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 <u>2002 Report to the Florida Legislature</u>, the FHSRA found that a traditional design-bidbuild 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 <u>Cross-State Rail Feasibility Study</u> 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 <u>No-Build Alternative</u>

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.



Corridor	Roadway	Limits	Construction Status	Туре
	I-275/I-4	CBD Interchange	In Progress	Interchange Improvements
Hillsborough	I-4	14 th Street to 50 th Street Pending		Additional Lanes 4 to 8
	I-4	I-4 50 th Street to Polk County Line	In Progress	Additional Lanes 4 to 6 and 8
Dolk	I-4	Hillsborough County Line to U.S. 92	Completed	Additional Lanes 4 to 6
POIK	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
	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
Orange	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

Table S-1Roadway Improvements within the Study Area

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 <u>Technology Alternatives</u>

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.

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	8	17
International Airport and Disney		
(not required)		
Trip time (1 hour, 10 minutes)	65–70 minutes	54-55 minutes
Seating capacity (250)	292	250

Table S-2Summary of Operations by Technology

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 <u>Alignment Alternatives</u>

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 <u>Summary</u>

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 <u>Florida High Speed Rail Screening Report</u>, 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.



Alternative	1	2	3	4	5	6	7	8
Technology								
Gas turbine	Х	Х	Х	Х				
Electric train					Х	Х	Х	Х
			Alig	nment				
I-275/I-4 in	v	v			v	v		
Tampa	Λ	Λ			Λ	Λ		
CSX Line/I-75 in			v	v			v	v
Tampa			Λ	Λ			Λ	Λ
I-4 between								
Tampa and	Х	Х	Х	Х	Х	Х	Х	Х
Orlando								
Bee Line								
Expressway/Taft-	\mathbf{v}		v		v		v	
Vineland Road in	Λ		Λ		Λ		Λ	
Orlando								
S.R. 536/Central								
Florida		v		v		\mathbf{v}		v
Greeneway in		Λ		Λ		Λ		Λ
Orlando								

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

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.



FLORIDA HIGH SPEED RAIL AUTHORITY TAMPA--ORLANDO

S-8

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 <u>Tampa Interstate Study</u> (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



FLORIDA HIGH SPEED RAIL AUTHORITY TAMPA--ORLANDO

S-10

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

	Alternatives							
	1	2	3	4	5	6	7	8
NATURAL ENVIRONMENT I	MPACTS (AC.)		<u> </u>	-		<u> </u>		
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 FLOODW	AY (AC.)		•			•		
Base Floodplain	26.99	54.54	61.04	58 70	56.99	54.54	61.04	58 70
Encroachment	50.88	54.54	01.04	56.70	50.00	54.54	01.04	56.70
Base Floodway Encroachment	9.45	6.47	9.45	6.47	9.45	6.47	9.45	6.47
CONTAMINATION SITES (RA	NKED H)	-	-	-	-	-	-	
Potential Petroleum Sites	2	0	7	5	2	0	7	5
Potential Hazardous	5	5	12	12	5	5	12	12
Materials Sites								
SECTION 4(I) IMPACTS	4	1	0	0	1	1	0	0
Recreation Facilities	1	1	0	0	1	1	0	0
Historic/Archaeological Sites	U	U	2	2	0	U	2	2
COMMUNITY SERVICES	0	12		0	0	12	=	0
Schools	0	12	3	9 5	8 10	12	5	9
Community Facilities	10	9	6	5	10	9	6	3
Parks & Recreation	5	1	3	6	5	1	3	6
Chemeteries	4	6	0	0	4	6	0	0
Churches		10	12	13	15	10	12	15
NOISE IMPACIS (MODERAL	E & SEVERE)		1	1	1	1		
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 (N	et Change in To	ns/Year)						
СО	-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 (Ch	ange from 2010	No-Build)	a			a		
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 <u>Wetlands</u>

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 <u>Wildlife and Habitat</u>

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 <u>Contamination Sites</u>

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.



S-14

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 <u>Section 4 (f) Sites</u>

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 <u>Community Services</u>

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.



S-16

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 <u>Noise Impacts</u>

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 <u>Vibration Impacts</u>

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 Other vibration impacts are scattered along I-4 in rural Hillsborough County Street. (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



FLORIDA HIGH SPEED RAIL AUTHORITY TAMPA--ORLANDO

S-18

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 <u>Air Quality</u>

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 1/20th 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.



TAMPA--ORLANDO

S-20

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 NHRPlisted, eligible, or potentially eligible archaeological sites. Therefore, the proposed FHSR project would have no effect on any significant archaeological resources.

S.8.12 <u>Relocations</u>

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 <u>Tampa Interstate Study EIS Record of Decision</u>. 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 <u>Transportation Impacts</u>

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 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 <u>2002 Florida High Speed Rail Authority Report</u> 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 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 <u>Total Cost for Construction</u>

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.

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: Camended: December 7, 2000 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.			

Table S-5High Speed Rail Study AreaLong Range Transportation Plans

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 Co	unty					
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 Adopted: Transportation Element 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: <u>Florida High Speed Rail Screening Report</u>, 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 <u>I-4 Wildlife Crossing</u>

A commitment by FDOT to provide a future wildlife crossing in Polk County is contained in the <u>Design Change Reevaluation</u> 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 <u>Coordination with Federal Aviation Administration</u>

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 ¹/₂ 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 <u>Coordination with Local Government</u>

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:

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

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 <u>Design Change</u> <u>Reevaluation</u> 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 <u>Standard Specifications</u> 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.*

