - Corridor Study CRAS Findings (April 2003)

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Kevin J. Thibault, P.E.
HNTB Architects Engineers Planners
5850 T. G. Lee Boulevard
Orlando, Florida 32822

April 15, 2003

Re: DHR Project No. 2003-2605 / Received by DHR: March 28, 2003
Cultural Resource Assessment, Corridor Level Analysis Report, Florida High Speed Rail Authority, Project Development & Environment (PD&E) Study from Tampa to Orlando; Hillsborough, Polk, Osceola, & Orange Counties, Florida

Dear Mr. Thibault:

Our office has received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966* (Public Law 89-665), as amended in 1992, and *36 C.F.R., Part 800: Protection of Historic Properties*. The State Historic Preservation Officer is to advise and assist federal agencies when identifying historic properties listed or eligible for listing in the *National Register of Historic Places*, assessing effects upon them, and considering alternatives to avoid or minimize adverse effects.

We find the proposal consistent with current archaeological research methods and maintain no objections to the proposed project. We look forward to receiving the future Cultural Resources Assessment Survey with site forms and proper documentation.

If you have any questions concerning our comments, please contact Alissa Slade, Historic Sites Specialist, at amslade@mail.dos.state.fl.us or (850) 245-6333. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

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☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
☒ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

Appendix B-3

MOA for Use of I-4/I-275 ROW

(FDOT/FHWA/FRA/FHSRA)

The FRA and FHWA have determined that the respective agencies are not required to provide concurrence with this agreement. A revised Memorandum of Agreement with language identifying the FDOT and FHSRA as the only signatories will be provided as required.

MEMORANDUM OF AGREEMENT AMONG THE FEDERAL RAILROAD ADMINISTRATION, THE FEDERAL HIGHWAY ADMINISTRATION, THE FLORIDA DEPARTMENT OF TRANSPORTATION, AND THE FLORIDA HIGH SPEED RAIL AUTHORITY REGARDING THE HIGH SPEED RAIL TRANSPORTATION PROJECT AND THE TAMPA INTERSTATE PROJECT IN TAMPA, FLORIDA

WHEREAS, the Florida High Speed Rail Authority (FHSRA) is currently preparing an Environmental Impact Statement (EIS) to establish a High Speed Ground Transportation System (HSGTS) from Tampa to Orlando in accordance with a November 2000 amendment to the Florida Constitution , and with subsequent enabling legislation enacted by the Florida Legislature in July 2001, and

WHEREAS, viable alignment opportunities for High Speed Rail within the Tampa Urbanized Area are limited and the FHSRA seeks to minimize impacts to the social and cultural environment, and

WHEREAS, the Federal Railroad Administration (FRA), and the Federal Highway Administration (FHWA) as a cooperating agency, both agencies of the U.S. Department of Transportation, and the FHSRA, an agency of the State of Florida, propose to consider for possible purchase and use certain right-of-way in the Tampa area along I-4/I-275 to accommodate the HSGTS and which would avoid a direct impact to the Ybor City National Historic Landmark District, and

WHEREAS, this right-of-way has been conceptually identified by the Florida Department of Transportation (FDOT), an agency of the State of Florida, and the Federal Highway Administration (FHWA) in their approved Tampa Interstate Study Environmental Impact Statement as needed for the ultimate improvements to I-4/I-275 in the area between 18th Street and Franklin Street, contiguous with the existing southern right-of-way boundary line and further that such Environmental Impact Statement contemplated a 44 foot envelope for HOV/Transit, and

WHEREAS, these actions are pursuant to the statutory requirements of the National Environmental Policy Act of 1969 (NEPA), as amended (42 U.S.C. 4321, et seq.), and related statutes, regulations, and orders, and

WHEREAS, the FHSRA has performed additional engineering analysis to determine that a preliminary alignment can be located within the footprint of the ultimate interchange layout for the I-275/I-4 corridor, and

WHEREAS, the parties acknowledge that:

- The proposed future use of the identified right-of-way by HSGTS does not adversely affect current construction operations and improvements along I-4/I-275 in this area.
- Documentation required under NEPA will be accomplished as part of the FHSRA EIS.
- Use of this right-of-way for HSGTS alignment may necessitate slight revisions to the design concepts proposed for ultimate improvements planned for I-4/I-275 in this area.

NOW, THEREFORE, FRA, FHWA, FHSRA, and FDOT agree with statements contained herein, and will work cooperatively to accomplish the goal of implementing a transportation facility that will accommodate both transit and highway modes of transportation within the Tampa Downtown Interchange area, provided that, satisfactory funding exists for both projects when funding becomes available.

Execution of this Memorandum of Agreement is evidence that all parties agree with the determinations stipulated herein.

FEDERAL RAILROAD ADMINISTRATION

Approved by: _____ Date: _____

Mark Yachmetz,
Associate Administrator for Railroad Development

FEDERAL HIGHWAY ADMINISTRATION

Approved by: _____ Date: _____

James E. St. John,
Division Administrator

FLORIDA DEPARTMENT OF TRANSPORTATION

Approved by: _____ Date: 1/13/04

Jose Abreu
Secretary

FLORIDA HIGH SPEED RAIL AUTHORITY

Approved by: _____ Date: Jan. 9, 2004

Frederick Dudley
Chairman

Appendix B-4

SHPO Concurrence Letter - PD&E CRAS Findings

(September 2003)

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Mr. Kevin J. Thibault, P.E.
HNTB
1615 Edgewater Drive, Suite 200
Orlando, Florida 33804

September 15, 2003

Re: DHR Number: 2003-7914 / Date Received by DHR: July 29, 2003
U.S. Department of Transportation - Federal Rail and Federal Highway Administrations
Cultural Resource Assessment Survey Report, Florida High Speed Rail Authority Project Development and Environment (PD&E) Study, From Tampa to Orlando, Hillsborough, Polk, Osceola, and Orange Counties, Florida

Dear Mr. Thibault:

Our office received and reviewed the referenced cultural resource assessment survey in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and implementing regulations in 36 CFR Part 800, for possible impact to historic properties listed, or eligible for listing, in the *National Register of Historic Places* (NRHP). The State Historic Preservation Officer is to advise Federal agencies as they identify historic properties (listed or eligible for listing, in the *NRHP*. We find the report complete and sufficient, in accordance with 1A-46, *Florida Administrative Code.*

Results of the archaeological survey investigations indicate that 92 previously recorded archaeological sites were identified within the alignments. No new archaeological sites were discovered within the segments or new alignment, nor within any proposed station locations or maintenance facility site. The 92 sites were evaluated as not eligible for listing in the *NRHP*. The two sites that were previously evaluated as eligible for listing in the *NRHP,* 8HI83 and 8HI476 (A&B), were re-evaluated. Site 8HI83, the Columbus Drive Site, if within the project Area of Potential Effect (APE), was apparently destroyed since it was recorded in 1953. Site 8HI476 (A&B), the Diamond Dairy Site, was excavated during mitigation actions performed prior to the Interstate 75 corridor construction activities.

The architectural resources portion of the survey indicated that a total of 405 properties were located within the APE, including 251 newly identified properties and 150 previously recorded properties. We note that seven properties are listed in the *NRHP*. The Centro Asturiano (8HI835), Floridan Hotel (8HI741), S.H. Kress Building (8HI752), Union Depot Hotel (8HI6939), and the Tampa Union Railroad Station (8HI298) are individually listed properties. The other two resources are districts, the Ybor City National Historic Landmark District (NHLD), 8HI313, and the North Franklin Street Historic District, 8HI8536.

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☐ Director's Office (850) 245-6300 • FAX: 245-6435
☐ Archaeological Research (850) 245-6444 • FAX: 245-6436
☑ Historic Preservation (850) 245-6333 • FAX: 245-6437
☐ Historical Museums (850) 245-6400 • FAX: 245-6433
☐ Palm Beach Regional Office (561) 279-1475 • FAX: 279-1476
☐ St. Augustine Regional Office (904) 825-5045 • FAX: 825-5044
☐ Tampa Regional Office (813) 272-3843 • FAX: 272-2340

Nine individual properties are considered eligible for listing in the *NHRP*: St. Paul AME Church (8HI155), Oaklawn Cemetery (8HI5595), Greater Bethel Baptist Church (8HI3282), German American Club (8HI142), I-Type House (8HI4415), J.J. Newberry Building (8HI753), Woolworth Building (8HI751), Fire Station No./Tampa Firefighters Museum (8HI124), and Jackson Hotel (8HI906) as a result of previous evaluations. Five new individual properties were evaluated as eligible for listing in the *NRHP* as a result of the new survey. These are the Allen Temple AME Church and Parsonage (8HI3688 and 8HI8785), St. Peter Claver Catholic School (8HI3659), St. James Episcopal Church (8HI8574) and the Thomas Henderson Memorial Chapel of the First United Methodist Church (8HI8744). In addition, 63 properties were identified and recorded as contributing properties in the Ybor City NHLD. These properties include the following sites: 8HI8577-8678, 8HI8581-8583, 8HI8585-8618, 8HI8620-8626, 8HI8628-8631, 8HI8633-8635, 8HI8637-8643, 8HI8645-8646, and 8HI8648-8649.

Based on the information provided, our office concurs with the determination regarding the five new properties considered potentially eligible for listing in the NRHP on an individual basis. We concur that the 63 new properties located, evaluated and recorded in the Ybor City NHLD are considered contributing properties. However, it is the opinion of this office that the St. Paul AME Church Parsonage (8HI6757) and the CSX Railroad Depot (8HI8739) are additional properties that are potentially eligible for listing in the *NRHP* Criterion A for ethnic heritage/Afro-American (the parsonage) and transportation systems/commerce (the depot).

Please note that it is our opinion that the property located at 918 East 11th Avenue (8HI8584) appears to be substantially altered and, therefore, is no longer a contributing property in the Ybor City NHLD.

We note that the proposed pond locations have not been identified, and when identified will be need to be subjected to a cultural resource assessment. The office looks forward to consulting with the stakeholders and the interested parties during the evaluation of potential effects on the 25 historic properties identified as listed, or potentially eligible for listing in the *NRHP* identified above, and the development of measures to avoid, minimize or mitigate adverse effects to those historic properties.

If you have any questions concerning our comments, please contact Laura Kammerer, Historic Preservationist Supervisor, at (850) 245-6333, or my electronic mail at lkammerer@dos.state.fl.us. Your interest in protecting Florida's historic properties is appreciated.

Sincerely,

Janet Snyder Matthews, Ph.D., Director, and
State Historic Preservation Officer

Xc: Rebecca Spain Schwarz, PBSJ

Appendix B-5

SHPO Concurrence Letter - Section 106 Findings

(January 2004)

FLORIDA DEPARTMENT OF STATE
Glenda E. Hood
Secretary of State
DIVISION OF HISTORICAL RESOURCES

Ms. Sharon M. Phillips, AICP
Post, Buckley, Schuh & Jernigan, Inc.
5300 West Cypress Street, Suite 300
Tampa, Florida 33607-1712

January 5, 2004

RE: DHR Project File Number: 2003-11265
Received by DHR: December 26, 2003
Report Title: *FHSR Cultural Resources Assessment Section 106 Consultation Case Report: Florida High Speed Rail Authority PD&E Study from Tampa to Orlando, Hillsborough, Polk, Osceola, and Orange Counties, Florida*

Dear Ms. Phillips:

Our office received and reviewed the above referenced project in accordance with Section 106 of the *National Historic Preservation Act of 1966*, as amended, and *36 CFR Part 800: Protection of Historic Properties*, and Chapter 267, *Florida Statutes*. It is the responsibility of the State Historic Preservation Officer to advise and assist, as appropriate, Federal and State agencies and local governments in carrying out their historic preservation responsibilities; to cooperate with Federal and State agencies to ensure that historic properties are taken into consideration at all levels of planning and development; and to consult with the appropriate Federal agencies in accordance with the *National Historic Preservation Act of 1966*, as amended, on Federal undertakings that may affect historic properties and the content and sufficiency of any plans developed to protect, manage, or to reduce or mitigate harm to such properties.

Results of the *FHSR Cultural Resources Assessment Section 106 Consultation Case Report: Florida High Speed Rail Authority PD&E Study from Tampa to Orlando* indicate that the report evaluates potential effects of the Florida High Speed Rail Proposed Action to the twelve historic structures within the proposed project corridor that are either listed, or determined eligible for listing, in the National Register of Historic Places. Based on the information provided in the report and consultation with our office, the Federal Railroad Administration and the Florida High Speed Rail Authority find that the proposed project should have no effect on seven historic structures (St. Paul AME Church, Greater Bethel Baptist Church, St. James Episcopal Church, Allen Temple AME Church and Parsonage, St. Peter Claver Catholic School, Centro Asturiano, and I-Type House) and a conditional no adverse effect on the five remaining structures (Oaklawn Cemetery, German American Club, Ybor City National Historic Landmark District, North

District, and St. Paul AME Church Parsonage). The conditions discussed for 'conditional no adverse effect' will be included as commitments in the Final Environmental Impact Statement and in future binding contracts with the Design, Build, Operate, Maintain and Finance vendor.

Based on the information provided, the Florida State Historic Preservation Office concurs with these findings and agrees to the stipulated conditions for the 'conditional no adverse effect' determinations for the Oaklawn Cemetery, German American Club, Ybor City National Historic Landmark District, North Franklin Street Historic District, and St. Paul AME Church Parsonage.

If you have any questions concerning our comments, please contact Brian Yates, Compliance Review Archaeologist, by electronic mail *byates@dos.state.fl.us*, or at 850-245-6372.

Sincerely,

Frederick P. Gaske

Frederick P. Gaske, Acting Director, and
Deputy State Historic Preservation Officer

Appendix B-6

City of Tampa - Letter of Park Significance for Perry Harvey Sr. Park (March 2003)

March 27, 2003

Ms. Sharon M. Phillips, AICP
V.P. Planning/PD&E Division Manager
PBS&J
5300 West Cypress Street
Tampa, Florida 33607

RE: Florida High Speed Rail PD&E Study
Financial Project ID No: 411253-1-94-03
Federal Aid Project Number: N/A
Hillsborough, Polk, Osceola and Orange Counties, Florida

Dear Ms. Phillips:

This correspondence is in reference to your letter of March 17, 2003, requesting our comments on the official designation and significance of Perry Harvey Sr. Park from the agency perspective.

Perry Harvey Sr. Park is officially designated as a neighborhood park in the City of Tampa Comprehensive Plan (adopted January 29, 1998). This 9.2-acre park serves several groups: residents of the downtown community (Central Park Village, Tampa Park Apartments, etc.), children from the Kid Mason Recreation Center, children from the Boys and Girls Club, and people from outside the city limits that utilize the unique skateboard facility. There are approximately 100-150 people that use the facility each day.

Perry Harvey Sr. Park includes the following facilities:

- Exercise/jogging path
- Tennis courts
- Basketball courts
- Playground equipment/sand lot
- Wooden deck
- Skateboard area
- Restrooms
- Covered picnic pavilions

Improvements are planned for the park but do not consist of any new structural improvements. With the exception of the restroom facility north of Kay Street being demolished, all improvements will take place within the park area south of Scott Street and north of Cass Street. A new roof will be installed to cover both the restroom and park office facilities; however, open space will remain between the two structures. The skatebowl and tennis courts are scheduled for resurfacing, the lighting will be redone using the existing poles, the brick water feature is scheduled to be torn up and replaced with a grass play area, and landscaping improvements are planned for the park. The improvements should be completed within six months of the commencement of construction.

This **is** / **is not** a significant park for the citizens of the downtown Tampa area.

Sincerely,

Ross Ferlita
City of Tampa, Parks Director

Appendix B-7

City of Tampa
Letter of Park Significance for Nuccio Parkway Linear Park

(March 2003)

March 27, 2003

Ms. Sharon M. Phillips, AICP
V.P. Planning/PD&E Division Manager
PBS&J
5300 West Cypress Street
Tampa, Florida 33607

RE: Florida High Speed Rail PD&E Study
Financial Project ID No: 411253-1-94-03
Federal Aid Project Number: N/A
Hillsborough, Polk, Osceola and Orange Counties, Florida

Dear Ms. Phillips:

This correspondence is in reference to your letter of March 17, 2003, requesting our comments on the official designation and significance of Nick Nuccio Linear Park from the agency perspective.

Nick Nuccio Linear Park is officially designated as a neighborhood park in the City of Tampa Comprehensive Plan (adopted 1/29/98). This 8.3 acre or _____square foot park serves several groups: **please describe.** There are approximately ___ people that use the facility each week/month.

Nick Nuccio Linear Park includes the following facilities:

- **Please list**
-

Improvements planned for the park include:

Please describe

This is / **is not** a significant park for the citizens of the downtown Tampa area.

Sincerely,

Ross Ferlita
City of Tampa, Parks Director

Appendix B-8

SFWMD - Letter of Significance for Shingle Creek Greenway

(April 2003)

SOUTH FLORIDA WATER MANAGEMENT DISTRICT
3301 Gun Club Road, West Palm Beach, Florida 33406 • (561) 686-8800 • FL WATS 1-800-432-2045 • TDD (561) 697-2574
Mailing Address: P.O. Box 24680, West Palm Beach, FL 33416-4680 • www.sfwmd.gov

April 14, 2003

Ms. Sharon M. Phillips, ACIP
Project Manager
PBS&J
5300 West Cypress Street, Ste. 300
Tampa, FL 33607-1768

Subject: Shingle Creek Greenway

Dear Ms. Phillips:

Thank you for the opportunity to discuss the South Florida Water Management District's (District) acquisition efforts in the Shingle Creek basin. The District designated Shingle Creek as a Save Our Rivers (SOR) project over a decade ago and has since acquired 1750 acres, primarily in the residential area known as Hunter's Creek. Consistent with the SOR mandate to establish appropriate public use, the District has established and continues to develop public use on District-owned land in this area.

Currently, the District is working with Orange County Schools to develop a cooperative agreement that will give area students opportunities for special programming within the project. In turn, the District will gain additional public access along the Greenway corridor.

The District is also participating in a multi-agency Metroplan grant application. The District, Orange and Osceola Counties, the City of Orlando, and the City of Kissimmee have envisioned a linear trail system spanning the length of the Shingle Creek project. If awarded grant funding, millions of dollars will be used to develop a premier trail system, for which District-owned land will play a significant role.

As the headwaters of the Everglades, the Shingle Creek project will continue to play a vital role in the District's mission of water resource protection and developing appropriate public use on it lands

Please contact me if I can offer additional support on this matter.

Sincerely,

Fred E. Davis, Director
Land Stewardship Division
Land Management & Operations

FED/imw

Appendix B-9

WQIE Checklist and Water Quality Criteria

WQIE CHECKLIST

Project Name: Florida High Speed Rail

County: Hillsborough, Polk, Osceola, Orange

Financial Project Number: _____

Federal Aid Project No: _____

Short project description Compare the impacts of several high speed rail alignment alternatives from Tampa to Orlando, Florida. Impacts include water quality issues such as increased runoff and additional pollutants.

PART 1: DETERMINATION OF WQIE SCOPE

Does project increase impermeable surface area? ☒ Yes ☐ No

Does project alter the drainage system? ☒ Yes ☐ No

If the answer to both questions is no, complete the WQIE by checking Box A in Part 4.

Do environmental regulatory requirements apply? ☒ Yes ☐ No

If no, proceed to part 4 and check Box B.

PART 2: PROJECT CHARACTERISTICS

20-year design ADT: N/A Expected speed limit: N/A km/hr

Drainage area: 850 Acres 14 % Impervious 86 % Pervious

Land Use: _____ % Residential _____ % Commercial _____ % Industrial

_____ % Agricultural 10 % Wetlands 90 % Other Natural

Potential large sources of pollution (identify): _____

Groundwater receptor (name of aquifer or N/A): N/A

Designated well head protection area: ☐ Yes ☒ No Name: _____

Sole source aquifer: ☐ Yes ☒ No Name: _____

Groundwater recharge mechanism: Recharge to the surficial aquifer will be negligible. Any recharge will be filtered by local soils. No karst conditions are expected along the study corridors; however, there is a small potential for karst conditions in some areas.

(Notify District Drainage Engineer if karst conditions expected)

Surface water receptor (name or N/A): Multiple, see write-up in Section 4.2.7, DEIS

Classification: ☐ I ☐ II ☒ III ☐ IV ☐ V

Special designation (check all that apply):

☐ ONRW ☐ OFW ☐ Aquatic Preserve ☐ Wild & Scenic River

☐ Special Water ☐ SWIM Area ☐ Local Comp Plan ☐ MS4 Area

☐ Other (specify): _____

Conceptual storm water conveyances (check all that apply):

☒ Swales ☐ Curb and Gutter ☒ Scuppers ☒ Pipe ☒ French Drains

☒ Retention/Detention Ponds ☐ Other (specify): _____

PART 3: ENVIRONMENTAL REGULATORY REQUIREMENTS

Regulatory Agency (check all that apply)	Reference citation for regulatory criteria	Most stringent criteria (check all that apply and describe below)
USEPA ☒	NPDES	☐
FDEP ☒	F.A.C., Chapters 62-25 and 62-40	☒
WMD (Specify) ☒	SWFWMD, SFWMD, SJWMD* WMD rules Ch. 40D-4 & 40D-40	☒
OTHER (Specify) ☐		☐

WQIE CHECK LIST (Cont.)

PART 4: WQIE DOCUMENTATION

A. ☐ Water quality is not an issue.

B. ☐ No regulatory requirements apply to water quality issues.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section5.C.3 of the SEIR.)

C. ☒ Regulatory requirements apply to water quality issues. Water quality issues will be mitigated through compliance with the quantity design requirements placed by FDEP, SWFWMD, SFWMD, SJWMD ________________, an authorized regulatory agency.
(Document by checking the "none" box for water quality in Section 6.C.3 of the Environmental Determination Form or Section5.C.3 of the SEIR.)

Evaluator Name (print):
Shayne Paynter

Office:
Tampa, Florida

Signature: Shayne Paynter Date: 4/9/03

CHAPTER 62-25 REGULATIONS OF STORMWATER DISCHARGE

62-25.001 Scope.

(1) The discharge of untreated stormwater may reasonably be expected to be a source of pollution of waters of the state and is, therefore, subject to Department regulation. The Department shall prevent pollution of waters of the state by discharges of stormwater, to ensure that the designated most beneficial uses of waters, as prescribed by Chapter 62-302, F.A.C., are protected.

(2) A permit under this chapter will be required only for new stormwater discharge facilities as defined herein. This provision shall not affect the Department's authority to require appropriate corrective action, pursuant to Sections 403.121-.161, F.S., whenever existing facilities cause or contribute to violations of state water quality standards.

(3) Stormwater discharges to groundwaters shall be regulated under the provisions of Chapters 62-520 and 62-522, F.A.C., and other applicable rules of the Department.

(4) The Department intends that, to the greatest extent practicable, the provisions of this chapter be delegated to either local governments or water management districts seeking such delegation.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82. Amended 1-26-84, Formerly 17-25.01, 17-25.001.

62-25.020 Definitions.

(1) "Artificial Watercourse" means a man-made waterway that was totally dredged or excavated prior to October 1, 1984 and which connects formerly isolated, nonjurisdictional wetlands to other waters. The Department shall bear the burden to show that such artificial watercourse was not totally dredged or excavated or that the connected wetlands were formerly jurisdictional.

(2) "Completion of Construction" means the time at which the stormwater discharge facility is first placed into operation or when the project passes final building inspection or when the project receives a certificate of occupancy, whichever comes first.

(3) "Conservation Plan" means a formal document, prepared or approved by a local Soil and Water Conservation District Board organized pursuant to Chapter 582, F.S., which outlines a system of management practices to control soil erosion, reduce sediment loss or protect the water quality on a specific parcel of property.

(4) "Construction" means any on-site activity which will result in the creation of a new stormwater discharge facility, including the building, assembling, expansion, modification or alteration of the existing contours of the property, the erection of buildings or other structures, or any part thereof, or land clearing.

(5) "Detention" or "To Detain" means the collection and temporary storage of stormwater in such a manner as to provide for treatment through physical, chemical, or biological processes with subsequent gradual release of the stormwater.

(6) "Engineer" means a Professional Engineer registered in Florida, or other person exempted pursuant to the provisions of Chapter 471, F.S., who is competent in the fields of hydrology and stormwater pollution control.

(7) "Effective Grain Size" means the diameter of filter sand or other aggregate that corresponds to the 10 percentile finer by dry weight on the grain size distribution curve.

(8) "Filtration" or "To Filter" means the selective removal of suspended matter from stormwater by passing the water through at least 2 feet of suitable fine textured granular media such as porous soil, uniformly graded sand and gravel, or other natural or artificial aggregate, which may be used in conjunction with filter fabric and/or underdrain pipe.

(9) "Intermittent Watercourse" means a stream or waterway that flows only at certain times of the year, flows in direct response to rainfall, and is normally an influent stream except when the groundwater table rises above the normal wet season level.

(10) "New Stormwater Discharge Facility" means a stormwater discharge facility which was not in existence on February 1, 1982, or for which a completed stormwater discharge, dredge or fill, or other Department permit or license application had not been received before February 1, 1982, or an existing stormwater discharge facility which is modified, as specified in subsection 62-25.040(3), F.A.C., on or after February 1, 1982. A stormwater discharge facility approved or found to be exempt by the

Department before February 1, 1982, or a facility which had been determined by the Department not to be significant pursuant to subsection 62-4.248(5), F.A.C., before February 1, 1982, or a facility exempted pursuant to subsection 62-25.030(2), F.A.C., shall not be considered a new stormwater discharge facility unless modified pursuant to subsection 62-25.040(3), F.A.C.

(11) "Regional Stormwater Discharge Facility" means a stormwater discharge facility which is permitted pursuant to subsection 62-25.040(6), F.A.C., and is designed and constructed to accept stormwater from multiple parcels within the drainage area served by the regional facility. Drainage area refers to the land or development that is served by and/or contributes stormwater to the regional facility.

(12) "Retention" or "To Retain" means the prevention of, or to prevent the discharge of, a given volume of stormwater runoff into surface waters of the State by complete on-site storage.

(13) "Stormwater" means the flow of water which results from, and which occurs immediately following, a rainfall event.

(14) "Stormwater Discharge Facility" means a stormwater management system which discharges stormwater into surface waters of the State.

(15) "Stormwater Management System" means the designed features of the property which collect, convey, channel, hold, inhibit or divert the movement of stormwater.

(16) "Swale" means a manmade trench which:

(a) Has a top width-to-depth ratio of the cross-section equal to or greater than 6:1, or side slopes equal to or greater than 3 feet horizontal to 1 foot vertical; and,

(b) Contains contiguous areas of standing or flowing water only following a rainfall event; and,

(c) Is planted with or has stabilized vegetation suitable for soil stabilization, stormwater treatment, and nutrient uptake; and,

(d) Is designed to take into account the soil erodibility, soil percolation, slope, slope length, and drainage area so as to prevent erosion and reduce pollutant concentration of any discharge.

(17) "Uniformity Coefficient" means the number representing the degree of homogeneity in the distribution of particle sizes of filter sand or other granular material. The coefficient is calculated by determining the D^{60}/D^{10} ratio where D^{10} and D^{60} refer to the particle diameter corresponding to the 10 and 60 percentile of the material which is finer by dry weight.

(18) "Waters" are as defined in Section 403.031(13), F.S.

(19) "Wetlands" means, for the purposes of this rule, those waters which are dominated by those plant species listed in Rule 62-301.400, F.A.C., and which meet the conditions specified in subsection 62-25.042(2), F.A.C.

(20) "Wetlands Stormwater Discharge Facility" means a new stormwater discharge facility which incorporates those wetlands identified in subsection 62-25.042(2), F.A.C., into the stormwater management system to provide stormwater treatment.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 5-8-85, Formerly 17-25.02, 17-25.020.

62-25.025 Design and Performance Standards.

The following design and performance standards are established for the purpose of determining compliance with this chapter, however, in some instances they may not result in compliance with water quality standards set forth in Chapters 62-302 and 62-4, F.A.C. No discharge from a stormwater discharge facility shall cause or contribute to a violation of water quality standards in waters of the state. Unless the applicant provides reasonable assurance that the discharge will not cause or contribute to a violation of water quality standards in waters of the state, the Department may require more stringent design and performance standards than are otherwise required by this chapter:

(1) Detention basins shall again provide the capacity for the specified treatment volume of stormwater within 72 hours following a storm event.

(2) Filtration systems shall have pore spaces large enough to provide sufficient flow capacity so that the permeability of the filter is equal to or greater than the surrounding soil. The design shall ensure that the particles within the filter do not move. When sand or other fine textured aggregate other than natural soil is used for filtration, the filter material should be of a quality sufficient to satisfy the following requirements:

(a) Washed (less than 1 percent silt, clay and organic matter) unless filter cloth is used which is suitable to retain the silt, clay and organic matter within the filter;

(b) Uniformity coefficient 1.5 or greater; and

(c) Effective grain size of 0.20 to 0.55 millimeters in diameter. These criteria are not intended to preclude the use of multilayered filters nor the use of materials to increase ion exchange, precipitation or pollutant adsorption capacity of the filter.

(3) Filtration systems shall be designed with a safety factor of at least two unless the engineer affirmatively demonstrates based on plans, test results, calculations or other information that a lower safety factor is appropriate for the specific site conditions. Examples of how to apply this factor include but are not limited to reducing the design percolation rate by half, doubling the length of underdrain or designing for the required drawdown within 36 hours.

(4) Retention basins shall again provide the capacity for the given volume of stormwater within 72 hours following the storm event. The additional storage volume must be provided by a decrease of stored water caused only by percolation through soil, evaporation or evapotranspiration.

(5) Swales shall be designed to percolate 80% of the runoff resulting from a three-year, one-hour design storm within 72 hours after a storm event, assuming average antecedent conditions.

(6) Unless applicable local regulations are more restrictive, for purposes of public safety, permanently wet retention and detention basins shall either be fenced or otherwise restricted from public access or contain side slopes that are no steeper than 4:1 (horizontal:vertical) out to a depth of two feet below the control elevation. All side slopes shall be stabilized by either vegetation or other materials to minimize erosion and subsequent sedimentation of the basins.

(7) Erosion and sediment control best management practices shall be used as necessary during construction to retain sediment on-site. These management practices shall be designed by an engineer or other competent professional experienced in the fields of soil conservation or sediment control according to specific site conditions and shall be shown or noted on the plans of the stormwater management system. The engineer or designer shall furnish the contractor with information pertaining to the construction, operation and maintenance of the erosion and sediment control practices.

(8) Stormwater discharge facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism suitable for preventing oil and grease from leaving the stormwater discharge facility in concentrations that would cause or contribute to violations of applicable water quality standards in the receiving waters.

(9) Stormwater discharge facilities which directly discharge to Outstanding Florida Waters shall include an additional level of treatment equal to fifty percent of the treatment criteria specified in paragraph 62-25.035(1)(b) or Rule 62-25.040 or 62-25.042, F.A.C.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–New 1-26-84, Amended 3-28-84, 5-8-85, Formerly 17-25.025.

62-25.027 Legal Operation/Maintenance Entity Requirements.

(1) The Department considers the following entities to be acceptable for meeting the requirements necessary to ensure that a stormwater discharge facility will be operated and maintained in compliance with the requirements of this chapter and other Department regulations:

(a) Local governmental units including counties or municipalities, or Municipal Service Taxing Units.

(b) Active water control districts pursuant to Chapter 298, F.S., or drainage districts created by special act, or Community Development Districts pursuant to Chapter 190, F.S., or Special Assessment Districts pursuant to Chapter 170, F.S.

(c) State or federal agencies.

(d) Duly constituted communication, water, sewer, electrical or other public utilities.

(e) The property owner or developer is normally not acceptable as a responsible entity when the property is intended to be sold to third parties. However, the property owner or developer may be acceptable under one of the following circumstances:

1. Written proof in the appropriate form by either letter or resolution, that a governmental entity or such other acceptable entity as set forth in paragraphs (a)-(c) above, will accept the operation and maintenance of the stormwater management and discharge facility at a time certain in the future.

2. Bonding or other assurances sufficient to operate and perform anticipated maintenance on stormwater facilities.

(f) Profit or non-profit corporations including homeowners associations, property owners associations, condominium owners associations or master associations shall be acceptable only under certain conditions that ensure that the corporation has the financial, legal and administrative capability to provide for the long term operation and maintenance of the stormwater discharge facility.

(2) Entity Requirements.

(a) If a Homeowner, Property Owner, Condominium or Master Association is proposed, the owner or developer must submit the Articles of Incorporation, Declaration, Restrictive Covenants, Deed Restrictions or such other organizational or operational documents affirmatively taking responsibility for the operation or maintenance of the stormwater discharge facility.

(b) The Association shall have sufficient powers reflected in its organizational or operational documents to:

1. Operate and maintain the stormwater management system and the stormwater discharge facility as exempted or permitted by the Department.

2. Establish rules and regulations.

3. Assess members.

4. Contract for services (if the Association contemplates employing a maintenance company) to provide the services for operation and maintenance.

5. The Association shall exist in perpetuity; however, if the Association is dissolved, the Articles of Incorporation must provide that the stormwater management system and discharge facility shall be maintenanced by an entity as set forth in paragraph (1) of this rule.

(3) Phased Projects.

(a) If an Operation/Maintenance entity is proposed for a project which will be constructed in phases, and subsequent phases will utilize the same stormwater management facilities as the initial phase or phases, the entity shall have the ability to accept responsibility for the operation/maintenance of stormwater discharge facility for future phases of the project.

(b) If the development scheme contemplates independent operation/maintenance entities for different phases, and the stormwater management system is integrated throughout the project, the entities, either separately or collectively shall have the responsibility and authority to operate and maintain the stormwater management system and discharge facility for the entire project. That authority shall include cross easements for stormwater management and the ability to enter and maintain the various facilities, should any sub-entity fail to maintain a portion of the stormwater management system or discharge facility within the project.

(4) The applicant shall be an acceptable entity from the time construction begins until the stormwater discharge facility is dedicated to and accepted by an established legal entity pursuant to subsection (1) above. The applicant shall provide proof of the existence of an entity pursuant to (1) above or of the future acceptance of the facility by an entity described in subsection (1) above prior to initiating construction.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–New 10-1-85, Formerly 17-25.027.

62-25.030 Exemptions.

(1) The following types of new stormwater discharge facilities are exempt from the notice and permit requirements of this chapter:

(a) Facilities designed to accommodate only one single family dwelling unit, duplex, triplex or quadruplex, provided the single unit, duplex, triplex or quadruplex is not part of a larger common plan of development or sale;

(b) Facilities which are designed to serve single family residential projects, including duplexes, triplexes and quadruplexes, of less than 10 acres total land area and which have less than 2 acres impervious surface provided that the facilities:

1. Comply with all regulations or ordinances applicable to stormwater management and adopted by a city or county; and

2. Are not part of a larger common plan of development or sale; and

3. Discharge into a stormwater discharge facility exempted or permitted by the Department under this chapter which has sufficient capacity and treatment capability as specified in this chapter and is owned, maintained, or operated by a city, county, special district with drainage responsibility, or water management district; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent.

4. Discharge into a stormwater discharge facility which has sufficient capacity and is part of a master drainage plan adopted by a city or county; however, this exemption does not authorize discharge to a facility without the facility owner's prior written consent.

(c) Stormwater discharge facilities whose functioning treatment components consist entirely of swales. However, this exemption is valid only if the swale, as constructed, meets or exceeds the requirements specified in subsections 62-25.020(16) and 62-25.025(5), F.A.C.

(d) Facilities which discharge into a regional stormwater discharge facility which is permitted pursuant to Rule 62-25.040, F.A.C., where the appropriate treatment criteria specified in this chapter and applied to the permitted regional facility are met by the discharge; however, this exemption does not authorize discharge to the permitted regional facility without the facility owner's prior written consent.

(e) Facilities for agricultural lands, provided those facilities are part of an approved Conservation Plan; however, if the Conservation Plan is not implemented according to its terms, this exemption shall be void; and

(f) Facilities for silvicultural lands, provided that the facilities are constructed and operated in accordance with the Silviculture Best Management Practices Manual (1979), published by the State of Florida, Department of Agriculture and Consumer Services, Division of Forestry, which is adopted and made a part of this rule by reference. A copy of this manual may be obtained by writing the Department of Agriculture, Division of Forestry, 3125 Conner Boulevard, Tallahassee, Florida, and may be inspected at all Department of Environmental Protection offices.

(2) Within the geographical area for which the Department has delegated stormwater permitting to the Southwest Florida Water Management District, the following types of new stormwater discharge facilities are exempt from the permitting requirements of this chapter provided that the owner files notice and an engineer certifies to the District, on forms provided by the District, at least 30 days prior to construction that the discharge facility will meet the criteria specified below, and provided that an entity responsible for operation and maintenance of the proposed facility has been determined. Furthermore, an engineer shall certify on forms provided by the District, within 30 days after completion of construction that the new stormwater discharge facility, as constructed, qualifies for exemption under this section. The District may require that the owner and engineer furnish appropriate design analyses, calculations, drawings, specifications and other information to describe, verify and document that the proposed stormwater discharge facility qualifies for exemption according to this rule.

(a) Facilities which discharge into a stormwater discharge facility which is permitted pursuant to Rule 62-25.040, F.A.C., or exempt pursuant to Rule 62-25.030, F.A.C., where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this exemption does not authorize discharge to permitted or exempt facilities without the facility owner's prior written consent; or,

(b) Facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one-half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to subsection 62-25.025(9), F.A.C.; or,

(c) Modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state.

(d) Facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

(3) Exemptions for Artificial Systems Used for Urban Stormwater Conveyance or Renovation.

(a) The Secretary shall, upon the petition of an affected person or permit applicant, and after public notice in the Florida Administrative Weekly and in a newspaper of general circulation in the area of the waters affected, and after opportunity for public hearing pursuant to Chapter 120, F.S., issue an Order for the duration of the permit specifically exempting from Class III criteria artificially created waters of the state which are upstream of man-made, discharge control systems controlled by the affected person or permit applicant and which are primarily for the conveyance or the retention, detention, and treatment of urban stormwaters. Such Order shall only be issued after affirmative demonstration by the Petitioner of the following:

1. Reasonable assurance has been provided that the discharge will not cause a violation of any applicable water quality standards downstream from the discharge control system; and

2. Waters shall not be degraded below the minimum standards prescribed for all waters at all times in Rule 62-302.500, F.A.C.; and

3. Granting the exemption is clearly in the public interest; and

4. Compliance with presently specified criteria is unnecessary for the protection of public water supplies or human health.

(b) The Petitioner shall affirmatively demonstrate those standards which the Petitioner believes more appropriately apply to the waters for which the exemption is sought.

(c) The Secretary shall specify, by Order, only those criteria which the Secretary determines to have been demonstrated by the preponderance of competent substantial evidence to be more appropriate.

(d) The Department shall modify the Petitioner's permit consistent with the Secretary's Order.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85, Formerly 17-25.03, Amended 8-30-88, Formerly 17-25.030.

62-25.035 Stormwater General Permits.

Except in the geographical area for which the Department has delegated stormwater permitting to the Southwest Florida Water Management District, the following types of new stormwater discharge facilities may be constructed pursuant to general permit as specified in Rule 62-25.801, F.A.C. This general permit shall not expire and shall not be subject to subsection 62-4.540(13), F.A.C., unless suspended or revoked in accordance with subsection 62-4.530(4), F.A.C.

(1) Facilities which discharge into a stormwater discharge facility which is permitted pursuant to Rule 62-25.040 or paragraph 62-25.035(1)(b) or (d), F.A.C., or which was previously approved pursuant to a noticed exemption under Rule 62-25.030, F.A.C., where the appropriate treatment criteria specified in this chapter and applied to the permitted or exempt facility are not exceeded by the discharge; however, this does not authorize discharge to the permitted or exempt facility without the facility owner's prior written consent; or,

(2) Facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one-half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to subsection 62-25.025(9), F.A.C.; or,

(3) Modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state; or,

(4) Facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–New 5-8-85, Formerly 17-25.035.

62-25.040 Construction Permit Requirements for New Stormwater Discharge Facilities.

(1) Any person intending to construct a new stormwater discharge facility, except as exempted pursuant to Rule 62-25.030, F.A.C., or as noted in Rule 62-25.035, F.A.C., or as permitted in Rule 62-25.042, F.A.C., or as noted in Rule 62-25.060, F.A.C., shall apply to the Department for a construction permit, using forms provided by the Department, prior to commencement of construction of the stormwater discharge facility. In a geographical area where delegation has occurred, pursuant to Rule 62-25.050, F.A.C., application shall be made pursuant to the provisions of the rules of the entity receiving the delegation.

(2) Construction of a new stormwater discharge facility shall not be undertaken without a valid construction permit as required pursuant to this rule.

(3) Modifications to an existing stormwater management system that will increase the discharge of the stormwater discharge facility beyond its previously designed and constructed capacity, or increase pollution loading, or change points of discharge, except for emergency repairs, are considered new stormwater discharge facilities for purposes of this chapter.

(4) A construction permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results and other information, that the construction, expansion, modification, operation, or activity of the stormwater discharge facility will not discharge, emit, or cause pollution in contravention of Department standards, rules or regulations.

(5) A showing by the applicant that the facility design will provide treatment equivalent to either retention, or detention with filtration, as described in this Chapter, of the runoff from the first one inch of rainfall; or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one-half inch of runoff, shall be presumed to provide reasonable assurance pursuant to subsection (4) above, provided that adequate provisions have been made for operation and maintenance of the proposed facility. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in subsection 62-25.025(9), F.A.C.

(6) Regional stormwater discharge facilities shall be permitted upon application and a showing by the applicant that:

(a) The facility will provide treatment equivalent to either retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for facilities with a drainage area less than 100 acres, the first one-half inch of runoff; and,

(b) Facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in subsection 62-25.025(9), F.A.C.; and,

(c) The facility is designed to meet the treatment criteria specified in paragraph (a) or (b) above for projected future land use conditions and associated stormwater volumes; and,

(d) The owner of the facility notifies the Department on a semi-annual basis, on forms provided by the Department, of all new projects and their associated stormwater volumes that have been allowed to discharge stormwater into the regional facility and certifies that the maximum allowable treatment volume of stormwater has not been exceeded.

(e) Adequate provisions have been made for the operation and maintenance of the proposed facility.

(7) In otherwise determining whether reasonable assurance has been provided, the Department shall, where appropriate, consider:

(a) Whether best management practices are proposed, such as those described in "A Manual of Reference Management Practices for Urban Activities (July, 1978)," "A Manual of Reference Management Practices for Construction Activities (December, 1977)," "A Manual of Reference Management Practices for Agricultural Activities (November 1978)," "Silviculture Best Management Practices Manual (1979)," "Stormwater Management Manual (October, 1981)," or best management practices described in manuals adopted by the Environmental Regulation Commission pursuant to Rule 62-25.050, F.A.C., or other appropriate best management practices. The manuals listed above by name are adopted and made a part of this rule by reference. Copies of these documents may be obtained by writing the Department, and may be inspected at all Department offices;

(b) The public interest served by the discharge;

(c) The probable efficacy and costs of alternative controls;

(d) Whether the proposed water quality benefits are reasonably related to the costs of the controls; and

(e) Whether reasonable provisions have been made for the operation and maintenance of the proposed facility.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 3-30-82, 1-26-84, 3-28-84, 5-8-85, Formerly 17-25.04, 17-25.040.

62-25.042 Permit Requirements for Wetland Stormwater Discharge Facilities.

(1) The wetlands stormwater discharge facility performance standards and other provisions relating to such facilities are an initial but necessary step by the Department in a field in which there exists limited knowledge. In an effort to further refine the state's wetlands stormwater discharge facility policies, monitoring data and other pertinent information relating to the performance standards will be collected and analyzed and periodic reports of the results of this monitoring shall be made available to the public. The Department must attempt to ensure that the wetlands stormwater discharge facility is compatible with the ecological characteristics of the wetlands utilized for stormwater treatment and to ensure that water quality standards will not be violated by discharges from wetlands stormwater discharge facilities. To achieve these goals, specific performance standards are set forth in this chapter. However, recognizing the complexities and concerns of implementing wetlands stormwater treatment performance standards, the Department shall review the monitoring data and other pertinent information on a regular basis. The Department

shall present the information to the Commission at a public hearing no later than April 1, 1989. Unless the Commission affirmatively determines that the performance standards remain appropriate, or amends them as it deems necessary, subsection 62-25.042(6), F.A.C., shall be repealed effective April 1, 1989.

(2) The wetlands to be used for stormwater management are those:

(a) Which are connected to other waters by artificial watercourses; or

(b) Which are connected to other waters solely by an intermittent watercourse.

(3) Any person who owns or has written authorization to use a wetland for stormwater treatment shall apply to the Department for a wetlands stormwater discharge facility permit, using forms provided by the Department, and shall receive such permit prior to commencement of construction of the stormwater discharge facility. The application shall be processed by the Department according to the procedures of Chapter 62-4, F.A.C.

(4) A wetlands stormwater discharge facility permit may be issued to the applicant, upon such conditions as the Department may direct, only if the applicant affirmatively provides the Department with reasonable assurance based on plans, test results or other information, that the construction, operation, or activity of the stormwater discharge facility shall not emit, or cause pollution in downstream waters in contravention of Department standards, rules or regulations.

(5) In the review of wetlands stormwater discharge facility permit applications, the Department shall consider the following:

(a) Compliance of the wetlands stormwater discharge facility permit with the performance standards specified in subsection 62-25.042(6), F.A.C.

(b) If the applicant is unable to show compliance with the performance standards in subsection 62-25.042(6), F.A.C., the applicant may qualify for a wetlands stormwater discharge facility permit using alternative design and performance standards approved by the Department provided that the use of the wetlands is compatible with the ecological characteristics of the wetland and the applicant complies with subsection 62-25.042(4), F.A.C.

(c) If the applicant proposes to dredge or fill in the wetlands used for stormwater treatment, the Department in its review of the permit application shall evaluate the adverse effects of the dredging or filling on the treatment capability of the wetland.

(6) A showing by the applicant that the wetlands stormwater discharge facility design complies with the performance standards listed below shall create a presumption in favor of the issuance of the permit:

(a) The facility complies with the requirements of subsection 62-25.060(2), F.A.C.

(b) The facility is part of a comprehensive stormwater management system that utilizes wetlands in combination with other best management practices to provide treatment of the runoff from the first one inch of rainfall; or, as an option for projects or project subunits with drainage areas less than 100 acres, the first one-half inch of runoff. Those facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment as specified in subsection 62-25.025(9), F.A.C.

(c) The utilization of wetlands for stormwater treatment shall not adversely affect the wetland by disrupting the normal range of water level fluctuation of the wetland as it existed prior to construction of the wetlands stormwater discharge facility. Normal range of water level fluctuation will be defined as the maintenance of the fluctuating water surface changes between the normal low water and the normal high water of the wetland system so as to prevent the desiccation or over impoundment of the wetland. The Department shall use water level data, lines on the trees, adventitious roots or other hydrological and biological indicators to determine the normal low and normal high water levels. Upland detention may be necessary to attenuate peak flows and meet the water level fluctuations specified above. When the normal range of water level fluctuations has been artificially altered, the Department shall establish an acceptable range of water level fluctuation based on historical information as to the previous size and nature of the wetlands, if available. If such information is not available, the range of water level fluctuation shall be derived from sound scientific principles or from analysis of other natural wetland systems in the vicinity.

(d) The wetlands stormwater discharge facility must be able to contain the runoff as specified in paragraph 62-25.042(6)(b), F.A.C., within the wetlands. Where the wetlands stormwater discharge facility alone cannot contain the runoff volume specified in paragraph (b) above within the water level ranges specified in paragraph (c) above, the other best management practices of the stormwater management system shall not adversely affect the ability of the wetlands stormwater discharge facility from meeting the requirements of this section. The design features of the facility shall maximize residence time of the stormwater within the wetland. The outfall structure shall be designed to bleeddown the volume specified in paragraph 62-25.042(6)(b), F.A.C., in no less than 120 hours with no more than one-half of the volume to be discharged within the first 60 hours.

(e) Stormwater shall be discharged into the wetlands utilized so as to minimize the channelized flow of stormwater by employing methods including, but not limited to, sprinklers, overland flow or spreader swales.

(f) Facilities which receive stormwater from areas which are a potential source of oil and grease contamination in concentrations exceeding applicable water quality standards shall include a baffle, skimmer, grease trap or other mechanism to minimize the amounts of oils and greases entering the wetlands utilized for stormwater treatment.

(g) Erosion and sediment controls shall be used during construction and operation of the facility to minimize sedimentation of the wetlands utilized for stormwater treatment. The sediment control mechanism shall be built in the uplands and be of sufficient size and design to minimize resuspension and discharge of collected sediments into the wetland and to allow for recurring maintenance removal of sediments without adverse impact to the wetland.

(7) The operation phase of this permit shall not become effective until:

(a) An engineer certifies that the wetlands stormwater discharge facility has been constructed in accordance with the design approved by the Department. Within 30 days after completion of construction of the wetlands stormwater discharge facility, the permittee shall submit the certification and two copies of as-built drawings and notify the Department that the facility is ready for inspection. The certification prepared by an engineer (not necessarily the project design engineer but one who has been retained or employed by the permittee to provide professional engineering services during the construction phase of project completion) shall be made on forms provided by the Department. The engineer shall certify therein that the facility has been constructed substantially in accordance with approved plans and specifications, and that any deviations will not prevent the facility from functioning in compliance with the requirements of this chapter. The engineer shall note and explain substantial deviations from the approved plans and specifications. The certification shall be based upon on-site observation of construction (scheduled and conducted by the engineer or by a project representative under his direct supervision) for the purpose of determining if the work was completed in compliance with approved plans and specifications;

(b) The permittee submits to the Department documentation that adequate provisions have been made for the operation and maintenance of the facility and for meeting any special permit conditions, such conditions may include water quality monitoring.

(8) In order to establish a reliable, scientifically valid data base upon which to evaluate the performance standards and the performance of the wetlands stormwater discharge facility, a monitoring program may be required. Monitoring programs shall provide the Department with comparable data for different types of wetlands and drainage designs. Data to be collected may include, but not be limited to, sedimentation rate, sediment trace metal concentrations, sediment nitrogen and phosphorus concentrations, changes in the frequency, abundance and distribution of vegetation and inflow and outflow water quality for nutrients, turbidity, oils and greases, bacteria and other parameters related to the specific site conditions. Inflow and outflow water quality parameters will be monitored on such storm event occurrences as established by the Department based on a site specific basis. Analytical data must be provided using standard procedures prescribed by a Department approved Quality Assurance Plan and reported in a format provided by the Department. The Department shall eliminate the requirement to continue the monitoring program upon its determination that no further data is necessary to evaluate the performance standards or ensure compliance with the performance standards and applicable water quality standards.

(9) A permit issued pursuant to this section shall be valid for a period of up to five years from the date of issue unless an earlier renewal date is specified by the Department. Both construction and operation of the facility will be covered by the initial permit.

(10) If the facility will continue to operate after the expiration date of the initial permit, the permit must be renewed. A permit may be renewed upon submittal to the Department of a certification that the facility is operating in compliance with the performance criteria of this section and is not causing water quality violations of downstream waters. The certification shall be treated as an application for permit renewal for purposes of the time provisions specified in Section 120.60, F.S.

(11) The permit may be transferred only pursuant to Rule 62-4.120, F.A.C. Upon transfer, all original permit conditions, schedules and criteria continue to be applicable.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–New 5-8-85, Formerly 17-25.042.

62-25.050 Delegation.

(1) The Department may, after notice in the Florida Administrative Weekly pursuant to the provisions of Chapter 120, F.S., delegate to either local governments or water management districts seeking such delegation, as provided in Sections 403.182, 403.812, F.S., and this rule, the authority to process notices, issue or deny permits, initiate enforcement actions, and monitor for compliance as provided in Sections 403.182, 403.812, F.S., and this section. Delegation shall not include the authority for a local government or a water management district to issue or deny permits for its own activities except replacement items or maintenance of existing facilities.

(2) A water management district which has been delegated stormwater regulation pursuant to this section may establish alternative requirements which protect the designated uses of waters of the state provided that the alternative requirements are approved by the Environmental Regulation Commission pursuant to Section 403.804, F.S., and have been incorporated by reference as department stormwater rules in Rule 62-25.090, F.A.C. These alternative requirements incorporated as department rules shall apply in lieu of the provisions of this chapter in the area of delegation, and applicable surface water management and stormwater permit discharge standards shall be applied in one permit proceeding. Following delegation to a water management district, those activities within the district that meet the exemption criteria of subsection 62-25.030(1), F.A.C., shall be exempt from the requirements of Rule 62-4.242, F.A.C., regarding Outstanding Florida Waters.

(3) A local government which has been delegated stormwater regulation pursuant to this rule may also establish by rule, ordinance or local law, alternative requirements provided the Department determines such alternative requirements are compatible with, or more stringent than, those imposed by this chapter.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85, Formerly 17-25.05, 17-25.050.

62-25.060 Relationship to Other Permitting Requirements.

(1) Whenever the construction of a new stormwater discharge facility requires that a dredge or fill permit be secured pursuant to Rule 62-312.150 or 62-312.160, or Chapter 62-312, F.A.C., or whenever other rules of the Department require that a permit, Section 401 Federal Clean Water Act certification or other certification be secured, all applicable stormwater requirements under this chapter shall be reviewed as part of those permit applications. A separate permit application under this chapter shall not be required. If the applicant requests a separate stormwater permit, the applicant must notify the Department of any other Department permits, exemptions, or certifications which have or will be requested for the project.

(2) The permit requirements of Chapter 62-4, F.A.C., or other applicable rules, rather than those of this chapter, shall apply to discharges which are a combination of stormwater and industrial or domestic wastewater or which are otherwise contaminated by non-stormwater sources unless:

(a) The stormwater discharge facility is capable of providing treatment of the non-stormwater component sufficient to meet state water quality standards; and

(b) The applicant requests that the permit requirements of this chapter apply.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 2-1-82, Amended 1-26-84, 5-8-85, Formerly 17-25.06, 17-25.060.

62-25.080 General Provisions.

Nothing under this chapter shall preclude:

(1) Stormwater effects from being considered in the evaluation of other types of permits where such consideration is relevant to a determination of compliance with applicable Department requirements;

(2) The legal joinder in a permitting proceeding under this chapter of persons who own or control unpermitted stormwater discharge systems which comprise a significant portion of the stormwater discharge facility;

(3) The Department from taking appropriate legal action including but not limited to the requiring of a permit to prevent the impairment of a use for which a water of the state has been designated under Chapter 62-302, F.A.C.;

(4) The Department from entering interagency or interlocal agreements to accomplish the provisions of this chapter.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–Formerly 17-4.248, Amended and Renumbered 1-20-82, Formerly 17-25.08, 17-25.080.

62-25.801 General Permit for New Stormwater Discharge Facilities.

(1) A general permit is hereby granted to any person for the construction and operation of the following types of new stormwater discharge facilities as set forth in Rule 62-25.035, F.A.C., provided that notice to the Department pursuant to Rule 62-4.530, F.A.C., is submitted on Form 62-25.900(2) Revised April 1985. This general permit shall not expire and shall not be subject to subsection 62-4.540(13), F.A.C., unless suspended or revoked in accordance with subsection 62-4.530(4), F.A.C.:

(a) Facilities which discharge into a stormwater discharge facility which is permitted pursuant to Rule 62-25.040 or paragraph 62-25.035(1)(b) or (d), F.A.C., or which was previously approved pursuant to a noticed exemption under Rule 62-25.030, F.A.C., where the appropriate treatment criteria specified in Chapter 62-25, F.A.C., and applied to the permitted or exempt facility are not exceeded by the discharge; however, this exemption does not authorize discharge to the permitted or exempt facility without the facility owner's prior written consent; or,

(b) Facilities which provide retention, or detention with filtration, of the runoff from the first one inch of rainfall; or, as an option, for projects or project subunits with drainage areas less than 100 acres, facilities which provide retention, or detention with filtration, of the first one-half inch of runoff. However, facilities which directly discharge to Outstanding Florida Waters shall provide additional treatment pursuant to subsection 62-25.025(9), F.A.C.; or,

(c) Modification or reconstruction by a city, county, state agency, special district with drainage responsibility, or water management district of an existing stormwater management system which is not intended to serve new development, and which will not increase pollution loading, or change points of discharge in a manner that would adversely affect the designated uses of waters of the state; or

(d) Facilities of stormwater management systems that include a combination of management practices including but not limited to retention basins, swales, pervious pavement, landscape or natural retention storage that will provide for the percolation of the runoff from a three-year one-hour design storm.

(2) Except as provided in subsection (1), this general permit is subject to the general conditions of Rule 62-4.540, F.A.C., and the following special conditions:

(a) The stormwater discharge facilities shall be designed and constructed in accordance with the design and performance standards set forth in Rule 62-25.025, F.A.C.; and,

(b) Adequate provisions have been made for the operation and maintenance of the proposed facility; and,

(c) The design, construction and operation of the stormwater discharge facility shall comply with all other applicable requirements of Chapter 62-25, F.A.C.; and,

(d) The permittee shall submit appropriate design analyses, calculations, drawings, specifications and other information necessary to describe, document and verify that the proposed stormwater discharge facility qualifies for the general permit; and

(e) The permittee or engineer of record shall file with the Department within 30 days after the facility's completion of construction an as-built certification that the new stormwater discharge facility, as constructed, qualifies for the general permit.

(f) This general permit does not relieve the permittee of the responsibility for obtaining a dredge and fill permit where it is required.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 FS. History–New 5-8-85, Formerly 17-4.71, 17-4.710, 17-25.801.

62-25.900 Stormwater.

(1) Application for New Stormwater Discharge Facility Construction Permit, May 8, 1985.

(2) Notice of Intent to Use General Permit (Rule 62-4.710, F.A.C.), for New Stormwater Discharge Facility Construction, May 8, 1985.

(3) Regional Stormwater Discharge Facility Biannual Report, May 8, 1985.

(4) Application for Wetlands Stormwater Discharge Facility Permit, May 8, 1985.

Specific Authority 373.026(7), 373.043, 373.4145, 403.805(1) FS. Law Implemented 373.4145 Amended 3-31-84, 5-8-85, Formerly 17-1.215, Formerly 62-1.215.

CHAPTER 62-40 WATER RESOURCE IMPLEMENTATION RULE

PART I GENERAL

62-40.110 Declaration and Intent.

(1) The waters of the state are among its basic resources. Such waters should be managed to conserve and protect natural resources and scenic beauty and to realize the full beneficial use of the resource. Recognizing the importance of water to the state, the Legislature passed the Water Resources Act, Chapter 373, Florida Statutes, and the Air and Water Pollution Control Act, Chapter 403, Florida Statutes. Additionally, numerous goals and policies within the State Comprehensive Plan, Chapter 187, Florida Statutes, address water resources and natural systems protection.

(2) This chapter is intended to provide water resource implementation goals, objectives, and guidance for the development and review of programs, rules, and plans relating to water resources, as expressed in Chapters 187, 373, and 403, Florida Statutes.

(3) These policies shall be construed as a whole and no individual policy shall be construed or applied in isolation from other policies. All constructions of this chapter shall give meaning to all parts of the rule when possible.

(4) Notwithstanding the incorporation of other Department rules in Rule 62-40.120, F.A.C., this chapter shall not constitute standards or criteria for decisions on individual permits.

(5) A goal of this chapter is to coordinate the management of water and related land resources. Local governments shall consider the water resource implementation rule in the development of their comprehensive plans as required by Chapter 163, Florida Statutes, and as required by Section 403.0891(3)(a), F.S. Special districts which manage water shall consider the water resource implementation rule in the development of their plans and programs. The Legislature has also expressed its intent, in Section 373.0395, F.S., that future growth and development planning reflect the limitations of available ground water and other water supplies.

(6) It is an objective of the State to protect the functions of entire ecological systems, as developed and defined in the programs, rules, and plans of the Department and water management districts.

(7) Government services should be provided efficiently. Inefficiency resulting from duplication of permitting shall be eliminated where appropriate, including water quality and water quantity permitting functions.

(8) Public education, awareness, and participation shall be encouraged. The Department and Districts should assist educational institutions in the development of educational curricula and research programs which meet Florida's present and future water management needs.

(9) This chapter does not repeal, amend or otherwise alter any rule now existing or later adopted by the Department or Districts. However, procedures are included in this chapter which provide for the review of Department and District plans, programs, and rules to assure consistency with the provisions of this chapter. The procedure for modification of District rules as requested by the Department shall be as prescribed in Section 373.114, F.S., and applicable provisions of this chapter.

(10) It is the intent of the Department, in cooperation with the Water Management Districts, to seek adequate sources of funding to supplement District ad valorem taxes to implement the provisions of this chapter.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS., Ch. 93-213, s. 2, 1993 Fla. Laws 1652, 1654. History–New 5-5-81, Formerly 17-40.01, Amended 12-5-88, Formerly 17-40.001, Amended 8-14-90, 12-17-91, Formerly 17-40.110, Amended 7-20-95.

62-40.120 Department Rules.

The water resource implementation rule shall also include the following Department rules:

(1) Water Quality Standards, Chapter 62-3, F.A.C.

(2) Surface Water Quality Standards, Chapter 62-302, F.A.C.

(3) Surface Water Improvement and Management, Chapter 62-43, F.A.C.

(4) Ground Water Classes, Standards, and Exemptions, Chapter 62-520, F.A.C.

(5) Drinking Water Standards, Monitoring, and Reporting, Chapter 62-550, F.A.C.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 8-14-90, Formerly 17-40.120, Amended 7-20-95.

PART II DEFINITIONS

62-40.210 Definitions.

When used in this chapter and in the review of rules of the Districts pursuant to Section 373.114(2), F.S., unless the context or content of such District rule requires a narrower, more specific meaning, the following words shall mean:

(1) "Aquifer" shall mean a geologic formation, group of formations, or part of a formation that contains sufficient saturated permeable material to yield useful quantities of ground water to wells, springs or surface water.

(2) "Consumptive use" means any use of water which reduces the supply from which it is withdrawn or diverted.

(3) "Department" means the Department of Environmental Protection.

(4) "Detention" means the delay of stormwater runoff prior to its discharge.

(5) "District" means a water management district created pursuant to Chapter 373, Florida Statutes.

(6) "District Water Management Plan" means the long-range comprehensive water resource management plan prepared by a District.

(7) "Drainage basin" means a subdivision of a watershed.

(8) "Effluent", unless specifically stated otherwise, means water that is not reused after flowing out of any wastewater treatment facility or other works used for the purpose of treating, stabilizing, or holding wastes.

(9) "Floodplain" means land area subject to inundation by flood waters from a river, watercourse, lake, or coastal waters. Floodplains are delineated according to their estimated frequency of flooding.

(10) "Florida Water Plan" means the State Water Use Plan, together with the water quality standards and water classifications adopted by the Department.

(11) "Governing Board" means the governing board of a water management district.

(12) "Ground water" means water beneath the surface of the ground, whether or not flowing through known and definite channels.

(13) "Ground water availability" means the potential quantity of ground water which can be withdrawn without resulting in significant harm to the water resources or associated natural systems.

(14) "Ground water basin" means a ground water flow system that has defined boundaries and may include permeable materials that are capable of storing or furnishing a significant water supply. The basin includes both the surface area and the permeable materials beneath it.

(15) "High recharge areas" means areas contributing significant volumes of water which add to the storage and flow of an aquifer through vertical movement from the land surface. The term significant will vary geographically depending on the hydrologic characteristics of that aquifer.

(16) "Natural systems" for the purpose of this rule means an ecological system supporting aquatic and wetland-dependent natural resources, including fish and aquatic and wetland-dependent wildlife habitat.

(17) "Nutrient limitations" means those numeric values which establish a maximum or minimum allowable nutrient loading or concentration, as appropriate, for a specific nutrient. Nutrient limitations are established through an individual permit or other action within the regulatory authority of the Department or a District. These limitations serve to implement state water quality standards.

(18) "Pollutant load reduction goal" means estimated numeric reductions in pollutant loadings needed to preserve or restore designated uses of receiving bodies of water and maintain water quality consistent with applicable state water quality standards.

(19) "Prime recharge areas" means areas that are generally within high recharge areas and are significant to present and future ground water uses including protection and maintenance of natural systems and water supply.

(20) "Reasonable-beneficial use" means the use of water in such quantity as is necessary for economic and efficient utilization for a purpose and in a manner which is both reasonable and consistent with the public interest.

(21) "Reclaimed water" means water that has received at least secondary treatment and is reused after flowing out of a domestic wastewater treatment facility.

(22) "Retention" means the prevention of stormwater runoff from direct discharge.

(23) "Reuse" means the deliberate application of reclaimed water, in compliance with Department and District rules, for a beneficial purpose.

(a) For example, said uses may encompass:

1. Landscape irrigation (such as irrigation of golf courses, cemeteries, highway medians, parks, playgrounds, school yards, retail nurseries, and residential properties);

2. Agricultural irrigation (such as irrigation of food, fiber, fodder and seed crops, wholesale nurseries, sod farms, and pastures);

3. Aesthetic uses (such as decorative ponds and fountains);

4. Groundwater recharge (such as slow rate, rapid-rate, and absorption field land application systems) but not including disposal methods described in Rule 62-40.210(23)(b), F.A.C.;

5. Industrial uses (such as cooling water, process water, and wash waters);

6. Environmental enhancement of surface waters resulting from discharge of reclaimed water having received at least advanced wastewater treatment or from discharge of reclaimed water for wetlands restoration;

7. Fire protection; or

8. Other useful purpose.

(b) Overland flow land application systems, rapid-rate land application systems providing continuous loading to a single percolation cell, other land application systems involving less than secondary treatment prior to application, septic tanks, and groundwater disposal systems using Class I wells injecting effluent or wastes into Class G-IV waters shall be excluded from the definition of reuse.

(24) "Secretary" means the Secretary of the Department of Environmental Protection.

(25) "State water quality standards" means water quality standards adopted by the Environmental Regulation Commission pursuant to Chapter 403, Florida Statutes, including standards composed of designated most beneficial uses (classification of waters), the numerical and narrative criteria applied to the specific water use or classification, the Florida anti-degradation policy, and the moderating provisions contained in Rules 62-3, 62-4, 62-302, 62-520, and 62-550, F.A.C.

(26) "State Water Use Plan" means the plan formulated pursuant to Section 373.036, Florida Statutes, for the use and development of waters of the State.

(27) "Stormwater" means the water which results from a rainfall event.

(28) "Stormwater management program" means the institutional strategy for stormwater management, including urban, agricultural, and other stormwater.

(29) "Stormwater management system" means a system which is designed and constructed or implemented to control stormwater, incorporating methods to collect, convey, store, absorb, inhibit, treat, use, or reuse stormwater to prevent or reduce flooding, over-drainage, environmental degradation and water pollution or otherwise affect the quantity and quality of discharges from the system.

(30) "Stormwater utility" means the entity through which funding for a stormwater management program is obtained by assessing the cost of the program to the beneficiaries based on their relative contribution to its need. It is operated as a typical utility which bills services regularly, similar to water and wastewater services.

(31) "Surface water" means water upon the surface of the earth, whether contained in bounds created naturally or artificially or diffused. Water from natural springs shall be classified as surface water when it exits from the spring onto the earth's surface.

(32) "Surface water availability" means the potential quantity of surface water that can be removed or retained without significant harm to the water resources or associated natural systems.

(33) "Water resource caution area" means a geographic area identified by a water management district as having existing water resource problems or an area in which water resource problems are projected to develop during the next twenty years. A critical water supply problem area, as described in Section 403.064, F.S., is an example of a water resource caution area.

(34) "Water" or "waters in the state" means any and all water on or beneath the surface of the ground or in the atmosphere, including natural or artificial watercourses, lakes, ponds, or diffused surface water and water percolating, standing, or flowing beneath the surface of the ground, as well as all coastal waters within the jurisdiction of the state.

(35) "Watershed" means the land area which contributes to the flow of water into a receiving body of water.

(36) "Watershed management goal" means an overall goal for the management of water resources within a watershed.

(37) "Wetlands" means those areas that are inundated or saturated by surface or ground water with a frequency sufficient to support, and under normal circumstances do or would support, a prevalence of vegetative or aquatic life that requires saturated or seasonably saturated soil conditions for growth and reproduction, such as swamps, marshes, bayheads, cypress ponds, sloughs, wet prairies, wet meadows, river overflows, mud flats and natural ponds. This definition does not alter the Department's jurisdiction over dredging and filling activities in wetlands as defined in Section 403.911(7), F.S.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS., Ch. 93-213, sec. 2, Laws of Florida, Ch. 93-213, s. 29, 1993 Fla. Laws. History–New 5-5-81, Formerly 17-40.02, Amended 12-5-88, Formerly 17-40.020, Amended 8-14-90, 12-17-91, Formerly 17-40.210, Amended 7-20-95.

PART III GENERAL PROVISIONS

62-40.310 General Policies.

The following statement of general water resource implementation policy shall guide Department review of water management programs, rules, and plans. Water management programs, rules and plans, where economically and environmentally feasible, not contrary to the public interest, and consistent with Florida law, shall seek to:

(1) Water Supply

(a) Assure availability of an adequate and affordable supply of water for all reasonable-beneficial uses. Uses of water authorized by a permit shall be limited to reasonable-beneficial uses.

(b) Reserve from use that water necessary to support essential non-withdrawal demands, including navigation, recreation, and the protection of fish and wildlife.

(c) Champion and develop sound water conservation practices and public information programs.

(d) Advocate and direct the reuse of reclaimed water as an integral part of water and wastewater management programs, rules, and plans consistent with protection of the public health and surface and ground water quality.

(e) Encourage the use of water of the lowest acceptable quality for the purpose intended.

(f) Encourage the development of local and regional surface and ground water supplies within districts rather than transfer water across District boundaries.

(g) Encourage demand management and the development of alternative water supplies, including water conservation, reuse of reclaimed water, desalination, stormwater and industrial wastewater reuse, recharge, and aquifer storage and recovery.

(h) Protect aquifers from depletion through water conservation and preservation of the functions of high recharge areas.

(2) Water Quality Protection and Management

(a) Restore and protect the quality of ground and surface water by solving current problems and ensuring high quality treatment for stormwater and wastewater.

(b) Identify existing and future public water supply areas and protect them from contamination.

(3) Flood Protection and Floodplain Protection

(a) Encourage nonstructural solutions to water resource problems and give adequate consideration to nonstructural alternatives whenever structural works are proposed.

(b) Manage the construction and operation of facilities which dam, divert, or otherwise alter the flow of surface waters to minimize damage from flooding, soil erosion or excessive drainage.

(c) Encourage the management of floodplains and other flood hazard areas to prevent or reduce flood damage, consistent with establishment and maintenance of desirable hydrologic characteristics and associated natural systems.

(d) Encourage the development and implementation of a strict floodplain management program by state, regional, and local governments designed to preserve floodplain functions and associated natural systems.

(e) Avoid the expenditure of public funds that encourage or subsidize incompatible new development or significant expansion of existing development in high-hazard flood areas.

(f) Minimize flood-related emergencies, human disasters, loss of property, and other associated impacts.

(4) Natural Systems Protection and Management

(a) Establish minimum flows and levels to protect water resources and the environmental values associated with marine, estuarine, freshwater, and wetlands ecology.

(b) Mitigate adverse impacts resulting from prior alteration of natural hydrologic patterns and fluctuations in surface and ground water levels.

(c) Utilize, preserve, restore, and enhance natural water management systems and discourage the channelization or other alteration of natural rivers, streams and lakes.

(5) Management Policies

(a) Protect the water storage and water quality enhancement functions of wetlands, floodplains, and aquifer recharge areas through acquisition, enforcement of laws, and the application of land and water management practices which provide for compatible uses.

(b) Emphasize the prevention of pollution and other water resource problems.

(c) Develop interstate agreements and undertake cooperative programs with Alabama and Georgia to provide for coordinated management of surface and ground waters.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS., Ch. 93-213, sec. 2, Laws of Florida. History–New 7-1-81, Formerly 17-40.03, Amended 12-5-88, Formerly 17-40.030, Amended 8-13-90, 12-17-91, Formerly 17-40.310, Amended 7-20-95.

PART IV RESOURCE PROTECTION AND MANAGEMENT

62-40.410 Water Supply Protection and Management.

The following shall apply to those areas where the use of water is regulated pursuant to Part II of Chapter 373, Florida Statutes:

(1) No permit shall be granted to authorize the use of water unless the applicant establishes that the proposed use is a reasonable-beneficial use, will not interfere with presently existing legal uses of water and is consistent with the public interest.

(2) In determining whether a water use is a reasonable-beneficial use, the following factors will be considered:

(a) The quantity of water requested for the use;

(b) The demonstrated need for the use;

(c) The suitability of the use to the source of water;

(d) The purpose and value of the use;

(e) The extent and amount of harm caused;

(f) The practicality of mitigating any harm by adjusting the quantity or method of use;

(g) Whether the impact of the withdrawal extends to land not owned or legally controlled by the user;

(h) The method and efficiency of use;

(i) Water conservation measures taken or available to be taken;

(j) The feasibility of alternative sources such as reclaimed water, stormwater, brackish water and salt water;

(k) The present and projected demand for the source of water;

(l) The long-term yield available from the source of water;

(m) The extent of water quality degradation caused;

(n) Whether the proposed use would cause or contribute to flood damage;

(o) Whether the proposed use would significantly induce saltwater intrusion;

(p) The amount of water which can be withdrawn without causing harm to the resource;

(q) Whether the proposed use would adversely affect public health; and

(r) Whether the proposed use would significantly affect natural systems.

(3) Water may be reserved from permit use in such locations and quantities, and for such seasons of the year, as is required for the protection of fish and wildlife or the public health or safety. Such reservations shall be subject to periodic review and revision in light of changed conditions. However, all presently existing legal users of water shall be protected so long as such use is not contrary to the public interest.

(4) Water use shall not be allowed to exceed ground water availability or surface water availability. If either is exceeded, the Districts shall expeditiously implement a remedial program. The remedial program shall consider options such as designation of a water resource caution area, declaration of a water shortage, development of water resource projects, regulation of consumptive water users, or other options consistent with this chapter and Chapter 373, F.S.

(5) In implementing consumptive use permitting programs, the Department and the Districts shall recognize the rights of property owners, as limited by law, to make consumptive uses of water from their land, and the rights of other users, as limited by law, to make consumptive uses of water, for reasonable-beneficial uses in a manner consistent with the public interest that will not interfere with any presently existing legal use of water.

(6) Permits authorizing consumptive uses of water which cause unanticipated significant adverse impacts on off-site land uses existing at the time of permit application, or on legal uses of water existing at the time of permit application, should be considered for modification, to curtail or abate the adverse impacts, unless the impacts can be mitigated by the permittee.

(7) The Districts shall determine whether Section 373.233, F.S., entitled "Competing Applications", and implementing rules, are applicable to pending applications.

(8) Any reallocation of an existing permitted quantity of water shall be reviewed by the District and shall be subject to full compliance with the applicable permitting criteria of the District.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

62-40.412 Water Conservation.

(1) The overall water conservation goal of the state shall be to prevent and reduce wasteful, uneconomical, impractical, or unreasonable use of water resources. Conservation of water shall be required unless not economically or environmentally feasible. The Districts should accomplish this goal by assisting local and regional governments and other parties, in addition to the assistance required under section 373.0391 of the Florida Statutes, "in the development and future revision of local government comprehensive plan elements or public facilities report as required by s. 189.415," in designing and formulating additional plans and programs to conserve water to meet their long-term needs, including incentives such as longer term or more flexible permits, economic incentives, and greater certainty of supply during water shortages.

(2) Districts shall further accomplish this water conservation goal by:

(a) Establishing efficiency standards for urban, industrial, and agricultural demand management, which standards may include the following:

1. Restrictions against inefficient irrigation practices;

2. Imposing year-round restrictions, which may include variances or exemptions, on particular irrigation activities or irrigation sources, and which shall use a uniform time period of 10:00 a.m. to 4:00 p.m.;

3. Minimizing unaccounted-for water losses;

4. Promoting water-conserving rate structures; and

5. Water-conserving plumbing fixtures, xeriscape, and rain sensors.

(b) Maintaining public information and education programs for long- and short-term water conservation goals.

(c) Executing provisions to implement the above criteria and to consistently apply water shortage restrictions between those Districts whose boundaries contain political jurisdictions located in more than one District.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95, Amended 1-7-97.

62-40.416 Water Reuse.

(1) Section 373.0391(2)(e), F.S., requires that the Districts shall designate areas that have water supply problems which have become critical or are anticipated to become critical within the next 20 years. The Districts shall identify such water resource caution areas during preparation of a District Plan pursuant to Rule 62-40.520, F.A.C., and shall adopt and amend these designations periodically as set forth in this section and as required under section 120.54 of the Florida Statutes.

(2) In implementing consumptive use permitting programs, a reasonable amount of reuse of reclaimed water shall be required within designated water resource caution areas, unless objective evidence demonstrates that such reuse is not economically, environmentally, or technically feasible.

(3) The Districts shall periodically update their designations of water resource caution areas. Such updates shall occur within one year after updates of the District Plan prepared pursuant to Rule 62-40.520, F.A.C. After completion of the District Plan or updates pursuant to Rule 62-40.520, F.A.C., the Districts may limit areas where reuse shall be required to areas where reuse is specified as a remedial or preventive action pursuant to Rule 62-40.520, F.A.C.

(4) In implementing consumptive use permitting programs, a reasonable amount of reuse of reclaimed water from domestic wastewater treatment facilities may be required outside of areas designated pursuant to Rule 62-40.416(1), F.A.C., as subject to water supply problems, provided:

(a) Reclaimed water is readily available;

(b) Objective evidence demonstrates that such reuse is economically, environmentally, and technically feasible; and

(c) The District has adopted rules for reuse in these areas.

(5) The Department encourages local governments to implement programs for reuse of reclaimed water. The Districts are encouraged to establish incentives for local governments and other interested parties to implement programs for reuse of reclaimed water. These rules shall not be deemed to pre-empt any such local reuse programs.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95, Amended 1-7-97.

62-40.422 Interdistrict Transfer.

The following shall apply to the transfers of surface and ground water where such transfers are regulated pursuant to Part II of Chapter 373, Florida Statutes:

(1) The transfer or use of surface water across District boundaries shall require approval of each involved District. The transfer or use of ground water across District boundaries shall require approval of the District where the withdrawal of ground water occurs.

(2) In deciding whether the transfer and use of surface water across District boundaries is consistent with the public interest pursuant to Section 373.223, Florida Statutes, the Districts should consider the extent to which:

(a) Comprehensive water conservation and reuse programs are implemented and enforced in the area of need;

(b) The major costs, benefits, and environmental impacts have been adequately determined including the impact on both the supplying and receiving areas;

(c) The transfer is an environmentally and economically acceptable method to supply water for the given purpose;

(d) The present and projected water needs of the supplying area are reasonably determined and can be satisfied even if the transfer takes place;

(e) The transfer plan incorporates a regional approach to water supply and distribution including, where appropriate, plans for eventual interconnection of water supply sources; and

(f) The transfer is otherwise consistent with the public interest based upon evidence presented.

(3) The interdistrict transfer and use of ground water must meet the requirements of Section 373.2295, Florida Statutes.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 5-5-81, Formerly 17-40.05, 17-40.050, 17-40.402, 17-40.422, Amended 7-20-95.

62-40.430 Water Quality.

(1) Water quality standards shall be enforced pursuant to Chapter 403, Florida Statutes, to protect waters of the State from point and non-point sources of pollution.

(2) State water quality standards adopted by Department rule shall be a part of the Florida Water Plan.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 5-5-81, Formerly 17-40.06, 17-40.060, 17-40.403, Formerly 17-40.430.

62-40.432 Surface Water Protection and Management.

(1) Surface Water Protection and Management Goals. The following goals are established to provide guidance for Department, District and local government stormwater management programs:

(a) It shall be a goal of surface water management programs to protect, preserve and restore the quality, quantity and environmental values of water resources. A goal of surface water management programs includes effective stormwater management for existing and new systems which shall seek to protect, maintain and restore the functions of natural systems and the beneficial uses of waters.

(b) The primary goals of the state's stormwater management program are to maintain, to the maximum extent practicable, during and after construction and development, the pre-development stormwater characteristics of a site; to reduce stream channel erosion, pollution, siltation, sedimentation and flooding; to reduce stormwater pollutant loadings discharged to waters to preserve or restore beneficial uses; to reduce the loss of fresh water resources by encouraging the reuse of stormwater; to enhance ground water recharge by promoting infiltration of stormwater in areas with appropriate soils and geology; to maintain the appropriate salinity regimes in estuaries needed to support the natural flora and fauna; and to address stormwater management on a watershed basis to provide cost effective water quality and water quantity solutions to specific watershed problems.

(c) Inadequate management of stormwater throughout a watershed increases stormwater flows and velocities, contributes to erosion and sedimentation, overtaxes the carrying capacity of streams and other conveyances, disrupts the functions of natural systems, undermines floodplain management and flood control efforts in downstream communities, reduces ground water recharge, threatens public health and safety, and is the primary source of pollutant loading entering Florida's rivers, lakes and estuaries, thus causing degradation of water quality and a loss of beneficial uses. Accordingly, it is a goal to eliminate the discharge of inadequately managed stormwater into waters and to minimize other adverse impacts on natural systems, property and public health, safety and welfare caused by improperly managed stormwater.

(d) It shall be a goal of stormwater management programs to reduce unacceptable pollutant loadings from older stormwater management systems, constructed before the adoption of Chapter 62-25, F.A.C., (February 1, 1982), by developing watershed management and stormwater master plans or District-wide or basin specific rules.

(e) The concept of developing comprehensive watershed management plans in designated watersheds is intended not only to prevent existing environmental, water quantity, and water quality problems from becoming worse but also to reduce existing flooding problems, to improve existing water quality, and to preserve or restore the values of natural systems.

(2) Watershed management goals shall be developed by the District for all watersheds within the boundaries of each District and shall be consistent with the Surface Water Improvement and Management (SWIM) program and the EPA National Pollution Discharge Elimination System (NPDES) program. Watershed management goals shall be included in the District Water Management Plans.

(3) Stormwater Management Program Implementation. As required by Section 403.0891, F.S., the Department, Districts and local governments shall cooperatively implement on a watershed basis a comprehensive stormwater management program designed to minimize the adverse effects of stormwater on land and water resources. All such programs shall be mutually compatible with the State Comprehensive Plan (Chapter 187, Florida Statutes), the Local Government Comprehensive Planning

and Land Development Regulation Act (Chapter 163, Florida Statutes), the Surface Water Improvement and Management Act (Sections 373.451-.4595, F.S.), Chapters 373 and 403, F.S., and this chapter. Programs shall be implemented in a manner that will improve and restore the quality of waters that do not meet state water quality standards and maintain the water quality of those waters which meet or exceed state water quality standards.

(a) The Department shall be the lead agency responsible for coordinating the statewide stormwater management program by establishing goals, objectives and guidance for the development and implementation of stormwater management programs by the Districts and local governments. The Department shall implement the state's stormwater management program in Districts which do not have the economic and technical resources to implement a comprehensive stormwater and surface water management program.

(b) The Districts which have implemented a comprehensive stormwater and surface water management program shall be the chief administrators of the state stormwater management program. The Department or the Districts, where appropriate, shall set regional stormwater management goals and policies on a watershed basis, including watershed stormwater pollutant load reductions necessary to preserve or restore beneficial uses of receiving waters. For water bodies which fully attain their designated use and meet the applicable state water quality standards, the pollutant load reduction goal shall be zero. Such goals and policies shall be implemented through District SWIM plans, through preparation of watershed management plans in other designated priority watersheds and through appropriate regulations.

(c) Local governments shall establish stormwater management programs which are in accordance with the state and District stormwater quality and quantity goals. Local governments may establish a stormwater utility or other dedicated source of funding to implement a local stormwater management program which shall include the development and implementation of a stormwater master plan and provisions, such as an operating permit system, to ensure that stormwater systems are properly operated and maintained.

(d) Section 189.4155 of the Florida Statutes requires that special districts, such as water control districts created under Chapter 298 of the Florida Statutes, must be consistent with the applicable local government comprehensive plan adopted under Part II, Chapter 163 of the Florida Statutes, in the construction and expansion of public facilities, or in a major alteration which affects the quantity or quality of the level of service of a public facility. In order to be consistent with the goals and objectives of the water resource implementation rule, any water control district created pursuant to Chapter 298, F.S., or special act, and other special districts as defined in Section 189.403(1), F.S., which have water management powers shall:

1. Be consistent with Department and district stormwater quality and quantity goals for the construction and expansion of water control and related facilities.

2. Operate existing water control and related facilities consistent with applicable Department and district stormwater quality and quantity goals. Any modification or alteration of existing water control and related facilities shall be consistent with Department and district stormwater quality and quantity goals.

(4) Surface Water Management. The following shall apply to the regulation of surface water pursuant to Part IV, Chapter 373, Florida Statutes.

(a) The construction and operation of facilities which manage or store surface waters, or other facilities which drain, divert, impound, discharge into, or otherwise impact waters in the state, and the improvements served by such facilities, shall not be harmful to water resources or inconsistent with the objectives of the Department or District.

(b) In determining the harm to water resources and consistency with the objectives of the Department or District, consideration should be given to:

1. The impact of the facilities on:

a. water quality;

b. fish and wildlife;

c. wetlands, floodplains, estuaries, and other environmentally sensitive lands;

d. reasonable-beneficial uses of water;

e. recreation;

f. navigation;

g. saltwater or pollution intrusion, including any barrier line established pursuant to Section 373.033, F.S.;

h. minimum flows and levels established pursuant to Section 373.042, F.S.; and

i. other factors relating to the public health, safety, and welfare;

2. Whether the facilities meet applicable design or performance standards;

3. Whether adequate provisions exist for the continued satisfactory operation and maintenance of the facilities; and

4. The ability of the facilities and related improvements to avoid increased damage to off-site property, water resources, natural systems or the public caused by:

a. floodplain development, encroachment or other alteration;

b. retardance, acceleration or diversion of flowing water;

c. reduction of natural water storage areas;

d. facility failure; or

e. other actions adversely affecting off-site water flows or levels.

(5) Minimum Stormwater Treatment Performance Standards.

(a) When a stormwater management system complies with rules establishing the design and performance criteria for stormwater management systems, there shall be a rebuttable presumption that such systems will comply with state water quality standards. The Department and the Districts, pursuant to Section 373.418, F.S., shall, when adopting rules pertaining to stormwater management systems, specify design and performance criteria for new stormwater management systems which:

1. Shall be designed to achieve at least 80 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards.

2. Shall be designed to achieve at least 95 percent reduction of the average annual load of pollutants that would cause or contribute to violations of state water quality standards in Outstanding Florida Waters.

3. The minimum treatment levels specified in subparagraphs 1. and 2. above may be replaced by basin specific design and performance criteria adopted by a District in order to achieve the pollutant load reduction goals established in paragraph (c).

(b) Erosion and sediment control plans detailing appropriate methods to retain sediment on-site shall be required for land disturbing activities.

(c) The pollutant loading from older stormwater management systems shall be reduced as necessary to restore or maintain the beneficial uses of waters. The Districts shall establish pollutant load reduction goals and adopt them as part of a SWIM plan, other watershed management plan, or District-wide or basin specific rules.

(d) Watershed specific stormwater pollutant load reduction goals shall be developed for older stormwater management systems on a priority basis as follows:

1. The Districts shall include in adopted SWIM Plans numeric estimates of the level of pollutant load reduction goals anticipated to result from planned corrective actions included in the plan.

a. For SWIM water bodies with plans originally adopted before January 1, 1992, these estimates shall be established before December 31, 1994.

b. For SWIM water bodies with plans originally adopted after January 1, 1992, these estimates shall be established within three years of the plan's original adoption date.

2. Each District shall develop water body specific pollutant load reduction goals for non-SWIM water bodies on a priority basis according to a schedule provided in the District Water Management Plan. The list of water bodies and the schedule shall be developed by each District, giving priority consideration to water bodies that receive discharges from stormwater management systems that are required to obtain a NPDES municipal stormwater discharge permit.

3. The Districts shall consider economic, environmental, and technical factors in implementing programs to achieve pollutant load reduction goals. These goals shall be considered in local comprehensive plans submitted or updated in accordance with Section 403.0891(3)(a), F.S.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 2-20-91, Formerly 17-40.420, 17-40.432, Amended 7-20-95, 1-7-97.

62-40.450 Flood Protection.

Flood protection shall be implemented within the context of other interrelated water management responsibilities. Florida will continue to be dependent on some structural water control facilities constructed in the past, and new structural facilities may sometimes be unavoidable in addressing existing and future flooding or other water-related problems. The Department and the Districts shall promote nonstructural flood protection strategies.

(1) Flood Protection Responsibilities

(a) Local governments have the primary responsibility for regulating land use, enforcing construction criteria for flood prone areas, establishing local stormwater management levels of service, constructing and maintaining local flood control facilities, and otherwise preventing flood damages to new and existing development.

(b) District flood protection responsibilities relate primarily to serving regional water conveyance and storage needs. Districts have the authority to plan, construct, and operate water control facilities, as well as regulate discharges into works of the District or facilities controlled by the District.

(c) Rules adopted under Part IV of Chapter 373, F.S., shall require that appropriate precautions be taken to protect public health and safety in the event of failure of any water control structures, such as pumps and levees.

(d) Department and District programs shall discourage siting of incompatible public facilities in floodplains and flood prone areas wherever possible. Where no feasible alternative exists to siting an incompatible public facility in a floodplain or flood prone area, the facility shall be designed to minimize flood damage risks and adverse impacts on natural flood detention and conveyance capabilities.

(e) Each District shall clearly define in its District Water Management Plan, in basin specific plans, or rules, the District's responsibilities related to flood emergencies, including its mechanisms for coordinating with emergency response agencies.

(2) District Facilities

(a) District water control facilities shall be operated and maintained in accordance with established plans or schedules.

(b) Districts shall assess the design characteristics and operational practices of existing District water control facilities to ascertain opportunities for minimizing adverse impacts on water resources and associated natural systems. Where feasible, facility design modifications or operational changes shall be implemented to enhance natural systems or fulfill other water management responsibilities.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS., Ch. 93-213, sec. 2, Laws of Florida. History–New 7-20-95.

62-40.458 Floodplain Protection.

(1) The Department and the Districts shall provide leadership to protect and enhance the beneficial values of floodplains. This shall include active coordination with local governments, special districts, and related programs of federal agencies, the Department of Community Affairs, and the Department of Health and Rehabilitative Services. Nothing in this section is intended to diminish the Department's and District's responsibilities regarding flood protection.

(a) The Department and the Districts shall pursue development of adequate floodplain protection information, including:

1. District determination of flood levels for priority floodplains. At a minimum, this shall include the 100-year flood level, with other flood levels to be determined where needed for watershed-specific management purposes. Districts are encouraged to determine the 10-year flood level for the purpose of assisting the Department of Health and Rehabilitative Services to regulate septic tanks in floodplains pursuant to Section 10D-6.0471, F.A.C.

2. Identification of floodplains with valuable natural systems for potential acquisition.

3. Identification of floodplain areas having potential for restoration of natural flow regimes.

(b) The Department and the Districts shall develop jointly a comprehensive system of coordinated planning, management, and acquisition to protect and, where feasible, enhance floodplain functions and associated natural systems in floodplains. This system shall include implementation of policies and programs to:

1. Acquire and maintain valuable natural systems in floodplains.

2. Protect the natural water storage and water conveyance capabilities of floodplains.

3. Where feasible, enhance or restore natural flow regimes of rivers and watercourses that have been altered for water control purposes.

(c) District regulatory programs shall minimize incompatible activities in floodplains. For regulated floodplains, each District, at a minimum, shall ensure that such activities:

1. Will not result in significant adverse effects on surface and ground water levels and surface water flows.

2. Will not result in significant adverse impacts to existing surface water storage and conveyance capabilities of the floodplain.

3. Will not result in significant adverse impacts to the operation of District facilities.

4. Will assure that any surface water management facilities associated with the proposed activity will be capable of being effectively operated and maintained.

5. Will not cause violations of water quality standards in receiving waters.

6. Will not otherwise be harmful to water resources.

(2) Each District shall provide to local governments and water control districts available information regarding floodplain delineation and floodplain functions and associated natural systems, and assist in developing effective measures to manage floodplains consistently with this chapter.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

62-40.470 Natural Systems Protection and Management.

Programs, plans, and rules to accomplish natural systems protection and management shall include rules to address adverse cumulative impacts, the establishment of minimum flows and levels (Rule 62-40.473, F.A.C.) and may include protection measures for surface water resources (Rule 62-40.475, F.A.C.).

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS., Ch. 93-213, sec. 2, Laws of Florida. History–New 7-20-95.

62-40.473 Minimum Flows and Levels.

(1) In establishing minimum flows and levels pursuant to Section 373.042, consideration shall be given to the protection of water resources, natural seasonal fluctuations in water flows or levels, and environmental values associated with coastal, estuarine, aquatic, and wetlands ecology, including:

(a) Recreation in and on the water;

(b) Fish and wildlife habitats and the passage of fish;
(c) Estuarine resources;
(d) Transfer of detrital material;
(e) Maintenance of freshwater storage and supply;
(f) Aesthetic and scenic attributes;
(g) Filtration and absorption of nutrients and other pollutants;
(h) Sediment loads;
(i) Water quality; and
(j) Navigation.
(2) Established minimum flows and levels shall be protected where relevant to:
(a) The construction and operation of water resource projects;
(b) The issuance of permits pursuant to Part II, Part IV, and Section 373.086, Florida Statutes; and
(c) The declaration of a water shortage pursuant to Section 373.175 or Section 373.246, Florida Statutes.
(3) Each water management district shall advise the Secretary by January 1, 1995 of the date by which each District shall establish minimum flows and levels for surface waterbodies within the District. Priority shall be given to establishment of minimum flows and levels on waters which are located within:
(a) an Outstanding Florida Water;
(b) an Aquatic Preserve;
(c) an Area of Critical State Concern; or
(d) an area subject to Chapter 380 Resource Management Plans adopted by rule by the Administration Commission, when the plans for an area include waters that are particularly identified as needing additional protection, which provisions are not inconsistent with applicable rules adopted for the management of such areas by the Department and the Governor and Cabinet.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 5-5-81, Formerly 17-40.08, Amended 12-5-88, Formerly 17-40.080, 17-40.405, Formerly 17-40.473, Amended 7-20-95.

62-40.475 Protection Measures for Surface Water Resources.
(1) As part of SWIM Plans or basin-specific management plans, programs, or rules, the Districts are encouraged to implement protection measures as appropriate to enhance or preserve surface water resources. Protection measures shall be based on scientific evaluations of particular surface waters and the need for enhancement or preservation of these surface water resources.
(2) In determining if basin-specific rules should be adopted to establish protection areas, due consideration shall be given to surface waters with the following special designations:
(a) an Outstanding Florida Water,
(b) an Aquatic Preserve,
(c) an Area of Critical State Concern, or
(d) an area subject to Chapter 380 Resource Management Plans adopted by rule by the Administration Commission, when the plans for an area include waters that are particularly identified as needing additional protection, which provisions are not inconsistent with applicable rules adopted for the management of such areas by the Department and the Governor and Cabinet.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

PART V WATER PROGRAM DEVELOPMENT

62-40.510 Florida Water Plan.
(1) The Department shall formulate an integrated, coordinated Florida Water Plan for the management of Florida's water resources. The scope of the plan shall include the Florida Water Plan and District Water Management Plans and all other water-related activities of the Department and the Districts. District Water Management Plans shall give due consideration to the factors in Section 373.036(2), F.S.
(2) The Florida Water Plan shall be developed in coordination with District Water Management Plans and include, at a minimum:
(a) Department overview, including a discussion of the interrelationships of Department and District programs;
(b) Water management goals and responsibilities, including the following areas of responsibilities:
1. water supply protection and management,
2. flood protection and management,
3. water quality protection and management, and
4. natural systems protection and management;

(c) Statewide water management implementation strategies for each area of responsibility;

(d) Intergovernmental coordination, including the Department's processes for general supervision of the water management districts;

(e) Procedures for plan development, including public participation;

(f) Methods for assessing program effectiveness and the Department's progress toward implementation of the Plan;

(g) Linkages to Department rulemaking, budgeting, program development, and legislative proposals;

(h) Strategies to identify the amount and sources of supplemental funding to implement the programs identified in Chapter 373, District Water Management Plans, this chapter, and any delegated programs;

(i) Chapter 62-40, F.A.C., Water Resource Implementation Rule;

(j) Appropriate sections of the District Water Management Plans;

(k) State water quality standards.

(3) The Florida Water Plan shall be developed expeditiously and may be phased. It shall be completed by November 1, 1995.

(4) At a minimum, the Florida Water Plan shall be updated every five years after the initial plan development. Annual status reports on the Plan shall also be prepared by the Department.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

62-40.520 District Water Management Plans.

(1) Each district shall prepare a long range comprehensive water management plan which is consistent with the provisions of this chapter and Section 373.036, Florida Statutes. District Water Management Plans are comprehensive guides to the Districts in carrying out all their water resource management responsibilities, including water supply, flood protection, water quality management, and protection of natural systems. The plans shall provide general directions and strategies for District activities, programs, and rules. They will be implemented by a schedule of specific actions of the District, which may include program development, water resource projects, land acquisition, funding, technical assistance, facility operations, and rule development.

(2) The District Plan shall include an assessment of water needs and sources for the next 20 years. The District Plan shall identify specific geographical areas that have water resource problems which have become critical or are anticipated to become critical within the next 20 years to be called water resource caution areas. Identification of water resource caution areas needed for imposition of reuse requirements pursuant to Rule 62-40.416, F.A.C., may be accomplished before publication of the complete District Plan.

(3) Based on economic, environmental, and technical analyses, a course of remedial or preventive action shall be specified for each current and anticipated future problem.

(4) Remedial or preventive measures may include, but are not limited to, water resource projects; water resources restoration projects pursuant to Section 403.0615, Florida Statutes; purchase of lands; conservation of water; reuse of reclaimed water; enforcement of Department or District rules; and actions taken by local government pursuant to a local government comprehensive plan, local ordinance, or zoning regulation.

(5) District Plans shall also provide for identifying areas where collection of data, water resource investigations, water resource projects, or the implementation of regulatory programs are necessary to prevent water resource problems from becoming critical.

(6) District plans shall address, at a minimum, the following subjects:

(a) District overview;

(b) Water management goals;

(c) Water management responsibilities, including:

1. Water supply protection and management, to include needs and sources, source protection, and a schedule for recharge mapping and recharge area designation;

2. Flood protection and floodplain management. This shall include the District's strategies and priorities for managing facilities and floodplains, and a schedule for District mapping of floodplains;

3. Water quality protection and management for both surface water and ground water. This shall include the District's strategies, priorities, and schedules to develop pollutant load reduction goals; and

4. Natural systems protection and management. This shall include a schedule for establishing minimum flows and levels for a priority selection of surface waters and ground waters in the District, considering ground water availability and surface water availability, and a schedule for establishing protection areas for surface waters in the District, where appropriate.

(d) For each water management responsibility, the following shall be included:

1. Resource assessments, including identification of regionally significant water resource issues and problems, and determinations of the need for ground water basin resource availability inventories in various portions of the District;

2. Evaluation of options;

3. Water management policies for identified issues and problems;

4. Implementation strategies for each issue and problem, including tasks, schedules, responsible entities, and measurable benchmarks.

(e) Integrated plan, describing how the water problems of each county in the District are identified and addressed;

(f) Intergovernmental coordination, including measures to implement the plan through coordination with the plans and programs of local, regional, state and federal agencies and governments; and

(g) Procedures for plan development, including definitions and public participation.

(7) District Plans shall be developed expeditiously and may be phased. All District Plans shall be accepted by the Governing Board no later than November 1, 1994. A District Water Management Plan is intended to be a planning document and is not self-executing.

(8) At a minimum, District Plans shall be updated and progress assessed every five years after the initial plan development. Each District shall include in the Plan a procedure for evaluation of the District's progress towards implementing the Plan. Such procedure shall occur at least annually and a copy of the evaluation shall be provided to the Department each year by November 15 for review and comment.

(9) Plan development shall include adequate opportunity for participation by the public and governments. Districts shall be deemed to have afforded adequate opportunity for participation to the public and governments, by holding public workshops with advance notice by publication. Districts shall hold public workshops at least four months before Plan acceptance by the Governing Board. At the workshops, a preliminary list of schedules to be included in the Plan shall be presented.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 5-5-81, Formerly 17-40.09, Amended 12-5-88, Formerly 17-40.090, Amended 8-14-90, 12-17-91, Formerly 17-40.501, 17-40.520, Amended 7-20-95, 1-7-97.

62-40.530 Department Review of District Water Management Plans.

(1) After acceptance by the District Governing Board, District Water Management Plans shall be submitted to the Department.

(2) Within sixty days after receipt of a Plan for review, the Department shall review each Plan for consistency with this chapter and recommend any changes to the Governing Board.

(3) After consideration of the comments and recommendations of the Department, the Governing Board shall, within sixty days, either incorporate the recommended changes into the Plan or state in the Plan, with specificity, the reasons for not incorporating the changes.

(4) Plan amendments shall follow the same process as for initial Plan acceptance.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

62-40.540 Water Data.

(1) All local governments, water management districts, and state agencies are directed by Section 373.026(2), F.S., to cooperate with the Department in making available to the Department such scientific or factual data as they may possess. The Department shall prescribe the format and ensure the quality control for all water quality data collected or submitted.

(2) The Department is the state's lead water quality monitoring agency and central repository for surface water and ground water information. The Department shall coordinate Department, District, state agency, and local government water quality monitoring activities to improve data and reduce costs.

(3) The U.S. Environmental Protection Agency water quality data base (STORET) shall be the central repository of the state's water quality data. All appropriate water quality data collected by the Department, Districts, local governments, and state agencies shall be placed in the STORET system within one year of collection.

(4) The Department's biennial state water quality assessment (the "305(b) Report") shall be the state's general guide to water quality assessment and should be used as the basis for assessments unless more recent, more accurate, or more detailed information is available.

(5) Appropriate monitoring of water quality and water withdrawal shall be required of permittees.

(6) The Districts shall implement a strategy for measuring, estimating, and reporting withdrawal and use of water by permitted and exempted users. Thresholds for measurement requirements and reporting applicable to permittees shall be established and adopted by rule.

(7) The Department and the Districts shall coordinate in the development and implementation of a standardized computerized statewide data base and methodology to track activities authorized by environmental resource permits in wetlands and waters of the state. The data base will be designed to provide for the rapid exchange of information between the Department and the Districts. The Department will serve as the central repository for environmental resource permit data and shall specify the data base organization and electronic format in which the data are to be provided by the Districts.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 7-20-95.

PART VI WATER PROGRAM ADMINISTRATION AND EVALUATION

62-40.610 Review and Application.

(1) This chapter shall be reviewed periodically, but in no case less frequently than once every four years. Revisions, if any, shall be adopted by rule.

(2) Within 12 months after adoption or revision of this chapter, the Districts shall have revised their rules and reviewed their programs to be consistent with the provisions contained herein.

(3) District rules adopted after this chapter takes effect shall be reviewed by the Department for consistency with this chapter.

(4) At the request of the Department, each District shall initiate rulemaking pursuant to Chapter 120, Florida Statutes, to consider changes the Department determines to be necessary to assure consistency with this chapter. The Department shall be made a party to the proceeding.

(5) District water policies may be adopted which are consistent with this chapter, but which take into account differing regional water resource characteristics and needs.

(6) A District shall initiate rulemaking or program review to consider implementation of programs pursuant to Sections 373.033, 373.042, 373.106, Part II, Part III, or Part IV of Chapter 373, Florida Statutes, where the Department or District determines that present or projected conditions of water shortages, saltwater intrusion, flooding, drainage, or other water resource problems, prevent or threaten to prevent the achievement of reasonable-beneficial uses, the protection of fish and wildlife, or the attainment of other water resource implementation rule directives.

(7) The Department and Districts shall assist other governmental entities in the development of plans, ordinances, or other programs to promote consistency with this chapter and District water management plans.

Specific Authority 373.026(7), 373.043, 373.036(1)(d), 373.171 FS. Law Implemented 373.023, 373.026, 373.033, 373.036(1)(d), 373.0391, 373.0395, 373.042, 373.046, 373.086, 373.103, 373.106, 373.171, 373.175, 373.185, 373.1961, 373.223, 373.246, 373.413, 373.4135, 373.414, 373.416, 373.418, 373.423, 373.429, 373.451, 373.453, 403.0615(3), 403.064, 403.0891 FS. History–New 5-5-81, Formerly 17-40.10, 17-40.100, Amended 12-17-91, Formerly 17-40.601, Formerly 17-40.610, Amended 7-20-95.

RULES OF THE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CHAPTER 40D-40
GENERAL ENVIRONMENTAL RESOURCE PERMITS

40D-40.011 Policy and Purpose

The rules in this chapter grant general environmental resource permits for certain specified surface water management systems which have been determined to be not harmful to the water resources of the District and to be not inconsistent with the objectives of the District. The purpose of this chapter is to set forth the requirements for qualifying for a general permit and the conditions under which they may be exercised. Non-exempt surface water management systems which do not qualify for a noticed general environment resource permit pursuant to Chapter 40D-400, F.A.C. or a general permit under this chapter are required to obtain individual permits. The District reserves the right to require an individual permit for any surface water management system which: does not comply with the provision of this chapter; may be harmful to the water resources of the District; or is inconsistent with the overall objectives of the District.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.103(1), 373.413(1), 373.416, 373.419, 373.429, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95, 9-26-02.

40D-40.021 Definitions

As used in this chapter:

(1) "Public highway project" means a road and associated facilities located within a right of way dedicated to the public for highway purposes, which are constructed, altered, operated, maintained or funded by the United States, the State of Florida, a county, or municipality.

(2) The terms have the same meaning as defined in Rule 40D-4.021.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416, 373.419, 403.031(3), F.S. History – New 10-1-84, Amended 3-1-88.

40D-40.031 Implementation, Effective Date and Applicability

(1) This rule specifies the effective dates for the permit program developed pursuant to Part IV, Chapter 373, F.S.:

(2) If the surface water management system meets the conditions of subsections 40D-40.302(1) through (4), the effective date is October 1,1984.

(3) Amendments to these rules adopted October 27, 1987, including the Basis of Review, are effective March 1, 1988, and apply to permit applications filed on or after March 1, 1988.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.416, 373.414, 373.419, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95.

40D-40.040 General Environmental Resource Permits

(1) Three types of General Environmental Resource Permits are issued pursuant to this Chapter and Chapter 40D-4, F.A.C. They are:

(a) General Environmental Resource Permit for Minor Surface Water Management systems. The conditions for issuance for this permit are contained within Section 40D-40.301;

(b) General Environmental Resource Permit for Surface Water Management Systems. The conditions for issuance of this permit are contained within Section 40D-40.302;

(c) General Environmental Resource Permit for Site Conditions Assessment. The conditions for issuance of this permit are contained within section 40D-40.302.

(2) General Environmental Resource Construction and Operation Permits are required prior to the construction, alteration, removal, maintenance, operation or abandonment of certain surface water management systems.

(3) Site Conditions Assessment Permits are optional general permits that are issued as the first phase of construction permitting which identify and document the boundaries of certain existing site conditions found within a project area. At a minimum, all site conditions assessment permits shall evaluate, and identify if present, the landward extent of wetlands and other surface waters; the level and landward extent of the 100 year flood plain; seasonal high water levels; and existing watershed delineations. Additional site conditions boundaries may be requested by the applicant and evaluated for permitting by the District. A site conditions assessment permit does not authorize construction, alteration, operation, or abandonment of a surface water management system or establishment of a mitigation bank, but it can be formally modified by the permittee to apply for either an individual or a general construction and operation permit.

(1) "Public highway project" means a road and associated facilities located within a right of way dedicated to the public for highway purposes, which are constructed, altered, operated, maintained or funded by the United States, the State of Florida, a county, or municipality.

(2) The terms have the same meaning as defined in Rule 40D-4.021.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416, 373.419, 403.031(3), F.S. History – New 10-1-84, Amended 3-1-88.

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(3) Amendments to these rules adopted October 27, 1987, including the Basis of Review, are effective March 1, 1988, and apply to permit applications filed on or after March 1, 1988.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.416, 373.414, 373.419, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95.

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(b) General Environmental Resource Permit for Surface Water Management Systems. The conditions for issuance of this permit are contained within Section 40D-40.302;

(c) General Environmental Resource Permit for Site Conditions Assessment. The conditions for issuance of this permit are contained within section 40D-40.302.

(2) General Environmental Resource Construction and Operation Permits are required prior to the construction, alteration, removal, maintenance, operation or abandonment of certain surface water management systems.

(3) Site Conditions Assessment Permits are optional general permits that are issued as the first phase of construction permitting which identify and document the boundaries of certain existing site conditions found within a project area. At a minimum, all site conditions assessment permits shall evaluate, and identify if present, the landward extent of wetlands and other surface waters; the level and landward extent of the 100 year flood plain; seasonal high water levels; and existing watershed delineations. Additional site conditions boundaries may be requested by the applicant and evaluated for permitting by the District. A site conditions assessment permit does not authorize construction, alteration, operation, or abandonment of a surface water management system or establishment of a mitigation bank, but it can be formally modified by the permittee to apply for either an individual or a general construction and operation permit.

the project Statement of Completion and as-built information by the original permittee, and operation approval by the District.

(4) A site conditions assessment permit shall neither authorize construction, alteration, operation or maintenance of any surface water management system nor imply approval of any such future activities in, on or over any wetlands or other surface waters, or elsewhere.

(5) The technical and procedural aspects of site conditions assessment permitting are described in the "Basis of Review for Environmental Resource Permit Applications," specifically in Appendix 7 thereof, adopted by reference in section 40D-4.091, F.A.C.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.414, 373.416, 373.419, F.S. History – New 7-23-96, 9-26-02.

40D-40.111 Requests for Noticed General Permits

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416, 373.419, F.S. History – New 3-1-88. Repealed 10-3-95.

40D-40.112 Content of Application for Standard General Permits

(1) To Apply for a general permit, including an application for a general permit for minor surface water management systems, the applicant shall file with the District the Application form identified in Chapter 40D-1, F.A.C. and other required documents, information and fees.

(2) The application shall consist of the requirements as stated in Rule 40D-4.101, F.A.C.

(3) A complete application for a general permit for construction and operation shall also constitute an application for certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 U.S.C. Section 1341. Issuance of the construction and operation permit shall constitute certification of compliance with water quality standards unless the permit is issued pursuant to the net improvement provision of section 373.414(1)(b), F.S., or the permit specifically states otherwise.

(4) If a general permit application involves activities located in, on, or over wetlands or other surface waters, as delineated by the methodology authorized in subsection 373.421(1), F.S., then, within three business days of receipt of the application, the District shall forward a copy to the appropriate office of the U.S. Army Corps of Engineers unless specifically authorized by the Corps to do otherwise.

(5) If the application involves activities located in, on, or over wetlands or other surface waters, as delineated by the methodology authorized in subsection 373.421(1), F.S., the District shall forward a copy of notice of the application to and request comments from:

(a) the Florida Fish and Wildlife Conservation Commission;

(b) the Florida Department of State, Division of historical Resources;

(c) any person who has requested a copy of the specific application that is under review; and

(d) the Department of Environmental Protection, if the proposed activities have a potential to impact marine listed species.

(4) An activity which requires both a general environmental resource permit or a permit under Subsections 373.414(11) – (16), F.S., and a proprietary authorization under Chapter 253 or 258, F.S., shall be subject to the requirements and procedures in Section 373.427, F.S., Chapters 18-20 and 18-21, F.A.C., and Rules 62-312.065 and 62-343.075, F.A.C.

Specific Authority 373.044, 373.113, 373.118, 373.421(2), F.S. Law Implemented 373.413, 373.414, 373.416, 373.419, 373.427, F.S. History – New 10-3-95, Amended 7-23-96, 10-16-96, 7-2-98, 9-26-02.

40D-40.041 Noticed General Permit for Construction, Alteration of Operation of Surface Water Management Systems

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 120.60(2), 373.413, 373.416, F.S. History – New 3-1-88, Amended 1-11-93, Repealed 10-3-95.

40D-40.042 General Permit for Construction, Alteration or Operation of Surface Water Management Systems

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 120.60(2), 373.413, 373.414, 373.416, 373.419, F.S. History – New 10-1-84, Amended 3-1-88, 1-11-93, Repealed 10-3-95.

40D-40.043 List of Entities to Which Permitting Pursuant to This Chapter Has Been Delegated

Specific Authority 373.044, 373.046, 373.113, 373.149, 373.171, F.S. Law Implemented 373.046, 373.103(8), F.S. History – New 11-27-89, Amended 3-1-90, 11-16-92, 6-30-96, Repealed 7-2-98.

40D-40.044 General Permit for Site Conditions Assessment

(1) This general permit identifies and documents the boundaries of certain existing topographic and environmental site conditions within the applicant's project area that are measurably associated with waters, as described in the application.

(2) A site conditions assessment permit is binding with respect to the permitted project area and constitutes final District action. Any application for a construction and operation permit that is received from a permittee within the duration of the site condition assessment permit will be evaluated, with respect to the existing conditions that were verified in the permit, according to the applicable District rules in effect at the time the site conditions assessment permit was issued. All other aspects of the application for a construction and operation permit will be evaluated based on the District's rules and permitting criteria in effect at the time the application for a construction or operation permit is complete.

(3) The site conditions assessment permit application processing fee paid by the original permittee, excluding any fees paid for modification of the permit, shall be credited toward a subsequent construction and operation permit issued within the project area during the duration of the site conditions assessment permit. The fee shall be reimbursed after submittal of

the project Statement of Completion and as-built information by the original permittee, and operation approval by the District.

(4) A site conditions assessment permit shall neither authorize construction, alteration, operation or maintenance of any surface water management system nor imply approval of any such future activities in, on or over any wetlands or other surface waters, or elsewhere.

(5) The technical and procedural aspects of site conditions assessment permitting are described in the "Basis of Review for Environmental Resource Permit Applications," specifically in Appendix 7 thereof, adopted by reference in section 40D-4.091, F.A.C.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.414, 373.416, 373.419, F.S. History – New 7-23-96, 9-26-02.

40D-40.111 Requests for Noticed General Permits

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416, 373.419, F.S. History – New 3-1-88. Repealed 10-3-95.

40D-40.112 Content of Application for Standard General Permits

(1) To Apply for a general permit, including an application for a general permit for minor surface water management systems, the applicant shall file with the District the Application form identified in Chapter 40D-1, F.A.C. and other required documents, information and fees.

(2) The application shall consist of the requirements as stated in Rule 40D-4.101, F.A.C.

(3) A complete application for a general permit for construction and operation shall also constitute an application for certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 U.S.C. Section 1341. Issuance of the construction and operation permit shall constitute certification of compliance with water quality standards unless the permit is issued pursuant to the net improvement provision of section 373.414(1)(b), F.S., or the permit specifically states otherwise.

(4) If a general permit application involves activities located in, on, or over wetlands or other surface waters, as delineated by the methodology authorized in subsection 373.421(1), F.S., then, within three business days of receipt of the application, the District shall forward a copy to the appropriate office of the U.S. Army Corps of Engineers unless specifically authorized by the Corps to do otherwise.

(5) If the application involves activities located in, on, or over wetlands or other surface waters, as delineated by the methodology authorized in subsection 373.421(1), F.S., the District shall forward a copy of notice of the application to and request comments from:

(a) the Florida Fish and Wildlife Conservation Commission;

(b) the Florida Department of State, Division of historical Resources;

(c) any person who has requested a copy of the specific application that is under review; and

(d) the Department of Environmental Protection, if the proposed activities have a potential to impact marine listed species.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.414, 373.416, 373.419, F.S. History – New 10-1-84. Amended 3-1-88, 10-3-95, 7-23-96, 10-16-96, 9-26-02.

40D-40.141 Request for Additional Information

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 120.60(2), 373.413, 373.414, 373.416, 373.419, F.S. History – New 10-1-84. Amended 3-1-88. Repealed 10-3-95.

40D-40.301 Conditions for Issuance of General Permit for Minor Surface Water Management Systems

(1) To obtain this general permit, an applicant must provide reasonable assurance that the following conditions are met and certify that:

(a) The total land area does not equal or exceed 10 acres:

(b) The area of impervious surface will not equal or exceed two acres:

(c) The proposed activities will consist of the dredging or filling of less than 100 square feet in wetlands or other surface waters;

(d) The activities will not utilize pumps for storm water management;

(e) The activities will not utilize storm drainage facilities larger than one 24-inch diameter pipe, or its equivalent;

(f) Discharges from the site will meet state water quality standards;

(g) The proposed building floors will be above the 100 year flood elevation;

(h) The proposed activities do not cause significant adverse impacts to occur individually or cumulatively;

(i) The surface water management system can be effectively operated and maintained; and

(j) The surface water management system will meet the applicable water quality design criteria in the Basis of Review described in Rule 40D-4.091(1).

(2) Applicants required to obtain a permit by subsection 40D-4.041(4) may obtain this general permit if the applicant provides reasonable assurance and certifies that the conditions in paragraphs 40D-40.301(1)(f), (i), (j) and 40D-4.301(4) are met.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.414, 373.416, 373.427, F.S. History – New 3-1-88, Amended 10-3-95, 10-16-96.

40D-40.302 Conditions for Issuance of General Permits

In order to qualify for a general permit for construction and operation under this chapter, the applicant must give reasonable assurances that the surface water management system meets all conditions of subsection 40D-40.302(1), all thresholds in subsection 40D-40.302(2), and conditions of at least one other subsection. To obtain a general site conditions assessment permit under this chapter, the applicant must provide reasonable assurances that all conditions of subsection 40D-40.302(5) are met.

(1) Conditions

(a) The surface water management system must meet the conditions specified in Rules 40D-4.301 and 40D-4.302.

(b) The permittee must have obtained a Works of the District permit or other approval from the District if the permittee proposes to connect to, place structures in or across, or otherwise make use of works owned by the District.

(2) Thresholds.

(a) The project area except for public highway projects, must be less than 100 acres.

(b) Construction or alteration of a system, including dredging or filling to occur in, on or over a total one acre or less of wetlands and other surface waters. For this purpose, calculation of the one-acre area shall not include:

1. Ditches that were originally constructed in uplands.

2. Any wholly owned, isolated wetland or other surface water less than one-half acre and for which mitigation is not required.

(c) The system must not include more than nine proposed boat slips.

(3) Additional Conditions for Surface Water Management Systems Associated with Public Highway Projects.

(a) The public highway project must be located within a right of way dedicated to the public for highway purposes.

(b) The public highway project must not:

1. Drain lands outside the jurisdiction of the constructing or funding public body;

2. Lower or have the potential for lowering the dry season groundwater table outside the project's design drainage area; and

3. Interfere with natural drainage patterns or flows.

(4) Additional Conditions for Phased Construction under Conceptual Permits.

(a) The project phase must comply with the requirements of the conceptual permit.

(b) The project phase must be less than 100 acres and meet the conditions of subsection 40D-40.302(1).

(c) The conceptual permit must have been issued subsequent to October 12, 1984.

(5) Conditions for a Standard General Site Conditions Assessment Permit.

(a) The boundaries of wetlands and other surface waters or other site conditions referenced in the application and subject to assessment and verification by the District shall in fact be true and accurate representations of the actual existing site conditions; and

(b) The project area shall not be in violation of any District rule.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.414, 373.416, 373.419, F.S. History – New 10-1-84, Amended 3-1-88, 5-10-88, 9-13-88, 10-3-95, 7-23-96, 7-16-02, 9-26-02.

40D-40.321 Duration of Permits

Unless revoked or otherwise modified, the duration of a general permit issued pursuant to this Chapter is as specified in Rule 40D-4.321, F.A.C.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416, 373.419,F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95.

40D-40.331 Modification of Permits

A request for modification to renew or extend a permit issued under this chapter shall be made in accordance with this rule. Requests to modify permits shall be made:

(1) in accordance with Rules 40D-4.091, 40D-4.331, 40D-40.040, 40D-40.112, 40D-40.301 and 40D-40.302 for general construction and operation permits and as applicable for all site conditions assessment permits; or

(2) by letter for general construction and operation permits provided the requested modification does not exceed the conditions of subsection 40D-4.331(2)(b).

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.413, 373.416(1), 373.429, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95, 7-23-96, 4-17-97, 9-26-02.

40D-40.341 Revocation of Permits

Specific Authority 373.044, 373.113, F.S. Law Implemented 120.60(6), 373.429, 373.430(1), F.S. History – New 10-1-84, Repealed 7-2-98.

40D-40.351 Transfer of Permits

Transfer of permits shall be made in accordance with Rule 40D-4.351.

Specific Authority 373.044, 373.113, F.S. Law Implemented 373.413, 373.416(2), F.S. History – New 10-1-84.

40D-40.381 General Conditions

The general permits issued pursuant to this chapter shall be subject to the following limiting conditions;

(1) For construction and operation permits the general conditions of Rule 40D-4.381 shall apply.

(2) For site conditions assessment permits the general conditions of 40D-4.381 are inapplicable and only the following limiting general conditions shall apply.

(a) The boundaries of wetlands and other surface waters or other site conditions referenced in the application for assessment and evaluation by the District must have been true and accurate representations of the actual existing site conditions at the time of permit issuance.

(b) The site conditions assessment permit shall be invalid for construction permitting purposes following changes to physical conditions on site that alter site conditions boundaries, or the discovery of false or inaccurate information submitted in the application.

(c) A site conditions assessment permit is the first phase of a construction permit. A site conditions assessment permit shall neither authorize construction, alteration, operation or maintenance of any surface water management system nor imply approval of any such activities in, on or over any wetlands or other surface waters, or elsewhere. At the time of application for modification of a site conditions assessment permit to a construction permit for a project area, the permittee shall submit a copy of the deed or other evidence or ownership, evidence of an easement or other documents evidencing authorization to perform the proposed

work as provided in the environmental resource permit application form incorporated by reference in Chapter 40D-1.

(3) All general permits shall be subject to other reasonable conditions as are necessary to assure that the permitted system will not be inconsistent with the overall objectives of the District and will not be harmful to the water resources of the District.

Specific Authority 373.044, 373.113, 373.118, F.S. Law Implemented 373.117, 373.413, 373.414, 373.416, 373.419, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95, 7-23-96, 9-26-02.

RULES OF THE
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT
CHAPTER 40D-4
INDIVIDUAL ENVIRONMENTAL RESOURCE PERMITS

40D-4.011 Policy and Purpose.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S. History – Readopted 10-5-74, Formerly 16J-4.01, Amended 10-1-84, 3-1-88, 10-3-95, Repealed 7-2-98.

40D-4.021 Definitions.

When used in this Chapter and Chapters 40D-40 and 40D-400:

(1) "Environmental Resource Permit" means a conceptual, individual or general permit for a surface water management system issued pursuant to Part IV, Chapter 373, Florida Statutes.

(2) "Conceptual Permit" means an environmental resource permit issued by the District which approves the concepts of a phased development master plan for a surface water management system or for a mitigation bank which is binding upon the District and the permittee based upon the rules in effect at the time of filing of the conceptual application and constitutes final District action so that construction and operation permits for each phase will be reviewed under the permitting criteria in effect when the application for the conceptual permit was filed.

(3) "Construction permit" means an environmental resource permit issued by the District authorizing construction, alteration or abandonment of a surface water management system in accordance with the terms and conditions of the permit.

(4) "Operation permit" means a phase of an environmental resource permit issued by the District authorizing the operation and maintenance of a surface water management system in accordance with the terms and conditions of the permit.

(5) "Surface water management system" or "system" means any stormwater management system, dam, impoundment, reservoir, appurtenant work, or works or any combination thereof. The terms "surface water management system" or "system" include areas created by filling or by dredging as those terms are defined in subsections 373.403 (13) and 373.403(14), F.S.

(6) "New surface water management system" means any surface water management system which is not in existence on October 1, 1984, or not authorized to be constructed on October 1, 1984.

(7) "Alteration" means any activity resulting in substantial expansion or change of a surface water management system that will increase or decrease the design discharge of the system, increase pollutant loading, change the point or points of discharge, or intrude into or otherwise adversely impact wetlands by rim ditching, draining, filling or excavation. Routine custodial maintenance and repairs shall not constitute alterations.

(8) "Surface waters of the state" means those surface waters regulated pursuant to subsection 403.031(13), Florida Statutes.

(9) "Surface waters" are defined in subsection 373.019(10), Florida Statutes.

(10) "Wetlands" means those areas that are inundated or saturated by surface water or ground water at a frequency and a duration sufficient to support, and under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soils. Soils present in wetlands generally are classified as hydric or alluvial, or posses characteristics that are associated with reducing soil conditions. The prevalent vegetation in wetlands generally consists of facultative or obligate hydrophytic macrophytes that are typically adapted to areas having soil conditions described above. These species, due to morphological, physiological, or reproductive adaptations, have the ability to grow, reproduce, or persist in aquatic environments or anaerobic soil conditions. Florida wetlands generally include swamps, marshes, bayheads, bogs, cypress domes and strands, sloughs, wet prairies, riverine swamps and marshes, hydric seepage slopes, tidal marshes, mangrove swamps and other similar areas. Florida wetlands generally do not include longleaf or slash pine flatwoods with an understory dominated by saw palmetto.

(11) "Total land area" means land holdings under common ownership or control which are contiguous, or land holdings which are served by a common surface water management system.

(12) "Project Area" means the area within the total land area, as defined in section 40D-4.021(11), which is or will be served by a surface water management system to be permitted.

(13) "Construction" means any on site activity which will result in the creation of a new surface water management system, or the abandonment or alteration of an existing surface water management system, including the building, assembling, expansion or recontouring of the property; the erection of buildings or other structures, or any part thereof; or land clearing.

(14) "Basis of Review for Environmental Resource Permit Applications within the Southwest Florida Water Management District," or "Basis of Review" is the document incorporated by reference in Rule 40D-4.091, which provides threshold design, administrative and technical criteria for permit applicants.

(15) "Noticed General Permit" means an Environmental Resource Permit issued or denied by staff.

(16) "General Permit" means an Environmental Resource Permit issued by District staff or denied by the Governing Board.

(17) "Individual Permit" means an Environmental Resource Permit issued or denied by the District Governing Board.

(18) "Embedment" is the placement of transmission or distribution lines, pipes or cables into the bottoms of waters of the state by minimal displacement of bottom material and without the creation of a trench, or trough, through the use of techniques such as plowing-in, weighing-in, or non-trenching jets.

(19) "Entrenchment" is the placement of transmission or distribution lines, pipes or cables into the bottoms of waters of the state by the creation of a defined trench, or trough, through the use of such devices as clamshells, dredges, trenching jets, or other devices which produce similar results.

(20) The definitions listed in Chapters 40D-400, F.A.C. are also applicable to this Chapter and Chapter 40D-40, F.A.C.

(21) "Site Conditions Assessment Permit" means an environmental resource permit issued by the District as the first phase of construction permitting which identifies and documents the boundaries of certain existing topographic and environmental site conditions within the applicant's project area that are measurably associated with waters.

(22) "Prospecting" – means activities considered normal and reasonably necessary to retrieve samples of subsurface geologic sediments for the specific purpose of locating, mapping, and determining the quality and quantity of sedimentary strata or natural deposits.

Specific Authority 373.044, 373.113, 373.118, 373.149, 373.171, F.S. Law Implemented 373.403, 373.419, F.S. History – Readopted 10-5-74, Formerly 16J-4.02, Amended 10-1-84, 3-1-88, 9-11-88, 10-3-95, 7-23-96, and 2-27-02, 9-26-02.

40D-4.031 Implementation, Effective Date and Applicability.

(1) Chapter 40D-4 shall continue in implementation from January 1, 1975, throughout the entire area comprising the District as of 11:59 p.m., December 31, 1976; and from August 3, 1977, throughout the areas annexed into the Peace and Withlacoochee River Basins and within the Manasota Basin; and shall be implemented October 16, 1978, and apply within the area annexed into the District by Chapter 78-65, Laws of Florida.

(2) Amendments to these rules adopted October 27, 1987, including the Basis of Review, are effective March 1, 1988, and apply to permit applications filed on or after March 1, 1988.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S., 76-243, Laws of Florida. History – Readopted 10-5-74, Amended 9-4-77, 10-16-78, Formerly 16J-4.03, Amended 10-1-84, 3-1-88.

40D-4.041 Permits Required.

(1) Unless expressly exempt by law or District rule an Environmental Resource Permit shall be obtained from the District prior to:

(a) The construction and operation of any new surface water management system, or

(b) The alteration, abandonment, or removal of any surface water management system.

(c) The establishment of a mitigation bank.

(2) The District issues the following types of Environmental Resource Permits:

(a) General permits for construction, alteration, operation, removal or abandonment of surface water management systems for projects which have, either singularly or cumulatively, minimal environmental impact.

1. General permits are issued pursuant to Chapter 40D-40, F.A.C.

2. Noticed general permits are issued pursuant to Chapter 40D-400, F.A.C.

(b) Individual permits for construction, alteration, operation, removal or abandonment of surface water management systems for projects not meeting the criteria to qualify for a general permit under Rules 40D-40 or 40D-400, F.A.C., and for mitigation banks.

(c) Conceptual permits are individual permits for mitigation banks and projects to be developed in phases which approve the concepts of a phased development master plan. A conceptual permit does not authorize construction, alteration, operation, or abandonment of a surface water management system or establishment of a mitigation bank.

(d) Site conditions assessment permits are optional general permits issued pursuant to Chapters 40D-4 and 40D-40, F.A.C., and the Basis of Review for Environmental Resource Permit Applications within the Southwest Florida Water Management District, as the first phase of construction permitting which identify and document the boundaries of certain existing topographic and environmental site conditions existing within a project area. At a minimum, all site conditions assessment permits shall evaluate, and identify if present, the landward extent of wetlands and other surface waters; the level and landward extent of the 100 year floodplain; seasonal high water levels and existing watershed delineations. In the permit application, the applicant may request that the District evaluate additional site conditions boundaries. A site conditions assessment permit does not authorize construction, alteration, operation, or abandonment of a surface water management system or establishment of a mitigation bank. However, a currently valid site conditions assessment permit can be formally modified by the permittee to apply for either an individual or a general construction and operation permit.

(3) A General Permit for Minor Surface Water Management Systems is required for a surface water management system, otherwise exempt from permitting under subsections 40D-

4.051(3) or (4), unless the system is exempt by statute or rule from storm water quality regulation or has received storm water quality review and approval by the District or by a DEP permit, license or certification.

(4) Any dredging or filling in, on, or over surface waters of the State which is authorized by a general or individual permit issued under Chapters 40D-4, 40D-40, or 16J-4, F.A.C., as such Chapters existed prior to October 3, 1995, but which is not authorized by a permit or exemption under Chapter 62-312, F.A.C., as such Chapter existed prior to October 3, 1995, shall require an Environmental Resource Permit prior to the dredging or filling. However, such dredging or filling shall be exempt from the requirements of paragraphs 40D-4.301(1)(a) through (e) and (g) through (k).

(5) A proprietary authorization is required by Chapters 253 and 258, F.S., for activities which are located on submerged lands owned by the Board of Trustees of the Internal Improvement Trust Fund. Such authorization shall be reviewed by the District for activities which also require an environmental resource permit or exemption under Chapters 40D-4, 40D-40, and 40D-400, F.A.C., or a permit under subsections 373.414(11)-(16), F.S., under Section 373.427, F.S., Chapters 18-20 and 18-21, F.A.C., and Rules 62-312.065 and 62-343.075, F.A.C.

(6) (a) The owner/operator of any system for a mining or mining related activity that has an exemption confirmation letter issued by the District or the Department pursuant to Rule 40D-45.051, F.A.C., as that Rule existed prior to October 9, 2001, must apply for an Environmental Resource Permit from the District or the Department in accordance with the division of responsibilities outlined in the Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., and aquaculture General Permits Under Section 403.814, F.S., Between Southwest Florida Water Management District and Department of Environmental Protection, dated October 27, 1998. The application shall be provided no later than May 1, 2004, and be completed no later than May 1, 2005, and shall include the system for mining, mining related activities, and reclamation activities.

(b) During the application period the system for a mining or mining related activity previously exempt under Rule 40D-45.051, F.A.C., shall be operated in accordance with any plans, terms and conditions approved in the exemption confirmation letter and shall not affect the quality of receiving waters such that the applicable water quality standards set forth in Chapters 62-4, 62-302, 62-520, 62-522, and 62-550, F.A.C., including any antidegradation provisions of sections 62-4.242(1)(a) and (b), 62-4.242(2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in sections 62-62-4.242(2) and (3), will be violated, and shall not otherwise harm the water resources. If an owner/operator proposes modifications to a system at any time, such modification shall be immediately subject to permitting under Chapter 40D-4, F.A.C., as provided in Rule 40D-4.054, F.A.C.

Specific Authority 373.044, 373.113, 373.118, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, 373.427, F.S. History – Readopted 10-5-74, Amended 12-31-74, 9-4-77, 6-7-78, Formerly 16J-4.04, 16J-4.10(1), (2), (4), Amended 10-1-84, 3-1-88, 10-3-95, 7-23-96, 10-16-96, 4-17-97, 10-11-01, 7-16-02, 9-26-02, 3-26-03.

40D-4.042 Formal Determination of Wetlands and Other Surface Waters.

(1) Pursuant to subsection 373.421(2), F.S., a real property owner, an entity that has the power of eminent domain, or any other person who has a legal or equitable interest in real

property may petition the District for a formal determination for that property. A formal determination means the District will determine the locations on the property of the landward extent (boundaries) of wetlands and other surface waters.

(2) To petition for a formal determination, the petitioner must submit to the District the following:

(a) Five copies of a Petition for Formal Determination including copies of all items required by that form, and

(b) A non-refundable formal determination fee as specified in Rule 40D-1.607, F.A.C.

(3) (a) Within 30 days of receipt of a petition for a formal determination, the District shall notify the petitioner of any additional information which may be necessary to complete review of the petition. The District shall complete the determination and shall issue a notice of agency action within 90 days after the petition is deemed complete. The petitioner may publish the notice of agency action on the petition in a newspaper of general circulation in the county or counties where the property is located in accordance with Rule 40D-1.1010, F.A.C.

(b) The provisions of sections 120.57 and 120.569, F.S., apply to formal determinations made pursuant to this section. Any person whose substantial interests will be affected by the District's proposed action on the petition may request an administrative hearing on the proposed action.

(4) A petitioner can request a formal determination consisting of a certified survey, an approximate delineation, or combinations thereof as described in Section 3.4 of the Basis of Review for Environmental Resource Permit Applications adopted by reference in Rule 40D-4.091, F.A.C.

(5) The Regulation Department Directors are delegated the authority to take final action on petitions for formal determinations under this section. A formal determination shall be issued only if the petitioner has satisfied all the requirements of this section.

(6) A formal determination shall be binding for five years provided physical conditions on the property to not change so as to alter the boundaries of the wetlands and other surface waters during that period.

(7) A petition for a new formal determination for a property for which a formal determination already exists shall require the reduced fee set forth in Rule 40D-1.607, F.A.C., provided:

(a) physical conditions on the property have not changed so as to alter the boundaries of the wetlands and other surface waters during that period; and

(b) the petition is submitted within 60 days prior to the existing determination's expiration.

(8) Pursuant to subsection 373.421(4), F.S., the Governing Board may revoke the formal wetland determination upon a finding that the petitioner has submitted inaccurate information to the District.

Specific Authority 373.044, 373.113, 373.421(2), F.S. Law Implemented 373.421(2), F.S. History – New 10-3-95, Amended 7-2-98, 2-14-00, 5-28-00, 7-29-02, 2-27-03.

40D-4.051 Exemptions.

The following activities are exempt from permitting under this chapter:

(1) The activities specified in Sections 373.406, Florida Statutes.

(2) The construction, alteration, or operation of a surface water management system for agricultural or silvicultural activities which satisfies the following requirements:

(a) The total land area does not equal or exceed 10 acres;

(b) The area of impervious surface will not equal or exceed 2 acres;

(c) The activities will not be conducted in wetlands;

(d) The activities will not be conducted in existing lakes, streams, or other watercourses;

(e) The surface water management system will not utilize drainage pumps or operable discharge structures;

(f) The activities will not utilize storm drainage facilities larger than one 24-inch diameter pipe, or its hydraulic equivalent;

(g) Discharges from the site will meet applicable state water quality standards, as set forth in Chapter 62-3, and Rule 62-4.242;

(h) The activities are part of a conservation plan prepared or approved by a local Soil and Water Conservation District Board organized pursuant to Chapter 582, Florida Statutes, (S.C.S.). If the S.C.S. conservation plan is not implemented according to its terms, the exemption created in this subsection does not apply.

(i) The activities can otherwise reasonably be expected not to have significant adverse water resource impacts; and

(j) The surface water management system can be effectively maintained.

(3) (a) All normal and necessary farming and forestry operations as are customary for the area, which can be conducted without the construction or alteration of a surface water management system. In order to qualify for this exemption, such operations and facilities shall not impede or divert the flow of surface waters entering or leaving the operation or intrude into or otherwise substantially and adversely impact significant wetlands.

(4) Phosphate mining and mining related surface water management systems are exempt from the requirements of this chapter, provided that all conditions for exemption in Rule 40D-4.053(1) are met. However, nothing in this section is intended to exempt phosphate mining from the Department of Environmental Protection's authority.

(5) Phosphate mine reclamation and restoration conducted in accordance with Chapter 16C-16, the Mine Reclamation rules of the Florida Department of Environmental Protection, is exempt from the requirements of this chapter provided that all conditions for exemption in Rule 40D-4.053(2) are met.

(6) Any system for a mining or mining related activity which has a valid permit issued by the District or the Department pursuant to Rule 40D-45.041, F.A.C. This exemption shall be for the plans, terms and conditions approved in the permit issued pursuant to Chapter 40D-45, F.A.C. If an operator of a system previously permitted under Chapter 40D-45, F.A.C. proposes an "alteration" as the term is defined in subsection 40D-4.021(7), F.A.C., such system shall be reviewed under the provisions of Chapter 40D-4, F.A.C.

(7) Construction or private use of a single family dwelling unit, duplex, triplex or quadruplex that is not part of a larger common plan of development or sale and does not involve wetlands or other surface waters.

(8) Routine maintenance of a surface water management system; however, maintenance of surface water management systems will be considered in conjunction with the applications for construction, alteration, or operation.

(9) In accordance with the provisions of Section 403.813(2), F.S., no permit shall be required under Chapters 40D-4, 40D-40 or 40D-400, Florida Administrative Code for the following activities:

(a) The repair or replacement of existing functional pipes or culverts the purpose of which is the discharge or conveyance of stormwater. In all cases, the invert elevation, the diameter, and the length of the culvert shall not be changed. However, the material used for the culvert may be different form the original material. This exemption does not authorize the repair, replacement, or alteration of dams, spillways or appurtenant works, not construction activities or procedures that cause a violation of water quality standards as set forth in Chapter 62-302 and Rule 62-4.242, F.A.C.

(b) The installation, replacement or repair of mooring pilings and dolphins associated with private docking facilities.

(c) The installation of private docks of 1000 square feet or less of surface area over wetlands or other surface waters or 500 square feet or less of surface area over wetlands or other surface waters for docks which are located in Outstanding Florida Waters. This exemption shall include the construction of structures above the dock area, such as gazebos and boat shelters, provided such structures are not enclosed with walls and doors, are not used for living, commercial purposes, or storage of materials other than those associated with recreational use and provided the structures do not exceed, together with the docking facility, the total area limitations above. To quality for this exemption, any such dock and associated structure:

1. shall be used for recreational, non-commercial activities; and

2. shall be constructed or held in place by pilings, including floating docks, so as not to involve filling or dredging other than necessary to install the pilings; and

3. shall not substantially impede the flow of water or create a navigational hazard; and

4. shall be the sole dock constructed pursuant to this exemption as measured along the shoreline for a minimum distance of 65 feet, unless the parcel of land or individual lot as platted is less than 65 feet in length along the shoreline, in which case there may be one exempt dock allowed per parcel or lot. For the purposes of this rule, multi-family living complexes and other types of complexes or facilities associated with the proposed private dock shall be treated as one parcel of property regardless of the legal division of ownership or control of the associated property. Construction of a private dock under this exemption does not obligate the District to issue a subsequent permit to construct a channel to provide navigational access to the dock. Activities associated with a private dock shall include the construction of the structures attached to the pier which are only suitable for the mooring or storage of boats (i.e., boatlifts). Nothing in this paragraph shall prohibit the Department from taking appropriate enforcement action pursuant to Chapter 403, F.S., to abate or prohibit any activity otherwise exempt from permitting pursuant to this paragraph if the Department can demonstrate that the exempted activity has caused water pollution in violation of Chapter 403, F.S.

(d) The performance of maintenance dredging of existing manmade canals, channels, basins, berths, and intake and discharge structures, where the spoil material is to be removed and deposited on a self-contained, upland spoil site which will prevent the escape of the spoil material and return water from the spoil site into wetlands or other surface waters, provided no more dredging is performed than is necessary to restore the canal, channels, basins, berths, and intake and discharge structures to original design specifications, and provided that control devices are used at the dredge site to prevent turbidity and toxic or deleterious substances from

discharging into adjacent waters during maintenance dredging. This exemption shall apply to all canals constructed before April 3, 1970, and to those canals constructed on or after April 3, 1970, pursuant to all necessary state permits. This exemption shall not apply to the removal of a natural or manmade barrier separating a canal or canal system from adjacent wetlands or other surface waters. Where no previous permit has been issued by the Board of Trustees of the Internal Improvement Trust Fund, the Department, the District or the United States Army Corps of Engineers for construction or maintenance dredging of the existing manmade canal, channel, basin, berth or intake or discharge structure, such maintenance dredging shall be limited to a depth of no more than 5 feet below mean low water.

(e) The installation and maintenance to design specifications of boat ramps on artificial bodies of water where navigational access to the proposed ramp exists, or the installation and maintenance to design specifications of boat ramps open to the public in any wetlands or other surface waters where navigational access to the proposed ramp exists and where the construction of the proposed ramp will be less than 30 feet wide and will involve the removal of less than 25 cubic yards of material from the wetlands or other surface waters and the installation of docks with an area of 500 square feet or less over wetlands or other surface waters that are associated with and adjoining the boat ramps constructed pursuant to this exemption. All material removed shall be placed upon a self-contained upland site so as to prevent the escape of the spoil material and return water from the spoil site into the wetlands or other surface waters. For the purpose of this exemption artificial bodies of water shall include, residential canal systems, canals permitted by a District created under Section 373.069, Florida Statutes, and artificially created portions of the Florida Intracoastal Waterway.

(f) Construction of seawalls or riprap, including only that backfilling needed to level the land behind seawalls or riprap, in artificially created waterways where such construction will not violate existing water quality standards, impede navigation or adversely affect flood control. An artificially created waterway is defined as a body of water that has been totally dredged or excavated and which does not overlap natural wetlands or other surface waters. For the purpose of this exemption, artificially created waterways shall also include existing residential canal systems. This exemption does not apply to the construction of vertical seawalls in estuaries or lagoons unless the proposed construction is within an existing man-made canal where the shoreline is currently occupied in whole or in part by vertical seawalls.

(g) Construction of private docks in artificially created waterways where construction will not violate water quality standards, impede navigation, or adversely affect flood control.

(h) The replacement or repair of existing docks and mooring pilings provided that no fill material other than the piles is to be used, and provided that the replacement or the repaired dock or mooring pile is in the same location and of the same configuration and dimensions as the dock or mooring pile being replaced or repaired. A dock or mooring pile must be functional and able to provide access to boats moored at the dock or pile before this exemption may be used unless the dock or mooring pile has been rendered nonfunctional by a discreet event such as a storm, collision or fire.

(i) The restoration of a seawall or riprap at its previous location, upland of its previous location, or within 18 inches waterward of its previous location, as measured from the face of the existing seawall slab to the face of restored seawall slab or from the front slope of the existing riprap to the front slope of the restored riprap. No filling can be performed except in the actual restoration of the seawall or riprap. No construction shall be undertaken without

necessary title or leasehold interest, especially where private and public ownership boundaries have changed as a result of natural occurrences such as accretion, reliction and natural erosion. This exemption shall be limited to functioning seawalls or riprap. This exemption shall not affect the permitting requirements of Chapter 161, Florida Statutes.

(j) The maintenance of functioning insect control structures, and the maintenance of functioning dikes and functioning irrigation and drainage ditches, including roadway ditches, provided that the spoil material is deposited on a self-contained upland spoil site which will prevent the escape of the spoil material and return water into wetlands or other surface waters. In the case of insect control structures, if the cost of using a self-contained upland spoil site is to excessive as determined by the Department of Agriculture and Consumer Services, pursuant to subsection 403.088(1), Florida Statutes, that it will inhibit the proposed insect control, existing spoil sites or dikes may be used, upon notification to the District. In the case of insect control where upland spoil sites are not used pursuant to this exemption, turbidity control devices shall be used to confine the spoil material discharge to that area previously disturbed when the receiving body of water is used as a potable water supply, is designated as approved, conditionally approved, restricted or conditionally restricted waters for shellfish harvesting by the Department, or functions as a habitat for commercially or recreationally important shellfish or finfish. In all cases, no more dredging is to be performed than is necessary to restore the dike or irrigation or drainage ditch to its original design specifications. This exemption shall apply to man-made trenches dug for the purpose of draining water from the land or for transporting water for use on the land and which are not built for navigational purposes.

(k) The restoration of less than 100 feet in length of existing insect control impoundment dikes and the connection of such impoundments to tidally influenced waters. Such impoundments shall be connected to tidally influenced waters for at least 6 months each year, beginning September 1, and ending February 28, if feasible, or operated in accordance with an impoundment management plan approved by the District. The connection shall be of sufficient cross-sectional area to allow beneficial tidal influence. Restoration shall involve no more dredging than needed to restore the dike to original design specifications, and such that the final elevation of the dredge area shall be within 2 feet of immediately adjacent bottom elevations. For the purposes of this paragraph, restoration shall not include maintenance of impoundment dikes of insect control impoundments.

(l) The installation of subaqueous transmission and distribution lines laid on, or embedded in, the bottoms of wetlands or other surface waters, except in Class I and Class II waters and aquatic preserves, provided that no dredging or filling is necessary.

(m) The replacement or repair of subaqueous transmission and distribution lines laid on or embedded in, the bottoms of wetlands or other surface waters.

(n) The construction of seawalls or riprap in wetlands or other surface waters, where such construction is between and adjoins at both ends existing seawalls or riprap, follows a continuous and uniform construction line with the existing seawalls or riprap, is no more than 150 feet in length, and does not violate existing water quality standards, impede navigation adversely or affect flood control. However, this shall not affect the permitting requirements of Chapter 161, Florida Statutes. In estuaries and lagoons construction of vertical seawalls is limited to the circumstances and purposes stated in subsection 373.414(5)(b) 1.-4., Florida Statutes.

(o) The replacement or repair of existing open-trestle foot bridges and vehicular bridges that are 100 feet or less in length and two lanes or less in width, provided that

no more dredging or filling in wetlands or other surface waters is performed than that necessary to replace or repair pilings and that the structure to be replaced or repaired is the same length, the same configuration, and in the same location as the original bridge. No debris from the original bridge shall be allowed to remain in wetlands or other surface waters.

(10) The following activities shall not be required to obtain a permit under chapters 40D-4, 40D-40, or 40D-400, F.A.C.:

(a) Activities necessary to preserve, restore, repair, remove, or replace an existing communication or power pole or line, provided that work does not involve dredge or fill activities other than the removal of the existing structure and the installation of the new structure, and in the case of a power pole or line, the activity does not increase the voltage of existing power lines. An activities does not qualify to use this exemption if it results in relocation of an existing structure or facility more than 10 feet in any direction from its original location, or if it involves the construction of new power or telephone lines or the repair and replacement of existing structures that require dredge or fill activities to provide access to the site.

(b) The installation, removal, and replacement of utility poles that support telephone or communication cable lines, or electric distribution lines of 35kV or less, together with the bases and anchoring devices to support those poles, as specified below. For the purpose of this exemption, "anchoring device" shall mean steel guy wires fastened to the ground and "base" shall mean a concrete or steel foundation not exceeding four feet in radius, used to support a utility pole. This exemption shall be subject to the following conditions:

1. no more than 15 utility poles may be installed, removed, or replaced in wetlands;

2. this exemption shall not apply in surface waters other than wetlands;

3. the temporary disturbance to wetlands shall be limited to a length of 0.5 miles, an aerial extent of 0.5 acre, and a width of 30 feet to access the site to actually install, remove, or replace the utility poles; thereafter, maintenance of the utility right of way in wetlands shall be limited to a cleared corridor that does not exceed a total width of 15 feet and a total area of 0.25 ac.;

4. this exemption shall not apply in forested wetlands located within 550 feet from the mean or ordinary high water line of a named waterbody that is designated as an Outstanding Florida Water or an Outstanding National Resource Water, or to activities in any aquatic preserves;

5. there shall be no permanent placement of fill other than utility poles and anchoring devices;

6. there shall be no dredging or filling of fill pads or access roads except for temporary mats, which may be used to access pole installation sites, and all temporary mats shall be removed within thirty days after the installation, removal or replacement of the utility poles, associated bases, and anchoring devices;

7. the installation of the utility pole(s) and associated bases and anchoring devices shall not interfere with navigation or impede water flow in wetlands;

8. turbidity, sedimentation, and erosion shall be controlled during and after construction to prevent violations of state water quality standards due to construction related activities;

9. except for the permitted structures, pre-construction ground elevations and the contours of all soils that are disturbed by construction activities, including

vehicle ruts in wetlands, shall be restored within 30 days of completion of the installation of the utility line or cable, and restored grades shall be stabilized within 72 hours following completion of elevation and contour restoration to minimize erosion;

10. vehicle usage in wetlands shall be conducted so as to minimize tire rutting and erosion impacts;

11. water jets shall not be used except for those which are a pre-engineered part of the pole, and provided that the water for the jets is either recirculated on site or is discharged in a self-contained upland disposal site;

12. vehicular access in wetlands shall be limited to existing roads, trails, rights-of-way or easements, and to other previously disturbed corridors where they exist; and

13. the permittee shall provide an annual report to the District which summarizes the activities conducted under this exemption for the period from January 1 to December 31 of each year, including: the acreage of temporary impacts in wetlands resulting from the use of temporary mats and the clearing of wetland vegetation; the extent of permanent impacts to wetlands including the number of poles and structures in wetlands and the acreage of clearing in wetlands; the voltage of all electric lines that are installed; the number of times this exemption is used; the specific location of each line that is installed (including the county, the section, township, and range, and the identity of permanent landmarks such as roads and named wetlands and other surface waters within or adjacent to the work location), and the number of times and locations where water jets are used.

(c) The installation of aids to navigation, including bridge fender piles, "No Wake" and similar regulatory signs, and buoys associated with such aids, provided that the devices are marked in accordance with Section 327.40, Florida Statutes.

(d) Maintenance of minor silvicultural surface water management systems as described in subsection 40D-400.500(4), F.A.C., which were permitted under Part IV of Chapter 373, F.S. or were constructed prior to the requirements for a permit under this part, provided such maintenance is conducted in accordance with the performance standards set forth in subsection 40D-400.500(5), F.A.C.

(e) The construction or maintenance of culverted driveway or roadway crossings and bridges of artificial waterways, subject to the following provisions:

1. This exemption shall apply only to wholly artificial, non-navigable drainage conveyances.

2. The construction project area shall not exceed one acre, and the construction shall be for a discrete project that is not part of a larger plan of development which requires permitting under Chapters 40D-40, 40D-400, F.A.C., or this chapter.

3. The artificial waterway in existing condition shall not be more than 4 feet deep, measured from the top of bank to the bottom of the artificial waterway.

4. The person performing the exempt activity shall ensure that the size and capacity of the culvert(s) will be adequate to pass normal high water stages of the artificial waterway without causing adverse impacts to upstream or downstream property, but the culvert(s) shall not be larger than one 24 inch diameter pipe, or its equivalent; and in no instance shall the culvert(s) provide a smaller cross-sectional area or discharge capacity than any upstream culvert.

5. The elevation of the culvert invert shall be at the existing bottom grade of the artificial waterway.

6. The length of the driveway or roadway crossing the waterway shall not exceed 30 feet from top of bank to top of bank.

7. The top width of the driveway or roadway shall not exceed 20 feet, the toe to toe width shall not exceed 40 feet, and side slopes shall be no steeper than 3 feet horizontal to 1 foot vertical.

8. Clean fill used for the crossing shall be obtained from an upland borrow pit or from a dredge site that is in compliance with the regulatory requirements of Part IV, Chapter 373, F.S., either through a permit, or an exemption.

9. There shall be no additional dredging, filling, or construction activities within the artificial waterway or project area, except those directly involved in the construction or operation and maintenance of the culverted crossing and those exempted from regulation under Part IV, Chapter 373, F.S.

10. All temporary fill in construction areas shall be removed and the area regraded to original elevations and revegetated.

11. The person performing the exempt activity shall implement measures for erosion and pollution control using best management practices, including turbidity curtains or similar devices and other site specific practices, in strict adherence to the Florida Department of Transportation's "Standard Specifications for Road and Bridge Construction," and Chapter 6 of the Department's "Florida Development Manual," to prevent violations of state water quality standards. Temporary erosion controls shall be implemented prior to and during construction, and permanent erosion control measures for all exposed soils shall be completed within 7 calendar days of the most recent construction activity.

12. Any spoil material from construction or maintenance shall be used or disposed of on an upland portion of the property or shall be transported off site and deposited on a self-contained upland spoil site that is in compliance with the permitting requirements of Chapters 40D-4 and 40D-40, F.A.C., as applicable.

13. If dewatering is performed, all temporary fill dikes and dewatering discharges shall be installed and constructed so that no upstream flooding or impoundment occurs and to prevent siltation, erosion or turbid discharges into waters of the State in violation of state water quality standards. Any temporary works shall be completely removed, and all areas upstream and downstream from the crossing shall be restored to grades, elevations and conditions which existed before the construction.

14. This exemption shall apply only to a maximum of 2 crossings on a given total land area of property with a minimum distance of 500 feet between crossings.

15. This exemption shall not apply to activities involving relocation or other alteration of all or part of the artificial waterway, or construction for other than the proposed culvert crossing, except as exempted by Chapter 373, F.S., or this section.

(f) Construction of freshwater fish attractors by Florida Fish and Wildlife Conservation Commission, U.S. Forest Service, and county and municipal governments, provided that the material to be used shall be clean concrete, rock, brush, logs, or trees, and shall be free of soils, preservatives, oil, grease, debris, litter, putrescible substances, "white goods," asphalt material, tires, or other pollutants, and shall be firmly anchored to the bottom of the waterbody. The size of an individual fish attractor shall not exceed one quarter acre in area. The material shall be placed so that the top of the fish attractor is at least three (3) feet below the surface of the water at ordinary low water and shall be outside any posted navigational channels. No fish attractor material shall be placed on or in areas vegetated by native aquatic vegetation.

The site shall be marked with a buoy or buoys to ensure that no material is deposited outside of the site.

(g) Installation of piling support structures associated with water testing or monitoring equipment by the Department or the Districts, provided that flow or navigation are not impeded.

(11) Surface Waters or Wetlands Created by Mosquito Control Activities. Construction, alteration, operation, maintenance, removal, and abandonment of stormwater management systems, dams, impoundments, reservoirs, appurtenant works, or works, in, on, or over lands that have become surface waters or wetlands solely because of mosquito control activities undertaken as a part of a governmental mosquito control program, and which lands were neither wetlands nor other surface water before such activities, shall be exempt from the provisions in this Chapter adopted by the District to implement subsections 373.414(1) through (6); 373.414(7) regarding any authority granted pursuant to section 373.414, F.S. (1991); 373.414(8) and 373.414(10), F.S.

(12) Exemptions for Treatment or Disposal Systems.

(a) Alteration and maintenance of the following shall be exempt from the provisions in Chapter 40D-4, F.A.C., implementing subsections 373.414(1) through 373.414(6), 373.414(8), and 373.414(10), F.S.; and subsection 373.414(7), F.S., regarding any authority to apply state water quality standards within any works, impoundments, reservoirs, and other watercourses described in this subsection and any authority granted pursuant to section 373.414, F.S. (1991):

1. Works, impoundments, reservoirs, and other watercourses constructed and operated solely for wastewater treatment or disposal in accordance with a valid permit reviewed or issued under sections 62-28.700, 62-302.520 or Chapters 62-17, 62-600, 62-610, 62-640, 62-650, 62-660, 62-670, 62-671, 62-673, 62-701, F.A.C., or section 403.0885, F.S., or rules implementing section 403.0885, F.S., except for treatment wetlands or receiving wetlands permitted to receive wastewater pursuant to 62-611, F.A.C., or section 403.0885, F.S. or its implementing rules;

2. Works, impoundments, reservoirs, and other watercourses constructed solely for wastewater treatment or disposal before a construction permit was required under chapter 403, F.S., and operated solely for wastewater treatment or disposal in accordance with a valid permit reviewed or issued under sections 62-28.700, 62-302.520, or chapters 62-17, 62-600, 62-610, 62-640, 62-650, 62-660, 62-670, 62-671, 62-673, or 62-701, F.A.C.,; or section 403.0885, F.S., or rules implementing section 403.0885, F.S., except for treatment wetlands or receiving wetlands permitted to receive wastewater pursuant to Chapter 62-611, F.A.C., or section 403.0885, F.S. or its implementing rules;

3. Works, impoundments, reservoirs, and other watercourses of less than 0.5 acres in combined area on a project-wide basis, constructed and operated solely for stormwater treatment in accordance with a noticed exemption under Chapter 62-25, F.A.C., or a valid permit issued under Chapters 62-25 (excluding Rule 62-25.042), 62-330, 40D-4, F.A.C., except those permitted as wetland stormwater treatment systems.

4. Works, impoundments, reservoirs, and other watercourses of less than 0.5 acres in combined area on a project-wide basis, constructed and operated solely for stormwater treatment before a permit being required under Chapters 62-25, 40D-4, F.A.C.

(b) Alteration and maintenance of the following shall be exempt from the provisions in Chapter 40D-4, F.A.C., adopted to implement subsections 373.414(1),

373.414(2)(a), 373.414(8), and 373.414(10), F.S.; and subsections 373.414(3) through 373.414(6), F.S.; and subsection 373.414(7), F.S., regarding any authority to apply state water quality standards within any works, impoundments, reservoirs, and other watercourses described in this subsection and any authority granted pursuant to 373.414, F.S. (1991), except for authority to protect threatened and endangered species in isolated wetlands:

1. Works, impoundments, reservoirs, and other watercourses of 0.5 acre or greater in combined area on a project-wide basis, constructed and operated solely for stormwater treatment in accordance with a noticed exemption under Chapter 62-25, F.A.C., or a valid permit issued under Chapters 62-25 (excluding Rule 62-25.042), 62-330, 40D-4, F.A.C., except those permitted as wetland stormwater treatment systems.

2. Works, impoundments, reservoirs, and other watercourses of 0.5 acres or greater in combined area on a project-wide basis, constructed and operated solely for stormwater treatment before a permit was required under Chapters 62-25, 40D-4, F.A.C.

(c) The exemptions in paragraphs (a) and (b) above shall not apply to works, impoundments, reservoirs or other watercourses that are:

1. currently wetlands which existed before construction of the stormwater treatment system and were incorporated in it;

2. being altered through expansion into wetlands or other surface waters; or

3. wetlands created, enhanced or restored as mitigation for wetland or surface water impacts under a permit issued by the Department or the District.

(d) Alterations and maintenance of works, impoundments, reservoirs and other watercourses exempt under this subsection shall not be considered in determining whether the wetland permitting thresholds in Chapters 40D-4 or 40D-40, F.A.C., are met or exceeded.

(e) Works, impoundments, reservoirs and other watercourses exempt under this subsection, other than isolated wetlands in systems described in paragraph (b) above, shall not be delineated under Section 373.421, F.S.

(f) This exemption shall not affect the application of state water quality standards, including those applicable to Outstanding Florida Waters, at the point of discharge to waters as defined in subsection 403.031(13), F.S.

(g) As used in this subsection, "solely for" means the reason for which a work, impoundment, reservoir, or other watercourse is constructed and operated, and such construction and operation would not have occurred but for the purposes identified in paragraphs (a) and (b) above. Furthermore, the phrase does not refer to a work, impoundment, reservoir, or other watercourse constructed or operated for multiple purposes. Uses, such as occasional recreational uses, will not render the exemption inapplicable, so long as the incidental uses are not part of the original planned purpose of the work, impoundment, reservoir or other watercourse. However, for those works, impoundments, reservoirs, or other watercourses described in subparagraphs (a)3. and (b)1., use of the system for flood attenuation, whether originally planned or unplanned, shall be considered an incidental use so long as the works, impoundments, reservoirs, and other watercourses are no more than two acres larger than the minimum area required to comply with the applicable stormwater treatment requirements of Chapters 62-25, 62-330, 40D-4, F.A.C. For the purposes of this subsection, reuse from a work, impoundment, reservoir, or other watercourse, is part of treatment or disposal.

(13) The performance of activities pursuant to the provisions of the exemptions described above does not relieve the person or persons who are using the exemption or who are

constructing or otherwise implementing the activity from meeting the permitting or performance requirements of other District rules.

Specific Authority 373.044, 373.113, 373.149, 373.171, 373.414(9), F.S. Law Implemented 373.406, 373.413, 373.414(9), F.S. History – Readopted 10-5-74, Formerly 16J-4.05, Amended 10-1-84, 10-1-86, 3-1-88, 1-24-90, 10-3-95, 4-18-01, 5-17-01, 4-9-02.

40D-4.052 Request for Exemption.
(Reserved)

40D-4.053 Conditions for Exemption.

(1) The exemption for phosphate mining and related activities provided in Rule 40D-4.051(8) is subject to the following conditions:

(a) The operator shall certify to the District prior to mining, with existing mines certifying by January 1, 1987, and provide sufficient information to demonstrate that all facilities are and will be designed, constructed and operated to avoid damage to off site property or the public caused by:

1. floodplain development, encroachment or other alteration,
2. retardance, acceleration or diversion of flowing water,
3. reduction of natural water storage areas,
4. excessive discharge or facility failure, or
5. other activities adversely impacting off site water flows or levels.

(b) The operator shall submit to the District a copy of each Annual Report submitted to the Department of Natural Resources (DNR) in accordance with Rule 16C-16.091.

(c) The operator shall submit to the District a copy of each application to the DER for a dredge and fill permit concurrent with its submittal to DER, and fulfill the requirements of Rule 40D-4.053(1)(a) specific to the dredge and fill project prior to issuance by the DER of its proposed agency action.

(d) An existing permitted point of discharge shall not exceed the volume and frequency designated by its DER discharge permit unless a lesser discharge is calculated in accordance with Rule 40D-4.301(2) and submitted to the District to be the maximum allowable discharge.

(e) A new point of discharge shall be designed to the standards of Rule 40D-4.301(2) so that the volume and frequency of discharge specified in its DER discharge permit is equivalent to maximum allowable discharge, which is not to be exceeded.

(f) Natural drainage from off site up gradient areas shall not be interrupted so as to cause damage to off site property or the public, and natural drainage patterns on undisturbed lands shall be maintained to the maximum extent achievable without adversely altering the time, stage, volume and point or manner of discharge or dispersion.

(2) The exemption for phosphate mine reclamation and restoration provided in Rule 40D-4.051(9) is subject to the following conditions:

(a) The operator shall certify to the District, beginning with the first annual or biannual Department of Natural Resources (DNR) reclamation plan required to be filed after January 1, 1987, and provide sufficient information to demonstrate that each reclamation and restoration program is designed, and will be constructed and operated to avoid damage to off site property or the public caused by:

1. floodplain development, encroachment or other alteration,
2. retardance, acceleration or diversion of flowing water,
3. reduction of natural water storage areas,
4. excessive discharge or facility failure, or
5. other actions adversely impacting off site water flows or levels.

(b) The operator shall submit to the District a copy of its approved or pending Conceptual Reclamation Plans or any amendments thereto, under Rule 16C-16.041.

(c) The operator shall submit to the District a copy of its annual or biannual application to the DNR for approval of a reclamation and restoration program required by Rule 16C-16.032, and fulfill the requirements of Rule 40D-4.053(2)(a) specific to the program under consideration prior to issuance by the DNR of its proposed agency action.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.406, 373.413, F.S. History – New 10-1-86.

40D-4.054 Alteration of Exempt Projects.

A permit may be required for alteration of a previously exempt surface water management system.

Specific Authority 373.044, 373.113, F.S. Law Implemented 373.406, 373.413, F.S. History – New 10-1-84.

40D-4.091 Publications and Agreements Incorporated by Reference.

The following documents are hereby incorporated into this chapter and Chapters 40D-40 and 40D-400, F.A.C.:

(1) "Basis of Review for Environmental Resource Permit Applications with the Southwest Florida Water Management District, September 26, 2002. This document is available from the District upon request.

(2) Operating Agreement Concerning Regulation Under Part IV, Chapter 373, F.S., and Aquaculture General Permits Under Section 403.814, F.S., between Southwest Florida Water Management District and Department of Environmental Protection, dated October 27, 1998. This document is available from the District upon request.

(3) Chapter 62-344, Florida Administrative Code, Delegation of Environmental Resource Program to Local Governments.

(4) Memorandum of Understanding Between the Southwest Florida Water Management District and the Florida Department of Agriculture and Consumer Services for the Non-Binding Review of Disputed Environmental Resource Permitting Exemption Claims Under Section 373.406(2), Florida Statutes, dated December 13, 2002. This document is available from the District upon request.

Specific Authority 373.044, 373.046, 373.113, 373.171, 373.414, F.S. Law Implemented 373.0361, 373.114, 373.171, 373.403, 373.413, 373.414, 373.416, 373.429, 373.441, F.S. History – New 4-2-87, Amended 3-1-88, 9-11-88, 10-1-99, 4-1-91, 11-16-92, 1-30-94, 10-3-95, 12-26-95, 5-26-96, 7-23-96, 4-17-97, 4-12-98, 7-2-98, 12-3-98, 7-28-99, 8-3-00, 9-20-00, 6-12-01, 10-11-01, 2-27-02, 7-29-02, 9-26-02, 3-26-03.

40D-4.101 Content of Application.

(1) Applications for Environmental Resource Permits required by this chapter shall be filed with the District in accordance with the requirements of this chapter and Chapter 40D-1, F.A.C. The application shall consist of:

(a) The information required in subsection 373.413(2), F.S.;

(b) Five copies of the application form identified in Chapter 40D-1, F.A.C. with applicable supplements;

(c) Five copies of drawings, calculations, environmental and construction information, and engineering details sufficient to define the nature, scope, intent and functioning of the work proposed;

(d) The appropriate fee as specified in Chapter 40D-1, F.A.C.; and

(e) Such other information as is reasonably necessary to determine that the surface water management system meets the conditions of this chapter.

(2) The application must be signed by the owner or the owner's authorized agent. Applications signed by an agent must contain a letter of authorization which is signed by the owner.

(3) Notwithstanding the provisions of subsection (2), persons authorized by entities with the power of eminent domain may sign the application in lieu of the owner when applying on behalf of the entity and notice to the property owner(s) is provided pursuant to 40D-1.603(7).

(4) A complete application for an individual environmental resource permit shall also constitute an application for certification of compliance with state water quality standards where necessary pursuant to Section 401, Public Law 92-500, 33 USC Section 1341. Issuance of the permit shall constitute certification of compliance with water quality standards unless the permit is issued pursuant to the net improvement provision of section 373.414(1)(b), F.S. or the permit specifically states otherwise.

(5) If the permit application involves activities located in, on, or over wetlands or other surface waters, then, within three business days of receipt of the application, the District shall forward a copy to the appropriate office of the U.S. Army Corps of Engineers unless specifically authorized by the Corps to do otherwise.

(6) If the application involves activities located in, on, or over wetlands or other surface waters the District shall forward a copy of the notice of application to and request comments from:

(a) the Florida Fish and Wildlife Conservation Commission;

(b) the Florida Department of State, Division of Historical Resources;

(c) any person who has requested a copy of the specific application that is under review; and

Specific Authority 373.044, 373.113, 373.171, F.S. Law Implemented 373.042, 373.413, F.S. History – Readopted 10-5-74, Amended 12-31-74, 6-7-78, Formerly 16J-4.06(1), (2), Amended 10-1-84, 3-1-88, 10-3-95, 10-16-96, 12-16-97, 2-27-03.

40D-4.111 Notice of Application Form.

Specific Authority 373.044, 373.133, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S. History – Readopted 10-5-74, Amended 10-24-76, Formerly 16J-4.071, Repealed 10-1-84.

40D-4.121 Notice and Hearing Requirements.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S. History – Readopted 10-5-74, Formerly 16J-4.072, 16J-4.074, Amended 10-21-80, Repealed 10-1-84.

40D-4.131 Times for Receiving Objections and for Hearing.

Specific Authority 373.044, 373.133, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S. History – Readopted 10-5-74, Formerly 16J-4.073, Amended 10-21-80, Repealed 10-1-84.

40D-4.201 Permit Processing Fee.

A permit processing fee shall be paid to the District at the time a permit application is filed in the amount prescribed in the schedule set forth in Chapter 40D-1, F.A.C.

Specific Authority 373.044, 373.133, 373.149, 373.171, F.S. Law Implemented 373.109, F.S. History – Readopted 10-5-74, Formerly 16J-4.061, Amended 10-3-95.

40D-4.301 Conditions for Issuance of Permits.

(1) In order to obtain a general, individual, or conceptual permit under this chapter or Chapter 40D-40, F.A.C., and applicant must provide reasonable assurance that the construction, alteration, operation, maintenance, removal or abandonment of a surface water management system:

(a) will not cause adverse water quantity impacts to receiving waters and adjacent lands;

(b) will not cause adverse flooding to on-site or off-site property;

(c) will not cause adverse impacts to existing surface water storage and conveyance capabilities;

(d) will not adversely impact the value of functions provided to fish and wildlife, and listed species including aquatic and wetland dependent species, by wetlands, other surface waters and other water related resources of the District;

(e) will not adversely affect the quality of receiving waters such that the water quality standards set forth in chapters 62-3, 62-4, 62-302, 62-520, 62-522 and 62-550, F.A.C., including any antidegradation provisions of sections 62-4.242(1)(a) and (b), 62-4.242(2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding Florida Waters and Outstanding National Resource Waters set forth in sections 62-4.242(2) and (3), F.A.C., will be violated;

(f) will not cause adverse secondary impacts to the water resources;

(g) will not adversely impact the maintenance of surface or ground water levels or surface water flows established pursuant to Chapter 373.042, F.S.;

(h) will not cause adverse impacts to a work of the District established pursuant to Section 373.086, F.S.;

(i) is capable, based on generally accepted engineering and scientific principles, of being effectively performed and of functioning as proposed;

(j) will be conducted by an entity with financial, legal and administrative capability of ensuring that the activity will be undertaken in accordance with the terms and conditions of the permit, if issued; and

(k) will comply with any applicable special basin or geographic area criteria established pursuant to this chapter.

(2) If the applicant is unable to meet water quality standards because existing ambient water quality does not meet standards, the applicant shall comply with the requirements set forth in Section 3.2.4.5 of the Basis of Review.

(3) The standards and criteria contained in the Basis of Review for Environmental Resource Permit Applications shall determine whether the reasonable assurances required by subsection 40D-4.301(1) and Section 40D-4.302, F.A.C., have been provided.

(4) An activity which requires both an environmental resource permit, or a permit under Subsections 373.414(11) – (16), F.S., and a proprietary authorization under Chapters 253 or 258, F.S., shall be subject to the requirements and procedures in Section 373.427, F.S., Chapters 18-20 and 18-21, F.A.C., and Rules 62-312.065 and 62-343.075, F.A.C.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.042, 373.403, 373.413, 373.416, 373.426, 373.427, F.S. History – Readopted 10-5-74, Amended 12-31-74, 6-7-78, Formerly 16J-4.06(3), (4), (5), (6), (8), Amended 10-1-84, 6-2-85, 4-2-87, 3-1-88, 10-3-95, 10-16-96, 9-26-02.

40D-4.302 Additional Conditions for Issuance of Permits.

(1) In addition to the conditions set forth in Section 40D-4.301, F.A.C., in order to obtain a general, individual, or conceptual permit under this chapter an applicant must provide reasonable assurance that the construction, alteration, operation, maintenance, removal, and abandonment of a system:

(a) Located in, on, or over wetlands or other surface waters as delineated pursuant to the methodology authorized by subsection 373.421(1), F.S., will not be contrary to the public interest, or if such an activity significantly degrades or is within an Outstanding Florida Water, that the activity will be clearly in the public interest, as determined by balancing the following criteria:

1. whether the activity will adversely affect the public health, safety, or welfare or the property of others;

2. whether the activity will adversely affect the conservation of fish and wildlife, including endangered or threatened species, or their habitats;

3. whether the activity will adversely affect navigation or the flow of water or cause harmful erosion or shoaling;

4. whether the activity will adversely affect the fishing or recreational values or marine productivity in the vicinity of the activity;

5. whether the activity will be of a temporary or permanent nature;

6. whether the activity will adversely affect or will enhance significant historical and archaeological resources under the provisions of Section 267.061, F.S.; and

7. the current condition and relative value of functions being performed by areas affected by the proposed activity.

(b) Will not cause unacceptable cumulative impacts upon wetlands and other surface waters, as delineated pursuant to the methodology authorized by subsection 373.421(1), F.S.

(c) Located in, adjacent to or in close proximity to Class II waters or located in Class II waters or Class III waters classified by the Department as approved, restricted or conditionally restricted for shellfish harvesting pursuant to Chapter 16R-7, F.A.C., will comply with the additional criteria in subsection 3.2.5 of the Basis of Review for Environmental Resource Permit Applications adopted by reference in Section 40D-4.091, F.A.C.

(d) Which constitute vertical seawalls in estuaries or lagoons, will comply with the additional criteria provided in subsection 3.2.6 of the Basis of Review for Environmental Resource Permit Applications.

(2) The District shall take into consideration a permit applicant's violation of any Department rules adopted pursuant to Sections 403.91 – 403.929, F.S. (1984 Supp.), as amended, which the District had the responsibility to enforce pursuant to delegation or any District rules adopted pursuant to Part IV, Chapter 373, F.S., relating to any other project or activity and efforts taken by the applicant to resolve these violations, when determining whether the applicant has provided reasonable assurance that District permitting standards will be met.

Specific Authority 373.016, 373.044, 373.113, 373.171, F.S. Law Implemented 373.016, 373.042, 373.409, 373.413, 373.414, 373.416, 373.426, F.S. History – New 10-3-95, 9-26-02.

40D-4.311 Variances.

Specific Authority 373.044, 373.113, 373.171, F.S. Law Implemented 373.414(17), 403.201, F.S. History – New 10-3-95, Repealed 7-2-98.

40D-4.321 Duration of Permits.

(1) Unless revoked or otherwise modified, the duration of an Environmental Resource Permit issued pursuant to this chapter is:

(a) two years from the date of issuance, for a conceptual permit, unless within that period an application for a construction permit is filed for any portion of the project. If the application for a construction permit is approved and construction is commenced according to Rule 40D-4.321, F.A.C., then the conceptual permit is valid so long as the conceptually permitted phases are under construction consistent with a phased development master plan for a surface water management system that has been permitted by the District. If construction of the permitted phases is discontinued or is inconsistent with the phased development master plan then the conceptual permit shall expire.

(b) five years from the date of issuance for a construction permit, including a mitigation bank construction permit, to the completion of construction and submittal of the Statement of Completion and Request for Transfer to Operation Entity and supporting as-built documents, as required pursuant to this Chapter. If at the end of five years construction is ongoing in compliance with the permit requirements, the construction permit duration will automatically be continued for up to six months, provided within the continued duration all construction of the system shall be completed and statement of completion documents shall be submitted to the District.

(c) perpetual from the date of issuance for an operation permit issued under Chapter 373, Florida Statutes.

(d) five years from the date of issuance for a conceptual permit for a mitigation bank.

(e) five years from the date of issuance for a site conditions assessment permit.

(2) Conceptual permits expire automatically at the end of their duration unless modified pursuant to Section 40D-4.331, F.A.C.

Specific Authority 373.044, 373.113, F.S. Law Implemented 373.413, 373.416, F.S. History – New 10-1-84, Amended 3-1-88, 10-3-95, 7-23-96.

40D-4.331 Modification of Permits.

An application for modification of an environmental resource permit shall be processed in accordance with this rule, unless the permit is revoked, suspended or expired.

(1) Applications to modify a conceptual permit shall be made and reviewed:

(a) for an alteration of the design of the surface water management system, in accordance with the same criteria as new applications pursuant to Rules 40D-4.101, 40D-4.301, and 40D-4.302, F.A.C.;

(b) for construction authorization of a project phase, in accordance with Chapter 40D-40, F.A.C., if the project phase satisfies the requirements of Rules 40D-40.112 and 40D-40.302, F.A.C.; or

(c) for construction authorization of a project phase which does not satisfy the requirements of paragraph (b), in the manner of an individual permit and using the criteria applicable to the conceptual permit; or

(d) in accordance with subsection (2)(b) or (3) below.

(2) Applications to modify a construction permit shall be made:

(a) by formal application and review using the same criteria as new applications, pursuant to Rules 40D-4.101, 40D-4.301, and 40D-4.302, F.A.C., or

(b) by letter, provided the requested modification does not:

1. substantially alter the permit authorization,
2. increase the authorized off site discharge,
3. impact the environmental features of the project,
4. decrease the required retention/detention,
5. decrease the required flood control elevations for roads or buildings,
6. decrease pollution removal efficiency, or
7. renew or extend the existing permit duration.

(3) Applications for modification of a site conditions assessment permit shall be made by formal application and reviewed using the same criteria as new applications:

(a) for contiguous expansion or other adjustment of the project area,

(b) for additional permitted conditions,

(c) for any renewal or extension of a current permit, or

(d) for conversion to a Chapter 40D-4 or 40D-40, F.A.C., construction permit application, except that the permitted site conditions shall remain as permitted.

(4) Application for permit modification to renew or extend the existing permit duration shall occur by formal application and review, and such requests shall be submitted no sooner than 180 days prior to the permit expiration date.

(a) A modification for construction permit renewal will be granted if it is reasonably assured by the applicant and determined that any completed construction is in compliance with a currently valid permit, and the proposed construction will be in compliance with the District's rules in effect at the time the application for modification to renew is filed.

(b) Applications for conceptual permit renewal and site conditions assessment permit renewal or extension must comply with the same criteria as new applications.

(c) Each modification to renew or extend can be granted for a duration as needed, up to five years for construction permits and site conditions assessment permits, and up to two years for conceptual permits.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416(1), 373.429, 403.805, F.S. History – Readopted 10-5-74, Formerly 16J-4.13, Amended 10-1-84, 3-1-88, 10-1-88, 6-29-93, 10-3-95, 7-23-96.

40D-4.341 Revocation of Permits.

The Board may modify or revoke a permit at any time if it determines that a stormwater management system, dam, impoundment, reservoir, appurtenant work, or works has become a danger to the public health or safety or if its operation has become inconsistent with the objectives of the District or is in violation of any rule or order of the District, or the conditions of the permit.

Specific Authority 373.016, 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.429, 373.430(1), F.S. History – Readopted 10-5-74, Formerly 16J-4.13, Amended 10-1-84, 7-2-98.

40D-4.351 Transfer of Permits.

(1) Transfer of Ownership

(a) A permittee shall notify the District within 30 days of any sale, conveyance or any other transfer for a permitted surface water management system or the real property at which the system is located.

(b) The District will transfer the surface water management operation and maintenance permit provided the land use remains the same.

(c) The permittee transferring the permit shall continue to remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

(2) Conversion to Operation Phase

(a) In order to convert an environmental resource permit from the construction phase to the operational phase, the permittee shall submit the following:

1. The Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C.; and

2. Documentary evidence of satisfaction of permit conditions, other than long-term monitoring.

(b) A conversion to the operational phase shall not occur until a responsible entity meeting the requirements in the "Basis of Review for Environmental Resource Permit Applications with the Southwest Florida Water Management District – October 3, 1995" has been established to operate and maintain the system. The entity must be provided with sufficient ownership, legal or equitable interest so that it has control over all water management facilities authorized by the permit.

Specific Authority 373.044, 373.113, F.S. Law Implemented 373.413, 373.416(2), 403.805, F.S. History – New 10-1-84. Amended 6-29-93, and 10-3-95.

40D-4.381 General Conditions.

(1) The following general conditions shall be a part of all permits issued pursuant to this chapter and chapter 40D-40, F.A.C., unless waived or modified by the Board upon a determination that the conditions are inapplicable to the activity authorized by the permit.

(a) All activities shall be implemented as set forth in the plans, specifications and performance criteria as approved by this permit. Any deviation from the permitted activity and the conditions for undertaking that activity shall constitute a violation of this permit.

(b) This permit or a copy thereof, complete with all conditions, attachments, exhibits, and modifications, shall be kept at the work site of the permitted activity. The complete permit shall be available for review at the work site upon request by District staff. The permittee shall require the contractor to review the complete permit prior to commencement of the activity authorized by this permit.

(c) Activities approved by this permit shall be conducted in a manner which does not cause violations of state water quality standards. The permittee shall implement best management practices for erosion and a pollution control to prevent violation of state water quality standards. Temporary erosion control shall be implemented prior to and during construction, and permanent control measures shall be completed within 7 days of any construction activity. Turbidity barriers shall be installed and maintained at all locations where the possibility of transferring suspended solids into the receiving waterbody exists due to the permitted work. Turbidity barriers shall remain in place at all locations until construction is completed and soils are stabilized and vegetation has been established. Thereafter the permittee shall be responsible for the removal of the barriers. The permittee shall correct any erosion or shoaling that causes adverse impacts to the water resources.

(d) Water quality data for the water discharged from the permittee's property or into the surface waters of the state shall be submitted to the District as required by the permit. Analyses shall be performed according to procedures outlined in the current edition of Standard Methods for the Examination of Water and Wastewater by the American Public Health Association or Methods for Chemical Analyses of Water and Wastes by the U.S. Environmental Protection Agency. If water quality data are required, the permittee shall provide data as required on volumes of water discharged, including total volume discharged during the days of sampling and total monthly volume discharged from the property or into surface waters of the state.

(e) District staff must be notified in advance of any proposed construction dewatering. If the dewatering activity is likely to result in offsite discharge or sediment transport into wetlands or surface waters, a written dewatering plan must either have been submitted and approved with the permit application or submitted to the District as a permit prior to the

dewatering event as a permit modification. A water use permit may be required prior to any use exceeding the thresholds in Chapter 40D-2, F.A.C.

(f) Stabilization measures shall be initiated for erosion and sediment control on disturbed areas as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 7 days after the construction activity in that portion of the site has temporarily or permanently ceased.

(g) Off site discharges during construction and development shall be made only through the facilities authorized by this permit. Water discharged from the project shall be through structures having a mechanism suitable for regulating upstream stages. Stages may be subject to operating schedules satisfactory to the District.

(h) The permittee shall complete construction of all aspects of the surface water management system, including wetland compensation (grading, mulching, planting), water quality treatment features, and discharge control facilities prior to beneficial occupancy or use of the development being served by this system.

(i) The following shall be properly abandoned and/or removed in accordance with the applicable regulations:

1. Any existing wells in the path of construction shall be properly plugged and abandoned by a licensed well contractor.

2. Any existing septic tanks on site shall be abandoned at the beginning of construction.

3. Any existing fuel storage tanks and fuel pumps shall be removed at the beginning of construction.

(j) All surface water management systems shall be operated to conserve water in order to maintain environmental quality and resource protection; to increase the efficiency of transport, application and use; to decrease waste; to minimize unnatural runoff from the property; and to minimize dewatering of offsite property.

(k) At least 48 hours prior to commencement of activity authorized by this permit, the permittee shall submit to the District a written notification of commencement indicating the actual start date and the expected completion date.

(l) Each phase or independent portion of the permitted system must be completed in accordance with the permitted plans and permit conditions prior to the occupation of the site or operation of site infrastructure located within the area served by that portion or phase of the system. Each phase or independent portion of the system must be completed in accordance with the permitted plans and permit conditions prior to transfer of responsibility for operation and maintenance of that phase or portion of the system to a local government or other responsible entity.

(m) Within 30 days after completion of construction of the permitted activity, the permittee shall submit a written statement of completion and certification by a registered professional engineer or other appropriate individual as authorized by law, utilizing the required Statement of Completion and Request for Transfer to Operation Entity form identified in Chapter 40D-1, F.A.C. Additionally, if deviation from the approved drawings are discovered during the certification process the certification must be accompanied by a copy of the approved permit drawings with deviations noted.

(n) This permit is valid only for the specific processes, operations and designs indicated on the approved drawings or exhibits submitted in support of the permit application. Any substantial deviation from the approved drawings, exhibits, specifications or permit

conditions, including construction within the total land area but outside the approved project area(s), may constitute grounds for revocation or enforcement action by the District, unless a modification has been applied for and approved. Examples of substantial deviations include excavation of ponds, ditches or sump areas deeper than shown on the approved plans.

(o) The operation phase of this permit shall not become effective until the permittee has complied with the requirements of the conditions herein, the District determines the system to be in compliance with the permitted plans, and the entity approved by the District accepts responsibility for operation and maintenance of the system. The permit may not be transferred to the operation and maintenance entity approved by the District until the operation phase of the permit becomes effective. Following inspection and approval of the permitted system by the District, the permittee shall request transfer of the permit to the responsible operation and maintenance entity approved by the District, if different from the permittee. Until a transfer is approved by the District, the permittee shall be liable for compliance with the terms of the permit.

(p) Should any other regulatory agency require changes to the permitted system, the District shall be notified of the changes prior to implementation so that a determination can be made whether a permit modification is required.

(q) This permit does not eliminate the necessity to obtain any required federal, state, local and special district authorizations including a determination of the proposed activities' compliance with the applicable comprehensive plan prior to the start of any activity approved by this permit.

(r) This permit does not convey to the permittee or create in the permittee any property right, or any interest in real property, nor does it authorize any entrance upon or activities on property which is not owned or controlled by the permittee, or convey any rights or privileges other than those specified in the permit and Chapter 40D-4 or Chapter 40D-40, F.A.C.

(s) The permittee shall hold and save the District harmless from any and all damages, claims, or liabilities which may arise by reason of the activities authorized by the permit or any use of the permitted system.

(t) Any delineation of the extent of a wetland or other surface water submitted as part of the permit application, including plans or other supporting documentation, shall not be considered binding unless a specific condition of this permit or a formal determination under Section 373.421(2), F.S., provides otherwise.

(u) The permittee shall notify the District in writing within 30 days of any sale, conveyance, or other transfer of ownership or control of the permitted system or the real property at which the permitted system is located. All transfers of ownership or transfers of a permit are subject to the requirements of Rule 40D-4.351, F.A.C. The permittee transferring the permit shall remain liable for any corrective actions that may be required as a result of any permit violations prior to such sale, conveyance or other transfer.

(v) Upon reasonable notice to the permittee, District authorized staff with proper identification shall have permission to enter, inspect, sample and test the system to insure conformity with District rules, regulation and conditions of the permits.

(w) If historical or archaeological artifacts are discovered at any time on the project site, the permittee shall immediately notify the District and the Florida Department of State, Division of Historical Resources.

(x) The permittee shall immediately notify the District in writing of any previously submitted information that is later discovered to be inaccurate.

(2) In addition to those general conditions set forth in subsection (1), the Governing Board may impose on any permit granted under this chapter and Chapters 40D-40, F.A.C., such reasonable project-specific conditions as are necessary to assure that the permitted system will be consistent with the overall objectives of the District and will not be harmful to the water resources of the District.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.042, 373.403, 373.409, 373.413, 373.414, 373.416, 373.426, F.S. History – Readopted 10-5-74, Amended 12-31-74, 6-7-78, Formerly 16J-4.06(7), 16J-4.11, 16J-4.10(3), Amended 10-1-84, 3-1-88, 10-3-95, 10-16-96, 10-11-01.

40D-4.401 Identification Tags.

Specific Authority 373.044, 373.133, 373.149, 373.171, F.S. Law Implemented 373.413, 373.416, 373.426, F.S. History – Readopted 10-5-74. Previously numbered 16J-4.062. Repealed 10-1-84.

40D-4.411 Completion Report.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.419, F.S. History – Readopted 10-5-74. Previously numbered 16J-4.08. Repealed 10-1-84.

40D-4.451 Emergency Authorization.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.439, F.S. History – Readopted 10-5-74, Amended 10-24-76, Formerly 16J-4.16, Amended 10-1-84, Transferred to 40D-1.1021.

40D-4.461 Inspection.

Inspection of permitted systems shall be conducted in accordance with Section 373.423, Florida Statutes.

Specific Authority 373.044, 373.133, 373.149, 373.171, F.S. Law Implemented 373.423, F.S. History – Readopted 10-5-74. Amended 10-1-84. Previously numbered 16J-4.09.

40D-4.471 Abatement and Abandonment of a System.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.433, F.S. History – Readopted 10-5-74, Amended 10-1-84, Formerly 16J-4.14, Amended 10-3-95, Repealed 7-2-98.

40D-4.481 Remedial and Emergency Measures.

Specific Authority 373.044, 373.113, 373.149, 373.171, F.S. Law Implemented 373.436, 373.439, F.S. History – Readopted 10-5-74, Formerly 16J-4.15, 16J-4.17, Amended 10-1-84, Repealed 7-2-98.

High Speed Rail PD&E

Criteria of the South West Florida Water Management District

Water Quality Criteria:

For Wet Detention, Dry Retention, Swales, Ex-filtration systems, treat:

- One inch times the drainage basin area

Water Quantity Criteria:

For open drainage basins (not landlocked): Unless otherwise specified, demonstrate that the post-developed peak discharge rate will not exceed the pre-developed peak discharge rate of the 25 year/24 hour storm event

For areas that are within landlocked basins: provide calculations demonstrating that the difference of runoff between the pre-developed and post-developed volume of runoff from the 100 year/24 hour storm event is retained on-site.

Flood Protection:

For areas that are within the 100 year floodplain: demonstrate that no net encroachment to the 100 year will occur between the average wet season water table and the 100 year flood elevation.

High Speed Rail PD&E

Criteria of the South Florida Water Management District

Water Quality Criteria:

For Wet Detention, treat the greater of:

- One inch times the drainage basin area, or
- 2.5 inches times the impervious area

For Dry Detention, treat 75% of the Wet Detention

For Dry Retention, Ex-filtration trench and Underdrain systems, treat 50% of the Wet Detention

Water Quantity Criteria:

For open drainage basins (not landlocked): Demonstrate that the post-developed peak discharge rate will not exceed the pre-developed peak discharge rate of the 25 year/72 hour storm event

Demonstrate that road center lines are above the elevation of the 5 year/24 hour storm event

For areas that are within landlocked basins: provide calculations demonstrating that runoff from the 100 year storm event is retained on-site.

Flood Protection:

For areas that are within the 100 year floodplain: provide import/export calculations demonstrating that no net encroachment to the 100 year will occur between the average wet season water table and the 100 year flood elevation.

High Speed Rail PD&E

Criteria of the St. Johns River Water Management District

Water Quality Criteria:

For Wet Detention, treat the greater of:

- One inch times the drainage basin area, or
- 2.5 inches times the impervious area

In either case, no more than 50% of the treatment volume shall be released within 48 to 60 hours.

For Dry Retention-off-line and Underdrain system off-line and Exfiltration trench, treat the greater of:

- One half-inch times the drainage area, or
- 1.25 inches times the impervious area

For on-line treatment, add one-half inch to the off-line treatment

In all cases, the treatment volume shall recover within 72 hours following a storm event.

For Dry Detention off-line, treat the greater of:

- One inch times the drainage basin area, or
- 2.5 inches times the impervious area

In either case, 50% of the treatment volume shall recover within 24 to 30 hours following a storm event.

For swale systems:

- Percolate 80% of the runoff from the 3 year/1 hour storm
- Recover the treatment volume above within 72 hours following a storm event

Water Quantity Criteria:

For open drainage basins (not landlocked): Demonstrate that the post-developed peak discharge rate will not exceed the pre-developed peak discharge rate of the 25 year/24 hour storm event

Demonstrate that road center lines are above the elevation of the 5 year/24 hour storm event

For areas that are within landlocked basins: provide calculations demonstrating that the post-developed runoff volume does not exceed the pre-developed runoff volume from the 25 year/96 hour storm event.

Flood Protection:

For areas that are within the 100 year floodplain: provide calculations demonstrating that no net encroachment to the 100 year will occur between the average wet season water table and the 100 year flood elevation.

Appendix B-10

FDEP (State Clearinghouse) Coastal Zone Consistency Letter

(October 2003)

Department of Environmental Protection

Jeb Bush
Governor

Marjory Stoneman Douglas Building
3900 Commonwealth Boulevard
Tallahassee, Florida 32399-3000

David B. Struhs
Secretary

June 3, 2002

Ms. Jasmin Raffington
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: U.S. Department of Transportation – Federal Railroad Administration – Advance Notification – Florida High Speed Rail PD&E Study; Hillsborough, Polk, Osceola, and Orange Counties
SAI #FL200204171835C

Dear Ms. Raffington:

The Department has reviewed the above referenced Advance Notification from the U.S. Department of Transportation and Federal Highway Administration (USDOT) to conduct a PD&E study of construction of a new High Speed Rail between Orlando and Tampa. Funding for the PD&E study is consistent with the Department's authorities in the Florida Coastal Management Program, at this time. Additional information is required concerning the anticipated High Speed Rail design, impacts, construction, and mitigation for any proposed wetland impacts. Further evaluation(s) of the project will be conducted during the environmental documentation and/or permitting stages. Future consistency will be based in part on adequate consideration of comments offered in this and subsequent reviews. Department staff offer the following comments and recommendations:

There are two proposed alternatives for the High Speed Rail, the I-4 Corridor and the CSX Rail Corridor. It appears that the I-4 Corridor will be located within the existing I-4 right-of-way. If additional right-of-way is required to accommodate the High Speed Rail, the following resources and conservation lands may be affected:

- Eureka Springs, located in Hillsborough County, may be affected by the construction of the High Speed Rail. It is located approximately 900 meters north of the I-4 right-of-way. Stormwater should be treated to avoid adverse impacts to groundwater within the hydrological watershed of Eureka Springs.

- The I-4 corridor appears to impact the following lands that are proposed to be acquired under the Florida Forever Program: the Green Swamp Megasite and a tract within the Lake Wales Ridge Ecosystem project. We recommend that the proposed project avoid direct impacts to these proposed conservation lands.

- The I-4 corridor also appears to impact the following lands owned by the Southwest Florida Water Management District and the Board of Trustees of the Internal Improvement Trust Fund: Shingle Creek FNAI Florida Managed Area, Hilochee Wildlife Management Area, Upper Lakes Basin Watershed, Lake Wales Ridge National Wildlife Area, Lake Hancock Circle B Bar Preserve, McKay Bay, and the Tenoroc Fish Management Area. These areas were purchased for natural resource conservation and preservation purposes. The permit applicant will be required to eliminate or reduce the proposed resource impacts to the greatest extent practicable.

- The CSX corridor appears to impact the following lands that are proposed to be acquired under the Florida Forever Program: the Green Swamp Megasite and the Lake Wales Ridge Ecosystem tract. These areas should be avoided if possible.

- The CSX corridor also appears to impact the following lands owned by the Southwest Florida Water Management District and the Board of Trustees of the Internal Improvement Trust Fund: Tenoroc Fish Management Area and the Saddle Creek Sanctuary. These areas were purchased for natural resource conservation and preservation purposes. The permit applicant will be required to eliminate or reduce the proposed resource impacts to the greatest extent practicable.

The draft Environmental Impact Statement (EIS) would benefit from the evaluation of a third alternative corridor, one connecting the rail line at the Tampa International Airport with the Orlando International Airport. Existing parking lots at both airports would eliminate the need for construction of new parking lots.

In addition, the draft EIS should evaluate potential environmental impacts due to all activities associated with the High Speed Rail line. These would include the High Speed Rail depot stations, parking areas, commercial centers, construction staging areas, etc. The evaluation should include details as to the spatial extent of these activities, location of stormwater facilities, impacts to wetlands, impacts to protected species and their habitat, and to water quality.

As noted on the Advance Notification Sheet, construction activities will require issuance of Environmental Resource Permits (ERPs) by the DEP Central and Southwest Regulatory District Offices, pursuant to Part IV of Chapter 373, *Florida Statutes* (F.S.), and Rules 61-113, 40C-4, and 40D-4, *Florida Administrative Code* (*F.A.C.*). Early coordination of project plans with the DEP Central and Southwest Districts' regulatory staff is recommended to facilitate site

plan design, determine stormwater treatment requirements, and prevent ERP permitting problems.

The Department recommends that future environmental documentation provide information regarding the Best Management Practices to be utilized during construction activities to prevent erosion, sedimentation, and turbid discharges to waters of the state.

The issues raised above will be important considerations as the project design is developed. The project will be re-evaluated for consistency with the Department's authorities in the Florida Coastal Management Program on review of any subsequent reports, studies or environmental documents. We request that future environmental documents be circulated through the State Clearinghouse for our review and comment.

We appreciate the opportunity to comment on the Advance Notification. Please feel free to call me at (850) 487-2231 if you have any questions or need additional information.

Sincerely,

Angela J. Warren

Angela J. Warren
Environmental Specialist
Office of Intergovernmental Programs

/ajw

Appendix B-11

NRCS Concurrence Letter - Farmlands

(April 2003)

United States Department of Agriculture

USDA

NRCS Natural Resources Conservation Service

2614 N.W. 43rd Steet
Gainesville, FL 32606
Phone: 352-338-9533

http://www.fl.nrcs.usda.gov

P.O. Box 141510
Gainesville, FL 32614
Fax: 352-338-9578

April 25, 2003

Ms. Julie Rowell, AICP
Senior Planner
PBS&J
5300 West Cypress Street
Suite 300
Tampa, Florida 33607-1712

RE: Florida High Speed Rail PD&E Study
Phase I - Tampa to Orlando

Dear Ms. Rowell:

I have reviewed all of the documents which were submitted for the referenced project and concur that there is no prime or unique farmland which will impact this proposed project.

If I can be of further assistance, please contact me.

Sincerely,

Warren Henderson

Warren Henderson
State Soil Scientist

cc: Juan Vega, DC, Plant City Service Center
Paula Allen, DC, Orlnado Service Center

Appendix B-12

Notice of Intent

U. S. DEPARTMENT OF TRANSPORTATION
Federal Highway Administration
Florida Division
227 N. Bronough Street, Suite 2015
Tallahassee, Florida 32301
(850) 942-9650

FLORIDA
www.fhwa.dot.gov/fl

March 19, 2002

IN REPLY
REFER TO: HPR-FL

Office of the Federal Register
800 North Capitol Street, NW, Suite 700
Washington, D. C. 20001

Gentlemen:

Subject: Notice of Intent to Prepare an Environmental Impact Statement
Florida High Speed Rail
Orlando to Tampa
Orange, Polk, and Hillsborough Counties, Florida

In accordance with the Federal Highway Administration (FHWA) Notice N6640.19, dated March 24, 1980, I am enclosing three (3) originals of a Notice of Intent to prepare an environmental impact statement for the subject project. We request that this be published in the Federal Register.

Sincerely,

/s/ James E. St. John
James E. St. John
Division Administrator

Enclosures (3)

cc: Mr. Leroy Irwin, FDOT (MS-37), w/enclosure
Ms. Ruth Rentch, FHWA (HEPE), Room 3222, w/enclosure

GBH:djs
bc: GBH, CK, MLW, DW, P&R Reader
File: 440.3 *(2002 High Speed Rail)*

S:\Planning\2002\TRNNOI-HSR.doc

(4910-22)

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration
Federal Highway Administration

ENVIRONMENTAL IMPACT STATEMENT: ORANGE, POLK, AND HILLSBOROUGH COUNTIES IN FLORIDA

AGENCIES: Federal Railroad Administration (FRA) and
Federal Highway Administration (FHWA), DOT

ACTION: Notice of Intent to Prepare an Environmental Impact Statement.

SUMMARY: The FRA and FHWA are issuing this notice to advise the public that the agencies will prepare an environmental impact statement (EIS) for a proposed Florida High Speed Rail project between Orlando, and Tampa, Florida.

FOR INFORMATION CONTACT: David Valenstein, Environmental Program Manager, Federal Railroad Administration, 1120 Vermont Avenue (Mail Stop 20), Washington DC 20590, (202) 493-6368 and/or George Hadley, Environmental Programs Coordinator, Federal Highway Administration, 227 North Bronough Street, Tallahassee, Florida 32301, (850) 942-9650 extension 3011.

SUPPLEMENTAL INFORMATION: The FRA and FHWA in cooperation with the Florida High Speed Rail Authority, will prepare an EIS for a proposal being considered by the Authority to construct a high speed rail project between Orlando, and Tampa, Florida. The project would be approximately 90 miles long. The proposed project may include acquisition of right of way and construction of guide way structures and track, stations, park and ride lots, storage and maintenance facilities, and other ancillary facilities. The facilities would be built to allow trains to operate at speeds in excess of

120 miles per hour. The proposed high speed rail system would provide a new mode of intercity travel to link major metropolitan areas and interface with airports, mass transit and highways to provide added capacity to meet increases in intercity travel demand in a manner sensitive to, and protective of, Florida's unique natural resources.

Alternatives under consideration include: (1) the "no build alternative"; (2) build alternatives in a variety of corridors between Orlando and Tampa; and, (3) a variety of high speed rail technology. The corridor alternatives traverse areas where various social, economical, and environmental resources and issues are believed to exist. The social, economical and environmental resources and issues may include but are not limited to: community and neighborhood, noise, wetlands, cultural resources, water quality, safety, residential and business relocations, wildlife and habitat, land use planning, parklands, economic, and floodplains.

Notices describing the proposed action and soliciting comments will be sent to appropriate Federal, State and local agencies and to private organizations and citizens who have expressed an interest in this proposal The Federal agencies and the Authority will hold interagency and public meetings and public hearings in several locations in the project area. Information on the time and place of the public meetings and hearings will be provided in the appropriate local news media. There are plans to hold a scoping meeting on April 30, 2002 in the Orlando/Tampa, Florida area.

Comments and suggestions are invited from all interested parties to insure the full range of issues related to the proposed action and alternatives are addressed and all significant issues are identified. Comments and questions concerning the proposed action should be directed to the addresses provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued On: March 19, 2002

/s/James E. St. John

James E. St. John
FHWA Division Administrator
Tallahassee, Florida

and recreational craft). The U.S.–EU mutual recognition agreement annexes on telecommunications equipment covers telecommunications terminal equipment, including radio transmitters and information technology equipment. The annex on electromagnetic compatibility (EMC) covers equipment subject to EU and U.S. radio interference and compatibility requirements, including radios and VCRs imported into the United States and most electrical and electronic equipment exported to the EU. The recreational craft annex covers the safety certification of small boats.

PUBLIC COMMENTS: USTR invites written comments from interested persons on the desirability of negotiating an MRA with EFTA covering the sectors of telecommunications equipment, electromagnetic compatibility, and recreational craft. Comments are invited in particular on: (a) The benefits for pursuing an MRA covering these sectors; and (b) any specific issues regarding an MRA covering any of the sectors. All submissions must be in English and should conform to the information requirements of 15 CFR part 2003. Comments should state clearly the position taken and should describe the specific information (including data, if possible) supporting that position.

All written comments should be addressed to: Gloria Blue, Executive Secretary, Trade Policy Staff Committee, Office of the United States Trade Representative, 1724 F Street, NW., Washington, DC 20508.

Written comments, requests, or other information submitted in connection with this request, except information granted "business confidential" status pursuant to 15 CFR 2003.6, will be available for public inspection in the USTR Reading Room, Room 3, 1724 F Street, NW., Washington, DC 20508. An appointment to review the file may be made by calling (202) 395–6186. The Reading Room is open to the public from 10 a.m. to 12 noon, and from 1 p.m. to 4 p.m. Monday through Friday.

Business confidential information will be subject to the requirements of 15 CFR 2003.6. Any business confidential material must be clearly marked as such on the cover letter or page and each succeeding page, and must be accompanied by a non-confidential summary thereof, in the form specified above. A justification as to why the information contained in the submission should be treated confidentially must be included in the submission.

Carmen Suro-Bredie,
Chair, Trade Policy Staff Committee
[FR Doc. 02–7371 Filed 3–26–02; 8:45 am]
BILLING CODE 3190–01–P

OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE

Procurement Thresholds for Implementation of Trade Agreements Act

Editorial Note: Due to numerous errors, this document is being reprinted in its entirety. It was originally printed in the Federal Register on Thursday, February 21, 2002 at 67 FR 8057

AGENCY: Office of the United States Trade Representative.

ACTION: Notice of Procurement Thresholds Under the WTO Government Procurement Agreement and Chapter 10 of the North American Free Trade Agreement.

SUMMARY: Executive Order 12260 requires the U.S. Trade Representative to set the U.S. dollar thresholds for application of Title III of the Trade Agreements Act of 1979 (19 U.S.C. 2511 *et seq.*), which implements U.S. obligations under the World Trade Organization Government Procurement Agreement (GPA) and Chapter 10 of the North American Free Trade Agreement (NAFTA). These obligations apply to covered procurements valued at or above the specified U.S. dollar thresholds. The U.S. Trade Representative has determined that, for the calendar years 2002–2003, the thresholds are as follows:

I. WTO Government Procurement Agreement

A. Central Government Entities listed in U.S. Annex 1

(1) Procurement of goods and services—$169,000.

(2) Procurement of construction services—$6,461,000.

B. Sub-Central Government Entities listed in U.S. Annex 2

(1) Procurement of goods and services—$460,000.

(2) Procurement of construction services—$6,461,000

C. Other Entities listed in U.S. Annex 3

(1) Procurement of goods and services—$518,000.

(2) Procurement of construction services—$6,461,000.

II. Chapter 10 of the NAFTA

A. Federal Government Entities listed in the U.S. schedule to Annex 1001.1a–1

(1) Procurement of goods and services—$50,190.

(2) Procurement of construction services—$7,304,733.

B. Government Enterprises listed in the U.S. schedule to Annex 1001.1a–2

(1) Procurement of goods and services—$280,951.

(2) Procurement of construction services—$6,990,862.

FOR FURTHER INFORMATION CONTACT: Questions relating to the implementation of NAFTA Chapter 10 may be directed to Karissa Kovner, USTR Director for International Procurement Negotiations (202/395–3063), Office of the U.S. Trade Representative, 600 Seventeenth Street, NW, Washington, DC 20508.

Carmen Suro-Bredie,
Chairman, Trade Policy Staff Committee.

[FR Doc. 02–4120 Filed 2–20–02; 8:45 am]
BILLING CODE 3190–01–P

Editorial Note: Due to numerous errors, this document is being reprinted in its entirety. It was originally printed in the Federal Register on Thursday, February 21, 2002 at 67 FR 8057.

[FR Doc. R2–4120 Filed 3–26–02; 8:45 am]
BILLING CODE 1505–01–D

DEPARTMENT OF TRANSPORTATION

Federal Railroad Administration

Federal Highway Administration

Environmental Impact Statement: Orange, Polk, and Hillsborough Counties in Florida

AGENCIES: Federal Railroad Administration (FRA) and Federal Highway Administration (FHWA), DOT

ACTION: Notice of intent to prepare an environmental impact statement.

SUMMARY: The FRA and FHWA are issuing this notice to advise the public that the agencies will prepare an environmental impact statement (EIS) for a proposed Florida High Speed Rail project between Orlando and Tampa, Florida.

FOR MORE INFORMATION CONTACT: David Valenstein, Environmental Program Manager, Federal Railroad Administration, 1120 Vermont Avenue (Mail Stop 20), Washington DC 20590, (202) 493–6368 and/or George Hadley, Environmental Programs Coordinator,

Federal Highway Administration, 227 North Bronough Street, Tallahassee, Florida 32301, (850) 942–9650 extension 3011.

SUPPLEMENTARY INFORMATION: The FRA and FHWA in cooperation with the Florida High Speed Rail Authority, will prepare an EIS for a proposal being considered by the Authority to construct a high speed rail project between Orlando, and Tampa, Florida. The project would be approximately 80 miles long. The proposed project may include acquisition of right of way and construction of guide way structures and track, stations, park and ride lots, storage and maintenance facilities, and other ancillary facilities. The facilities would be build to allow trains to operate at speeds in excess of 120 miles per hour. The proposed high speed rail system would provide a new mode of intercity travel to link major metropolitan areas and interface with airports, mass transit and highways to provide added capacity to meet increases in intercity travel demand in a manner sensitive to, and protective of Florida's unique natural resources.

Alternatives under consideration include: (1) The "no build alternative"; (2) build alternatives in a variety of corridors between Orlando and Tampa; and, (3) a variety of high speed rail technology. The corridor alternatives traverse areas where various social, economical, and environmental resources and issues are believed to exist. The social, economical and environmental resources and issues may include but are not limited to: community and neighborhood, noise, wetlands, cultural resources, water quality, safety, residential and business relocations, wildlife and habitat, land use planning, parklands, economic, and floodplains.

Notice describing the proposed action and soliciting comments will be sent to appropriate Federal, State and local agencies and to private organizations and citizens who have expressed an interest in this proposal. The Federal agencies and The Authority will hold interagency and public meetings and public hearings in several locations in the project area. Information on the time and place of the public meetings and hearings will be provided in the appropriate local news media. There are plans to hold a scoping meeting on April 30, 2002 in the Orlando/Tampa, Florida area.

Comments and suggestions are invited from all interested parties to insure the full range of issues related to the proposed action and alternatives are addressed and all significant issues are identified. Comments and questions concerning the proposed action should be directed to the addresses provided above.

(Catalog of Federal Domestic Assistance Program Number 20.205, Highway Research, Planning and Construction. The regulations implementing Executive Order 12372 regarding intergovernmental consultation on Federal programs and activities apply to this program.)

Issued on: March 19, 2002.

James E. St. John,

FHWA Division Administrator, Tallahassee, Florida.

[FR Doc. 02–7278 Filed 3–26–02; 8:45 am]

BILLING CODE 4910–22–M

DEPARTMENT OF TRANSPORTATION

Federal Motor Carrier Safety Administration

[Docket No. FMCSA–99–6285]

Parts and Accessories Necessary for Safe Operation; Renewal of Fuel Tank Exemptions for Vehicles Manufactured by the General Motors Corporation

AGENCY: Federal Motor Carrier Safety Administration (FMCSA), DOT.

ACTION: Grant of applications for exemptions.

SUMMARY: The FMCSA is granting the application from the General Motors Corporation (GM) for exemptions for the vehicles specified in this notice. Those exemptions are from certain fuel tank design and certification labeling requirements in the Federal Motor Carrier Safety Regulations (FMCSRs). Renewal of the exemptions enables motor carriers to continue operating commercial motor vehicles (CMVs) manufactured by GM which are equipped with fuel tanks that do not meet the FMCSA's requirements that fuel tanks be capable of receiving fuel at a rate of at least 20 gallons per minute and be labeled or marked by the manufacturer to certify compliance with the design criteria. The FMCSA believes the terms and conditions of the exemptions have ensured a level of safety that is equivalent to the level of safety that would be achieved by complying with the regulations, and that renewing the exemptions would not adversely affect highway safety. The exemptions continue to preempt inconsistent State and local requirements applicable to interstate commerce.

DATES: The exemptions are effective on March 27, 2002. The exemptions expire on March 20, 2004.

SUPPLEMENTARY INFORMATION:

Electronic Access

You can mail or deliver comments to the U.S. Department of Transportation, Dockets Management Facility, Room PL–401, 400 Seventh Street, SW., Washington, DC 20590–0001. You can also submit comments as well as see the submissions of other commenters at *http://dms.dot.gov*. Please include the docket number that appears in the heading of this document. You can examine and copy this document and all comments received at the same Internet address or at the Dockets Management Facility from 9 a.m. to 5 p.m., e.t., Monday through Friday, except Federal holidays. If you want to know that we received your comments, please include a self-addressed, stamped postcard or include a copy of the acknowledgment page that appears after you submit comments electronically.

FOR FURTHER INFORMATION CONTACT: Ms. Deborah M. Freund, Office of Bus and Truck Standards and Operations, (202) 366–4009, Federal Motor Carrier Safety Administration, 400 Seventh Street, SW., Washington, DC 20590–0001. Office hours are from 7:45 a.m. to 4:15 p.m., e.t., Monday through Friday, except Federal holidays.

Background

GM's Application for Exemptions

GM applied for exemptions from 49 CFR 393.67(c)(7)(ii), which requires that certain fuel tank systems on CMVs be designed to permit a fill rate of at least 20 gallons (75.7 liters) per minute, and 49 CFR 393.67(f)(2) and (f)(3), which require that liquid fuel tanks be marked with the manufacturer's name and a certification that the tank conforms to all applicable rules in § 393.67, respectively.

On December 20, 1999 (64 FR 71186), the Federal Highway Administration (FHWA) published a notice of intent to grant GM's applications. The FHWA requested public comment on GM's applications and the agency's safety analysis, and presented other relevant information known to the agency. After considering all the comments received, the agency granted the exemptions on April 26, 2000 [65 FR 24531]. In that notice [at 65 FR 24532–24533], the agency noted that the 20 gallon per minute rate referenced in the FMCSA's regulations, while appropriate for diesel fuel-powered vehicles, mandates that fill pipes on gasoline-powered vehicles be capable of receiving fuel at twice the maximum rate gasoline pumps are designed to dispense fuel. The vehicles in question are gasoline-fueled and are

Appendix B-13

Advance Notification Package

FLORIDA HIGH SPEED RAIL AUTHORITY

April 15, 2002

Ms. Cindy Cranick, Coordinator
Florida State Clearinghouse
Department of Community Affairs
2555 Shumard Oak Boulevard
Tallahassee, Florida 32399-2100

RE: Advance Notification
Florida High Speed Rail PD&E Study
Financial Project ID No. 411253 1
Hillsborough, Polk, Osceola and Orange Counties

Dear Ms. Cranick:

The attached Advance Notification package is forwarded to your office for processing through appropriate state agencies in accordance with Executive Order 95-359. Distribution to local and federal agencies is being made as noted.

Although more specific comments will be solicited during the permit coordination process, we request that permitting and permit reviewing agencies review the attached information and furnish us with whatever general comments they consider pertinent at this time.

This is a Federal-aid action and the Federal Highway Administration (FHWA) in cooperation with the Federal Railroad Administration (FRA) will determine what degree of environmental documentation will be necessary. The determination will be based upon in-house environmental evaluations and comments received through coordination with other agencies. Please provide a consistency review for this project in accordance with the State's Coastal Zone Management Program.

In addition, please review this improvement's consistency, to the maximum extent feasible, with the approved Comprehensive Plan of the local government jurisdiction(s) pursuant to Chapter 163, Florida Statutes.

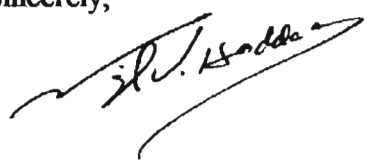
We are looking forward to receiving your comments on the project within 45 days. Should additional review time be required, a written request for an extension of time must be submitted to our office within the initial 45-day comment period.

Your comments should be addressed to:

Nazih Haddad, Staff Director
Florida High Speed Rail Authority
605 Suwannee Street, MS 67
Tallahassee, FL 32399-0450

Your expeditious handling of this notice will be appreciated.

Sincerely,



Nazih Haddad, Staff Director
Florida High Speed Rail Authority

NH/BW/KS
Attachments

FLORIDA HIGH SPEED RAIL AUTHORITY
ADVANCE NOTIFICATION FACT SHEET

1. **Need for Project:** The Florida High Speed Rail project was developed to address concerns over increasing auto congestion on Interstate-4 (I-4); lack of convenient alternatives for commuter, business, and tourist markets; and pressure to develop increased capacity in a constrained transportation corridor. The corridor from Tampa to Orlando has been subject to increasing growth and land development over the past 20 years that has exacerbated traffic congestion. Moreover, the metropolitan, tourist attraction, and port connections foreseen by the communities along the corridor suggest a strong opportunity for an alternative transportation solution based on the following needs: commuter travel, business travel, tourist travel, and freight movement.

   The Florida High Speed Rail Act was enacted in November 2000 in response to an amendment to the Constitution of the State of Florida. In June 2001, the Florida Legislature created the first Florida High Speed Rail Authority (FHSRA). The Authority's role is to plan, administer and manage the preliminary engineering and environmental assessment of the intrastate high-speed rail system. The Authority adheres to the National Environmental Policy Act (NEPA) guidelines established by Congress in 1969. NEPA requires that a Project Development and Environment (PD&E) Study process shall be followed to provide a comprehensive corridor evaluation resulting in Federal Highway Administration (FHWA) and Federal Railroad Administration (FRA) Location and Design Concept Acceptance. This process is being followed to ensure compliance with environmental regulations and consideration of all potential impacts. The study will result in a compatible project which will either avoid or minimize impacts and provide for appropriate mitigation.

2. **Description of the Project:** The proposed PD&E Study will evaluate the existing interstate system and the CSX railroad from St. Petersburg/Tampa to Orlando for potential corridor alignments. This Phase I effort will be completed in two parts:

   - **Phase I – Part 1** Evaluation of corridor alternatives of I-4 and the CSX railroad alignment from Tampa to Orlando.

   - **Phase I – Part 2:** Upon the completion of a detailed investment-grade ridership study in late 2002, the PD&E Study for St. Petersburg to Tampa will begin.

   The PD&E Study will investigate two possible alternative high-speed corridor alignments including an evaluation of technology, engineering, and environmental costs and other factors affecting selection of the corridor. Following development of alternative conceptual corridor alignments, an analysis of the socioeconomic, natural and physical environmental impacts within proposed corridors will be completed.

   The total length of the project is approximately 93 miles. A study area location map is attached.

3. **Environmental Information:**

a. **Land Uses:** A variety of land uses are located within the half-mile study corridor identified for each alternative. The types of land uses include: residential, commercial, institutional, industrial, transportation, utilities, vacant, agricultural, recreational, and conservation land uses. Along the I-4 rail corridor alternative there is a mix of residential, commercial, institutional, and industrial land uses. The majority of the CSX alternative corridor travels along vacant land with the exception of the few small to moderate sized cities and the two urbanized areas located at the east and west termini of the study corridor. The specific land uses within each corridor are currently being identified and will be documented in the PD&E Study.

b. **Wetlands:** The project corridor traverses central Florida. Although route specific wetland impacts have not been determined at this time, there is the potential for encroachment of numerous large contiguous wetland systems as well as smaller isolated wetlands. Wetlands located along, or near the proposed corridor alternatives, which have regional or statewide significance because of their respective wildlife habitat functions, water quality, flood storage capacity and recreational value, include: Reedy Creek Swamp, Davenport Creek Swamp, Shingle Creek, Boggy Creek Swamp, Green Swamp, and the Hillsborough River.

Potential impacts to wetlands will be evaluated during project development and in the Environmental Document. The objectives will be to: 1) inventory and characterize the existing wetland resources; 2) avoid and minimize impacts where prudent and feasible; 3) quantify unavoidable impacts; and 4) identify practicable alternatives to mitigate for these impacts. This information will be used to assist in the selection of a preferred alternative. The selection of the preferred alternative will be made in consultation with the U.S. Army Corps of Engineers (USACOE), the U.S. Fish and Wildlife Service (USFWS), the Florida Department of Environmental Protection, and other applicable regulatory agencies after public hearings and review of public comments.

c. **Floodplains:** According to Flood Insurance Rate Maps (FIRM), the proposed project will involve work in areas of the 100 year floodplain. All potential impacts will be evaluated in detail as route alternatives are more fully developed, as set forth in Executive Order 11988 "Floodplain Management" and 23 CFR 650 and coordinated with the appropriate regulatory agencies.

d. **Wildlife and Habitat:** Coordination with the Florida Fish and Wildlife Conservation Commission (FFWCC), Florida Natural Areas Inventory (FNAI), and USFWS will be conducted during the PD&E Study. Based on identified habitat types and information provided by the regulatory agencies, protected species surveys will be conducted by experienced wildlife biologists. Specific field surveys for protected species that potentially occur within the study area will be conducted following

established survey protocols and guidance provided by the regulatory agencies. Potential impacts to wildlife/protected species will be assessed and appropriate mitigation and minimization measures will be developed. The Green Swamp Wildlife Management Area is identified as a critical habitat for the wildlife/protected species in the study area. Due to the potential barrier effect of transportation corridors, wildlife crossings will be considered. A list of federal and state-protected species potentially occurring within each county along the alternative routes is provided in Appendix A.

e. **Outstanding Florida Waters:** There is one Outstanding Florida Waters (OFW) within the project area: the Econlockhatchee River. The project will be evaluated for potential involvement with this OFW.

f. **Aquatic Preserves:** There are no aquatic preserves in the project area.

g. **Coastal Zone Consistency:** A Coastal Zone Consistency determination is required.

h. **Cultural Resources:** Archaeological and historic resources occur in the vicinity of the High Speed Rail alternative alignments. Potential for involvement with specific sites and structures will vary according to specific locations of route alternatives. Many communities along the alternative routes have downtown historic districts which are listed (or are eligible for listing) on the National Register of Historic Places (NRHP). Prehistoric archaeological sites may also be affected by one or more route alternatives. A Cultural Resource Assessment Survey will be conducted for the project. In consultation with the State Historic Preservation Officer (SHPO), potential archaeological and historic resources within the study corridor alternatives will be identified and determinations will be made regarding eligibility for listing on the NRHP, the applicability of Section 106 of the National Historic Preservation Act (Public Law 89-665, as amended) and Section 4(f) of the Department of Transportation Act (Public Law 89-670, as amended) and whether resources will be affected by proposed alternatives. This information will be considered in developing and assessing alternatives.

Section 4(f) properties include any lands utilized for public parks, recreation, and wildlife and waterfowl refuges. Some state facilities may be impacted, e.g. Tenoroc State Recreation Area. A number of County and City Parks and Public Recreation Lands may also be impacted by the alternative alignments under study. Each Section 4(f) resource potentially impacted by an alternative alignment will be identified and described, and the respective impacts on each Section 4(f) property will also be identified and evaluated. All potential measures available to minimize any impacts of the Florida High Speed Rail project will be identified and discussed, including the results of preliminary coordination with the entity having jurisdiction over the Section 4(f) property.

i. **Coastal Barrier Resources:** There are no Coastal Barrier Resource Units in the project area.

j. **Contamination:** Throughout the proposed Florida High Speed Rail corridor, the variety of land uses results in a potential for diverse contamination and hazardous materials involvement. A Contamination Screening Evaluation will be conducted for the entire project corridor in accordance with Chapter 22 of the Florida Department of Transportation PD&E Manual, with emphasis placed in those land use areas representing higher contamination probabilities. Alternative route-specific data will be considered in the selection of a preferred alternative during the project development phase of the study.

k. **Sole Source Aquifer:** The project is not located within a sole source aquifer.

l. **Noise:** Noise impacts from the proposed project have the potential to be significant. A detailed noise study will conducted in accordance with the FRA's High-Speed Ground Transportation Noise and Vibration Impact Assessment methodology.

m. **Other topics or comments:** A detailed multi-phase Public Involvement Program (PIP) is planned to commence with the onset of data collection and will continue throughout the development of the project. Comment and review agency input and involvement will be solicited as part of this PIP and will help to determine specific route locations.

A Memorandum of Understanding (MOU) entered into jointly by the FHWA and the FRA agencies of the U.S. Department of Transportation and the FHSRA, an agency of the State of Florida is being completed presently. The purpose of the MOU is to coordinate and document each agency's respective roles and responsibilities in implementing actions relating to the Florida High Speed Rail Transportation Project necessary to ensure full compliance with the statutory requirements of NEPA, as amended (42 U.S.C. 4321, et seq.), and related statutes, regulations and orders.

As stated in the draft MOU, "The FRA and the FHWA will be jointly responsible for determining the scope of issues to be addressed in the environmental process, for identifying the significant issues related to the proposed action, and for review of the financial feasibility and ridership forecasts conducted for the project for use in the NEPA review process. The FRA will be primarily responsible for compliance with the environmental requirements relating to safety, noise, and electromagnetic field effects. The FHWA will be primarily responsible for compliance with other environmental requirements including NEPA, Clean Air Act (42 U.S.C. 7401 et seq.), Statewide and Metropolitan Planning Rule, and other applicable federal requirements, and for coordination of the environmental documents with other federal agencies with jurisdiction by law or special expertise.

FHSRA will be responsible for the coordination and oversight of appropriate environmental studies, necessary technical analyses, and coordinating the preparation of environmental documents including, but not limited to: assessment of project financial feasibility, consistency with metropolitan land use and transportation plans, potential environmental impacts, agency and public involvement, notifications, and coordination with affected state and local agencies and the public. FHSRA will provide all reasonable assistance in the location, design, engineering, construction, testing, commissioning, permitting, operation and maintenance of the system. The State of Florida will own the right-of-way and infrastructure, and the future Design-Build-Operate-Maintain-and Finance Consortium will be responsible for the rolling stock and operation and maintenance. FHSRA will fully cooperate with FRA and provide any and all information in its control, and will ensure that the necessary information required by FRA to develop appropriate safety standards for the system is provided."

4. **Navigable Waterway Crossings:** Yes. The Hillsborough River is an important waterway crossing for this project. The navigability of other waterway crossings is dependent on the specific location of each respective route. A determination will be made during the project study pursuant to 23 CFR 650, Subpart H, Section 650.805, regarding whether or not a U.S. Coast Guard permit is required.

5. **Permits Required:** Various permit applications may be required to be filed and approved prior to construction. Agencies which may have an interest from a permitting standpoint include, but may not be limited to, the following (actual permits required will be determined during subsequent project development):

- U.S. Army Corps of Engineers – Individual Permit
- U.S. Environmental Protection Agency - NPDES Construction Permit
- Florida Department of Environmental Protection – NPDES Construction Permit
- South Florida Water Management District - Environmental Resource Permit
- Southwest Florida Water Management District - Environmental Resource Permit
- St. Johns River Water Management District – Environmental Resource Permit

APPENDIX A
LISTED SPECIES POTENTIALLY OCCURRING ALONG THE PROPOSED ROUTES, LISTED BY COUNTY

Scientific Name	Common Name	State Status	Fed. Status	Hillsborough	Polk	Osceola	Orange
FISH							
Acipenser oxyrhynchus (desotoi)	Atlantic sturgeon (Gulf)	S	T	X			
Cyprinodon variegatus hubbsi	Lake Eustis pupfish	S					X
AMPHIBIANS							
Rana capito	Gopher frog	S		X	X		X
REPTILES							
Alligator mississippiensis	American alligator	S	T	X	X	X	X
Crocodylus acutus	American crocodile	E	E	X			
Drymarchon corais couperi	Eastern indigo snake	T	T	X	X	X	X
Eumeces egregius lividus	Blue-tailed mole skink	T	T		X		
Gopherus polyphemus	Gopher tortoise	S		X	X	X	X
Neoseps reynoldsi	Sand skink	T	T		X	X	X
Nerodia fasciata taeniata	Atlantic salt marsh snake	T	T				
Pituophis melanoleucus mugitus	Florida pine snake	S			X		X
Pseudemys concinna suwanniensis	Suwannee cooter	S		X	X		
Stilosoma extenuatum	Short-tailed snake	T		X	X		X
BIRDS							
Ajaia ajaja	Roseate spoonbill	S		X	X		X
Ammodramus savannarum floridanus	Florida grasshopper sparrow	E	E		X	X	
Aphelocoma coerulescens	Florida scrub-jay	T	T	X	X	X	X
Aramus guarauna	Limpkin	S		X	X	X	X
Charadrius alexandrinus tenuirostris	Southeastern snowy plover	T		X			
Charadrius melodus	Piping plover	T	T	X			

Source: Florida's Endangered Species, Threatened Species, and Species of Special Concern, Official List. June 1999, Florida Natural Areas Inventory.

APPENDIX A
LISTED SPECIES POTENTIALLY OCCURRING ALONG THE PROPOSED ROUTES, LISTED BY COUNTY

Scientific Name	Common Name	State Status	Fed. Status	Hillsborough	Polk	Osceola	Orange
Egretta caerulea	Little blue heron	S		X	X	X	X
Egretta rufescens	Reddish egret	S		X			
Egretta thula	Snowy egret	S		X	X	X	X
Egretta tricolor	Tricolored heron	S		X	X	X	X
Falco sparverius paulus	Southeastern American kestrel	T		X	X	X	X
Grus canadensis pratensis	Florida sandhill crane	T		X	X	X	X
Haematopus palliatus	American oystercatcher	S		X			
Haliaeetus leucocephalus	Bald eagle	T	T	X	X	X	X
Mycteria americana	Wood stork	E	E	X	X	X	X
Pelecanus occidentalis	Brown pelican	S		X			
Picoides borealis	Red-cockaded woodpecker	T	E		X	X	X
Polyborus plancus audubonii	Audubon's crested caracara	T	T		X	X	
Rostrhamus sociabilis	Snail kite	E	E		X		
Speotyto cunicularia	Burrowing owl	S		X		X	X
Sterna antillarum	Least tern	T		X			X
MAMMALS							
Podomys floridanus	Florida mouse	S		X	X	X	X
Sciurus niger shermani	Sherman's fox squirrel	S		X	X	X	X
Trichechus manatus	Manatee	E	E	X			
Ursus americanus floridanus	Florida black bear	T			X	X	X
PLANTS							
Adiantum tenerum	Brittle maidenhair fern	E		X			
Asclepias curtissii	Curtiss' milkweed	E		X	X	X	X
Asplenium auritum	auricled spleenwort	E		X			
Bonamia grandiflora	Florida bonamia	E	T		X	X	X

Source: Florida's Endangered Species, Threatened Species, and Species of Special Concern, Official List. June 1999, Florida Natural Areas Inventory.

APPENDIX A
LISTED SPECIES POTENTIALLY OCCURRING ALONG THE PROPOSED ROUTES, LISTED BY COUNTY

Scientific Name	Common Name	State Status	Fed. Status	Hillsborough	Polk	Osceola	Orange
Calamintha ashei	Lavender basil	T			X		X
Chionanthus pygmaeus	Pygmy fringe tree	E	E	X	X	X	
Chrysopsis floridana	Florida golden aster	E	E	X			
Clitoria fragrans	Pigeon-wing butterfly-pea	E	T		X		X
Conradina brevifolia	Short-leaved rosemary	E	E		X		
Conradina grandiflora	Large-flowered rosemary	E				X	X
Deeringothamnus pulchellus	Beautiful pawpaw	E	E				X
Dicerandra frutescens	Scrub balm	E	E		X		
Eriogonum longifolium var *graphalifolium*	Scrub buckwheat	E	T		X	X	X
Eryngium cuneifolium	Scrub celery	E	E		X		
Hartwrightia floridana	Florida hartwrightia	T			X		
Hypericum cumulicola	Highlands scrub hypericum	E	E		X		
Illicium parviflorum	Yellow star anise	E			X		X
Lantana depressa	Pineland lantana	E		X		X	
Lechea cernua	Nodding pinweed	T			X	X	
Lechea divaricata	Pine pinweed	E		X			
Lechea lakelae	Lakela's pinweed	E		X			
Liatris ohlingerae	Florida gayfeather	E	E		X		
Lilium catesbaei	Catesby's lily	T		X	X	X	X
Lupinus aridorum	Scrub lupine	E	E		X		X
Matela floridana	Florida milkweed	E					X
Monotropa hypopithys	Pinesap	E					X
Nemastylis floridana	Celestial lily	E				X	X
Nolina atopocarpa	Florida beargrass	T					X
Nolina brittoniana	Scrub beargrass	E	E		X	X	X
Opphioglossum palmatum	Hand adder's tongue fern	E					X

Source: Florida's Endangered Species, Threatened Species, and Species of Special Concern, Official List. June 1999, Florida Natural Areas Inventory.

APPENDIX A
LISTED SPECIES POTENTIALLY OCCURRING ALONG THE PROPOSED ROUTES, LISTED BY COUNTY

Scientific Name	Common Name	State Status	Fed. Status	Hillsborough	Polk	Osceola	Orange
Panicum abscissum	Cutthroat grass	E			X	X	
Paronychia chartacea	Papery whitlow-wort	E	T		X		X
Peperomia humilis	Pepper	E					X
Platanthera integra	Southern yellow fringeless orchid	E				X	X
Polygala lewtonii	Scub milkwort	E	E		X	X	X
Polygonella ciliata var. *basiramia*	Hairy jointweed	E	E		X		
Polygonella myriophylla	Small's jointweed	E	E		X	X	X
Prunus geniculata	Scrub palm	E	E		X		
Pteroglossaspis ecristata	Non-crested coco	T		X			
Rhapidophyllum hystrix	Needle palm	C		X	X	X	X
Salix floridana	Florida willow	E					X
Triphora latifolia	Broad-leaved nodding-caps	E		X			
Verbena tampensis	Tampa vernian	E		X			X
Warea amplexifolia	Clasping warea	E	E		X	X	X
Warea carteri	Carter's warea	E	E		X		
Zephyranthes atamasco	Rain lily	T		X	X	X	
Zephyranthes simpsonii	Simpson's zephyr lily	T		X	X	X	
Zephyranthes treatiae	Treat's zephyr lily	T		X	X	X	
Ziziphus celata	Florida jujube	E	E		X		

Source: Florida's Endangered Species, Threatened Species, and Species of Special Concern, Official List. June 1999, Florida Natural Areas Inventory.

E = Endangered
T = Threatened
C = Commercially Exploited
S = Species of Special Concern

Appendix B-14

Advance Notification Comments

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FINAL ADVANCED NOTIFICATION COMMENTS

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
Transportation	***Expressway Authority***	***Orlando-Orange County Expressway Authority (OOCEA) Orlando, Florida***	• Potential crossing or use of right-of-way on SR 417 (GreeneWay) and/or SR 528 (Bee Line Expressway), such action will necessitate OOCEA approval
Socioeconomics Safety	***City Agency***	***City of Lake Worth, Florida***	• Lake Worth City Commission adopted Resolution No. 39-97 which includes: – High Speed Rail through developed, heavily populated areas will pose significant safety concerns – Benefits to a community which is bypassed will be negligible – Values in a community adjacent to where HSR passes through will undoubtedly decline – Safety and property value concerns of the coastal communities
Socioeconomics Land Use Transportation	***City Agency***	***City of Orlando, Florida***	• Metropolitan Activity Centers – Three metropolitan activity centers (Downtown area, International Drive area, and Orlando Airport area) – Focus HSR station locations within these high intensity metropolitan activity centers • Infrastructure Concentration – Activity centers will meet the infrastructure requirements of high speed rail stations • Access within Activity Centers – City's comprehensive plan calls for every Metropolitan Activity Center in the City to be served by internal transit and pedestrian systems – Internal circulators and adequate pedestrian facilities will complement HSR stations • Rail Passenger Transfers – LYNX buses can connect rail passengers with other locations within its three county service area and possibly Volusia County • Multi-Modal System – City recently purchased land for LYNX to build a Downtown inter-modal station which could serve HSR – Orlando International Airport is an inter-modal terminal which incorporates aviation, cargo, and surface transportation facilities – Intense land uses and activities in these areas make them

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			prime locations for HSR stations • Mass Trans Element – City shall attract development on one or more high speed ground transportation demonstration projects by 2000 – City shall become the hub of the Florida HSR system by 2000
All Environmental ***Land Use*** ***Noise/Vibration***	***Town***	***Town of Davie, Florida***	• Request to extend the normal 45 day response time to 60 days • The three main north/south alignments in Broward County (US 27, I-75, and South Florida Rail Corridor), the Mayor and Town Council voted in support of the South Florida Rail corridor alignment • Serious concerns about location of HSR in I-75 area - the impact that this would have on the citizens of the Town, particularly the 5,000 residents of the Ivanhoe community. • US 27 area, concerned about negative environmental impacts • Eastern location would make the rail more easily accessible to the population, without forcing traffic westward
Socioeconomics ***Safety***	***City Agency***	***City of Sunrise, Florida***	• Supports the HSR project • Tremendous benefits to the resident of South Florida and City of Sunrise • Environmental benefits include reduction of auto and air trips between Central and South Florida • Economic benefits include creation of construction and permanent jobs and savings for business travelers • Safety benefits include reduction of automobile accident related injuries and deaths • Support HSR station along the proposed western corridor Sawgrass area of City of Sunrise – Sawgrass Mills Mall draws 20 million visitors per year – Broward County Arena will seat 20,000 people
Transportation ***Land Use*** ***Socioeconomics*** ***Wetlands***	***City Agency***	***City of Ft. Lauderdale***	• Desire to achieve sustainable development in the eastern portion of South Florida • Consideration be given to the use of the Florida East Coast or CSX railroad right-of-ways for a South Florida alignment • Greatest opportunities for linking major downtowns, business and office centers, tourist destinations and other high density or activity generator locations

FINAL ADVANCED NOTIFICATION COMMENTS, Continued

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			• Use of the CSX/FEC corridors would also promote the greatest potential for multi-modal opportunities linking in particular to Port Everglades, Tri-rail, Ft. Lauderdale-Hollywood International Airport, Miami International Airport, the Miami Downtown People Mover and the Miami Metro Rail • Would minimize environmental impacts by using an already developed urban corridor thus minimizing any further intrusion into or adjoining to wetlands and/or the Everglades • City of Ft. Lauderdale stands ready to facilitate the project in whatever Comprehensive Plan provisions and other regulatory measures necessary to accommodate an alignment along an appropriate corridor within the City of Ft. Lauderdale
Socioeconomics	***City Agency***	***City of Boynton Beach, Florida***	• Resolution No R97-77 adopted by the Boynton Beach City Commission • Boynton Beach City Commission formally opposes the use of taxpayers' money to assist in funding the HSR project • Urge that a portion of the funds be used to assist the Tri-Rail System
	City Agency	***City of Altamonte Springs, Florida***	• Proposed routes of the HSR do not extend into Altamonte Springs or Seminole County • City of Altamonte Springs has no comment related to impact to our existing utility system infrastructure
All Environmental ***Farmlands*** ***Land Use***	***Non-Profit Organization***	***Florida Defenders of the Environment, Inc. (FDE)*** ***Gainesville, Florida***	• Florida Defenders of the Environment a nonprofit conservation organization established in 1969 • FDE is concerned about potential impacts to endangered species, wetlands, floodplains, wildlife corridors, agricultural lands, and water recharge areas • Disturbed about potential for HSR to promote urban sprawl along the right-of-way
Land Use	***American Indians***	***Seminole Tribe of Florida*** ***Hollywood, Florida***	• Seminole Tribe of Florida requested an extension of 45-day time period to 60 days • May effect Tribal real property interests throughout the state of Florida • Require specific data on the alternative alignment segments under consideration
Land Use ***Biology/Threatened and***	***Non-Profit Organization***	***Sierra Club, Loxahatchee Group*** ***Palm Beach County, Florida***	• Concerned with any route that will negatively impact the Everglades or any of our environmentally sensitive lands.

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
Endangered Species ***Wetlands*** ***Socioeconomics***			• Use the I-95 right-of-way to Orlando then elevate the rails above the I-4 to Tampa thus avoiding any further wetlands impact • Road/rail kill of our endangered species • 123 endangered plant and animal species that are protected by the Endangered Species Act • Tax burden the people of Florida • Travelers will not use this rail system
Land Use ***Biology/Threatened and Endangered Species*** ***Wildlife and Habitat*** ***Air Quality*** ***Water Quality***	***Non-Profit Organization***	***Martin County Audubon Society (MCAS)*** ***Stuart, Florida***	• Supports the concept of a HSR project • Transportation by HSR can be a cost-effective, high volume mode of transportation that will be highly beneficial to residents and visitors • Selection of a corridor that minimizes the impact to Florida's natural environment is a critical first-step in ensuring the project does not cause unacceptable environmental effects • Selection of the corridor that poses neither direct nor indirect negative effects to protected species and/or their habitat • Avoidance of natural habitat areas (National Wildlife Refuges, State Parks, State Preserves) • Design of a management plan for operation of HSR minimizes negative effects on various environmental fronts (e.g., protecting water quality and quantity, preserving air quality, not prohibiting drainage, etc.) • Protected species issues in Martin County include: – Fishes ◊ The common snook *(centropomus undecimalis)* is listed as a species of special concern (SSC) and is known to inhabit the St. Lucie Canal – Amphibians ◊ Suitable habitat for the gopher frog *(Rana capito)* is present along the proposed route in Martin County and is designated as a SSC – Reptiles ◊ Suitable habitat for the Florida pine snake *(Pituophis melanoleucus* mugitus) is present in Martin County and is designated as a SSC – Birds ◊ Suitable habitat for the Florida grasshopper

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			sparrow *(Ammodramus savannarum floridanus)* is present along the proposed route in Martin County and is designated as Endangered ◊ Suitable habitat for the snail kite *(Rostrhamus sociabilis)* is present along the proposed route in Martin County and is designated as Endangered ◊ Suitable habitat for the white *ibis (Eudocimus albus)* is present along the proposed route in Martin County and is designated as a SSC ◊ The whooping crane *(Grus americana)* has been sighted at locations between Martin County and Orlando ◊ Known nests of bald eagles ◊ Typographical errors/corrections (kirtland's warbler and arctic peregrine falcon) – Plants ◊ Surveys should be conducted for these species and appropriate design measures developed and implemented to ensure their protection (giant Leather fern, Crenulate lead plant, Long strap fern, Indian River prickly apple, Cowhorn orchid, Clamshell orchid, Butterfly orchid, Red Stopper, Delicate ionopsis, Nodding Clubmoss, Hanging Clubmoss, Simpson's ironwood, Celestial lily, Cinnamon fern, Royal fern, Blue-flowered butterwort, Yellow butterwort, Rose pogonia orchid, Tiny milkwort, False coco orchid, Plexia orchid, Tall neottia orchid, Lace-lip ladies tress orchid, Southern Ladies Tress Orchid, Stiff-leaved wild pine, Twisted air plant, Giant air plant)
Aquatic Preserve ***Water Quality*** ***Biology/Threatened and Endangered Species*** ***Wetlands***	***Non-Profit Organization***	***St. Lucie Audubon Society*** ***Ft. Pierce, Florida***	• Oppose any project what would effect the North Fork of the St. Lucie River an aquatic preserve and an outstanding Florida water • Listed species in county potentially threatened • Oppose the impact to wetlands no matter the size within our County • Structure of the rail will greatly effect the natural hydrology of water drainage basins not only effecting our environmental

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			systems but developed ones too
Transportation ***Biology/Threatened and Endangered Species*** ***Air Quality*** ***Wetlands*** ***Socioeconomics*** ***Land Use***	***Metropolitan Planning Organization***	***Metropolitan Planning Organization of Palm Beach County*** ***West Palm Beach, Florida***	• Impact from the project should be quantified, both from trips removed from highways, airports, commuter rail, etc. as well as additional trips associated with the rail stations, operations, construction and associated development • Environmental sensitive land areas, both wetlands and upland scrubs – Associated with these areas are threatened and endangered flora and fauna • Palm Beach County is a maintenance area for ozone and close to the limit for nitrogen oxides, impacts on air quality must be quantified • MPO recently adopted a 2015 Cost Feasible Transportation System Plan for the entire County • Concerned about the financial impacts of the HSR project on Tri-Rail • Impact on the social and economic well-being of Palm Beach County • Impacts on property values, neighborhood disruption and pressures to change the charger of adjacent land uses • Concerned on the ability of local governments to ensure comprehensive plans, permit requirements and development ordinances will be followed through the approval and certification process
Navigable Waters	***Federal***	***United States Coast Guard*** ***Seventh Coast Guard District*** ***Miami, Florida***	• Cross waterways would require approval of the proposed location and plans through issuance of Coast Guard Bridge Permits • Request to be designated as a cooperating agency for the environmental documentation • Waterways which have guide clearance criteria and may require bridge crossings are listed below with guide clearance specifications – Okechoobee Waterway - 55' above MHW (Vertical CL) and 90' between fender normal to the axis of the channel (Horizontal CL) – Miami River - 75' above MHW and 25' above MHW (closed position) [Vertical CL] and 90' between fender normal to the axis of the channel (Horizontal CL)

FINAL ADVANCED NOTIFICATION COMMENTS, Continued

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			• Other waterway crossings requiring bridge permit actions along the CSX Railroad alignment include: – Biscayne Canal – Snake Creek Canal – C-10 Canal – Dania Cut-off Canal – South Fork New River – North Fork New River – Middle River Canal – Cypress Creek Canal – Pompano Canal – Hillsboro Canal – El Rio Canal (2 crossings) – Kissimmee River – St. Johns River
Wetlands	***Federal***	***US Department of Commerce National Oceanic and Atmospheric Administration National Marine Fisheries Service St. Petersburg, Florida***	• Everglades and Loxahatchee Slough are among the wetlands of South Florida that would be impacted by the project • Wetland systems should be avoided to the maximum extent possible • Long term restoration of these systems is expected to positively affect living marine resources particularly those of Florida Bay • Any mitigation considered for impacts to these wetland systems should be complementary to this large-scale state and federal ecosystem restoration effort
Biology/Threatened and Endangered Species	***Federal***	***United States Department of Interior Fish and Wildlife Service Vero Beach, Florida***	• South Florida Ecosystem Office's area of responsibility includes the counties of Dade, Broward, Palm Beach, Martin, St. Lucie, Indian River, Okeechobee, Osceola, and Polk • Jacksonville Field Office handles the counties of Brevard, Orange, and Hillsborough • Several areas in which the project may affect federally endangered and threatened species under the jurisdiction of the South Florida Ecosystem Office • The following is a listed of Federally listed birds – The federally endangered Wood Stork (*Mycteria americana)* may have rookeries along the corridor of the project alignment

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED

- ◊ Primary and secondary protection zones are established around a wood stork colony in order to ensure that a colony site survives. The primary zone can encompass an area 500 feet to 1,500 feet outward in all directions from the colony boundaries. The secondary zone can extend 1,000 to 2,000 feet or to a radius of 2,500 feet of the outer edge of the colony. Specific size of the zone depends upon such factors as the surrounding habitat and feeding behaviors
- ◊ No removal of vegetation, no activities that reduce the area, depth, or length of flooding in the wetlands surrounding the colony, and no construction of buildings, roadways, towers, power lines, canals, or the like
- ◊ No unauthorized human entry closer than 300 ft of the colony, no increase or irregular pattern in human activity and no aircraft closer than 500 ft of the colony
- ◊ Within the secondary zone, should be no increase in human activity, and no alteration in the area's hydrology
- ◊ High-tension power lines should be no closer than three miles from an active colony

– Federally endangered Everglade snail kite *(Rostrhamus sociabilis plumbeus)* may be nesting and foraging in areas of the proposed project

- ◊ The project alignment may cut through habitat that has been designated as critical for the Everglades snail kite under 50 CFR 17.95
- ◊ Avoid critical habitats for the snail kite
- ◊ No construction or clearing activities take place within 1,500 feet of a snail kite nest, particularly from January 15 through June 30

– Federally endangered red-cockaded woodpecker *(Picoides borealis)* may have colonies along areas of the alignment

- ◊ Red-cockaded woodpeckers prefer older pine and pine-hardwood stands

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			◊ Surveys should be conducted for foraging red-cockaded woodpeckers and their cavities ◊ Typical surveys should describe date, time, length, route (mapped), environmental conditions, and observations – Federally threatened bald eagle *(Haliaeetus leucocephalus)* nests in several areas along the current alignment ◊ As guidance, use the Habitat Management Guidelines for the Bald Eagle in the Southeast Region ◊ Primary and secondary protection zones are established around bald eagle nests in order to determine what types of activities would not adversely affect bald eagles, especially during the nesting season ◊ The primary zone can encompass an area 750 feet to 1,500 feet outward from the nest ◊ The secondary zone can extend 1,500 feet to 1 mile (5,280.00 ft) from the primary zone boundary. ◊ Determining these zones will require aerials of the area for each nest and possible site visits ◊ Restrictions in the primary zone include: no residential, commercial or industrial development; no tree-cutting, logging, construction, or mining; and no use of toxic chemicals ◊ During nesting period (October 1 to May 15) unauthorized human entry and helicopter or fixed-wing aircraft within 500 vertical or 1,000 horizontal feet should also be restricted ◊ Within secondary zone, there should be no construction of new commercial and industrial sites; no multistory buildings and density residential housing units between a nest tree and the eagles' feeding area; now construction of new roads, trails and canals; and no use of toxic chemicals

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			◊ Other activities may take place on the secondary zone but not during the nesting season – Federally threatened Florida scrub jay (*Aphelocoma coerulescens)* may occur in areas along the corridor of the alignment ◊ Conduct survyes to determine the exact location and extent of any scrub jay territory in relation to the Florida HSR corridor ◊ Scrub jay surveys should use the methodology outline in *Ecology and Development-related Habitat Requirements for the Florida Scrub Jay* – Federally threatened Audubon's (Florida) crested caracara *(Polyborus plancus audubonii*) may be found nesting in areas along the corridor of the Florida HSR ◊ Caracaras nest almost exclusively in cabbage palms ◊ No construction or clearing activities should take place within at least 900 feet of an active caracara nest during the nesting season (generally January 15 through June 30, although caracaras have been documented nesting in all months) • Federally listed reptiles include: – Federally threatened eastern indigo snake (*Drymarchon corais couperi*) may be found in areas of the the Florida HSR alignment corridor • Federally listed plants include: – Federally endangered Britton's bear glass (*Nolina brittoniana*) and federally threatened Florida bonamia (*Bonamia grandiflora*) may occur in some areas of the proposed alignment for the Florida HSR ◊ It is prohibited to remove and reduce to possession any endangered or threatened plant from areas under federal jurisdiction or to maliciously damage or destroy any such species on any such area, or to remove, cut, dig up, damage or destroy any such species on any other area in knowing violation of any law or regulation of any state

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			◊ Conduct surveys for the relocation of either of these plant species within the vicinity of the project corridor so that you may avoid them • Everglades Restoration - Water Conservation Areas 2 and 3 – Potential impacts the Florida HSR may have on this portion of the Everglades Protection Area – Loxahatchee National Wildlife Refuge – Oppose any alternative alignment that would have direct impacts on the Water Conservation Area or the Loxahatchee National Wildlife Refuge – Could impede efforts to restore the Everglades – May cut through areas that would form part of the Water Preserve Areas – Alignment could remove areas that have been targeted for the Water Preserve Areas and compromise the effectiveness of remaining areas by dividing proposed buffer cells – Alignment may be incompatible with the restoration of a the Everglades and the associated Water Preserve Areas – Recommend that you develop an alternative alignment to avoid these sensitive areas
	County Agency	***Hillsborough County, Florida***	• Hillsborough County requested a 15-day extension
	Metropolitan Planning Organization	***Broward County Metropolitan Planning Organization Ft. Lauderdale, Florida***	• Broward County Metropolitan Planning Organization requested a 15-day extension
Wildlife and Habitat Land Use Biology/Threatened and Endangered Species Wetlands Stormwater Floodplains Transportation Recreation/Parkland Soils/Geology	***Regional Planning Council***	***Tampa Bay Regional Planning County Tampa, Florida***	• Council Comments/Concerns – Wildlife and habitat assessments will be performed to evaluate potential adverse effects and include measures necessary to mitigate for any impacts to listed species – It is inconsistent with the scope of the Regional Policy Plan – Project does not address high speed rail service to Pinellas County – Consistency with Natural Resource Goals 4.5, 4.10, and 4.11 cannon be determined at this time • Recommendations – Further planning and environmental design proceed consistent with the following goal and policies of *Future*

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			of the Region, A Strategic Regional Policy Plan for Tampa Bay Region • Pertinent Policies – Protect, preserve and restore all regionally-significant natural resources – Mitigation should meet the following minimum ratios ◊ Intertidal habitats - 3:1 ◊ Coastal strand and barrier islands - 3:1 ◊ Open water marine and estuarine habitats - 4:1 ◊ Beaches - 2:1 ◊ Riverine habitats - 3:1 ◊ Lake habitats - 3:1 ◊ Special habitats - 2:1 – Mitigation by habitat re-creation shall employ native plant material. Monitor mitigation areas for a sufficient time to ensure success: a minimum 85% final coverage of desired species. Yearly maintenance and planing should be undertaken to ensure final cover as necessary – Mitigation banking shall set the criteria for impact mitigation, consistent with other policies in this section – Mitigation for allowable impacts to regionally-significant wetland areas should be performed within the drainage basin. – Mitigation by restoring disturbed habitat of a similar nature, including removal of exotic plant species may be acceptable. The minimum acceptable ratio shall be twice the habitat re-creation ratio set forth in policy 4.5.2 – Maintain and improve native plant communities and viable wildlife habitats – Maintain a minimum horizontal buffer necessary to preserve the natural value and function of the regionally-significant natural resource – Provide and maintain adequate long-term monitoring of native plant communities and listed species' populations to provide a sound data base and to identify trends upon which future regulatory and acquisition decisions can be based

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			– Prohibit hardening of unaltered shorelines or other structural lining of natural waterways or shorelines, except when required by watershed and/or stormwater management plans – Protect, preserve and restore the natural functions of riverine systems. Prohibit new development in riverine floodways (the area of highest velocity) – Prohibit channelization through regionally-significant natural systems such as intertidal, estuarine, riverine and special habitats; solely to create new lands for development; or to create new navigation access – Protect the natural resources of regionally-significant parks, greenways, preserves and conservation lands from incompatible land uses adjacent to these areas – Support the restoration of natural features in the region's parks and open space system – Support land acquisition programs that protect natural resources, provide habitats for listed plant and animal species, protect Aquatic Preserves and provide for appropriate recreational opportunities – Promote the principles of ecosystem management for the protection of regionally-significant natural resources – Discourage development in the undeveloped 100-year floodplain – Implement floodplain management strategies to prevent erosion, retard runoff and protect natural functions and values – Land use decisions shall be consistent with federal-state-listed species protection and recovery plans, and adopted habitat management guidelines] – Establish and maintain regional wildlife corridors, Strategic Habitat Conservation Areas, and the Florida Greenways Plan, in coordination with the Florida Game and Fresh Water Fish Commission, Florida Department of Environmental Protection, Southwest Florida Water Management District and U.S. Fish and Wildlife Service – Preserve regionally-significant geological features (e.g., significant limestone outcroppings and natural springs)

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			– Adopt coordinated riverine management plans to include: ◊ Identification and mapping of the floodplain and riverine systems ◊ Goal statements identifying the types of fish, wildlife, habitat and water resources to be protected ◊ Promotion of Ecosystem Management principles ◊ Evaluation of the regionally-significant natural resources within the river or floodplain, and the identification of an appropriate buffer width necessary to protect the resources of interest. The buffer should be supported by appropriate technical information and be scientifically defensible ◊ Identification of the optimal and minimum seasonal flows necessary to maintain the health of the riverine and estuarine system – Extension of the Florida HSR into Hillsborough and Pinellas Counties – Development in accordance with the intent of Florida's growth management laws – HSR, commuter rail system, and other transit systems should be connected and coordinated to promote appropriate intermodal transportation – Adequate intermodal access, including mass transit feeder services and automobile park-and-ride facilities
All Environmental Transportation	***Regional Planning Council***	***South Florida Regional Planning Council Hollywood, Florida***	• The western alignment along the Everglades and the Water Conservation Areas may create significant environmental impacts. • Considerations of a western alignment must ensure that its proposed corridor be compatible with the East Coast Buffer Plan of the South Florida Water Management District and other plans for Everglades Ecosystem Restoration • Alignment scenario must ensure mass transit linkages to the eastern urban core areas • The urbanized area of Broward and Dade counties is still in need of a connected and accessible intra-regional transit

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			network • Intermodal terminals should also be the norm for HSR stations to connect to the intra-regional transit system and the currently proposed Miami Intermodal Center near the Miami International Airport is an excellent example • Associated developments of any size, once approved, need not go through the Developments of Regional Impact review unless specifically required in the certification approval • FDOT should actively involve the applicable local governments in its considerations for any associated developments • Regional Transportation – To achieve mutually supportive transportation planning and land use planning that promotes both mobility and accessibility in order to foster economic development, preserve natural systems, improve air quality, increase access to affordable housing and promote safety – To enhance the regional transportation system's role in system-wide preparedness for emergency situations – To achieve a coordinated transportation system planning process across jurisdictions and across issue-areas so that barriers are minimized and consistency across the region is achieved
Socioeconomics All Environmental Land Use	***State Agency***	***Florida Department of Environmental Protection Tallahassee, Florida***	• The ridership studies will be critical to an evaluation of environmental issues because they will help to weigh the true environmental benefits of the project against the impacts. These studies will determine directly how man people will ride the trains over time and thus serve as an indicator of (1) the number of automobiles which will be in use, and (2) airplane flights which will not be needed • It will be important for the ridership evaluation to verify and quantify these benefits and to determine whether the benefits outweigh project impacts and costs • National Environmental Policy Act (NEPA) Coordination – The scoping notice and all subsequent stages of the EIS should be submitted to the Florida State Clearinghouse for a coordinated review by all state agencies • Consideration of Alternative Cooridors

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED
			– Integrate other long range planning and management strategies – Ecosystem Management Implementation Strategies – Full analysis will therefore need to consider the project's impacts and benefits not only "on-site," but also in the context of the many ecosystems and regions it will traverse – Likely conflict with the general purpose of the buffer preserves to serve as a shield between the Everglades and the urbanized lower east coast area – Siting the corridor along the eastern edge of the Everglades would likely stimulate urban development in the western portions of southeast Florida's coastal counties which would conflict with the "Eastward Ho" initiative sponsored by the Governor's Commission for a Sustainable South Florida and the Department of Community Affairs – The use of existing rail or interstate highway alignments will likely yield the least environmental impacts – HSR could provide a valuable transportation alternative and provide opportunities to further revitalize urban cores and direct growth to suitable areas • Wildlife and Habitat - Manatees – Nearly all of the counties possibly affected by this project have at least some manatee use. Specific waterways of particular concern include the Loxahatchee River, Hillsborough River, and the North Fork of the St. Lucie River – Some waterways may require construction windows to prevent impacts to manatees during certain times of the year. All in-water work in manatee habitat will require the standard construction conditions and may need dedicated manatee observers in some locations • Florida Natural Areas Inventory (FNAI) – Species occurrence information – Proper acknowledgment should thus be given to the source of county distribution information and an explanation should be given as to how the composition

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			of the species list was derived if it does not follow the State List – The Gulf sturgeon, *(Acipenser oxyrinchus desoteia*) and the Suwannee cooter *(Pseudemys concinna suwanniensis*) do on occur in Brevard County – Availability in the FNAI database of very specific information for threatened/endangered species and natural communities along the alternative routes for this project – Specific locations of high quality lands within the state and has scientific expertise to offer on management issues – Information provided by the FNAI database may also be published without prior written notification to FNAI, and it must be credited as an information source • Aquatic Preserves – In addition to the aquatic preserve designation, the Loxahatchee River and Slough is under a federal Wild and Scenic River designation which was not mentioned in the AN • Permits Required – FDEP is also listed as requiring a "Forest Service Permit," no such permit is required or issued by this agency. – Several permits listed under USEPA have been delegated to FDEP including: ◊ National Pollutant Discharge Elimination System (NPDES) ◊ Prevention of Significant Deviation (PSD) ◊ Title V Air permitting • Wetlands – Impacts to Allapattah Flats
Recreation/Parkland ***Noise/Vibration*** ***Wildlife and Habitat Biology/Threatened and Endangered Species***	***State Agency***	***Florida Game and Fresh Water Fish Commission (GFC)*** ***Tallahassee, Florida***	• A number of areas under review for state acquisition may also be affected by some of the proposed alignments, including the Pal-Mar property, Cypress Creek property and Allapattah Flats. • EIS should provide details on the acreage and habitat type of public lands that would be impacted by the various alignments

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			and the impact each alignment would have on land management practices, including access by management personnel and recreational users of public lands are crossed • Reduced ability to conduct controlled burns because of potential smoke problems, the spread of exotic species along the rail corridor, and the reduced recreational experience from noise and visual pollution should be addressed in detail • Provide, by alignment, the acreage of each vegetative community impacted • Location of all bridges, culverts, and wildlife underpassess should also be provided so GFC can evaluate the impacts of this project on habitat fragmentation • Detailed analysis of habitat connectivity and provide plans to minimize impacts to large habitat systems and wildlife populations • Address hydrology and sheetflow and proposed methods to avoid, minimize, or mitigate the impacts of the road bed acting as an elevated dam across the landscape • Provide a full accounting of all species, including listed species and game animals that would be potentially impacted by this project • Location of all structures such as stations and terminals, park and ride facilities, and storage and maintenance facilities, should be identified along with any development areas planned in association with the rail line. • Direct and secondary impacts of these facilities to fish and wildlife resources and habitat should be thoroughly assessed
Land Use ***Water Quality*** ***Wetlands*** ***Wildlife and Habitat*** ***Floodplains*** ***Stormwater***	***Water Management District***	***St. Johns River Water Management District*** ***Palatka, Florida***	• Impacts to the Upper St. Johns River Basin (USJRB) Project - $195 Million joint flood control and wetland restoration project of the US Army Corps of Engineers and SJRWMD. The project was initiated in 1977 with construction beginning in 1988 • SJRWMD has a great deal a natural resource information available on GIS maps and in technical reports, which are available to the applicant • Fragmentation of habitat, water quality deterioration, and hydrologic or other modifications • Increased direct obstacles to terrestrial wildlife movement

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			• Increased wildlife mortality due to train/animal collisions • Increased floodplain encroachments • Increased potential for linear obstacles to surface water movement • Potential for impacts to environmentally sensitive areas • Increases the potential for adverse impacts resulting from secondary development surrounding new infrastructure (i.e., stations) • Large stations – Create more stormwater runoff than larger stations – More difficult to place within existing urban areas to minimize impacts to natural areas – Greater potential for secondary development that may adversely affect environmentally sensitive areas
	Water Management District	***Southwest Florida Water Management District Brooksville, Florida***	• Consistency cannot be determined without an Environmental Assessment Report • Portions of route that cross near the Green Swamp along the I-4 corridor
Coastal Zone Consistency Land Use Construction - Works of the District Wetlands Water Quality Wildlife and Habitat Biology/Threatened and Endangered Species Recreation/Parkland	***Water Management District***	***South Florida Water Management District West Palm Beach, Florida***	• Reviewed for consistency with the Florida Coastal Zone Management Program (FCMP) • Insufficient information is available at this time to determine whether or not this project is consistent with the achievement of the SFWMD's projects, programs and objectives • Crossings of portions of the Water Conservation Areas (WCAs) appear to be inconsistent with the Governor's Executive Order No 88-25 which prohibits development activities in the WCAs • Proposed alignment appears to be inconsistent with the Central and Southern Florida Project Comprehensive Review Study • Proposed alignment appears to be inconsistent with East Coast Buffer Project (ECBP) • Proposed Alignment may be inconsistent with the Lower East Coast Regional Water Supply Draft Interim Plan • Delays in the land acquisition, construction and implementation of the ECBP or the Northwest Dade County Freshwater Lake Plan (NDCFLP) projects could extend completion of the proposed rail system beyond these target

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			dates (i.e., the time-frames may be incompatible) • Appears to be inconsistent with the Governor's Commission for a Sustainable South Florida's recognition of the purpose of the NDCFLP • May encourage urban sprawl and inhibit downtown revitalization efforts of coastal communities • Inconsistent with the objectives of The Governor Commission for a Sustainable South Florida for transforming urban sprawl • Growth management impacts and consistency with "Eastward Ho" • Everglades restoration - construction of a levee to accommodate high speed rail may limit future design options and impact water conveyance from west to east and vice-versa • Proposed alignment may impact a number of the District's Save Our Rivers (SOR) projects • May impact a number of construction projects within the District's five year Capital Improvement Program • Insufficient land to accommodate the 100' wide right-of-way without having to impact the WCAs or FPL's transmission lines • Proposed reconstruction of portions of the SFWMD's existing levee system to accommodate the proposed new 100' wide right-of-way may not be technically and financially feasible in all areas • Restrictions on land purchased with Preservation 2000 funds • Wetland systems and numerous isolated wetlands and the mitigation required for the proposed impacts • Wildlife impacts of the proposed 100' wide right-of-way • Impacts to threatened and endangered species • Alteration of planned and ongoing land management practices on lands along the corridor, including controlled burns • Use of herbicides to control nuisance and exotic plant growth within the right-of-way • Spread of exotic plant species • Impact on SFWMD-owned land and works • Impact on SFWMD operations and maintenance activities • Water pollution during construction and operations phases • Conflicts with the goals of wildlife refuges and national parks

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			• Impact of ecotourism • Condemnation of private lands will be required for the proposed 100' wide right-of-way • Proposal to "screen" residential development may be inconsistent with SFWMD programs and project's as well as those of other agencies • Design conflicts and safety issues associated with the interface of the proposed catenary system with FPL's existing and proposed 500 kV electrical transmission lines in the vicinity of the WCAs • Dry season brush fires a threat to operation of the proposed catenary rail system • Pensucco wetlands (cell 26) be avoided • Adequate access needs to be provided to pumping stations located near the Florida Turnpike for the East Coast Buffer project • Avoid the Palm Beach County regional park • Investigate the feasibility of using the 300' wide corridor located adjacent to and outside of WCA 1 • Avoid the City of West Palm Beach Water Catchment Area • Impact on water quality resulting from possible train accidents • Alternative methods of maintaining the railroad right-of-way within environmentally sensitive areas • Effect on birds/nesting areas/animal migration • Trains to spread seeds from exotic plant species into the WCAs
Transportation ***Land Use*** ***Farmlands*** ***Wetlandss*** ***Wildlife and Habitat*** ***Socioeconomics*** ***Floodplains***	***State Agency***	***Florida Department of Community Affairs*** ***Tallahassee, Florida***	• Attached comments provided by: – City of Palm Beach Gardens – City of Boynton Beach – South Florida Regional Planning Council – Tampa Bay Regional Planning Council – East Coast Regional Planning Council ◊ Altamonte Springs ◊ Belle Isle ◊ Brevard County MPO ◊ Daytona Beach ◊ DeBary

IMPACT NAME(S)	AGENCY TYPE	AGENCY NAME/LOCATION	ISSUE/INFORMATION NEEDED

- ◊ Maitland
- ◊ Malabar
- ◊ Melbourne
- ◊ Orange County
- ◊ Orlando
- ◊ Orlando MPO
- ◊ Palm Bay
- ◊ St. Cloud
- ◊ Sanford
- ◊ Seminole County Planning Department
- ◊ Seminole County Manager
- ◊ Volusia County
- ◊ Volusia County MPO
- ◊ Winter Park

– Treasure Coast Regional Planning Council

- ◊ City of Lake Worth
- ◊ Palm Beach County MPO
- ◊ Town of Palm Beach Shores
- ◊ City of West Palm Beach
- ◊ St. Lucie County
- ◊ City of Sebastian

- Coordination in the Department's Sustainable Communities Demonstration Project (Tampa/Hillsborough/Orlando/Martin County and Boca Raton)
- Using route in Hillsborough County paralleling I-4 over the A-Line Cutoff and coordinating with the reconstruction project of I-4
- Avoid or minimize impacts to the Green Swamp Area of Critical State Concern in Polk County and to ensure that wildlife crossings and waterflow are maintained
- Following the alignment of existing highways and transportation corridors, including the Beeline Expressway, I-95 and Tri-Rail in order to support compact urban development and to maximize connections to intermodal transportation such as Tri-Rail, existing airports, deepwater ports and other transportation systems
- Excluding the Holopaw Cutoff alignment, western alignment

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			in St. Lucie and Martin Counties and the US 27 alignment west of the Loxahatchee National Wildlife Refuge in order to avoid adverse impacts to significant wetlands, wildlife habitat and agricultural lands • Excluding the US 27 and Florida Turnpike alignments in Palm Beach, Broward and Dade Counties in order to avoid impacts to the Everglades Wildlife Area and water conservation areas, to avoid impacts to areas that are predominantly residential development, and because they would require stations in areas that would promote urban sprawl • Consider of potential conflicts and increased costs of alignments through the proposed Lake Belt project in the Lake District area of Dade County • Consideration to elevating the line through portions of the corridor to avoid adverse impacts to wetlands, wildlife habitat, other environmentally sensitive areas, hydrology, and traffic circulation patterns • Comparison of the costs and benefits, including right-of-way acquisition, environmental mitigation, promotion of urban sprawl or compact urban development and redevelopment and other potential secondary impacts • 168 local governments which could be affected by the alternative corridor alignments • Boynton Beach and Palm Beach Gardens indicate potential conflicts between the proposed project and some local comprehensive plans • Potential loss of funding for the Tri-Rail system • Suggest additional linkages to areas such as Daytona Beach, Port Canaveral, the DeBary/Deltona transportation nodes, Melbourne Regional Airport, corridors proposed in the draft I-4 Multi-Modal Master Plan, and other light-rail systems • East Central Florida Regional Planning Council's comments include: – Expected contributions of local governments must be clearly identified – Suggests connections to local transit and other transportation systems (Melbourne Airport and Port Canaveral in Brevard County)

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			– Concerns regarding impacts to wetlands and wildlife movement across the rail corridor – FOX routing and attractions station involving Shingle Creek wetlands in Orange County raised concerns about unnecessary environmental impacts – Fencing of the rail corridor could have impacts on terrestrial wildlife movement • South Florida Regional Planning Council's comments include: – Western alignment may create environmental impacts to the Everglades and water conservation areas – Would not support redevelopment of in the urbanized areas of Dade and Broward counties – Ensure compatibility with the East Coast Buffer Plan – Consider mass transit linkages to the eastern urban areas • Tampa Bay Regional Planning Council's comments include: – Support the extension of the HSR to Pinellas County as well as Hillsborough • Treasure Coast Regional Planning Council's comments include: – Concerns regarding the potential diversion of funds from the Tri-Rail and other infrastructure projects – Location of the rail corridor outside of existing urban areas – Impacts to natural systems and existing land uses • City of Boynton Beach's comments include: – Opposing the use of Florida taxpayers' money for funding the project and urging FDOT to use funds for the Tri-Rail system • City of Lake Worth's comments include: – Opposing the expenditure of public funds for study and development of the project • City of Palm Beach Gardens' comments include: – Two alternate alignments are inconsistent with its comprehensive plan policies because of negative impacts to environmentally sensitive areas, wildlife corridors and/or residential neighborhoods – Grade crossing may limit the City's plans for future

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			thoroughfares • Town of Palm Beach Shores' comments include: – Concerns regarding the certification process that replaces the requirement for individual state, regional and local permit approvals – Wetlands and wildlife habitat – Impacts to floodplains, rivers and aquatic preserves • Palm Beach County Metropolitan Planning Organization's comments include: – Requesting that FDOT place higher priority on meeting current and anticipated transportation system needs • City of West Palm Beach comments: – Avoid impacts to the Water Catchment Area and wetland systems • St. Lucie County comments: – Supports the project
Coastal Zone Consistency	***State Agency***	***Florida Department of State (DOS) Division of Historical Resources Tallahassee, Florida***	• Reviewed in accordance with Florida's Coastal Zone Management Act and Chapter 267 Florida Statute as well as the procedures contained in 36 CFR, Part 800 • Project will have cultural resource surveys performed as need and efforts be coordinated with DOS • Provided that FDOT completes the necessary cultural resource surveys, coordinating with DOS, and appropriately avoiding, minimizing, or mitigating project impacts to any identify significant archeological or historic sites, the proposed project will have no adverse effect on historic properties listed, or eligible for listing, in the National Register, or otherwise of historical or architectural value • If conditions are met the project will also be consistent with the historic preservation aspects of Florida's Coastal Management program

Appendix B-15

Orange County - Letter of Preference for OCCC Station Site (October 2002)

ORANGE COUNTY
OFFICE OF THE CHAIRMAN
TELEPHONE 407-836-7370 FAX 407-836-7360
201 SOUTH ROSALIND AVENUE, ORLANDO FL 32801
chairman@co.orange.fl.us

RICHARD T. CROTTY
CHAIRMAN

October 31, 2002

William Dunn, P.E.
Florida High Speed Rail Authority Member
President
SunCam Inc.
7296 S.W. 146 Street Circle
Miami, Florida 33158-1670

Fax: 305-256-8733

Dear Mr. Dunn:

I recently received the enclosed memorandum from the Chairman of Efficient Transportation for the Community (ETC). After hearing his presentation and reviewing the data, it is clear to me that the most viable option for the Florida High Speed Rail would be to include a station at the International Drive Multi-Modal Center.

Orange County's billion-dollar investment in the Convention Center, the millions of convention delegates that travel here each year, and the level of employment and other economic activity in the International Drive area truly represent "Downtown Orange County". In addition, locating a station at the I-Drive Multi-Modal center allows for future connections to other modes of transit as well as providing a central access point for Orange, Seminole and Osceola County residents to utilize the High Speed Rail.

A High Speed Rail station in the International Drive area simply makes the most sense for the community. I support the will of the voters who approved the High Speed Rail project. The expenditures of public funds on a High Speed Rail project that does not access I-Drive will not provide a public benefit to the majority of our regions citizens and visitors. I urge you to take the time to review the enclosed information as you move through the route selection process and I am certain you will reach the same conclusion.

Sincerely,

Richard T. Crotty
Orange County Chairman

Enclosure

MEMORANDUM

To: Chairman Rich Crotty
Office of the Chairman

From: ETC of Central Florida, Inc.

Date: October 29, 2002

Re: The Overall Potential of the International Drive Resort Area to Provide Riders to a High Speed Rail Station Located at the Orange County Convention Center

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The following information has been assembled to set out the reasons high speed rail should include a station at the Orange County Convention Center to serve the Convention Center, International Drive and surrounding Orange County. The information indicates clearly that the high speed rail must include a Convention Center Station.

The International Drive Resort Area ("I-Drive") centerpiece is the Orange County Convention Center ("Convention Center"). The Convention Center is the second largest convention center in the United States, comprised of 7 million gross square feet. Orange County owns adjacent land which is zoned for convention center use, with all infrastructure in place necessary to expand the Convention Center in a Phase 6 by 1½ million square feet.

Numbers obtained from the Convention Center indicate that 1.6 million delegates (and their guests) per year come to the I-Drive area for conventions at the Convention Center. Phase 5 of the Convention Center, which will almost double the Center's capacity, opens in October 2003. The latest projections obtained from the Convention Center indicate that 2.4 million delegates and guests are expected to come to the I-Drive area for conventions each year after Phase 5 opens in 2003.

General data from the Convention Visitors Bureau shows convention group make-up as follows:

60% singles
16% couples
8% sharing a double
84%

The remaining 16% are 3+ people in a room and families.

It is logical that the 84% of singles, couples and doubles are prime prospects to ride a high speed rail train to and from OIA. These will be adults mainly with limited baggage going to conventions.

The Convention Center and the Convention Center and Visitors Bureau estimate that approximately 75% of people attending conventions at the Convention Center arrive by airplane.

Therefore, based upon the above, the number of prime prospects to ride the train to and from OIA would be as follows:

> 75% arriving by air x 84% being prime prospects x 2.4 million per year = 1,512,000 prime prospects per year
>
> 1,512,000 prime prospects per year x 2 trips (one from and one to OIA) ÷ 365 days per year = 8,285 prime prospects (riders) per day between the Convention Center and OIA.

This number is only taking into account convention delegates and their spouses and others traveling with delegates to and from the second largest convention center in the United States, and does not include any other potential ridership from I-Drive in general nor from the myriad of businesses and homes located near I-Drive or from Orange County travelers especially from north of I-Drive making an easy connection from light rail to high speed rail at the intermodal station, discussed below, to go to Tampa or OIA.

The intermodal station ("Intermodal Station") being planned and designed by Orange County at the Convention Center would be a major public intermodal center providing for the intersection of many transportation modes. DEIS work, contracted by Lynx with state and federal assistance, is continuing at this time on a light rail line from Downtown Orlando along the I-4 corridor connecting to the Intermodal Station, and this line is planned to go north to Altamonte Springs. As part of the Orange County mass transit system, an elevated circulator will also be studied, under contract with Lynx with state, federal and local assistance. The circulator will run from Sea World to Universal Studios on I-Drive, to move an estimated 8,000 people per hour per direction safely and efficiently to and from the Intermodal Station to connect with the high speed rail and the light rail. The circulator will connect also on the north end to the light rail at the Belz outlet mall station. The Intermodal Station would thus be connected efficiently to Downtown Orlando population centers and points north and into Seminole County. This will allow Orange County citizens, as well as Seminole County residents, to move easily along the light rail system near the I-4 spine with the convenient intermodal connection to Tampa or to the Orlando International Airport on high speed rail.

In addition, public bus service provided by LYNX and the I-Ride rubber-tire trolley system will also be connected with the Intermodal Station. The rubber-tired trolley is a public-private co-venture initiated by and operated by I-Drive owners with help from Orange

County and the City of Orlando, and carries over 1,700,000 riders per year. The I-Drive owners volunteered to be assessed one mil of special property taxes to support 14 trolleys presently serving 94 stops on 15-minute headways. The trolley will be connected to the Intermodal Station when the station opens. Scheduled public bus service is overshadowed by private bus systems set up for major events at the Convention Center, when up to 55,000 people need to be moved 4 times a day at the Convention Center. All of these bus systems need to converge with the I-Drive fixed guideway circulator system, the light rail and the high speed rail at the Intermodal Station.

Pertinent data concerning the I-Drive area is as follows:

35,496 hotel and timeshare rooms with a capacity of well over 70,000 occupants per night

Conservatively, over 27 million people sleep in the I-Drive resort area each year

5 major theme parks and numerous other attractions with a capacity of 70,000 patrons per day and hosting over 20 million visitors per year

Over 1.2 million square feet of restaurants

Over 4.6 million square feet of retail stores

2nd largest convention center in the country with a capacity of 118,000 patrons

11,175,570 room nights available per year

Over 700 individual businesses

Over 7.6 million square feet of offices

Over 46 thousand square feet of commercial

Over 263 thousand square feet of theaters

Over 5.4 million square feet of government/churches

The business community without the tourism base is over 290,000

More than 27,000 people work in the visitor industry in the resort area and many more than that work in businesses outside the visitor industry

Other positive attributes of I-Drive include the following.

1. There is tremendous expansion potential on I-Drive:

A. Land adjacent to Phase 5 of the Convention Center has been purchased by private owners to build a 1,000-room Hilton, a 1,500-room Hyatt and to expand the Peabody Hotel by approximately 1,700 rooms. All of these rooms would be at the Intermodal Station area. In addition, Harris Rosen has bought land easterly of the Intermodal Station and is beginning construction now on a golf course for a 1,500-room resort hotel. The total of these new convention hotel rooms is 5,700. The Rosen Resort site will include the Hospitality School of UCF, which will eventually have 1,000 students, and approximately 400 will be housed at the site. These hotel projects are all scheduled for completion to serve increased needs of Phase 5. In addition, Universal Studios owns 1,300 acres after sale of land for the Hyatt, Hilton, Rosen Hotel and Convention Center Phases 5 and 6. The major roads are now under construction to serve this new Universal land and all utilities and drainage will soon be in place. Entitlements for the Universal land allow the following future construction:

1) Approximately 250 acres for a major theme park

2) 13,000 hotel rooms, including 4,800 rooms already sold

3) 1.5 million square feet of retail

4) 600 timeshare units

5) 2 golf courses

B. Approximately 300 acres zoned tourist commercial/mixed use immediately around the Sea World theme park area are yet to be developed for tourist commercial uses, including additional attractions, hotels, retails and restaurants.

C. There remains to be developed for tourist commercial mixed use approximately 2,000 acres lying on South International Drive south of Sea World to State Road 536.

2. To assist the high speed rail project Universal has offered approximately $9.8 million in value of land lying approximately along a 3-mile corridor of frontage north of the Beeline in which to place the high speed rail.

3. Orange County owns approximately 60 acres that can be committed for the major intermodal station and development around that station.

4. International Drive offers the strength of being made up of many vibrant ownerships, including large corporations and numerous individuals owning theme parks, various hotels, shops and restaurants. There is strength in diversity of ownerships.

5. I-Drive is working diligently on a baggage-handling system from the Airport to I-Drive. That system is scheduled for operation in the near future. It is anticipated it will be successful and make it much easier to use a train between the Airport and I-Drive hotels.

The I-Drive area is far more than just a tourist area. It has major business interests which employ many people. The biggest employer is Lockheed Martin with about 7,500 workers. Harcourt, book publishers, employs over 1,100 people. Along the John Young Parkway within approximately a mile and a half of the Intermodal Station are Agere and a number of other large employers in the South Park and Orlando Central Park areas. In addition, there are numerous office buildings dispersed around and near the I-Drive corridor and a sizeable hospital. There are tens of thousands of homes near I-Drive including Windermere, Bay Hill, Orange Tree, Isleworth, Metro West, Cypress Point and Williamsburg. These business interests and local residents, in addition to the tourists, are a potential for considerable ridership both from the Intermodal Station to OIA and from the Intermodal Station to Tampa. The Intermodal Station is truly in the middle of "Downtown" Orange County. For locals, the intermodal connection at the Convention Center station by either the light rail or the circulator is an easy and useful connection, whereas there is a major problem and hassle for most Orange County local residents and business travelers to drive to the Airport to get on a high speed rail train to Tampa or to drive all the way to Disney, over one-third of the driving time to Tampa for most Orange County and Orlando residents, to get on a high speed rail to Tampa.

If WDW will not allow a connection at Disney if the Convention Center is served, that is of little concern to I-Drive businesses. In the bigger picture, I-Drive interests believe that would be a valuable connection for both areas and would relieve some traffic on I-4 and local roads. I-Drive does not feel this Disney connection is vital or even particularly desirable to the future of I-Drive and believes it would be as helpful to Disney as it would be to I-Drive. If Disney wants a connection, I-Drive accepts that decision. I-Drive is also willing to accept a station at Disney which would not permit passenger movement, through the use of car door closures or other means, between Disney and I-Drive.

In summary, the Intermodal Station will connect high speed rail to and serve

(1) the second largest convention center in the United States (7 million gross square feet) which can be expanded on its expansion land in Phase 6 by one and one-half million square feet,

(2) a thriving general tourist industry,

(3) a thriving and fast-growing non-tourist general commercial/business halo area in and around I-Drive,

(4) tens of thousands of rooftops inhabited by many affluent people in a second halo around the I-Drive area, and

(5) through the light rail connect also serve the City of Orlando and much of Orange County and Seminole County.

The potential is huge. The transportation elements of a light rail, an elevated circulator and a high speed rail are converging at the same time and place and that convergence makes all the elements viable.