# APPENDIX C:
# TECHNICAL ANALYSIS MEMORANDA

# TECHNICAL MEMORANDUM
# COMPREHENSIVE PLANNING AND COORDINATION

Date Prepared: September 22, 2009
Prepared By: Sherry Carver

Section S.9 of the Florida High Speed Rail (FHSR) Final Environmental Impact Statement (FEIS) addresses consistency between the FHSR and the comprehensive plans for the various local governments that are located within the preferred corridor. Specifically, Table S-5, page S-25, summarizes the references to high speed rail in the Transportation Elements of the comprehensive plans for Hillsborough County, Polk County, Osceola County and the affected municipalities within them. Table S-6, page S-26, summarizes the references to high speed rail in the long range transportation plans (LRTPs) for the three MPOs that represent the various affected local governments.

In order to illustrate the updated references to high speed rail in both the comprehensive plans and the LRTPs, Table S-5 and Table S-6 have been revised and are attached to this memorandum. These tables are based on a review of all applicable planning documents as of August 31, 2009. Only those references that mentioned high speed rail specifically have been included. The "Actions Needed" column on the revised Tables S-5 and S-6 state that the Florida Department of Transportation (FDOT) will request each local government and MPO address High Speed Rail in the next comprehensive plan or LRTP update.

Copies of all pertinent pages from the comprehensive plans and LRTPs referenced in revised Tables S-5 and S-6 are also attached to this memorandum.

**Updated References to Table S-5**
**(Review Conducted on Aug 31, 2009)**

**High Speed Rail Study Area**

**Long Range Transportation Plans**

| Document | LRTP Adoption Date | Reference to High Speed Rail | Action Needed |
|---|---|---|---|
| **Hillsborough County** | | | |
| Hillsborough County 2025 LRTP | Adopted: Nov 10, 2004 Amended: Oct 3, 2006 Amended: June 5, 2007 | Yes - Chapter 8, Amended June 5, 2007, Regional Transportation Planning (Page 8-4) | None |
| **Polk County** | | | |
| Polk County 2030 LRTP | Adopted: December 2005 Amended: June 21,2007 | Yes - Policies 5.8 and 5.9 (Page 21) | None |
| **Orange and Osceola Counties** | | | |
| METROPLAN Orlando 2030 LRTP | Scheduled to be Adopted: Sept 2009 | Yes - Map of Transit Network Needs (Page 36) Map of Transit Vision Concept Plan Corridors (Page 38) | None |

**Updated References to Table S-6**
**(Review Conducted on Aug 31, 2009)**

**High Speed Rail Study Area**

**Transportation Elements**

| Document | Adoption Date | Reference to High Speed Rail | Action Needed |
|---|---|---|---|
| **Hillsborough County** | | | |
| Hillsborough County Transportation Element | Adopted: Aug 26, 2008 | Yes - Policy 6.1.4 (Page 154) | None |
| City of Tampa Transportation Element | Adopted: Feb 9, 2009 | Yes - Intermodal Analysis<br>Policy 48.1.3 (Page 337) | None |
| City of Plant City Transportation Element | Adopted: July 7, 2009 | No | None |
| **Polk County** | | | |
| City of Lakeland Transportation Element | Adopted: Dec 27, 2001<br>Effective: June 8, 2009 | Policy 7D (Page III-122)<br>Policy 7E (Page III-122a) | None |
| Polk County Transportation Element | Adopted: Nov 18, 1992<br>Revised: Sept 2008 | Yes - Policy 3.202-F3 (Page G-7)<br>Policy 3.202-F4 (Page G-8)<br>Policy 3.202-F5 (Page G-8)<br>Policy 3.202-F6 (Page G-8) | None |
| **Osceola County** | | | |
| Osceola County Transportation Element | Adopted: Dec 10, 2007 | Yes - Policy 1.2.13 (Page 66) | None |
| Reedy Creek Improvement District | Dec 15, 1999 | No | FDOT will request the District to address HSR. |
| **Orange County** | | | |
| Orange County Transportation Element | Adopted: August 2009 | No | FDOT will request the District to address HSR. |
| City of Orlando Transportation Element | Adopted: Aug 12, 1991<br>Amended: June 28, 2007 | No | FDOT will request the District to address HSR. |

**TECHNICAL MEMORANDUM**
**ARCHAEOLOGICAL AND HISTORICAL RESOURCES UPDATE**

Date Prepared: September 15, 2009
Prepared By: Rebecca Spain Schwarz, Cultural Resource Coordinator

## *Archaeological and Historical Resources*

### PD&E Background information

A Project Development and Environment (PD&E) Study was prepared for the Florida High Speed Rail project between Tampa and Orlando in 2002-2005. During the PD&E Study, a Cultural Resource Assessment Survey (CRAS) (July 2003) was prepared to identify and evaluate cultural resources (historic structures and archaeological sites) within the project Area of Potential Effect (APE). A Section 106 Consultation Case Report (December 2003) was then prepared to evaluate potential effects for the Preferred Alternative. In accordance with Section 106 of the National Historic Preservation Act of 1966, as amended; 36 CFR Part 800; and Chapter 267, Florida Statutes, these documents were coordinated with the Federal Railroad Administration (FRA) and State Historic Preservation Officer (SHPO). As a result of this coordination, the Preferred Alternative, based on the stipulated conditions (commitments stated below),would have a "conditional no adverse effect" determination for the Oaklawn Cemetery, German American Club, Ybor City NHLK, North Franklin Street Historic District, and the St. Paul AME Church Parsonage (SHPO letter dated January 5, 2004).

The resulting Final Environmental Impact Statement (FEIS) was approved by FRA the on July 19, 2005. The FEIS included the following five cultural resource related commitments agreed upon by the Florida High Speed Rail Authority (FHSRA), FRA, and the SHPO, as part of the Section 106 Consultation process conducted during the PD&E Study. These commitments would also be incorporated into future Design, Build, Operate, Maintain, and Finance (DBOM&F) contracts that will be binding to the vendor:

a. Provide the Florida High Speed Rail (FHSR) design plans (for the Tampa Central Business District [CBD] and Ybor City areas) to the State Historic Preservation Officer (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 National Historic Landmark District (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 Tampa Interstate Study (TIS) Memorandum of Agreement (MOA) would be fulfilled for any impacts to contributing historic structures within the Ybor City NHLD and the TIS Ultimate right-of-way (ROW).

e. Aesthetic treatment for the FHSR would be compatible with the existing Urban Design Guidelines set up for the TIS within the Tampa Commercial Business District (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.

## 2009 Reevaluation Update

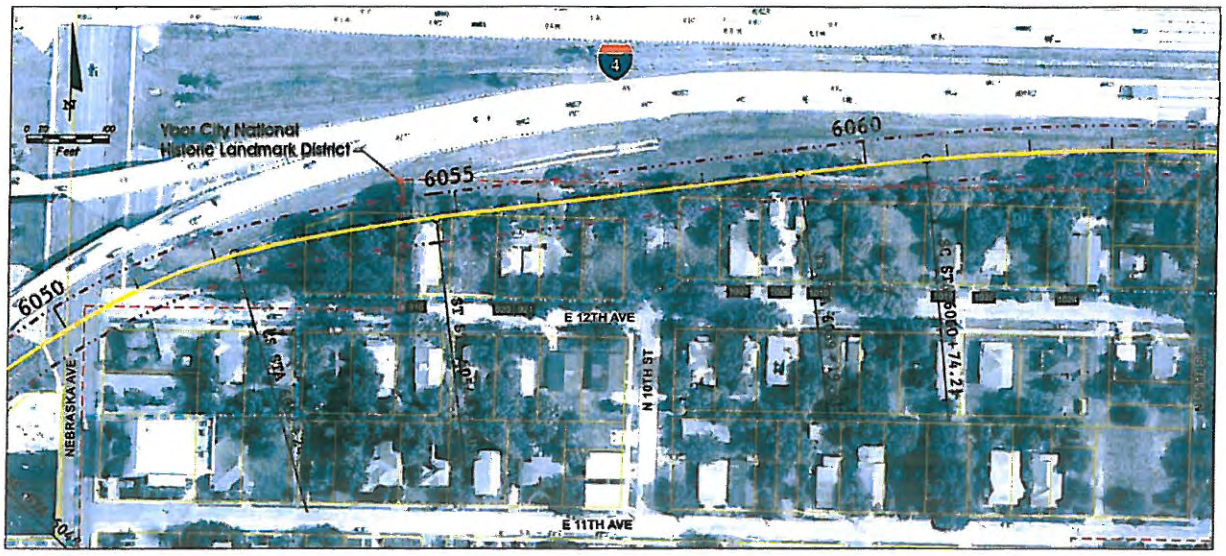
During the current reevaluation process, the alignment was shifted slightly (12 feet south) and the ROW requirements were reduced to the minimum amount needed in the vicinity of the Ybor City NHLD. This is still within the original TIS Ultimate ROW. The attached aerials show the PD&E Study alignment presented in the Section 106 Consultation Case Report (December 2003) and the current alignment being evaluated in the Reevaluation (September 2009). This shift in alignment does not represent any change in impacts (direct or indirect) to historic structures within the Ybor City NHLD. Therefore, there are no changes in impacts as a result of the alignment shift evaluated in this Reevaluation.

As part of the Tampa Interstate project (improvements to I-4, the I-4/I-275 downtown interchange, and I-275 west of downtown) the Florida Department of Transportation (FDOT) and Federal Highway Administration (FHWA) have been implementing the stipulations of the TIS MOA. To date, the FDOT and FHWA have relocated and rehabilitated 35 historic contributing structures, as stipulated in the MOA. They have also worked with the City of Tampa to relocate an additional 17 historic structures (out of 29 stipulated in the MOA) for rehabilitation by others. One of these historic structures (1006 E. 12th Avenue) was located within the proposed FHSR ROW. This structure was moved to 2314 E. 12th Avenue in April 2009. Twelve additional historic structures are in the process of being evaluated for relocation by FHWA/FDOT and rehabilitation by others, to fulfill the requirements of the TIS MOA.

To date, there are five historic contributing structures located on parcels that are within the Ybor City NHLD and the FHSR ROW. These are 916, 920, 922, 1004, and 1010 E. 12th Avenue, as shown in the attached photographs. The structures themselves might not all be impacted directly since some of the FHSR ROW needs are small takes from the rear of the parcel. These structures have been evaluated for relocation by FDOT/FHWA and rehabilitation by others, but have not yet been selected as suitable candidates. 916 E. 12th Avenue is very large and a suitable relocation lot south of I-4 is not available. 920 and 922 E. 12th Avenue are two very small buildings, located on one parcel, that are not in good condition. 1004 E. 12th Avenue is too long for the currently available relocation lots south of I-4. 1010 E. 12th Avenue has been altered with replacement siding and windows but retains its Bungalow form and porch. If any of these structures will be removed for the FHSR ROW acquisition, they would require Historic American Buildings Survey (HABS) documentation prior to demolition in order to fulfill the requirements of the TIS MOA (FEIS commitment d stated above).

## Summary Archaeological and Historical Resources Update Status

Even with the slight 12 foot shift in alignment, the proposed project still lies within the TIS Ultimate ROW that was included in the TIS MOA. Based on the stipulated conditions (FHSR FEIS commitments stated above), the proposed project will still have a "conditional no adverse effect" determination for the Oaklawn Cemetery, German American Club, Ybor City NHLK, North Franklin Street Historic District, and the St. Paul AME Church Parsonage. There is no change in status.

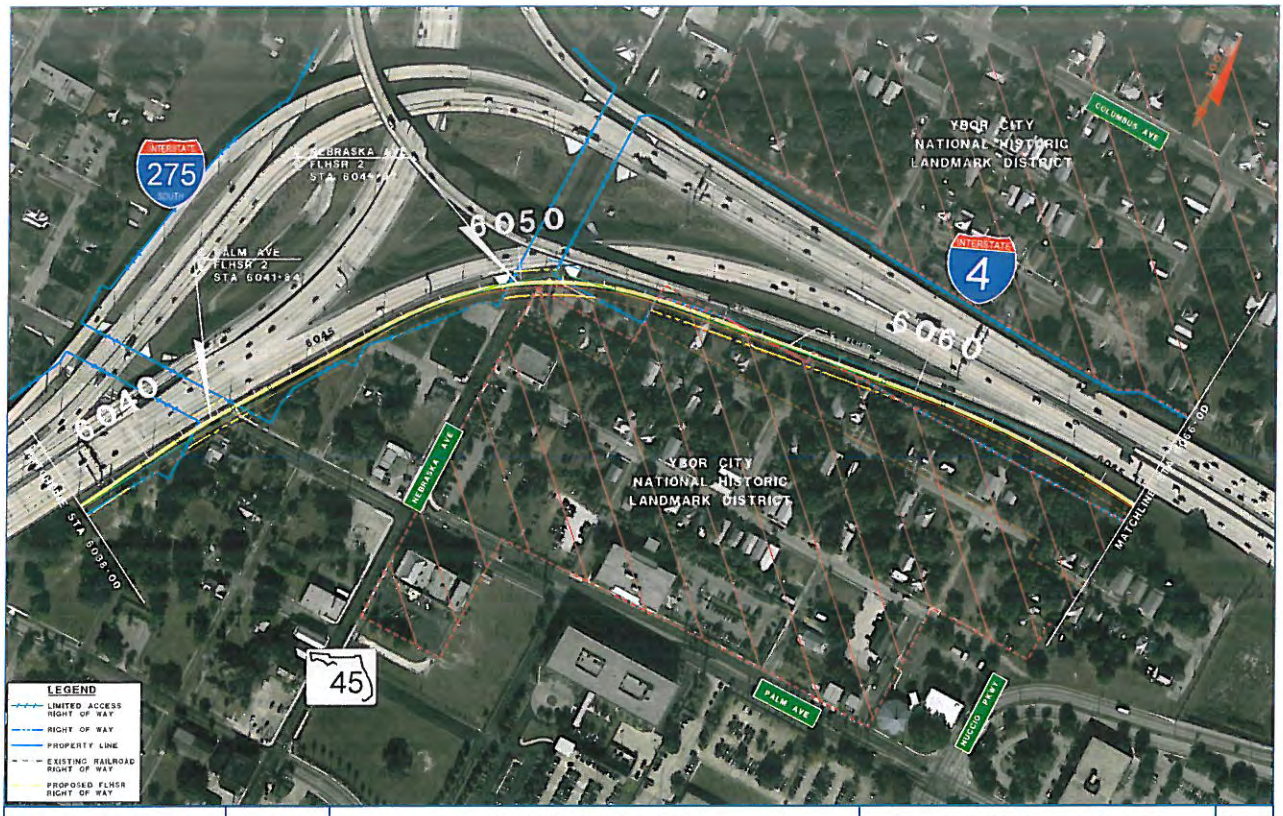



LEGEND
- Property Lines
- Historic Resources ID Number
- Proposed Action Alignment
- Proposed FHSR Right-of-Way
- Approved Tampa Interstate Study (TIS) Ultimate Right-of-Way

FLORIDA HIGH SPEED RAIL AUTHORITY
NOVEMBER 2003

FLORIDA HIGH SPEED RAIL

FIGURE 4




| PARSONS | PBS&J | STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION | FLORIDA HIGH SPEED RAIL PLAN | SHEET NO. |
|---|---|---|---|---|

# Tampa Interstate Study MOA

## Remaining Southside Properties

916 12th Avenue

920 12th Avenue and 922 12th Avenue



# Tampa Interstate Study MOA

## Remaining Southside Properties

1004 12th Avenue

1010 12th Avenue

**TECHNICAL MEMORANDUM**
**SECTION 4(F) RESOURCES UPDATE**

Date Prepared: September 30, 2009
Prepared By: Sharon Phillips, Sr. Division Manager
*Rev. Howard Newman September 30, 2009*

## *2005 PD&E Background Information*

A Project Development and Environment (PD&E) Study was prepared for the Florida High Speed Rail project between Tampa and Orlando in 2005. In the 2005 Final Environmental Impact Statement (FEIS), a Section 4(f) Evaluation was prepared for Perry Harvey Sr. Park. The Section 4(f) Evaluation identified the acquisition of 0.184 acres of ROW at Perry Harvey Sr. Park as an unavoidable impact of the project, since a prudent and feasible alternative does not exist. The existing exercise/jogging path located in the northernmost section of the park (north of Estelle Street) would be terminated approximately 40 feet east of its current terminus at Henderson Avenue. Measures to minimize harm were evaluated and implemented to the greatest extent possible. It was determined that there would be a potential for moderate noise level increases (proximity effects). An evaluation of vibration, access, aesthetics, and ecological encroachment indicates that the project will not substantially impair or diminish the use of the park and a determination was made that there will be no constructive use.

Ross Ferlita of the City of Tampa stated that Perry Harvey Sr. Park is a significant park for the citizens of the downtown Tampa area in a letter dated March 27, 2003. The Florida High Speed Rail Authority (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. The City of Tampa responded in a letter dated March 11, 2004 that the compensation for impacts to the park can be accomplished through the eminent domain process.

The resulting Final Environmental Impact Statement (FEIS) was approved by the Federal Railroad Administration (FRA) on July 19, 2005. The FEIS included the following Section 4(f) related commitment agreed upon by the Florida High Speed Rail Authority (FHSRA), FRA, and the FHWA during the PD&E Study. These commitments would also be incorporated into future Design, Build, Operate, Maintain, and Finance (DBOM&F) contracts that will be binding to the vendor:

> The Long-Term Preferred Alternative for this project (TIS EIS) will involve the "use" of land from one City of Tampa park requiring a Section 4(f) Evaluation. In an effort to avoid or minimize the proposed impacts, several avoidance alternatives were evaluated. FHWA has determined that there is no feasible and prudent alternative to the use of a limited amount of land from Perry Harvey Sr. Park for public transportation purposes. FDOT is committed to mitigating the potential impacts to Perry Harvey Sr. Park. Conceptual mitigation plans have

been prepared for the park, coordinated with the City of Tampa, and presented to the community for input. Mitigation includes berms, landscape materials, a noise barrier, realignment of walkways and paths, replacement of the skateboard facility at a location to be designated by the City, and relocation of the Kid Mason Fendall Center into the Perry Harvey Sr. Park.

## *2009 Reevaluation Update*

As stated in the original Section 4(f) Evaluation, the FHSR project will comply with the specific commitments and stipulations identified in the existing Tampa Interstate Study (TIS) FEIS for the Ultimate ROW requirements. The commitment is based on the assumption that the FHSR will be constructed prior to the construction of the Ultimate TIS.

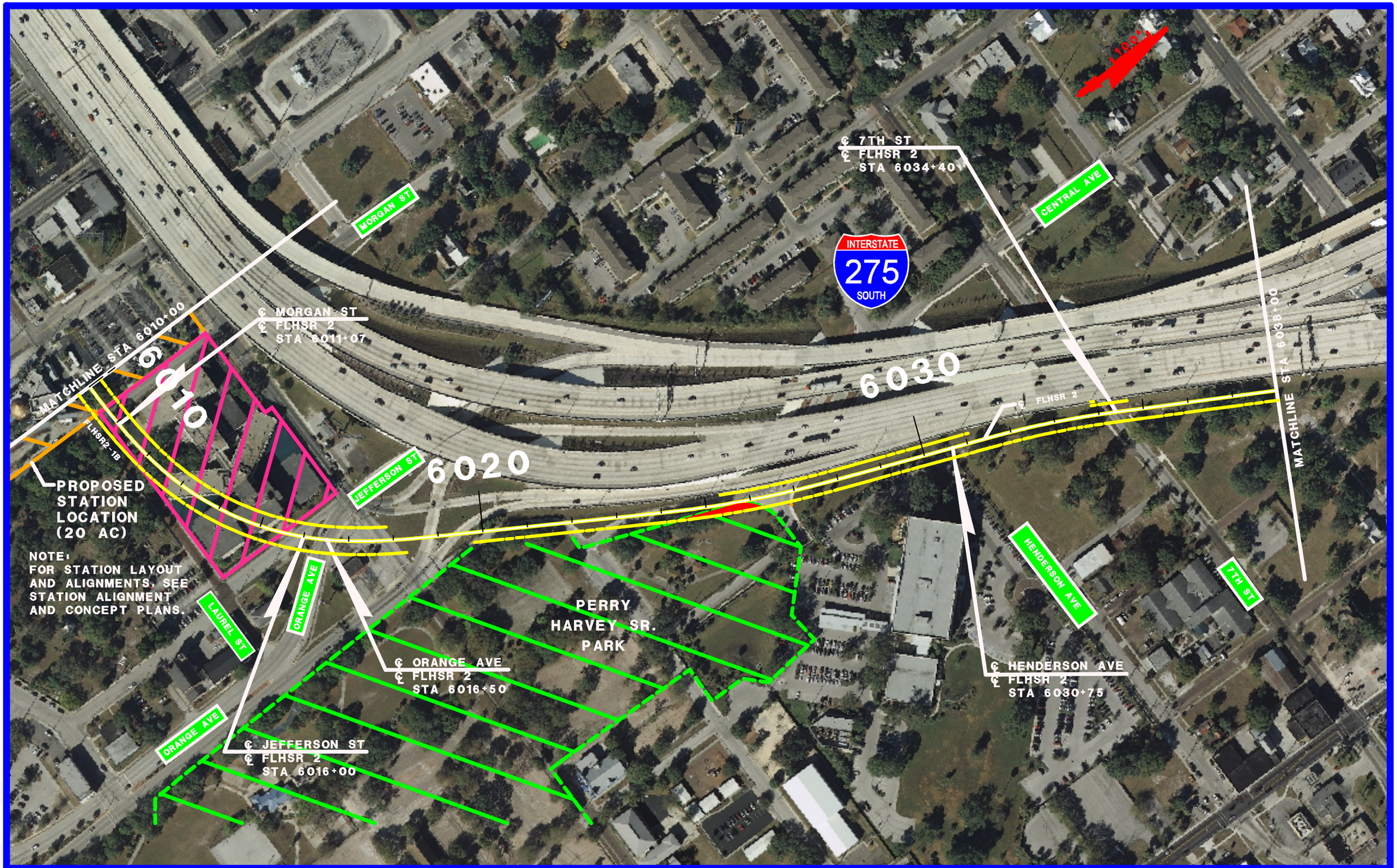
### Ybor City National Historic Lands District (NHLD)

The right-of-way required by the FHSR project is still within the TIS Ultimate ROW which was cleared as a part of the Tampa Interstate Study Final Environmental Impact Statement and Section 4(f) Evaluation (1996). Further, a Memorandum of Agreement (MOA) was negotiated with the SHPO for that project to mitigate the adverse effects to the Ybor City National Historic Lands District (NHLD) from taking the right-of-way. Therefore there are no changes to the Section 4(f) evaluation for the Ybor City NHLD.

### Perry Harvey Sr. Park

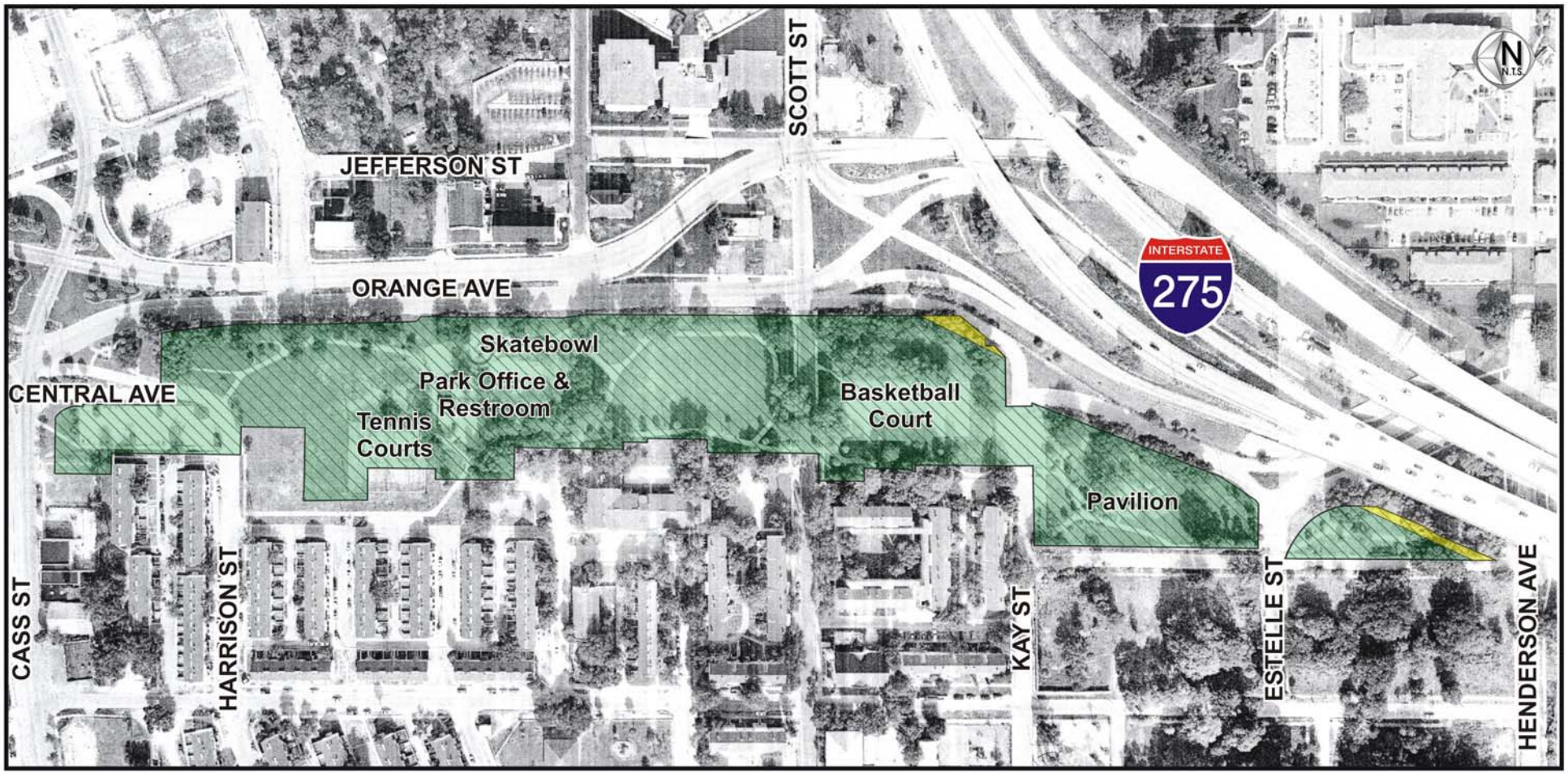
Since the approval of the 2005 FHSR FEIS, the interim reconstruction of I-275/I-4 interchange has occurred  In addition, FDOT has proposed a safety improvement requiring an additional lane be constructed to the outside of the ramp running from SB I-275 to EB I-4.  As a result of the safety improvement, the FHSR ROW has been minimized to a ROW width of 44 feet and relocated slightly to the south and west. The FHSR ROW remains within the TIS Ultimate ROW footprint. It is anticipated that FHSR will run 18 to 24 feet above the park on an elevated track as it enters the Tampa Central Business District (CBD) station. Initial calculations indicate the impact to the park will be reduced from the amount of land to be acquired from .184 to .05 acres.

During the 2005 FEIS it was determined that there would be a potential for moderate noise level increases (proximity effects). An evaluation of vibration, access, aesthetics, and ecological encroachment indicates that the project will not substantially impair or diminish the use of the park, and a determination was made that there will be no constructive use. These conclusions have not changed. Coordination is currently being finalized with the City of Tampa.




PARSONS | PBSJ | *STATE OF FLORIDA DEPARTMENT OF TRANSPORTATION* | *FLORIDA HIGH SPEED RAIL PLAN* | SHEET NO. 41

# PERRY HARVEY PARK
# SECTION 4(f) RESOURCE




LEGEND

Portion of Perry Harvey Park which would be Acquired

Perry Harvey Park Boundaries

**FLORIDA HIGH SPEED RAIL AUTHORITY**

FLORIDA HIGH SPEED RAIL

**FIGURE 5-1**

# PERRY HARVEY PARK
# SECTION 4(f) RESOURCE


LEGEND

Perry Harvey, Sr. Park

Private Property formerly Park Property

2009 Alignment (44-ft).

2005 FEIS Alignment (60-ft.)

Portion of Perry Harvey, Sr. Park to be acquired (2005 FEIS) = 4,593 sf (0.11 acres)*
Portion of Perry Harvey Sr. Park to be acquired (Red Alignment) = 4,232 sf (0.10 acres)**

FLORIDA HIGH SPEED RAIL AUTHORITY

FLORIDA HIGH SPEED RAIL

FIGURE 5-1 REVISED 8/24/2009

Notes:
* Excludes portion of park property that is now privately owned.
** Measurement subject to parcel data verification.

# TECHNICAL MEMORANDUM
# AIR QUALITY EVALUATION

Date Prepared: September 16, 2009
Prepared By: Daniel Doebler

The Florida High Speed Rail project was previously evaluated for effects on air quality. The air quality evaluation was performed on a regional basis through development of an emissions inventory for three pollutants; carbon monoxide, oxides of nitrogen, and volatile organic compounds. The inventory accounted for emissions from trains, operational/maintenance (O&M) facilities supporting the trains, and O&M activities which would all be new sources that would contribute to the regional pollutant load. The emissions inventory also accounted for reductions in emissions of air pollutants caused by decreased motor vehicle trips as travelers use the train as an alternate mode of transportation.

The air quality evaluation was documented in the Final Environmental Impact Statement (FEIS) circulated by FRA and FHSRA in July 2005. This reevaluation will address changes in conditions subsequent to the 2005 FEIS that may affect the proposed project. This memorandum focuses specifically on the effect changed conditions will have on the air quality analysis.

The changed conditions can be sorted into four main categories which are described below:

1) Relocation of some preferred station sites that are part of the preferred alternative;
2) Possible modifications to the FHSR horizontal and vertical alignments to accommodate roadway improvements designed or constructed after the 2005 FEIS was prepared;
3) Relocation of the Operations and Maintenance Facility to accommodate development of the previously selected site included in the preferred alternative;
4) Update of the forecasted ridership.

## *Methodology*

The 2005 FEIS was reviewed to determine air quality impacts previously identified for the preferred project alternative that may be influenced by changed conditions and associated modifications to the preferred alternative. Commitments documented in the 2005 FEIS were also reviewed to identify any measures specific to air quality. Current designations pertaining to attainment of the National Ambient Air Quality Standards (NAAQS) were reviewed to identify the need to demonstrate conformity with the Sate Implementation Plan or maintenance plans developed for the counties (Hillsborough, Polk, Osceola, and Orange Counties) involved in the proposed project.

## *Results*

Emissions from trains, operational/maintenance (O&M) facilities supporting the trains, and O&M activities are directly related to forecasted train operations and train-miles traveled. Relocation of station sites or the O&M facility and modifications to horizontal or vertical alignments of the FHSR will not cause a change in forecasted train operations. Any change in train trip distance caused by relocation of station sites would be negligible on the total train-miles traveled. Therefore, the emissions inventory documented in the 2005 FEIS accounting for new sources that would contribute to the regional pollutant load remains valid.

Reductions in emissions of air pollutants caused by decreased motor vehicle-miles traveled are directly related to forecasted ridership. The updated forecast shows a very small increase in ridership which would further reduce motor vehicle trips. However, the change in the updated forecast is very small and any corresponding change in the regional pollutant load would be negligible. Therefore, the emissions inventory documented in the 2005 FEIS accounting for reduced emissions from motor vehicles that would diminish the regional pollutant load remains valid.

## *Commitments*

There are no commitments documented in the 2005 FEIS that are specific to air quality. The more general commitment (#25) stating that "construction will be conducted in accordance with the FDOT's Standard Specifications for Road and Bridge Construction and Best Management Practices" does include control of dust (i.e., particulate matter) from earthwork and unpaved roads. There will be no change in this commitment.

## *Regulatory Updates*

Polk, Osceola, and Orange Counties were designated as in attainment of the NAAQS at the time that the 2005 FEIS was circulated and under review. With the attainment designation, determination of conformity with a State Implementation Plan or plan to maintain the NAAQS was not required. The attainment designation and conformity determination documented in the 2005 FEIS has not changed for these three counties.

Hillsborough County was designated as a maintenance area for ozone at the time that the 2005 FEIS was circulated and under review. An Air Quality Maintenance Plan demonstrating compliance with the one-hour average ozone standard was developed by the Florida Department of Environmental Protection. The 2005 FEIS documented that any increase in pollutants that are precursors to ozone formation are under the de minis rates stipulated in the General Conformity Rule. Therefore, a conformity determination pursuant to the General Conformity Rule was not required for the FHSR project. Later in the year 2005, the one-hour average ozone standard was revoked and replaced with an eight-hour average ozone standard. The Air Quality Maintenance Plan for the one-hour average ozone standard was no longer applicable and the U. S. Environmental Protection Agency re-designated all counties in Florida, including Hillsborough County, as in attainment of the NAAQS. With the attainment designation, no conformity determination is currently required for Hillsborough County.

# TECHNICAL MEMORANDUM
# NOISE AND VIBRATION IMPACT ASSESSMENT

Date Prepared: September 21, 2009
Prepared By: Harris Miller Miller & Hanson Inc. (HMMH)

## *Introduction and Summary*

The objective of the update was to identify major land use and alignment changes since the Florida High Speed Rail (FHSR) Final Environmental Impact Statement (FEIS) along the rail corridor from Tampa to Orlando, and conduct a noise and vibration analysis to update the status of the noise and vibration impacts assessed in the FEIS.

This update considered only the Preferred Alternative (Alternative 5 in the FEIS) along Alignments A1, B1, C1, D1, and E1. This update assumed only an electric-powered train and the speed profiles, height profiles, alignments, and schedules information provided by Parsons.

The entire study corridor was evaluated through aerial photography for changes in noise- and vibration-sensitive land uses. A small number of new residential developments have been constructed in the study corridor since 2003, mostly along Alignment D1. Noise measurements were conducted in the areas where both the more significant new noise-sensitive land uses were observed and no noise measurements had been conducted nearby in the EIS.

This update report provides 1) a characterization of the existing noise conditions at the significant new noise-sensitive land uses, 2) an update of the corridor-long noise impact assessment and a noise assessment at the significant new sites, and 3) an update of the corridor-long vibration impact assessment and a vibration assessment at the significant new sites.

There are fewer noise impacts in the study update than in the FEIS, and none of the impacts are at the new noise-sensitive land uses. In 2003, there were 28 residential buildings exposed to moderate noise impact and 24 exposed to severe impact. In the current update, those totals have been reduced to 13 moderate impacts and 17 severe impacts.

Vibration impacts have also been reduced from the FEIS, and none of the impacts are at the new land uses. In 2003, vibration impact was assessed at seven residences, six hotels, and a commercial building with vibration-sensitive equipment. In the current update, vibration impact is expected at only three residences, at five of the hotels, and at the commercial building.

## Existing Noise Measurements at Significant New Land Uses

Existing ambient noise levels were characterized through direct measurements in five selected areas representing significant land use changes along the corridor on September 2 and 3, 2009. Estimating existing noise exposure is an important step in the noise impact assessment since the thresholds for noise impact are based on the existing levels of noise exposure. The measurements included both long-term (approximately 24 hours) and short-term (60 minutes) monitoring of the A-weighted sound levels at representative noise-sensitive locations in the five selected areas closest to the proposed rail line.

Four of the new noise-sensitive areas were located along Alignment D1, and one was located at the east end of Alignment C1. The attached figure shows the general location of the two long-term monitoring

sites LT-12A and LT-12B, and the three short-term sites, ST-17A, ST-15A and ST-14A. In the figure, the new sites are shown in red, along with the 2003 noise measurement sites, which are shown in black. At each site, the measurement microphone was positioned adjacent to the noise-sensitive buildings in a location most exposed to the study corridor, avoiding noise shielding by fences, landscaping, and other obstructions, where possible.

Since all of the new locations are along the I-4 corridor, traffic noise from I-4 was the dominant source of noise at each of the measurement sites. Traffic noise from other roadways contributed minimally to the measured noise levels. Descriptions of each of the new measurement locations follow:

Long-term site LT-12A represents nine new modular homes constructed in an existing mobile home area located on Frontage Rd between I-4 and Avenue of the Americas in Davenport. The site and closest homes are approximately 220 ft south of the proposed rail line near FHSR survey Station 3970.

Long-term site LT-12B represents the Tuscana Resort, a complex of multi-family buildings located between S Goodman Rd and I-4 in Davenport. The site is approximately 230 ft north of the proposed rail line near Station 4185 at the end of Tuscany Way. A golf course borders the complex to the east.

Short-term site ST-17A represents condominiums called the Villas at Reunion Square North in Kissimmee, south of the corridor. The area is bordered by I-4 to the north, Tradition Blvd to the west and S. Lake Wilson Road to the east. Portions of the site closest to I-4 are still under construction. The measurement site was located at the residential building closest to the rail line approximately 750 ft away near Station 4237, and at the end of Sandy Ridge Dr. Planned future development closer to the proposed rail line will be only parking, according to the development plans.

Short-term site ST-15A represents a complex of multi-family buildings north of the corridor in Lakeland, bordered by I-4 to the south, Old Combee Rd to the west, and Walt Loop Rd to the east. The site was located at the end of Field Stone Dr at the closest building to the corridor, approximately 250 ft from the rail line near Station 2936.

Short-term site ST-14A represents the Cambridge Cove Apartments, north of the corridor in Lakeland, and bordered by Kathleen Rd, Mall Hill Rd, and I-4 to the south. The measurement site was approximately 500 ft from the rail line near Station 2730, and located at the closest building to the corridor at the end of Cambridge Cove Cir.

Table 1 presents a summary of the ambient noise measurements in the new noise-sensitive areas, including location, date, time, duration and measured sound levels. The measured noise levels include the 24-hour Ldn for the long-term sites and the one-hour Leq measured at the short-term sites. For the purposes of assessing impact and determining the impact criterion at each site, the Ldn at the short-term sites was estimated from the measured one-hour Leq per FRA guidance.

**Table 1. Summary of Ambient Noise Measurement Results in the New Noise-sensitive Areas**

| Alignment No. | Site No. | Measurement Location Description | Start Of Measurement | | Meas. Time (Hrs) | Noise Level (dBA) | |
|---|---|---|---|---|---|---|---|
| | | | Date | Time | | Ldn | Leq |
| D1 | LT-12A | Modular homes at 2727 Frontage Road, Davenport | 09-02-09 | 10:15 | 24 | 68 | -- |
| D1 | LT-12B | Tuscana resort, 1395 Tuscana Ln, Davenport MF at end of Tuscany Way | 09-02-09 | 09:25 | 24 | 72 | -- |
| D1 | ST-17A | MF @ 104 Sandy Ridge Dr, Kissimmee | 09-02-09 | 11:25 | 1 | 60[1] | 62 |
| D1 | ST-15A | MF @ 5406 Field Stone Dr, Lakeland | 09-02-09 | 13:37 | 1 | 69[1] | 71 |
| C1 | ST-14A | MF @ 101 Cambridge Cove Circle, Lakeland | 09-03-09 | 09:25 | 1 | 55[1] | 57 |

Notes : Estimated per FRA guidance. Source: Harris Miller Miller & Hanson Inc., 2009

## Noise Impact Assessment

As described above, the noise impact assessment was updated along the entire corridor of the Preferred Alternative to account for land use and alignment changes since the FEIS.

In summary, there are fewer noise impacts in this study update than in the FEIS, and none of the impacts are at the new noise-sensitive land uses. In 2003, there were 28 residential buildings exposed to moderate noise impact and 24 exposed to severe impact. In the current update, those totals have been reduced to 13 moderate impacts and 17 severe impacts.

The results of the noise analysis are presented in Table 2, which shows for each impacted property, the Alignment designation, the FHSR station number, the distance to near track, the existing and predicted future noise levels, the noise impact criteria and category of impact, and the number of residences impacted.

**Table 2. Noise Impacts for the Preferred Alternative**

| Location | FHSR Survey Station | Dist to Near Track (ft.) | Speed (mph) | Exist. Noise Level[1] | Project Noise Level[1] | | | Impact Category | Total Noise Level[1, 2] | Noise Level Increase[1, 2] | No. of Res. Impacts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Predicted[2] | Impact Criteria | | | | | Mod | Sev |
| | | | | | | Mod | Sev | | | | | |
| Alignment A1 | 6003 | 33 | 21 | 68 | 67 | 63 | 68 | Moderate | 70 | 2.6 | 1 hotel | 0 |
| Alignment A1 | 6010 | 63 | 24 | 68 | 63 | 63 | 68 | Moderate | 69 | 1.2 | 3 | 0 |
| Alignment A1 | 6042 | 25 | 42 | 74 | 69 | 65 | 72 | Moderate | 75 | 1.4 | 4 | 0 |
| Alignment A1 | 6051 | 43 | 45 | 79 | 66 | 65 | 75 | Moderate | 79 | 0.2 | 3 | 0 |
| Alignment E1 | 7671 | 73 | 137 | 59 | 68 | 57 | 63 | Severe | 68 | 8.9 | 0 | 1 |
| Alignment E1 | 7673 | 93 | 137 | 59 | 66 | 57 | 63 | Severe | 67 | 7.7 | 0 | 4 |
| Alignment E1 | 7679 | 118 | 132 | 59 | 64 | 57 | 63 | Severe | 65 | 6.3 | 0 | 8 |
| Alignment E1 | 7683 | 133 | 130 | 59 | 63 | 57 | 63 | Severe | 65 | 5.6 | 0 | 4 |
| Alignment E1 | 7687 | 218 | 126 | 59 | 60 | 57 | 63 | Moderate | 63 | 3.5 | 3 | 0 |

*1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.*
*2. The reported noise levels represent the highest noise levels for each location.*

Table 2 shows noise impacts for a total of 30 residential buildings, 13 with moderate impact, and 17 with severe impact. Moderate impact is also projected at one hotel. Moderate noise impacts are expected at 10 residential buildings and one hotel along Alignment A1 in Tampa, near or west of the I-4/I-275 interchange. Alignment A1 has shifted slightly closer to the residences near Station 6042 due to I-275 widening, and slightly away from the residential area at Station 6010. Some residences that were impacted in 2003 are no longer present or now outside of the impact zone.

Along Alignment E1, severe noise impacts are expected at 17 residences and moderate noise impacts are expected at 3 residences. All of the impacted residences are located along or near 11$^{th}$ St. in the Taft area near Orlando. Impacts in this area have been reduced from the 24 severe and 13 moderate in 2003 because the rail line between Station 7670 and 7700 has shifted south and away from the nearest homes by between 5 and 75 ft.

Table 3 shows the results of the noise analysis performed at each of the five new noise-sensitive sites under the Preferred Alternative. For the sites where short-term measurements were performed, the Ldn was estimated from the measured one-hour Leq according to FRA guidelines. None of these sites will be impacted by noise from the Preferred Alternative.

**Table 3. Predicted Project Noise Levels for the Preferred Alternative at New Noise-sensitive Sites**

| Location | FHSR Survey Station | Dist to Near Track (ft.) | Speed (mph) | Exist. Noise Level[1] | Project Noise Level[1] | | | Impact Category | Total Noise Level[1, 2] | Noise Level Increase[1, 2] | No. of Res. Impacts | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Predicted[2] | Impact Criteria | | | | | Mod | Sev |
| | | | | | | Mod | Sev | | | | | |
| Alignment C1 Site ST-14A | 2730 | 493 | 132 | 55 | 48 | 56 | 61 | No Impact | 55 | 0.9 | 0 | 0 |
| Alignment D1 Site ST-15A | 2936 | 243 | 129 | 69 | 53 | 64 | 69 | No Impact | 69 | 0.1 | 0 | 0 |
| Alignment D1 Site LT-12A | 3970 | 213 | 162 | 68 | 55 | 63 | 68 | No Impact | 68 | 0.2 | 0 | 0 |
| Alignment D1 Site LT-12B | 4185 | 223 | 162 | 72 | 50 | 66 | 71 | No Impact | 72 | 0 | 0 | 0 |
| Alignment D1 Site ST-17A | 4237 | 743 | 162 | 60 | 42 | 58 | 63 | No Impact | 60 | 0.1 | 0 | 0 |

*1. Noise levels are based on Ldn and are measured in dBA. Noise levels are rounded to the nearest decibel except for the increase in noise level, which is given to the nearest one-tenth decibel to provide a better resolution for assessing noise impact.*
*2. The reported noise levels represent the highest noise levels for each location.*

# 4 Vibration impact assessment

As described above, the vibration impact assessment was updated along the entire corridor of the Preferred Alternative to account for land use and alignment changes since the FEIS.

In summary, vibration impacts have been reduced from the FEIS, and none of the impacts are at the new land uses. In 2003, vibration impact was assessed at seven residences, six hotels, and a commercial building with vibration-sensitive equipment. In the current update, vibration impact is expected at only three residences, at five of the hotels and at the commercial building.

The results of the vibration analysis are presented in Table 4, which shows for each impacted property, the Alignment designation, the FHSR station number, the distance to near track, the speed, the projected vibration level, the vibration impact criterion, and the number of residences impacted. The table shows that there are three residences, five hotels, and one commercial building (that contains vibration-sensitive equipment) with potential vibration impact. There are no impacts projected at any Category 3 (institutional) receptors. A discussion of each impacted receptor group follows.

**Table 4. Vibration Impacts for the Preferred Alternative**

| Location | FHSR Survey Station | Dist to Near Track (ft.) | Speed (mph) | Project Vibration Level[1,2] | Vibration Impact Criterion[1] | No. of Res. Impacts |
|---|---|---|---|---|---|---|
| Alignment D1 | 4534 | 153 | 162 | 85 | 80 | 1 hotel |
| Alignment D1 | 4536 | 223 | 162 | 82 | 80 | 1 hotel |
| Alignment D1 | 4540 | 203 | 162 | 82 | 80 | 1 hotel |
| Alignment E1 | 7131 | 183 | 162 | 81 | 80 | 1 hotel |
| Alignment E1 | 7109 | 228 | 162 | 81 | 80 | 2 |
| Alignment E1 | 7104 | 213 | 162 | 82 | 80 | 1 |
| Alignment E1 | 7203 | 233 | 162 | 81 | 80 | 1 hotel |
| Alignment E1 | 7530 | 137 | 120 | 67 | 65 | 1 comm[3] |

1. Vibration levels are measured in VdB referenced to 1 µin/sec.
2. The reported vibration level represents the maximum vibration level for each location.
3. Commercial building that uses lasers, which can be sensitive to vibration

In the FEIS, vibration impact was assessed at a group of four single-family residences located south and just west of 34th Street within 100 ft of Alignment A1 as the tracks ran along I-4, near Station 6140. However, these residences were taken as part of the I-4 widening and reconstruction project. The nearest residences in this area would now be 350 ft south away from the tracks with the I-4 eastbound lanes in between, so no vibration impact is expected.

A group of three hotels near the Celebration area on the south side of I-4 located within 300 ft of the proposed Alignment D1 experienced vibration impact in the 2003 study. These impacts are still expected with only a slight change in the alignment. One impacted hotel in the FEIS that was located south of the Alignment D1 near Station 4470 is no longer present; therefore no vibration impact is assessed at this location.

A group of hotels, multi-family residences, and apartments located in the Lake Buena Vista area of Alignment E1 is within 325 ft of the proposed tracks. There is a slight change in the alignment, but vibration impact is still expected in these buildings that are located on both sides of the corridor. In addition, a commercial building located just west of Orange Blossom Drive, and within 230 ft from the alignment, is projected to be impacted due to the use of vibration-sensitive equipment on site. In Alignment E1, a total of 3 residences, 2 hotels, and 1 commercial building would likely experience vibration impacts.

Table 5 summarizes the results of the vibration assessment conducted for the Preferred Alternative at the new sensitive sites identified for this update. These locations are along Alignments C1 and D1, and represent condominiums, multi-family residences, apartments, and modular homes. As the table shows, no vibration impact is expected at any of these receptors.

**Table 5. Predicted Project Vibration Levels for the Preferred Alternative at New Noise-sensitive Sites**

| Location | FHSR Survey Station | Dist to Near Track (ft.) | Speed (mph) | Project Vibration Level[1,2] | Vibration Impact Criterion[1] | Type of Receptor | No. of Res. Impacts |
|---|---|---|---|---|---|---|---|
| Alignment C1 (ST-14A) | 2730 | 493 | 132 | 49 | 80 | Multi-Family | 0 |
| Alignment D1 (ST-15A) | 2936 | 243 | 129 | 67 | 80 | Multi-Family | 0 |
| Alignment D1 (LT-12A) | 3970 | 213 | 162 | 71 | 80 | Modular homes | 0 |
| Alignment D1 (LT-12B) | 4185 | 223 | 162 | 71 | 80 | Multi-Family | 0 |
| Alignment D1 (ST-17A) | 4237 | 743 | 162 | 53 | 80 | Multi-Family | 0 |

*1. Vibration levels are measured in VdB referenced to 1 µin/sec.*

*2. The reported vibration level represents the maximum vibration level for each location.*


NOISE MONITORING SITES
HERNANDO COUNTY
PASCO COUNTY
PASCO COUNTY
HILLSBOROUGH COUNTY
SUMTER COUNTY
POLK COUNTY
LAKE COUNTY
POLK COUNTY
PASCO COUNTY
POLK COUNTY
HILLSBOROUGH COUNTY
POLK COUNTY
LAKE COUNTY
ORANGE COUNTY
OSCEOLA COUNTY
POLK COUNTY
ORANGE COUNTY
OSCEOLA COUNTY
Tampa International Airport
Tampa
Plant City
Lakeland
Polk Pkwy
Winter Haven
Auburndale
Lake Alfred
Haines City
Davenport
Kissimmee
Celebration
Orlando International Airport
Bartow
Pinellas County
FLORIDA'S TURNPIKE
LEGEND
City Limits
Retained Alignments
Potential Stations
Short Term Noise Measurement Locations
Long Term Noise Measurement Locations
Orlando International Airport Property
2009 Short Term Noise Measurement Locations
2009 Long Term Noise Measurement Locations
FLORIDA HIGH SPEED RAIL AUTHORITY
FLORIDA HIGH SPEED RAIL

# TECHNICAL MEMORANDUM
# WETLAND INVOLVEMENT

Date Prepared: September 30, 2009
Prepared By: Melanie A. Calvo, Sr. Scientist

The Florida High Speed Rail corridor was previously reviewed for involvement with surface waters and wetlands. That evaluation was included in the Final Environmental Impact Statement (FEIS) approved in July 2005. This re-evaluation will address changes to potential wetland impacts or regulation changes that may affect the proposed project.

The corridor alternatives proposed for this re-evaluation are unchanged with the exception of the three railway station site alternatives described below:

1) The addition of a site known as the "Tampa Jail Site" located in Corridor A southwest of I-275 and adjacent and north of Jefferson Street. This site is being added to the previously proposed, adjoining 20-acre Tampa station site (approximate Station 6011).
2) A re-location of a proposed "Disney Site" station approximately between stations 4515+00 and 4533+50, north and adjacent to Interstate Highway 4 (I-4) between Osceola Parkway and U.S. Highway 192 in Osceola County. The station was previously proposed in this location but is being shifted north to accommodate the new limited access right-of-way line for I-4.
3) The Orange County Convention Center (OCCC) Station's easternmost boundary is being extended slightly to the east.
4) A relocation of one of the two Maintenance and Operations facilities was required because of construction within the Orlando International Airport. (OIA). The site was previously identified in the FEIS a part of Alternative 5 and was replaced by an O&M site previously identified within the FEIS preferred alternative, Alternative 1.

## *Methodology*

The 2005 Final Environmental Impact Statement (FEIS) was reviewed to determine the wetland impacts previously estimated for the project. The previous wetland protection commitments were also reviewed.

Current aerials for the Florida High Speed Rail with the proposed corridors and stations were reviewed to identify if changes to the previous alignment would result in changes to wetland or surface water involvement. Current requirements and regulations pertaining to wetland permitting and mitigation measures were also reviewed.

## *Results*

The proposed revisions to the station sites locations do not result in significant changes to previously estimated wetland involvement. The "Tampa Jail Site" is in a highly urbanized location that provides no additional wetland habitat. The reconfiguration of the "Disney Site" does not result in additional wetland habitat types affected or a significant increase in wetland

habitat affected. The proposed increase in area to the OCCC site is minimal and is not anticipated to result in changes to wetland impact area. The corridor alignments and other stations identified previously have not been altered since the FEIS approved in 2005.

The change in location of an O&M within OIA site results in an increase of 10.22 wetland acres to the previous 25.62 acres for Alternative 5. The resulting total is 35.84 wetland acres. The estimate of wetland impacts for Alternative 5 is less the 40.03 identifies in the FEIS for Alternative 1. Therefore wetland impacts have not changed in a significant or substantial manner. The amount of high quality impacts does not change from the FEIS estimate of 11 acres.

However, it is noted that this estimate of wetland involvement is anticipated to be modified when the design process begins and minimization/avoidance measures are implemented during permitting.

## *Regulatory Updates:*

The 2005 FEIS indicates that either FDEP (Florida Department of Environmental Protection) or the Water Management Districts (WMD) may be the reviewing agency for the Environmental Resource Permit. Because this project crosses multiple WMD districts, the FDEP will likely take the lead on permitting so that a comprehensive review of the entire corridor can occur. However, this decision will be made during the design and permitting phase.

The 2005 FEIS also states that "*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*." The regulations governing the NPDES have been modified since 2005 such that any project that results in the clearing of <u>one or more acre</u> of land will require a NPDES permit. Also, because a General Permit exists for this type of work, a permit application for a NPDES will not be required. Instead, a Notice of Intent to utilize the General Permit is required to be submitted by the construction contractor 48 hours prior to construction commencement.

Finally, the 2005 FEIS states that "*Once the application(s) are submitted, the permitting process period ranges from 30 to 240 days."* Because the permitting level anticipated for this project is at an "Individual" level (greater than 1 acre of impact), this should be updated to state that the permitting process period is anticipated to require between 180 days to 365 days.

## *Commitments*

The following commitments resulted from the 2005 FEIS. The original commitment is stated below with recommended changes in bold following.

1. 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.

   **No change.**

2. 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.

**A specific statute (S. 373.4148) is in place for the FHSR project for the negotiation of wetland mitigation requirements and fees. The project will not follow the 373.4137 (F.S.) process with the exception that if and agreement on fees can not be reached between the Department of Transportation (DOT) and the FDEP, that the rates as described in 373.4137 (3) (F.S.) will be utilized. It is recommended that the wording be revised to reflect the specific statute for the HSR.**

**It is suggested that the commitment be modified as follows:**

"**A continuing process of wetland avoidance and minimization will occur during the design and permitting phase of the project. Unavoidable wetland impacts shall be mitigated pursuant to S. 373.4138 F.S. to satisfy all wetland mitigation requirements of Part IV Chapter 373, F.S. and 33 U.S.C.s. 1344. Mitigation requirements and associated fees will be negotiated between the DOT and the DEP to assure adequate compensation for the loss of wetlands resulting from the project is provided.**

3. 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.*

**No change.**

# TECHNICAL MEMORANDUM
# DRAINAGE EVALUATION

Date Prepared: September 30, 2009
Prepared By: Edward J. Kory, P.E., Senior Drainage Engineer

## *Introduction*

The Florida Department of Transportation (FDOT) is conducting a Reevaluation of the Final Environmental Impact Statement (FEIS) for the Florida High Speed Rail (FHSR) Tampa to Orlando project. The FEIS for the FHSR Tampa to Orlando project was initially approved by the Federal Railroad Administration (FRA) in July 2005. After this process funding for the project was cancelled by the State of Florida. In 2009 the Federal Government passed the American Recovery and Reinvestment Act of 2009 (ARRA). One of the programs created by the ARRA is the "Vision for High Speed Rail in America Program". FDOT has initiated the reevaluation process of the FEIS to qualify for participation in this program.

The purpose of the reevaluation of the FEIS is to identify any significant changes to the environmental impacts reflecting updates to land uses, roadways and environmental regulations within the approved FHSR corridor. This memorandum will deal with current changes and anticipated changes to the environmental regulations that will impact the permit requirements for this project.

## *Permit Requirements*

To construct this project coordination will be required with a number of state and federal agencies. Based on the current rules the following permits will be required for this project:

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

### Water Quality Criteria

The Project corridor falls within the jurisdictions of the Southwest Florida Water Management District (SWFWMD), South Florida Water Management District (SFWMD), and the St. Johns River Water Management District (SJRWMD). The water quality criteria associated with each agency would apply to the portion of the project within the respective district limits. The Florida Department of Environmental Protection (FDEP) would administer the project water quality requirements.

### State Water Quality Standards

(a) The construction of the FHSR will require the construction of stormwater management facilities (SMF) for the treatment of stormwater runoff from the FHSR. Reasonable assurance must be provided that these facilities "will not adversely affect the water quality of receiving waters such that the water quality standards set forth in Chapters 62-3. 62-4, 62-302, 62-304, 62-520, 62-522 and 62-550, F.A.C., including any antidegradation provisions of sections 62-4.242 (2) and (3), and 62-302.300, F.A.C., and any special standards for Outstanding Waters and Outstanding National Resource Waters set forth in sections 62-4.242 (2) and (3), F.A.C., will be violated".

(b) Will be financially, legally, and administratively capable of being effectively operated and maintained pursuant to the requirements of the Applicant Handbook.

(c) Will be capable, based on generally accepted engineering and scientific principles, of being performed and of functioning as proposed.

SMF in compliance with the standards listed above are presumed to meet all state water quality standards, including any Total Maximum Daily Loads (TMDL's) or pollutant load reduction goals established in a watershed management plan. SMF as typically designed in Florida today don't meet the TMDL requirements for the removal of nutrients such as Phosphorus and Nitrogen. Therefore the FDEP along with the WMD's have set up a Technical Advisory Committee (TAC) to draft a new Statewide Stormwater Treatment Rule to address this issue. This will impact the SMF design for the FHSR.

## New Statewide Stormwater Treatment Rule

FDEP is currently developing a new Statewide Stormwater Treatment Rule that would result in a major change to the permit criteria. Details for this new rule can be found in the FDEP's "Stormwater Quality Applicant Handbook".

The new rule will require permit applicants to show that SMF meet water quality standards as they apply to the removal of total phosphorous.

The performance standard for the new rule could require SMF "discharges to Class 3 wasters to provide a minimum level of treatment equal to an 85% reduction of the average annual loading of total phosphorus (TP) from the project site; or the post-development average annual loading total phosphorus shall not exceed the loading from representative native landscapes (e.g., post = pre), whichever is less."

For the case where SMF discharge directly to Outstanding Florida Waters, the minimum level of treatment may require that the post-development average annual loading total phosphorus not to exceed the loading from representative native landscapes (e.g., post = pre).

One of the major provisions being considered for determining the level TP required to be removed is how the existing level of TP is quantified. The "native landscapes referred to in the previous paragraph could require that for the existing condition analysis of the annual load of TP, that the project site be analyzed based on the land use prior to any development.

It is also noted in the latest draft (as of September 30, 2009) that the above performance standard has been set to address only Total Phosphorus. The TAC is still assessing the level of Total Nitrogen (TN) reduction that is achieved if a SMF is designed to achieve an 85% TP reduction to see if this is adequate. If the TAC deems the level of TN removal is not sufficient, the performance standard would be set at 85% reduction of the annual loading for both TP and TN, with the option to use the post-pre level of treatment if it is less than 85%.

## Stormwater Management Facilities (SMF)

Due to the moderate to high ground water tables typically encountered the most common SMF design is the Wet Detention Pond. The most significant component and design criteria for the wet detention pond is the storage capacity of the permanent pool which is the pond surface located below any outfall structure. Pollutant removal processes that take place in the permanent pool include: uptake of nutrients by algae, adsorption of nutrients and heavy metals onto bottom sediments, biological oxidation of organic materials, and sedimentation.

The permanent pool volume in the pond must be large enough to detain the untreated runoff long enough for the treatment processes described in the previous paragraph to take place. One of the major biological mechanisms for the removal on nutrients is phytoplankton growth. The average residence time of the pond must be large enough to assure adequate algae growth. Typically the permanent pool volumes for wet detention ponds are sized to achieve a minimum residence time of 14 days. The residence time is determined by the annual rainfall volumes. Based on the new criteria the residence time required to achieve the necessary treatment efficiency shall be determined from regression equations performed by Harvey Harper based on data gathered for wet detention ponds in Florida.

Based on these equations, a wet detention pond with a permanent pool volume equivalent to a 14 day residence time has a removal efficiency of 58 percent for total phosphorous. Wet detention ponds are capable of providing annual mass load reductions for TP in excess of 80% for residence times greater than 200 days, however the removal of TN is under 45%. Therefore if wet detention is the primary mode of treatment for a SMF, then some amount of pre-treatment will be required to enhance the SMF performance efficiency to meet the minimum efficiencies required to meet the average annual load reductions for TP and TN.

The pre-treatment option would consist of dry retention in ponds, ditches or exfiltration trenches if the ground water and soil conditions allow. If not underdrains can be incorporated into the dry retention design to control the ground water condition and promote the recovery of the required stormwater runoff volume. This is typically referred to as the "Treatment Train Approach" in the new rules being developed. Underdrains will be incorporated into the design of the FHSR to remove water from the track corridor. Therefore it may be feasible to modify this design and utilize the underdrains in the track bed to provide the required pre-treatment required to meet the new stormwater treatment standards.

This is the one major change to the stormwater management requirements now versus what was anticipated in the original FEIS for the FHSR. The new rule, if instituted, could require larger ponds and a more complex SMF design to meet the new water quality standards. In addition these ponds would require additional maintenance over their lifespan to operate at the required efficiencies under the new rule.

## Existing Permits

***Hillsborough County*** is located within the jurisdictional limits of FDOT District 7 and the SWFWMD. There are existing ERP for road construction activities previously built in this County. These permits assumed that the median was DCIA, so it was concluded in the original FEIS for the FHSR that additional SMF would not be required in Hillsborough County. It was thought that only Letter Modifications from the SWFWMD would be required to permit the construction of the FHSR here. Based on the New Statewide Stormwater Treatment Rule being developed this is no longer the case. SMF designs submitted to the FDEP for review will have to show that they meet the standards required for the removal of the average annual load of TP and TN. The current ponds do not meet this requirement. They may provide the required attenuation and it may be practical to incorporate these ponds into the SMF design as part of the treatment train approach. This may help greatly reduce any additional right-of-way requirements, but additional treatment options will be needed here.

***Polk County*** is located within the jurisdictional limits of FDOT District 1 and the SWFWMD. At the time of the original FEIS for the FHSR there were three Design Build contracts awarded but not permitted. Since then these projects have been permitted and constructed through the SWFWMD. The widening of I-4 in Polk County was to the outside; therefore the median areas were assumed to be pervious areas in the design of the SMF. SMF designs submitted to the FDEP for review will have to show that they meet the standards required for the removal of the average annual load of TP and TN. The

current ponds do not meet this requirement. In addition they may not provide the required attenuation but it may be practical to incorporate these ponds into the SMF design as part of the treatment train approach. This may help greatly reduce any additional right-of-way requirements, but additional treatment options will be needed here.
Portions of the I-4 corridor in Polk County traverse the Green Swamp which is located within the 100-year flood zone. SWFWMD criteria requires that any floodplain volume lost due to fill be replaced based on a cup for cup approach. Reviews of the existing permits indicate that due to the outside widening the floodplain compensation volume was in some instances provided in the median. Placement of fill in the median to construct to FHSP may increase the floodplain impacts above what was originally assumed in the FEIS. In addition there have been SMF permitted in the median of I-4. Therefore to reduce the floodplain impacts and not impact existing SMF in this area it may be practical to consider elevating the FHSR to minimize these impacts.

***Osceola and Orange County's*** are located within the jurisdictional limits of FDOT District 5 and both the SFWMD and SJRMWD. Coordination with the Reedy Creek Improvement District (RCID) will be required where the FHSR crosses Bonnet Creek in Osceola County and along portions of SR 528 in Orange County. In addition coordination with the Valencia Water Control District will be required where the FHSR crosses over the C-10 and C-11 Canals in Orange County. There are several existing SMF that can be utilized as part of the SMF design in these two Counties. It may be feasible to incorporate these SMF's into the overall SMF design to reduce the right-of-way requirements.

## Wetland Impacts

Wetland impacts within the project corridor will require coordination with the SWFWMD, SFWMD, and SJRWMD), FDEP and United States Army Corp of Engineers (USACE). In addition the United States Fish and Wildlife Service (USFWS), Environmental Protection Agency (EPA), National Marine Fisheries Service (NMFS), and Florida Fish and Wildlife Conservation Commission (FFWCC) will review and comment on federal and state wetland permit applications.

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.

## National Pollutant Discharge Elimination System (NPDES)

Any project which results in the clearing of one 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 90 to 240 days.

**Attachments:** FDEP Contact Record 9/1/09, SWFWMD Contact Record 9/1/09, FDOT District 5 Meeting Minutes 9/2/09 and Contact Record 9/9/09

PARSONS

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**644905**

**Meeting Minutes**
**Florida High Speed Rail**
**Meeting w/FDEP**

A meeting was conducted with the FDEP, on Tuesday, September 1, 2009 at 10:00 a.m., to discuss the how the new Statewide Stormwater Treatment Rule will impact the stormwater management design for the High Speed Rail.

The following were in attendance:

| | |
|---|---|
| Debra Laisure, FDEP | Leo Angelero, FDEP |
| Lisa Prather, FDEP | Jim Kory, Parsons |

- The final Technical Advisory Committee (T.A.C.) meeting is scheduled for September 22 and 23.
    - After this meeting the draft rule and Stormwater Quality Applicants Handbook will be finalized.
    - Rule workshops will take place between October 2009 and February 2010.
    - The new rule will then be presented to the State Legislature in the spring of 2010, which will need to pass Statutes for the new rule to take effect.
    - The new rule should become law starting in 2011.
- Projects without a permit in hand by the time the new Statewide Stormwater Treatment Rule takes effect will need to meet the new criteria.
- The existing land condition used to determine the allowable nutrient discharge is based on the native vegetative state of the soil before it was ever altered by people.
    - To determine the native vegetative condition of the project corridor (I-4 Median), one would have to look at the land use prior to any type of development.
- Changes made during TAC meetings to proposed rule change.
    - In March 2009, the agencies determined that the performance standard (level of treatment) for the statewide stormwater rule should be the lesser of at least 85% average annual nutrient load reduction (95% for discharges to OFWs) OR post-development nutrient load not exceeding predevelopment nutrient load (where predevelopment is the native vegetative community condition). A revised draft Applicant's Handbook, along with

several technical memos, has been added under the July 29-30 TAC Meeting folder. The revised Applicant's Handbook will be the focus of the discussions at the July, August, and September TAC meetings. Based on input from these meetings, we will revise the Applicant's Handbook before beginning rule workshops in the fall.

- Hank Higginbotham from the SWFWMD has run different scenarios to estimate the water quality treatment criteria based on the New Statewide Stormwater Treatment Rule.

**Action Item:** Contact Hank Higginbotham from SWFWMD to obtain EXCEL BMP Review Aid which can be used to estimate potential pond sizes.

cc.: Attendees
File-644905

# CONTACT RECORD REPORT

DATE: 09/01/09
REPORT BY: JIM KORY
TIME: 1:00 PM
TYPE OF CONTACT: VISIT ☐ PHONE ☒
PHONE NUMBER: 1-813-985-7481 EXT. 2001

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PERSON CONTACTED OR IN CONTACT WITH YOU: HANK HIGGINBOTHAM (SWFMD)

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CALL SUMMARY: I SPOKE TO HANK HIGGINBOTHAM ABOUT THE NEW STATEWIDE STORMWATER TREATMETN RULE BEING DEVELOPED BY THE FDEP AND WMD'S .

MR. HIGGINBOTAHM INFORMED ME THAT THEY HAVE DEVELOPED A DRAFT DOCUMENT, AN EXCEL SPREADSHEETS WHICH CAN BE USED TO CALCULATED THE STORMWATER MANAGEMENT FACILITY DESIGN TO MEET THE CRITERIA FOR REMOVAL OF NUTRIENTS FROM STORMWATER RUNOFF. THIS FILE CAN BE DOWNLOADED FROM THE FOLLOWING DIRECTORY (HTTP://FTP.SWFWMD.STATE.FL.US/PUB/DRAFT_IMP_WATERS_REV_AID/ ). THE NAME OF THE EXCEL FILE IN THIS DIRECTORY IS "DRAFT_BMP_REVIEW_AID_AS_OF_02_13_09.XLS".
MR. HIGGINBOTHAM SAID THAT THE ACTUAL NUTRIENT REMOVAL CRITERIA AND HOW IT IS TO BE QUANTIFIED IS STILL SUBJECT TO CHANGE. HOWEVER, IF SWFWMD WHERE STORMWATER RUNOFF DISCHARGES TO AN IMPAIRED WATER BODY (I.E. LAKE HANCOCK), STORMWATER MANAGEMENT FACILITIES CURRENTLY NEED TO SHOW A NET REDUCTION IN THE AMOUNT OF NUTIENTS DISCHARGED TO THE IMPAIRED WATER BODY. HE DID NOTE THE THE GREEN SWAMP IS NOT CONSIDERED AND IMPAIRED WATER BODY.

ACTION REQUIRED/TAKEN: I DOWNLOADED THE EXCEL FILE FROM THE WEB SITE.

JIM KORY _____ _____
Name of Person Documenting Conversation Signature

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PARSONS

Baldwin Point Building, 2420 Lakemont Avenue, Suite 450, Orlando, Florida 32814 (407) 702-6800 Fax: (407) 702-6950 www.Parsons.com

**644905**

**Meeting Minutes**
**Florida High Speed Rail**
**Meeting w/FDOT District 5**

A meeting was conducted with the FDOT District 5 Drainage Staff, on Wednesday, September 2, 2009 at 10:00 a.m., to discuss the stormwater management design for the High Speed Rail.

The following were in attendance:

| | |
|---|---|
| Pat Muench, FDOT | Ferrel Hickson, FDOT |
| Hannah Hernandez, FDOT | Jim Kory, Parsons |

- The meeting began with Jim Kory providing an overview on the latest developments with the High Speed Rail and the reevaluation of the FEIS document.
  - FDOT District 5 Drainage Staff was not aware of this work previous to our meeting.
- Provisions for the High Speed Rail within FDOT design for ultimate build out of I-4.
  - FDOT District 5 Drainage Staff mentioned that the I-4 corridor has been permitted for the ultimate build out.
  - FDOT stated that based on this work that in some areas the right-of-way for the permitted stormwater management facilities for the ultimate build out of Interstate 4 had been acquired by the State.
  - FDOT said that Scott Wesson of PBS&J lead the permitting effort for this task.

**Action Item:** Contact Scott Wesson from PBS&J to discuss Interstate 4 permits for the ultimate build out of the project corridor.

cc.: Attendees
File-644905

# CONTACT RECORD REPORT

DATE: 09/09/09
REPORT BY: JIM KORY
TIME: 9:50 AM
TYPE OF CONTACT: VISIT ☐ PHONE ☒
PHONE NUMBER: 1-407-806-4106

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PERSON CONTACTED OR IN CONTACT WITH YOU: SCOTT WESSON (PBS&J)

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CALL SUMMARY: I SPOKE TO SCOTT WESSON ABOUT THE WORK DONE ON ACQUIRING STORMWATER MANAGEMENT PERMITS FOR THE UTLTIMATE BUILD OUT OF INTERSTATE 4.

I TOLD SCOTT THAT I HAD SPOKEN TO FDOT DISTRICT 5 DRAINAGE STAFF, WHO INFORMED ME THAT PERMITS HAVE BEEN GRANTED AND RIGHT-OF-WAY ACQUIRED FOR THE FUTURE BUILDOUT (WIDENING) OF INTERSTATE 4. MR. WESSON SAID THAT THE PERMITS HAVE BEEN ACQUIRED FROM BOTH THE SJRWMD AND SFWMD FOR THIS WORK..HE ALSO SAID THAT THE PERMITTED PLANS INCLUDED A RAIL CORRIDOR IN THE MEDIAN FOR THE PROPOSED COMMUTTER RAIL. HOWEVER, MR. WESSON THE SOUTHERN TERMINUS FOR THESE PERMITS WAS KIRKMAND ROAD. SINCE KIRKMAN ROAD IS NORTH OF THE HIGH SPEED RAIL PROJECT CORRIDOR ALONG INTERSTATE 4, THESE PERMITS WILL HAVE NO INPACT ON THE HIGH SPEED RAIL PROJECTS.
MR. WESSON SAID THAT THE PERMITS ACQUIRED HAD TEN YEAR LIFE SPAN. THE AGENCIES GRANTED THE FDOT LONGER PERMITS DUE TO THE POTENTIAL FINANCIAL CONCERNS FOR CONSTRUCTING THESE PROJECTS. MR. WESSON SAID THE PERMITTING AGENCIES ALSO LEFT OPEN THE POSSIBILITY OF EXTENDING THESE PERMITS AFTER TEN YEARS DUE TO THE POTENTIAL FINANCING CONCERNS FOR CONSTRUCTING THE PROPOSED IMPROVMENTS. HOWEVER, THE PERMITTING AGENCIES HAVE RESEARVED THE RIGHT TO MODIFY THE PERMIT CRITERIA BASED ON THE FUTURE REQUIREMENTS.

ACTION REQUIRED/TAKEN:

JIM KORY _____ _____
Name of Person Documenting Conversation Signature

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**TECHNICAL MEMORANDUM**
**CONTAMINATION REVIEW**

Date Prepared: September 17, 2009
Prepared By: Karol Sihite, Brad Bayne, P.G.

Based on a review of the design modifications suggested for the reevaluation for four (4) of the proposed Florida High Speed Rail station locations, the impact evaluation for Contamination should be updated as discussed below. The two proposed station "properties" located at the vicinity of Station 7780 are considered one "site" for the purposes of this review.

## *Methodology*

To obtain updated information, a regulatory research database report (EDM - attached) for each station location was reviewed and research of on-line information regarding the sites listed in the database was conducted. On-line resources utilized included the FDEP Oculus (Storage Tanks and Hazardous Waste) databases and the Storage Tank/Contaminated Facility database. On-line sources for aerial photographs dating from the 1950s, 1960s, 1999, 2002, and 2008 was also reviewed to search for any nearby sites of potential contamination concern (such as gas stations, landfills, industrial facilities, etc.) USGS topographic maps were reviewed for the sites, which sometimes contain indications of historical land uses.

## *Findings*

A summary of our findings is as follows:

### Tampa Station Site (2104 Nebraska Avenue, Sta. 6048)

The EDM report identified two sites (MAP ID #1 and MAP ID #2) within approximately 200 feet of the proposed Tampa station site. The remaining sites listed in the EDM report (MAP ID #3 – MAP ID #12) were located more than 800 feet from the proposed station site, and are not expected to have any involvement with the project. MAP ID #1 is a Leaking Underground Storage Tank (UST) facility known as the Giglio Property (at 2007 Nebraska Ave.). The site is now occupied by a parking lot, but it was once occupied by a fueling station, which had nine USTs, all of which were removed in March 1991. Although this facility had a petroleum discharge reported on March 21, 1991, no cleanup was required. Twenty-five soil borings were completed on this property and were screened for organic vapors; no impacted soils were identified. The water table was greater than 20 feet below surface, so no groundwater samples were collected. This facility was found to be ineligible for participation in the State's petroleum cleanup programs because no contamination had been documented at this facility. This facility (MAP ID #1) is not anticipated to have any impact on the proposed Tampa station site.

### MAP ID #2 is a Leaking UST Site known as Torres Transmissions (2002 Nebraska Avenue)

This site was once a gasoline station, but the four on-site fuel USTs were removed in 1974. A petroleum discharge was reported at this facility on May 24, 1996. A 550-gallon used oil UST was

removed at that time, and soil borings in the former fuel UST area indicated elevated organic vapor concentrations. The former fuel UST area was noted to be at the "front" (east side) of the property. The facility was found to be eligible for the State's petroleum cleanup program. The initial facility cleanup score was 46, but has since been lowered to 10. No further information was available in the Oculus files, and there was no indication that any additional investigations had been conducted after 1996. Three factors limit the likelihood that this facility could impact the proposed Tampa station site: 1) the age of the contamination source (pre-1974), 2) the presumed groundwater flow direction (east or southeast), and 3) the estimated depth to groundwater (more than 20 feet). This facility (MAP ID #2) would be ranked **Low** with respect to project impacts.

## Disney Station Site (W. Osceola Parkway at I-4, Sta. 4520)

The EDM report identified only one site (MAP ID #1) within approximately 900 feet of the proposed Disney station site. MAP ID #1 is a Leaking UST facility known as the Radisson Resort Parkway (at 2900 Parkway Boulevard). The site is a hotel facility with an emergency diesel fuel generator. The facility previously had a generator fuel UST, which was installed in 1987 and removed in May 1999. The UST was replaced with a generator fuel Above-ground Storage Tank (AST) in March 1999. Although this facility had a petroleum discharge reported on March 30, 1999, no cleanup was required. This facility was found to be ineligible for participation in the State's petroleum cleanup programs because no contamination had been documented at this facility. Due to its distance from the proposed Disney station site, this facility (MAP ID #1) is not anticipated to have any impact on the proposed Disney station site.

Although no contamination impacts are expected at the proposed Disney site, it should be noted that he EDM report identified seven proposed or active Water Use Permitted water wells within the proposed site or in the immediate vicinity. No further information was provided regarding these wells, but they could be affected by the project, if the wells are active.

## Tradeport/Orlando International Airport Station Site, location #1 (North of Tradeport Drive at Ringhaver Drive, Sta. 7710)

The EDM report identified one site (MAP ID #1) within approximately 500 feet of the proposed Tradeport/OIA station site. The remaining sites listed in the EDM report (MAP ID #2 and MAP ID #3) were located more than 800 feet from the proposed station site, and are not expected to have any involvement with the project. MAP ID #1 is a Leaking AST facility and a Small Quantity Generator of hazardous waste known as Ring Power Corporation (at 9901 Ringhaver Drive). This site is a Caterpillar heavy equipment sales, rental, maintenance, and storage facility. The facility currently has nine ASTs for fuel, lube oil, waste oil, and antifreeze. One fuel AST was removed in March 2006. This facility had a petroleum discharge reported on January 26, 1991. The facility was under a monitoring only program from 1993 to 1995, and the facility reportedly received No Further Action approval from FDEP in February 1995. A soil removal project was conducted in March 1997, wherein 260.3 tons of petroleum-impacted soils were removed from the western portion of the site (approximately 250 feet east of the proposed Tradeport/OIA station site). Soil investigations continued in this area until 2001, when additional soil removal activities were completed, and No Further Action was requested for this facility. A Site Rehabilitation Completion Order for this facility was approved by FDEP on May 29, 2006. The impacted soil area is now covered by a building and a gravel parking area. Groundwater investigations of the site were limited, and the facility continues to use the area for equipment maintenance, equipment washing, and vehicle parking.

## Ring Power Corporation (MAP ID #1)

This site was inspected on several occasions by the FDEP for compliance with hazardous waste regulations. The September 2006 inspection identified one procedural violation, but no indications of spills or releases were noted in the inspection report. The facility was again inspected in December 2008, and did not have any violations. The Ring Power Corporation facility (MAP ID #1) would be ranked **Medium** with respect to project impacts at the proposed Tradeport/OIA station site – location #1.

## Tradeport/Orlando International Airport Station Sites, location #2 (Boggy Creek Road at OUC Railroad spur, Sta. 7780)

The EDM report identified one site (MAP ID #1) within approximately 800 feet of the proposed Tradeport/OIA location #2 site. The remaining sites listed in the EDM report (MAP ID #2 – MAP ID #4) were located more than 900 feet from the proposed station site, and are not expected to have any involvement with the project. MAP ID #1 is a Small Quantity Generator of hazardous waste known as Fedex National LTL, Inc. – Orlando (at 10975 Florida Crown Drive). No hazardous waste violations have been noted for this facility. Due to its distance from the proposed Tradeport/OIA station site and the lack of hazardous waste violations, the Fedex facility (MAP ID #1) is not anticipated to have any impact on the proposed Tradeport/OIA station site – location #2.

The following are recommended to address possible contamination concerns associated with this project:

There is a possibility that groundwater impacts originating at the Ring Power Corporation site (which was ranked **Medium**) have not been fully evaluated. Depth to groundwater and the direction of groundwater flow are not known for this site. The Ring Power facility includes a heavy equipment parking area and a truck wash rack area on top of an unpaved surface. There is the potential for spills of fuel or solvents from equipment to go undetected and leach into the groundwater. As a result of the uncertainty about the groundwater flow direction and the possibility of impacts to groundwater at the adjacent Tradeport/OIA station site – location #1, installation of three temporary monitoring wells is recommended along the east side of the proposed station site. The monitoring wells would be sampled for petroleum and solvent constituents. While this recommendation is made from a precautionary point of view, the actual installation of those wells can wait until such time as when actual property acquisition takes place.

The attached table summarizes the impacts from the regulatory-listed facilities nearest to each of the proposed High Speed Rail station sites. It should also be noted that any buildings to be demolished as part of construction of station facilities should be evaluated for asbestos and lead-based paint. This would apply primarily to the Tampa site, as that structure may be old enough to have a reasonable probability of containing asbestos and/or lead materials.

| FL HSR Site (Sta.) | EDM Map ID # | Potentially Contaminated Site Name and Address | Facility ID No. | Distance from proposed station site | Contamination Concern | Prelim. Ranking |
|---|---|---|---|---|---|---|
| Tampa (Sta. 6048) | 1 | Giglio Property 2007 N. Nebraska Ave. | 29-9102252 | 200 ft. Southeast | Leaking UST site; no cleanup required; no contamination identified | None |
| Tampa (Sta. 6048) | 2 | Torres Transmissions 2002 N. Nebraska Ave. | 29-9601267 | 200 ft. South | Leaking UST site; USTs removed in 1974; contaminated soil identified in old UST pit | Low |
| Disney (Sta. 4520) | 1 | Radisson Resort Parkway, 2900 Parkway Boulevard | 49-9101991 | 900 ft. South | Leaking UST site; no cleanup required; no contamination identified | None |
| Tradeport/ OIA #1 (Sta. 7710) | 1 | Ring Power Corporation, 9901 Ringhaver Drive | 48-9046708 | 300 ft. East | Leaking AST site; impacted soil removed; truck washing and truck maintenance activities on site | Medium |
| Tradeport/ OIA #2 (Sta. 7780) | 1 | Fedex National LTL, Inc. – Orlando 10975 Flordia Crown Drive | FLR 000100685 | 800 ft. West | SQG with no violations | None |

AST – Above-ground Storage Tank
SQG – Small Quantity Generator of Hazardous Waste
UST – Underground Storage Tank

**TECHNICAL MEMORANDUM**
**PROTECTED SPECIES INVOLVEMENT**

Date Prepared: September 30, 2009
Prepared By: Melanie A. Calvo, Sr. Scientist

## *Introduction*

The Florida High Speed Rail corridor was previously reviewed for involvement of species protected by the federal Endangered Species Act and the state Threatened and Endangered Species Act through a PD&E study (Study). That Study resulted in a Final Environmental Impact Statement (FEIS), approved in July 2005. This re-evaluation will address changes to species protection status and changes to protected species management requirements that may affect the proposed project. The corridor alternatives proposed for this re-evaluation are unchanged with the exception of the three railway station site alternatives described below:

1) The addition of a site known as the "Tampa Jail Site" located in Corridor A southwest of I-275 and adjacent and north of Jefferson Street. This site is being added to the previously proposed, adjoining 20-acre Tampa station site (approximate Station 6011).
2) A re-location of a proposed "Disney Site" station approximately between stations 4515+00 and 4533+50, north and adjacent to Interstate Highway 4 (I-4) between Osceola Parkway and U.S. Highway 192. The station was previously proposed in this location but is being shifted north to accommodate the new limited access right-of-way line for I-4.
3) The Orange County Convention Center (OCCC) Station's easternmost boundary is being extended slightly to the east.

This re-evaluation will also determine if the changes to the proposed station sites would result in any additional protected species involvement or a change in protection measures, beyond what was identified in the 2005 Study.

## *Methodology*

The 2005 Final Environmental Impact Statement (FEIS) was reviewed to determine the list of protected species that should be re-evaluated for the project. The previous species protection commitments were also reviewed.

Current aerials for the Florida High Speed Rail with the proposed corridors and stations were reviewed to assure that changes to the previous alignment will not result in additional protected species or habitat concerns. Other databases, managed by the Florida Fish and Wildlife Conservation Commission (FWC) or the U.S. Fish and Wildlife Service (FWS), were reviewed

to obtain the most current species data. The databases reviewed included information on the location of bald eagle nests, Florida black bear telemetry, nuisance, and road mortality location data, wading bird nesting colonies, wood stork core foraging areas, Florida panther database, snail kite consultation areas, and red-cockaded woodpecker colony locations.

## *Results*

The revisions to the station sites do not result in additional protected species concern. The "Tampa Jail Site" is urban and developed and provides no protected species habitat. The reconfiguration of the "Disney Site" does not result in a new habitat type or protected species concerns. The new additional area for the OCCC site is minimal and does not provide different habitat than what has already been considered.

The federal and state protected species that were considered to potentially occur in the area in the 2005 FEIS included the:

- gopher frog (*Rana capito*)
- American alligator (*Alligator mississippiensis*)
- gopher tortoise (*Gopherus polyphemus*)
- Eastern indigo snake (*Drymarchon corais couperi*)
- Florida pine snake (*Pituophis melanoleucus mugitus*)
- bald eagle (*Haliaeetus leucocephalus*)
- wood stork (*Mycteria americana*)
- Florida sandhill crane (*Grus canadensis pratensis*)
- Southeastern American kestrel (*Falco sparvenus paulus*)
- Florida burrowing owl (*Athene cunicularia floridana*)
- wading birds
- Florida black bear (*Ursus americanus*)
- Florida panther (*Puma concolor coryi*)
- Florida manatee (*Trichechus manatus latirostrus*)
- Florida mouse (*Podomys floridanus*)
- Sherman's Fox Squirrel (*Sciurus niger shermani*)

## *Updates*

Since the 2005 FEIS, the bald eagle was delisted (with the exception of the desert bald eagle in Arizona) and is no longer protected under the Endangered Species Act as of June 28, 2007. However, the bald eagle is still provided protection by two other federal laws, the Migratory Bird Treaty Act of 1918 and the Bald and Golden Eagle Protection Act, as amended. The state of Florida also delisted the bald eagle. The state wildlife agency, the FWC, has been delegated the responsibility of managing the bald eagle population in Florida. This is facilitated by guidelines provided in the Bald Eagle Management Plan. Any potentially disruptive activity within 660-feet of an active eagle nest must follow avoidance and protection guidelines detailed in the Management Plan.

An additional species, the Everglades snail kite (*Rostrhamus sociabilis*) has been afforded additional protection since the 2005 FEIS. A consultation area for the snail kite is now in place over Polk County and much of Osceola County. Although it is unlikely that this species will be affected by the project as habitat in the area is suboptimal, consultation with and concurrence from the USFWS will be required because the corridor is within the snail kite's designated consultation area. (Please refer to attached exhibit.)

The Gopher Tortoise Management Plan (September 2007) and Gopher Tortoise Permitting Guidelines (revised April 2009) instituted new permitting requirements for the gopher tortoise. These guidelines no longer allow an "incidental take" permit except under emergency situations. Therefore, the gopher tortoise must be relocated to an appropriate recipient site in accordance with these revised guidelines if impacts to the tortoise or its burrow are unavoidable.

The panther mortality database indicated two additional panther deaths on the I-4 corridor since the 2005 FEIS. A male panther (UCFP84) mortality was recorded on April 14, 2006, approximately ¼ mile southwest of Orlando. Another male panther (FP130) mortality occurred on March 21, 2007 near the Osceola and Orange County line.

## *Commitments*

The following commitments resulted from the 2005 FEIS. The original commitment is stated below with recommended changes in bold following.

1. 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.

    **No change.**

2. 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.

**Incidental take permits are not longer allowed. The commitment should be modified to state: "If burrows are identified during these surveys, FHSRA will contact FWC to coordinate mitigation for any impacts to this species and acquire the necessary relocation permits in accordance with the Gopher Tortoise Permitting Guidelines (April 2009). Although the relocation permit is issued for the gopher tortoise, the permitting process provides protection for the Florida mouse and gopher frog.**

3. 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.

**No change.**

4. 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 FWC immediately. Construction activities in the vicinity of the nest would cease until appropriate protective measures are determined.

**No change.**

5. 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.

**No change is recommended to the commitment. However, it is noted that the bald eagle nest PO-50 was active in 2007. The FHSRA should contact USFWS to discuss the viability of the nest prior to construction as well as determining any new nests established as stated in the existing commitment.**

6. 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.

**The USFWS guidelines have been modified to reduce the CFA to a 15-mi radius in central Florida. However, even with the reduction in the radius, most wetlands in the project corridor are anticipated to be in a CFA. Polk County and Osceola County are still subject to an 18.6-mi radius. It is also recommended that the FHSRA commit to utilizing the Wood Stork Foraging Habitat Assessment Procedure to evaluate wetlands that are within the CFA of a wood stork colony.**

7. 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.

   **No change.**

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

   **No change.**

## *Effect Determinations*

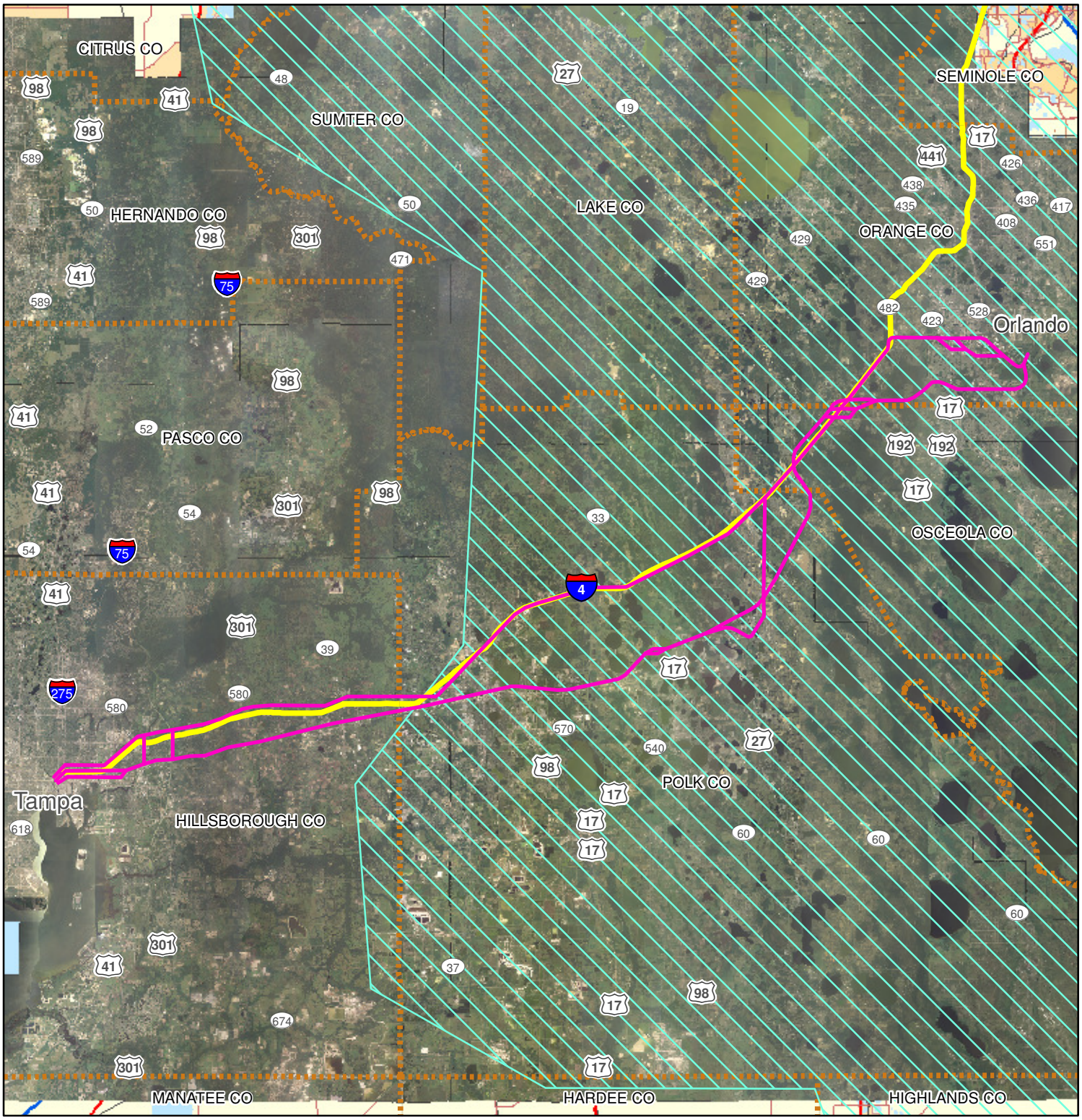
The 2005 FEIS concluded that:
"*The Preferred Alternative will have "no effect" on the following species: American alligator, Florida pine snake, Florida scrub jay, Florida burrowing owl, Southeastern American kestrel, Florida panther, manatee, Florida black bear, and protected plant species. The Preferred Alternative "may affect, is not likely to adversely affect" the following species: Eastern indigo snake, gopher tortoise, Florida mouse, gopher frog, sand skink, Florida sandhill crane, bald eagle, wood stork, state protected wading bird species, and Sherman's fox squirrel. As part of mitigation commitments, FHSRA will continue to coordinate with USFWS, the WMDs, and FFWCC to develop design and construction methods to avoid and minimize impacts to these species.*"

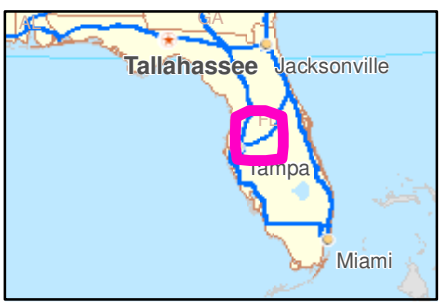
No change is recommended to the effects determinations. However, the snail kite was not included in the 2005 FEIS. Since the 2005 FEIS, a consultation area was established for the snail kite which includes Polk County and a portion of Osceola County. Therefore, consultation should take place with the USFWS for this species. The project is anticipated to have "no effect" on the Everglades snail kite as suitable habitat is not present.

## *USFWS Coordination*

Coordination has been initiated by phone with Todd Mecklenborg of USFWS. A letter is being prepared for USFWS signature which will update their concurrence with FHSR commitments including the Snail Kite. FGFWFC coordination typical takes place during the design permitting process.

# Florida High Speed Rail (Tampa - Orlando)
# Snail Kite Consultation Area

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**Legend**

Snail Kite Consultation Area

Rail Corridor ROW — I-4 Corridor ····· County Line

1 inch = 10 miles

0 10 Miles

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SD19414 090828

**TECHNICAL MEMORANDUM**
**UTILITIES UPDATE**

Date Prepared: September 21, 2009
Prepared By: Lynn Hogan, Utility Coordinator

## *Introduction*

The locations of major utilities within the Florida High-Speed Rail (FHSR) study area were assessed for the Final Environmental Impact Statement (FEIS) by contacting all of the utility companies with existing facilities in the study area. To determine what facilities exist within the project limits, all utilities were provided with sets of aerial maps of the study area for identifying the location of existing and planned facilities. Information received from the various utility companies was retained in the project file. Major utilities were determined to be those utilities that could influence the location and design of the FHSR project. The utility companies and the types of utilities located within proposed Design/Build Alternatives 1 through 8, station locations, and maintenance facilities were identified in Table 4-75 of the 2005 FEIS.

It was determined in the FEIS that the proposed FHSR design/build alternatives may require the relocation of some of the existing utilities. The majority of the existing utilities cross the FHSR alignments and would require provision of adequate depth beneath the tracks or vertical clearance over the tracks to accommodate for appropriate utility lines and equipment. Coordination with all affected utilities would be completed during final design.

## *Methodology*

For the FEIS Reevaluation, the presence of utilities within the FHSR Preferred Alignment was determined by issuing Sunshine State One-Call of Florida (SSOCOF) utility location requests (design tickets) through the SSOCOF Online Design Ticket Entry System at http://www.callsunshine.org (Irthnet). Detailed records of SSOCOF design tickets, correspondence with utility companies, and utility contact information, have been retained in the reevaluation project file.

Table 1 provides a summary of the SSOCOF design tickets and the limits of each ticket. Per SSOC, the designer may reference these ticket numbers in the future while confirming utility locations. SSOCOF ticket numbers may also be used to obtain maps of electronically generated and manually drawn sections of the alignment as well as current utility contacts through Irthnet.

## Table 1. Sunshine One Call of Florida Record of Design Tickets Created for the Preferred Alignment

| | ROAD | LIMITS FROM | TO | COUNTY | AREA | TYPE | TICKET# |
|---|---|---|---|---|---|---|---|
| 1 | SR 400 | I 275 S I4 E Ramp | N 50th Street | Hillsborough | Tampa | City | 229903933 |
| 2 | SR 400 | E Dr Martin Luther King, Jr. Blvd. | E Dr Martin Luther King, Jr. Blvd. | Hillsborough | Tampa | CDP | 229904311 |
| 3 | SR 400 | E Dr Martin Luther King | US 301 | Hillsborough | Tampa | CDP | 229904389 |
| 4 | SR 400 | Us 301 | I-75 W Ramp | Hillsborough | Tampa | Community | 229904475 |
| 5 | SR 400 | Williams Rd. | CR 574/Mango Rd. | Hillsborough | Mango | CDP | 229904759 |
| 6 | SR 400 | CR 574/Mango Rd. | McIntosh Rd. | Hillsborough | Thonotosassa | CDP | 229904863 |
| 7 | SR 400 | Branch Forbes Rd. | | Hillsborough | Plant City | CDP | 229905071 |
| 8 | SR 400 | Thonotosassa | Paul Buchman Hwy | Hillsborough | Plant City | CDP | 229905487 |
| 9 | SR 400 | Charlie Taylor Rd. | County Line Rd. | Hillsborough | Plant City | Community | 229905663 |
| 10 | SR 400 | County Line Road | Polk Pkwy (E) | Polk | Lakeland | Community | 229906131 |
| 11 | SR 400 | Polk Pkwy | Galloway Rd. | Polk | | | |
| 12 | SR 400 | Galloway Rd | Kathleen Rd. | Polk | Lakeland | City | 229906357 |
| 13 | SR 400 | Kathleen Rd | SR 33 | Polk | Lakeland | City | 229906399 |
| 14 | SR 400 | SR 33 | Hwy 33 N | Polk | Lakeland | City | 229906495 |
| 15 | SR 400 | Hwy 33 N | Polk Pkwy | Polk | | | |
| 16 | SR 400 | Polk Pkwy | Hwy 557 | Polk | Polk City | Community | 229906719 |
| 17 | SR 400 | Hwy 557 | US 27 | Polk | | | |
| 18 | SR 400 | US 27 | Ronald Reagan - Osceola/Polk CL | Polk | Davenport | Community | 229907263 |
| 19 | SR 400 | Osceola Polk Line Rd | SR 429 | Osceola | Citrus Ridge | CDP | 229907377 |
| 20 | SR 400 | SR 429 | World Drive | Osceola | | | |
| 21 | SR 400 | World Drive | US 192 | Osceola | Celebration | CDP | 229907467 |
| 22 | SR 400 | W Osceola Pkwy | W Osceola Pkwy | Osceola | Kissimmee | Community | 233905323 |
| 23 | SR 400 | Epcot Center Dr | Epcot Center Dr | Orange | Orlando | Community | 233905461 |
| 24 | SR 400 | Central Fla Pkwy | SR 535 / Apopka Vineland | Orange | Orlando | Community | 233905523 |
| 25 | SR 400 | SR 535 | SR 528 Ramp | Orange | Orlando | Community | 233905635 |
| 26 | SR 528 | SR 400 | Intl Drive | Orange | Orlando | Community | 245905919 |
| 28 | John Young Pkwy. | Commerce Park Dr | Taft Vineland | Orange | Orlando | Community | 243908915 |
| 27 | Taft-Vineland | Orange Blossom Trail | Tradeport | Orange | Orlando | Community | 233905811 |
| 28 | SR 528 | Universal Blvd | | Orange | Williamsburg | CDP | 245906361 |
| 29 | N/A (manually drawn alignment) | SR 528 @ John Young Pkwy | Taft Vineland @ Orange Blossom Trail | Orange | Orlando | Community | 245906855 |
| 30 | OUC Spur Line | Boggy Creek | S Access Rd | Orange | Orlando | Community | 245907313 |
| 31 | S. Access Rd. | Boggy Creek | Heinzelman Blvd | Orange | Orlando | Community | 245907503 |

## *Findings*

Since the 2005 FEIS, several utility companies have merged or changed names. Expansion of utilities into the study corridor was also a consideration. Table 2 lists utility companies with facilities that potentially cross or are within the FHSR Preferred Alternative Alignment. Utility companies highlighted and shown in bold in Table 2 were not previously identified in the FEIS.

The Florida Department of Transportation (FDOT) District 7 District Environmental Permits and Utilities Administrator, Sally A. Prescott, in an e-mail dated September 14, 2009, provided the following comments with regard to utilities that would be potentially impacted by the FHSR Preferred Alignment:

- TECO has some OE Transmission crossings throughout the corridor. In places where the proposed track follows along the outside of the roadway, such as the downtown interchange area, may require widening and relocation of the OH transmission poles. The outages involved with such relocations, as well as the MOT for the interstate, may be complicated as far as constructability and coordination with power outage scheduling. There is also the interstate street lighting involved in that area, which adds to the complexity.

- The downtown Tampa station area is in an older part of the city and may have old and fragile utilities in the area. There may also be contamination in the area. We need to determine if there are any more underground oil-cased power transmission lines such as we encountered during design of the Cross-town Connector.

- Per the proposed Florida Gas Transmission loop maps, Loop 10 proposes a gas transmission main crossing at the easternmost point of the westbound exit ramp to Forbes Road, STA 2045+50. This would need to be coordinated with both construction efforts (rail and gas main).

- Underground utilities are generally permitted at depths of 3-ft. under pavement (for jack & bores) and there may be instances where they may be in conflict. Any utilities placed by directional drill methods are at depths of 10 x diameter of the pipe, so they are probably clear.

The presence of the proposed FGT Loop 10 crossing was not identified in the FEIS utility data plans. Florida Gas Transmission has indicated that construction of Loop 10 is expected to begin in April 2010.

## *Conclusion*

There are no changes in the following findings of the 2005 FHSR FEIS with regard to utilities:

> The Preferred Alternative would require the relocation of some of the existing utilities. The majority of the existing utilities cross the Preferred Alternative and would require provision of adequate depth beneath the tracks or vertical clearance over the tracks to accommodate for appropriate utility lines and equipment. Coordination with all affected utilities would be completed during final design.

## Table 2. Utilities within the Preferred Alignment

| | Utility Owner | Utility Type |
|---|---|---|
| 1 | Aqua Utilities Florida, Inc. | W |
| 2 | AT&T | T / FO |
| 3 | Bright House Networks | CTV |
| 4 | City of Auburndale | W, S |
| 5 | Tampa Transport | W, S |
| 6 | Central Florida Gas | Gas |
| 7 | City of Lakeland | Electric, FO, Gas, W, S |
| 8 | City of Orlando | W, S |
| 9 | City of Plant City | W, S, FO, Traffic |
| 10 | City of Polk City | W, S |
| 11 | City of Tampa | W, S |
| 12 | Clorox Products Mfg | FO |
| 13 | Comcast Cable Communications | FO, Cable TV |
| 14 | Eastlake W Svc., Inc. | W |
| 15 | Embarq | Comm. / FO |
| 16 | Enterprise Community Development District | W, S |
| 17 | Fiberlight LLC | Comm. |
| 18 | Florida Gas Transmission | Gas |
| 19 | Florida Power & Light | Power |
| 20 | Gulfstream Natural Gas | Gas |
| 21 | Hillsborough County Traffic | Traffic |
| 22 | Hillsborough County Water Resource Services | W |
| 23 | Infrasource | T |
| 24 | Kinder Morgan/ Central Florida Pipeline | G |
| 25 | Level 3 Communications | T |
| 26 | MCI | T |
| 27 | Orange County Public Works | Traffic, FO |
| 28 | Orange County Utilities | W & S |
| 29 | Orlando Orange County Expwy. Authority | Traffic, FO |
| 30 | Orlando Telephone Company, Inc. | Comm. |
| 31 | Orlando Utilities Commission | Electric, W, Chilled W |
| 32 | Osceola County | Traffic, FO |
| 33 | Polk County Utilities | W & S |
| 34 | Progress Energy | Electric |
| 35 | Qwest Communications | T |
| 36 | Reedy Creek Energy Services | Electric |
| 37 | Severn Trent Services | W, S, Cable |
| 38 | Smart City Telecom | T |
| 39 | Taft W Association | W |
| 40 | Tampa Bay W | W |
| 41 | Tampa Electric Company | Power |
| 42 | TECO Peoples Gas | Gas |
| 43 | Time Warner Telecommunications | T |
| 44 | Toho W Authority | W |
| 45 | Traffic Control Devices | FO |
| 46 | Transtate Industrial Pipeline Systems | Gas |
| 47 | Verizon Florida Inc | T |
| 48 | Wiltel Communications, LLC | T |
| 49 | XO Communications | T |

Notes: Key: CTV=Cable Television, FO=Fiber Optic, W=W, S=Sewer, G=Gas, T=Telecommunications

= *Utility company not identified in the 2005 FEIS*

*In response to receipt of a design ticket, SSOCOF provides the originator of the design ticket with a list of SSOCOF members in the vicinity of the project. SSOCOF does not notify SSOCOF members of the receipt by SSOCOF of a design ticket. It is the sole responsibility of the design engineer to contact SSOCOF members to request information about the location of SSOCOF members` underground facilities. Submission of a design ticket will not satisfy the requirement of Chapter 556, Florida Statutes, to notify SSOCOF of intent to excavate or demolish. That intent must be made known specifically to SSOCOF in the manner required by law.*