APPENDIX N: CORRIDOR REPORT ADDENDUM

CORRIDOR REPORT ADDENDUM

for

SR 7 EXTENSION
Project Development and Environment (PD&E) Study
From SR 7 Okeechobee Boulevard (SR 704) to Northlake Boulevard
Palm Beach County, Florida

Financial Project ID: 229664-2-22-01
FM Number: 4752-030-P

Prepared for:

Florida Department of Transportation
District IV
3400 West Commercial Boulevard
Fort Lauderdale, FL 33309

April 2014

TABLE OF CONTENTS

1.0 BACKGROUND AND HISTORY

The purpose of the project is to improve system linkage within the western fringes of urbanized Palm Beach County and provide additional capacity to ease the congestion experienced within the area which includes the Village of Royal Palm Beach, the Acreage community, and future developments. This project is needed because: (1) there is a clear necessity to improve system linkage between Okeechobee Boulevard and Northlake Boulevard; (2) the Palm Beach Metropolitan Planning Organization (MPO) has identified this project as a critical priority; and (3) travel demands within western Palm Beach County will continue to grow.

The proposed extension of SR 7 will facilitate the hurricane evacuation process by providing additional capacity and connectivity in this area. Okeechobee Boulevard is an east-west facility, classified as an Urban Principal Arterial, and provides a connection to the Florida's Turnpike Mainline and Interstate 95 (I-95). Northlake Boulevard is an east-west facility, classified as an Urban Minor Arterial, and provides access to SR 710 and I-95. The limits established for this project, up to Northlake Boulevard, will allow for independent utility based on preliminary traffic modeling results and, therefore, the project is considered a reasonable expenditure without the need for future expansions or improvements. To accommodate the future traffic needs of Palm Beach County, the Palm Beach MPO has identified, in addition to the extension of SR 7, the need to widen Northlake Boulevard, up to six lanes, within the Cost Feasible Plan of the 2035 LRTP. Northlake Boulevard is currently a 4 lane divided facility around the project area.

During the corridor evaluation phase for the PD&E study, extensive public involvement was conducted to obtain local citizen input on the proposed corridors. The combination of public comments received, agency input, and potential environmental impacts led the Florida Department of Transportation (FDOT) to recommend Corridor 3 and the No-Build option for further evaluation[1]. Extending SR 7 through this corridor would not result in residential relocations and reduced the amount of impact to the environment when compared with Corridor 4 (Range Line Alignment) that was analyzed in the previous corridor report. In addition, Corridor 3 would not bifurcate the natural area formed by the Pond Cypress Natural Area and the Grassy Waters Preserve. The FHWA conceptually agreed with the FDOT's recommendation and concurred with Corridor 3 and the No-Build option being carried forward. Through the Efficient Transportation Decision Making (ETDM) process, the FHWA determined that the level of documentation for the PD&E Study was an Environmental Assessment (EA)[1].

The Public Hearing for the project was held March 21, 2012. On March 25, 2012, the FDOT and FHWA received a letter from the City of West Palm Beach urging all parties to cancel or defer this Project until the environmental impact of the Project – including both construction and operation – can be properly evaluated. The City contended that there is no need for the road. The City submitted comments and objections, requested that the FDOT and the FHWA make them part of the administrative record and take them into consideration when determining how to proceed with the project. The City also commented that at a minimum an Environmental Impact Statement ("EIS") was required, and the agencies are warned against the issuance of baseless Findings of No Significant Impacts (FONSIs)[2]

In addition, the US Army Corps of Engineers (USACE) also submitted comments to the FDOT in a letter dated April 2, 2012. In this letter the USACE suggested that additional corridors be evaluated.

[1] SR 7 Extension Corridor Report, Dated August 2007
[2] Tew-Cardenas, LLP letter to the City of West Palm Beach dated March 21, 2012

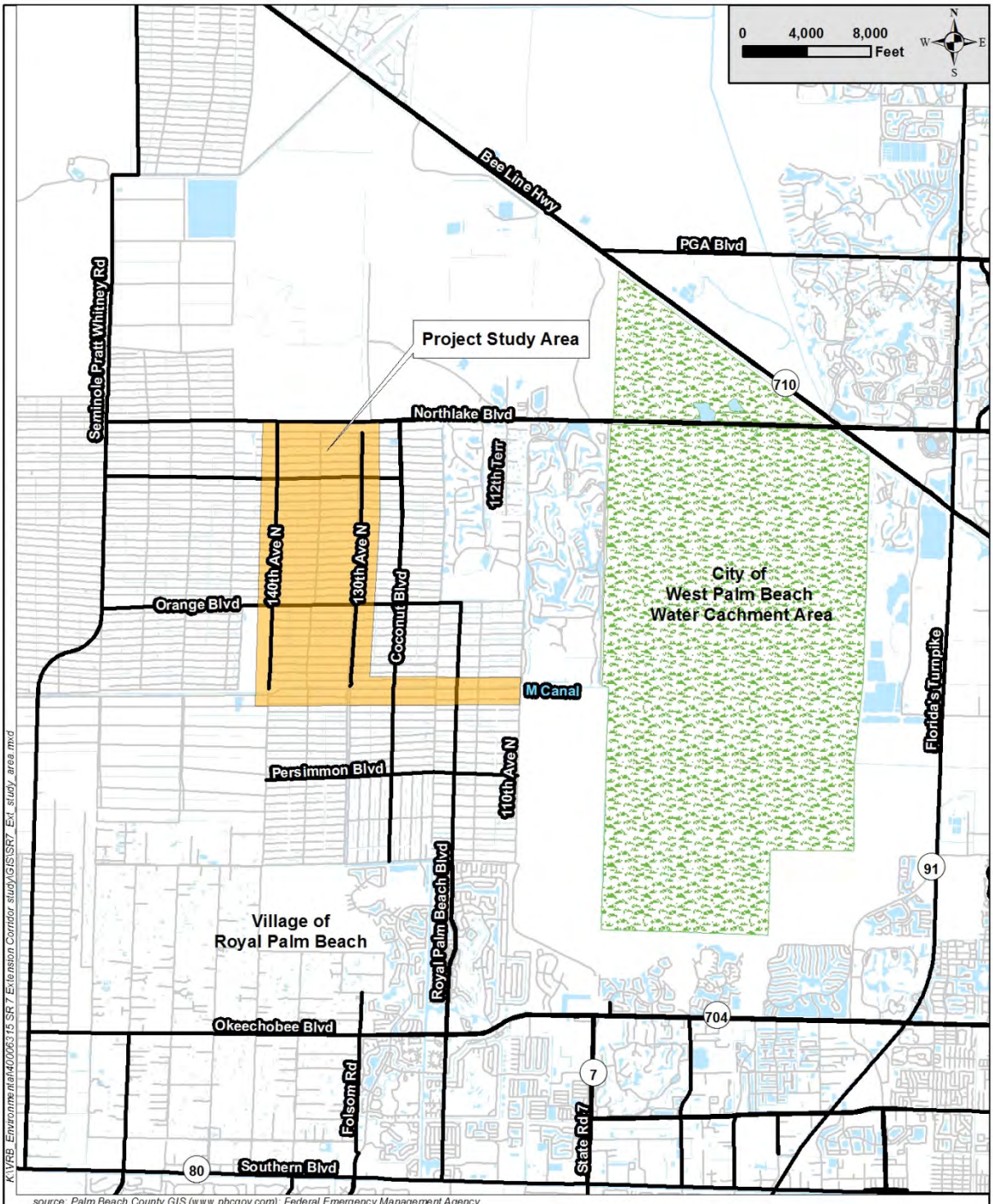
Following a careful evaluation of the comments received at the Public Hearing, the Department decided that additional corridors should be evaluated. See ***Figure 1*** – Location Map showing the study area used to define potential corridors in this study. The purpose of this report is to evaluate extension of SR 7 west along existing 60th Street with one corridor proceeding north along either 130th Avenue North or 130th Trail and a second corridor that proceeds northward along 140th Avenue North.

2.0 TYPICAL SECTION

The typical sections used in the evaluation are shown on Sheet Nos. 2, 3, 4 and 5 of ***Appendix A***. The 130th Avenue North/Trail Corridor includes an alignment that places a bridge over the Indian Trails Improvement District (ITID) B Canal. The proposed bridge typical section is shown in ***Appendix A*** – sheet no. 4. This bridge typical section is also used whenever SR 7 crosses over the ITID M and B Canals.

Palm Beach County is currently constructing two lanes of the ultimate 4-lane extension of SR 7 from north of Okeechobee Road to 60th Street (see Photo 1). The proposed typical section is a 4-lane divided urban arterial with four 12-foot lanes, two in each direction, a 22-foot raised median, bicycle lanes, curb and gutter an a 6-foot wide sidewalk to the outside with within 102-feet of right-of-way. The remaining two lanes will be constructed by FDOT as part of the SR 7 Extension.

Palm Beach County is also building a portion of 60th Street between the SR 7 Extension and Royal Palm Beach Boulevard (see Photo 2). It has been designed as an ultimate 4 lane urban typical section, however, only a portion of the ultimate is being constructed at this time. The construction consists of two 11-foot lanes, one in each direction, and a 12-foot wide bi-directional turn lane. The road is located to the south of the ITID M canal within 120-feet of right-of-way. A 40-foot easement is being provided by ITID. See ***Appendix A –*** sheet no. 2 for typical sections.



FDOT

Study Area Map

State Road 7 Extension Corridor Study
Palm Beach County, Florida
FPID: 229664-2-22-01; FAP No. 4752-030-P

1 inch = 8,000 feet	*MARCH 2014*	*FIGURE 1*

3.0 ALTERNATIVE CORRIDORS

Two corridors, 130th Avenue North/Trail and 140th Avenue North, were evaluated as part of this analysis. The following five alternatives were reviewed:

- Corridor 130th Avenue North
- Corridor 130th Trail
- Corridor Bridge over B Canal
- Corridor 140th Avenue North (East)
- Corridor 140th Avenue North (West)

Each of the new corridors evaluated proceed west and begin at the intersection of 60th Street and the extension of SR 7 currently under construction by Palm Beach County. It is noted that Palm Beach County is in the process of building a new roadway within 120 feet of right-of-way from the SR 7 Extension currently under construction to Royal Palm Beach Boulevard. The SR 7 Extension will utilize this corridor and will provide two additional lanes to make it a 4-lane divided roadway. A new four-lane road will be constructed to the west of Royal Palm Beach Boulevard. The alignment shifts south to provide space for ITID to maintain the M Canal from the south bank.

All new corridors end at Northlake Boulevard. The corridors along 130th Avenue North/Trail and the Bridge over B Canal intersect with Northlake Boulevard at the proposed entrance to the future Avenir development. Corridors along 140th Avenue North intersect Northlake Boulevard mid-way between the two future driveways into the planned Avenir development. However, there is sufficient space between intersections to meet access management requirements.

3.1 Corridor 130th Avenue North

This corridor is located along 60th Street and to the south of the ITID M Canal. See ***Appendix A*** - sheet no. 3 for the typical section. The road is bridged over the M Canal, proceeds north and is then positioned to the east of the ITID B Canal. Corridor 130th Avenue North is generally located on top of the existing 130th Avenue North. Unused portions of 130th Avenue North are removed. Photo 3 shows existing 130th Avenue North. To maintain local street connectivity and access to SR 7, portions of 130th Avenue North are relocated to the east of the SR 7 Extension . Box culverts are provided at certain locations to maintain flow in existing canals to the east. Stormwater quality and pre- versus post-discharge requirements will be provided on the residual area from properties where total acquisition is required. Thus, it is anticipated that additional ponds for stormwater will not be needed.

See ***Appendix A*** - sheet nos. 6 through 27 for concept plans.

3.1.1 Advantages

- Provides a connection from the extension of SR 7, currently under construction by Palm Beach County, to Northlake Boulevard
- Is not constructed adjacent to the City of West Palm Beach Water Catchment Area

3.1.2 Disadvantages

- Potential property impacts to 107 parcels and potential relocation of 54 homes

- Substantially impacts the remainder of the community within the corridor
- Attracts 15,500 vehicles compared to 21,600 for the currently Recommended Corridor adjacent to the City Water Catchment Area
- Potential to act as a dam for floodwaters east of the SR 7 Extension , resulting in the potential for increased flooding to homes to the east

3.2 Corridor 130th Trail

This corridor is located along 60th Street, to the south of the ITID M Canal, and is similar to the 130th Avenue North corridor. It then turns north, is bridged over the M Canal, and is located to the west of the ITID B Canal. The roadway is generally on top of existing 130th Trail. Portions of 130th Trail are relocated to the west of the SR 7 Extension to provide local connectivity and access to the SR 7 Extension. See ***Appendix A*** – sheet no. 3 for the proposed typical section. Photo 4 shows existing 130th Trail. Box culverts are provided at certain locations to maintain flow in the existing canals to the west.

Stormwater quality and pre- versus post-discharge requirements will be provided on the residual area from properties where total acquisition is required. Thus, it is anticipated that additional ponds for stormwater will not be needed.

See ***Appendix A*** - sheet nos. 28 through 49 for concept plans.

3.2.1 Advantages

- Provides a connection from the current extension of SR 7, currently under construction by Palm Beach County, to Northlake Boulevard
- It is not constructed adjacent to the City of West Palm Beach Water Catchment Area

3.2.2 Disadvantages

- Potential property impacts to 114 parcels and potential relocation of 72 homes
- Substantially impacts the remainder of the community within the corridor
- Attracts 15,500 vehicles (AADT 2040) compares to 21,600 (AADT 2040) for the currently Recommended Corridor adjacent to the City Water Catchment Area
- Potential to act as a dam for flood waters to the east of the SR 7 extension, resulting in the potential for increased flooding to homes to the east

3.3A Corridor within the ITID B Canal (Bridge)

This corridor is located in the center of the ITID B Canal and is bridged over the canal (see ***Appendix A*** - sheet no. 4, typical section). There are six side streets that cross the ITID B Canal and each of these streets have an intersection with 130th Avenue North and 130th Trail. The two intersections are approximately 190 feet apart. If SR 7, which is located over the B Canal, were connected to the crossing streets, three intersections would result that are less than 100 feet apart. This would create a safety and traffic flow problem. To avoid this problem, the proposed SR 7 Extension bridge is elevated over the existing cross streets. This places the SR 7 Extension about 22 feet above these side streets. To provide local access to the SR 7 Extension, connections are provided to 130th Avenue North and 130th Trail between the side streets that cross the canal.

To meet stormwater quality and pre- versus post-discharge requirements, off site ponds will be required. A 5-acre pond will be required every mile along the east side of 130th Avenue.

See ***Appendix A*** - sheet nos. 50 through 71 for concept plans.

3.3.1 Advantages

- Provides a connection from the current extension of SR 7, currently under construction by Palm Beach County, to Northlake Boulevard
- Is not constructed adjacent to the City of West Palm Beach Water Catchment Area
- No relocations are required along 130th Avenue North/Trail

3.3.2 Disadvantages

- Potential property impacts to 108 parcels and potential relocation of 24 homes along 60th Street
- Substantially impacts the remainder of the community within the corridor
- For safety reasons, the SR 7 Extension Bridge passes about 22 feet over the existing streets that cross the ITID B Canal. This will have a visual and noise impact within the corridor.
- Attracts 15,500 vehicles (AADT 2040) compared to 21,600 (AADT 2040) for the currently Recommended Corridor adjacent to the City Water Catchment Area
- The total project cost for this corridor located within the ITID B Canal is approximately $279 million—about 3.5 times greater than the other alternatives evaluated

3.3B Corridor within the ITID B Canal (Culvert)

In addition to placing the SR 7 Extension on a bridge directly over the ITID B Canal, an analysis was conducted to enclose the ITID B Canal and to construct the SR 7 Extension on top of the culverts. The purpose of the canal is for water retention, stormwater conveyance, irrigation, and flood control. Two options were considered: Option 1 is a multi-cell precast concrete box culvert and Option 2 is two Contech Rebo Culverts. Of the two options, the Contech Rebo Culverts would be less expensive, easier to construct, and would provide the necessary flow characteristics. The proposed option would consist of two ConTech Rebo Culverts, each measuring 30 feet 3 inches wide and 17 feet 11 inches high at the center. The existing B Canal is approximately 15 to 16 feet deep and 140 feet wide at the surface with side banks that slope at 1:2. The disadvantages of a closed conveyance system are as follows:

- Maintenance is problematic. Access to the culverts is every 350 feet via manhole.
- A closed system will result in bacteria build-up within the culverts, which will need to be chemically treated on a regular basis to avoid health problems.
- Access to the culverts is limited to predetermined locations. Future access will require construction to access the culvert.
- The available storage volume within the culverts is less than the existing open B Canal. This is due to the shape of the culverts to achieve structural integrity.
- Flood management is limited to the volume available within the culverts. Once the design year flood event is exceeded then 130th Avenue and 130th Trail and surrounding properties will flood.
- Any reduction in available flood volume will require compensation by excavation of an equal volume. This will require the acquisition of property.

- The cost of this alternative to enclose the ITID B Canal is in excess of $150 million—more than double the cost of the alignments that places SR 7 Extension on either 130th Avenue North or 130th Trail.

Due to its disadvantages, particularly the drainage and floodplain issues, this alternative is considered non-viable and will not be considered further.

3.4 Corridor 140th Avenue North (East)

Existing 140th Avenue North is an asphalt roadway with grass swales (see Photo 5). An unusual aspect of this corridor is that existing 140th Avenue North is located on private property within an easement. Two corridor options were evaluated along 140th Avenue North. One is located to the east of the property line and one to the west of the property line. Both corridors propose the SR 7 Extension as a 4-lane divided urban typical section.

Corridor 140th Avenue (East) places the two southbound lanes of the SR 7 generally on top of existing 140th Avenue North. The northbound lanes of SR 7 are located to the east on private property. A more detailed analysis will be required to determine if any of the existing pavement section beneath the SR 7 southbound lanes can be incorporated into proposed SR 7. It is noted that the proposed SR 7 will be a curb and gutter section with a closed drainage system. The grade of SR 7 will control what portion of the existing pavement section can be utilized.

Pipe culverts are provided to maintain flow in side canals, but they could be substituted for box culverts if further drainage analysis in undertaken. Based on the preliminary R/W analysis conducted by FDOT, the R/W may not result in total take of properties; therefore, for this alternative, additional R/W would be required for ponds.

See ***Appendix A*** - sheet nos. 72 through 96 for concept plans.

3.4.1 Advantages

- Provides a connection from the current extension of SR 7, currently under construction by Palm Beach County, to Northlake Boulevard
- Is not constructed adjacent to the City of West Palm Beach Water Catchment Area

3.4.2 Disadvantages

- Potential property impacts to 153 parcels and potential relocation of 46 homes.
- Substantially impacts the remainder of the community within the corridor
- Attracts 15,500 vehicles (AADT 2040) compared to 21,600 (AADT 2040) for the currently Recommended Corridor adjacent to the City Water Catchment Area
- Potential to act as a dam for flood waters to the west of the SR 7 Extension, resulting in the potential for increased flooding to homes to the west

3.5 Corridor 140th Avenue North (West)

This corridor places the SR 7 Extension to the west of existing 140th Avenue North. Existing 140th Avenue North is removed and access to remaining properties is made via side streets. Placing SR 7 to the

west results in impacts to the Acreage Pines Natural Area, the existing Acreage Community Park, and an FPL sub-station.

Pipe culverts are provided to maintain flow in side canals, but they could be substituted for box culverts if further drainage analysis in undertaken. Stormwater quality and pre- versus post-discharge requirements can be provided on the residual area from total take properties.

See ***Appendix A*** - sheet nos. 97 through 121 for concept plans.

3.5.1 Advantages

- Provides a connection from the current extension of SR 7, currently under construction by Palm Beach County, to Northlake Boulevard
- Is not constructed adjacent to the City of West Palm Beach Water Catchment Area

3.5.2 Disadvantages

- Potential property impacts to 156 parcels and potential relocation of 75 homes
- Substantially impacts the remainder of the community within the corridor.
- Attracts 15,500 vehicles (AADT 2040) compared to 21,600 (AADT 2040) for the currently Recommended Corridor adjacent to the City Water Catchment Area
- Potential to act as a dam for flood waters to the west of the SR 7 Extension, resulting in the potential for increased flooding to homes to the west
- The FPL sub-station will require $40 million to relocate
- Both the Acreage Pines Natural Area and Acreage Community Park are 4(f) resources and cannot be impacted unless no other reasonable alternative is available

Due to the disadvantages, particularly impacts to 4(f) resources, this alternative is considered non-viable and will not be considered further.

Photo: 1 – SR 7 Extension from Okeechobee Road to 60th Street

Photo: 2 – 60th Street between SR 7 Extension and Royal Palm Boulevard

Photo: 3 – 130th Avenue North (Typ.)

Photo: 4 – 130th Trail (Typ.)

Photo: 5 – 140th Avenue North (Typ.)

4.0 TRAFFIC ANALYSIS

The FDOT requested Kittleson & Associates, Inc. to prepare a S*R 7 Extension Alternative Corridor Evaluation Traffic Assessment* as part of the effort to evaluate the additional corridors utilizing 60th Street in combination with 130th Avenue/Trail and 140th Avenue North (see ***Appendix B***). The evaluation utilizes the 2035 Southeast Regional Planning Model (SERPM 6.5), which was also used for the PD&E study, to estimate the daily traffic demand for each of the corridor alternatives. This travel demand model takes into account the anticipated growth in population and employment, cost feasible roadway improvements, available roadway capacity and other factors, to estimate the vehicle assignments on the roadway network. To estimate the 2040 design year projection, the same area wide growth rate (per PD&E study) is applied.

By the year 2040 it is estimated that 21,600 vehicles per day would travel on the SR 7 Extension (for the alignment proposed in the PD&E study) south of Northlake Boulevard. If the extension was relocated to 60th Street/130th Avenue/Trail or 60th Street/140th Avenue North, approximately 15,500 and 15,400 vehicles would be expected to travel on the four-lane 60th Street/130th Avenue/Trail or 60th Street/140th Avenue North, respectively. Figure 2 in Appendix B illustrates the anticipated daily volumes along relevant links for the corridors evaluated. The model indicates that the remaining number of vehicles that wish to travel north-south between Okeechobee Boulevard and Northlake Boulevard would be diverted to other north-south roadways; including Seminole Pratt Whitney Road, Jog Road, the Florida's Turnpike, Haverhill Road, Military Trail, and as far east as Interstate 95. Another noteworthy finding is the trip's origins and destinations. The currently proposed alignment of SR 7 Extension appears to serve more regional trips, particularly in a southwest to northeast orientation. On the other hand, 130th Avenue North/Trail and 140th Avenue North corridors appear to serve more local trips, particularly from the southeast to northeast orientation.

5.0 ENVIRONMENTAL IMPACT

This chapter identifies the criteria and methodology used for evaluating each corridor for potential impacts associated with the social, natural, and physical environment.

5.1 Wetlands and Surface Waters

Wetland resources within the project study area were identified through a review of Geographic Information System (GIS) databases, existing PD&E Study and Environmental Assessment documents agency responses to an ETDM process for the SR 7 Extension project, and reference materials. Wetlands, as defined by 33 CFR 328.3(b), and as used by the US Army Corps of Engineers (USACE), are defined as "…those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions."

According to Palm Beach County and National Wetlands Inventory (NWI) GIS data and field reconnaissance, two publicly owned natural areas occur within the project corridor, the Acreage Pines Natural Area and Pond Cypress Natural Area. Habitats within these areas include high-quality freshwater wetlands such as marshes, cypress strands, wet prairies, and wet pine flatwoods.

For this corridor-level analysis, project wetlands were classified using National Wetlands Inventory (NWI) codes in accordance with USFWS methodology (Classification of Wetlands and Deepwater Habitats of the United States, Cowardin et al., 1979). Wetland types encountered in the project area are described as either palustrine unconsolidated bottom (PUB), palustrine emergent (PEM), palustrine forested/shrub (PSS), or riverine. Those areas mapped as riverine are existing man-made canals that are part of the ITID.

Total wetland acreage impacts, by habitat type, were calculated by overlaying the footprint of each corridor over wetland GIS data (***Figures 5-1 to 5-5***). Results are provided in ***Table 5-1***. Riverine wetlands, such as canals, are the most highly impacted wetland type under all five build corridors followed by palustrine unconsolidated bottom and palustrine emergent wetlands.

Table 5-1 Wetland Impacts by Habitat Type for each Proposed Corridor					
Wetland Habitat Type (NWI)	**130th Trail (acres)**	**130th Avenue N (acres)**	**Bridge over B Canal**	**140th Avenue N - West (acres)**	**140th Avenue N - East (acres)**
PSS	0.0	0.0	0.0	0.0	0.6
PEM	0.14	0.0	0.0	2.83	0.3
PUB	0.45	0.77	0.12	0.8	0.93
Riverine	1.63	2.78	0	0.91	0.7
Total	**2.22**	**3.55**	**0.12**	**4.54**	**2.52**

5.2 Floodplains

Potential encroachment into the 100-year base floodplain was determined by overlaying the footprint of each corridor over flood zone GIS data and measuring the area within the footprint of each corridor based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Maps (FIRMs). Based on a review of FIRM Panel Number 1201920050B (October 15, 1982 map revision), all the analyzed corridors are located within Zone B - *areas located between the 100 year and 500 year flood; or certain areas subject to 100-year flood and 500-year flooding with average depths less than one (1) foot or where the contributing drainage areas is less than one square mile; or areas protected by levees from the base flood.* Thus, there are no impacts in areas of 100-year flood or within a regulatory floodway.

5.3 Water Resources

There are several ITID canals within the project study area including the M Canal, B Canal, C Canal, E Canal, G Canal, and I Canal. The M Canal receives water from Lake Okeechobee, via the L-8 Canal, and from the City of West Palm Beach Water Catchment Area/Grassy Waters Preserve. Ultimately water within the M Canal flows to Lake Mangonia and Clear Lake, where the City of West Palm draws its drinking water. The M Canal is designated as Class I surface water under section 62-302.400(12)(b), F.A.C. A Class I waterway is defined by section 62-302.400(1), F.A.C., as a potable water supply. The proximity of the M Canal to the project is shown in ***Figures 5-1 to 5-5***.

Each of the corridors evaluated in this study are located adjacent to the M-canal for the portion of the corridor that extends along 60th Street North and each cross the M-canal. The proposed Corridors for cross over the C, E, G, I Canals and for the 130th Avenue, 130th Trail, and 140th Avenue North (East) one unnamed canal to the south of 62nd Court N. Each of these canals are interconnected with the M-canal Based on the number canal crossings, special consideration to ensure that runoff from the roadway is properly treated will be required.

Distinguishing each corridor's potential influence on the ITID Canals and the M Canal, in particular, was done by calculating the area of each canal crossing (in acres) in GIS from ground-truthed aerial photography. Results for all corridors are provided in ***Table 5-2***.

In the ETDM comments for the SR 7 Extension PD&E, the FDEP called project impacts on water quality and quantity "substantial," and noted that all activities must be designed to prevent stormwater pollutant contamination of the City's water supply.

Table 5-2 Potential Canal Impacts[1]					
Canal	**130th Trail (acres)**	**130th Avenue N (acres)**	**Bridge over B Canal (acres)**	**140th Avenue N – West (acres)**	**140th Avenue N – East (acres)**
B	0.03	1.86	33.5[2]	0.24	0.24
C	0.16	0.07	0.0	0.12	0.05
E	0.12	0.14	0.0	0.1	0.06
G	0.2	0.08	0.0	0.1	0.05
I	0.23	0.08	0.0	0.09	0.04
Unnamed	0.1	0.2	0.0	0	0.04
M	0.21	0.35	0.15	0.26	0.22
Total	**1.05**	**2.78**	**33.65**	**0.91**	**0.7**

[1]Acreage represents additional area of encroachment over the canal beyond the current area of crossing. [2]This impact is a shading impact all other impacts assumed to be culvert extensions or new culverts resulting in fill.

The waters in the study area are also listed as impaired waters in the Group 3 Lake Worth Lagoon/Palm Beach Coast Basin. A stormwater management system would be required for the road and based on correspondence from meetings with South Florida Water Management District during the PD&E Study, additional water quality treatment could be required to minimize potential secondary effects to Class I and impaired waters.

5.4 Wildlife and Habitat

The project study area is known to support species listed as endangered, threatened, or of special concern by the USFWS and the FWC. The occurrences of these species were documented during preliminary field evaluations, database searches, and literature review (***Figure 5-6***).

The existing desk top GIS and data review shows the following for the project study area:

- All of the corridors fall within 18.6 miles Core Foraging Area of federally endangered wood stork (Mycteria americana) colonies (619220 PBC SWA, 619315, Lox NC-4, and Loxahatchee 1). The colonies are located approximately 4.8 miles east (Palm Beach County Solid Waste Authority {SWA} property), and 14.6 miles, 16.0 miles, and 18.3 miles south of the project corridors. Based on comments received during the SR 7 Extension PD&E and the USFWS Draft Supplemental Habitat Management Guidelines for the Wood Stork in the South Florida Ecological Services Consultation Area (Service 2002), impacts to the wood stork foraging habitat will need to be avoided or minimized to the greatest practicable extent. Following avoidance and minimization, any lost foraging habitat resulting from the project will need to be replaced within the CFA of the affected nesting colony and should be of the same hydroperiod.

- The five proposed corridors are also located within USFWS consultation areas for the Audubon's crested caracara, red-cockaded woodpecker, Florida scrub-jay and snail kite.

- The Palm Beach County Acreage Pines Natural Area occurs within the project study area and the Pond Cypress Natural Area is adjacent to the project terminus at 110th Avenue North and 60th Street North. A bald eagle (*Haliaeetus leucocephalus*) nest that was last reported as active by

FWC in 2011, was documented approximately four miles east in the northern portion of the West Palm Beach Water Catchment Area/Grassy Waters Preserve (FWC, Eagle Nest Locator; accessed March 27, 2014).

- Review of FWC GIS databases indicated that several wading bird rookeries have been documented approximately 5 miles northwest of the study area within the J.W. Corbett Wildlife Management Area, as well as, within the SWA property to the east of the water catchment area. None of the corridors would directly affect these wading bird rookeries.

Other listed wildlife that may potentially occur within the project vicinity is listed in ***Table 5-3***. However, the study area consists primarily of developed single-family homes with limited native habitat except in the preserve areas and in the area adjacent to Northlake Boulevard. Though wading birds could forage in the canals, the wetlands within the natural areas, the wetlands along Northlake Boulevard, and small ponds on individual lots, it is anticipated that there would be minimal effects to listed species for each of the corridors evaluated in this study.

Table 5-3 Listed Wildlife Species Potentially Occurring within the Project Vicinity			
Species	**Common name**	**Status**	
		FWC	**USFWS**
Reptiles			
Alligator mississippiensis	American alligator	SSC	T(S/A)
Drymarchon corais couperi	Eastern indigo snake	T	T
Gopherus polyphemus	Gopher tortoise	T	c
Pituophis melanoleucus mugitus	Florida pine snake	SSC	NL
Birds			
Aphelocoma coerulescens	Florida scrub-jay	T	T
Mycteria Americana	Wood stork	E	E
Picoides borealis	Red-cockaded woodpecker	E	E
Polyborus plancus audubonii	Audubon's crested caracara	T	T
Rostrhamus sociabilis plumbeus	Snail kite	E	E
Haliaeetus leucocephalus[1]	Bald eagle	NL	NL
Ajaia ajaja	Roseate spoonbill	SSC	NL
Aramus guarauna	Limpkin	SSC	NL
Athene cunicularia floridana	Florida burrowing owl	SSC	NL
Grus canadensis pratensis	Florida sandhill crane	T	NL
Egretta caerulea	Little blue heron	SSC	NL
Egretta thula	Snowy egret	SSC	NL
Egretta tricolor	Tricolored heron	SSC	NL
Eudocimus albus	White ibis	SSC	NL
Sterna antillarum	Least tern	E	NL
Falco sparverius paulus	Southeastern American kestrel	T	NL
Mammals			
Podomys floridanus	Florida mouse	SSC	
Sciurus niger shermani	Sherman's fox squirrel	SSC	

E - Endangered, T - Threatened, SSC - Species of Special Concern, S/A - Similarity of Appearance, c – Candidate species, NL – Not listed

[1] Bald Eagle is no longer protection under the ESA, but is protected under the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Lacey Act and the nest is protected under FWC's management guidelines.

5.5 Cultural Resources

The potential for archaeological and historic sites to occur within the proposed corridors was evaluated by reviewing National Register of Historic Places (*National Register*) and State Historic Preservation Office (SHPO) GIS data obtained from the Florida Geographical Data Library (FGDL). The data helps identify potential sites in the vicinity of the proposed corridors and also provides information on their significance in terms of listing or eligibility for listing in the National Register. This preliminary investigation identified the M Canal (PB14880) within the project study area as a previously documented SHPO resource group. However, based on the SHPO GIS data and the EA prepared for the SR 7 PD&E project, the M Canal is not eligible for listing on the *National Register*. No other previously recorded

archaeological sites or historic resources were documented in proximity (approximately 5.0 miles) to the project area.

5.6 Section 4(f) of the Department of Transportation Act

Recreation areas and preserves within or near the project study area (***Figures 5-7***) consist of the Palm Beach County Acreage Pines Natural Area, Acreage Community Park, and Pond Cypress Natural Area. There are no direct impacts to the Pond Cypress Natural Area. Corridors 130th Avenue, 130th Trail, Bridge over Canal B and 140th Avenue North (East) all avoid impacts to these recreational areas. 140th Ave North (West) corridor directly impacts both the Acreage Pines Natural Area (2.29 acres) and the Acreage Community Park (8.65 acres). It is anticipated that each of these resources would be determined by the Federal Highway Administration (FHWA) as resources protected under Section 4(f).

5.7 Contamination

Initial data collection in the area of contamination has been completed and included a review of the following:

- Florida Geographic Data Library (FGDL)
- FDEP Storage Tank Contamination Monitoring (STCM) program and Petroleum Contamination Monitoring databases
- FDEP Contamination Locator Map
- FDEP OCULUS database
- Field reconnaissance

The majority of the study area for this analysis is single family, rural residential development.

Overall, the project study area appears to have a low risk of hazardous material/petroleum contamination involvement (***Figure 5-8***). All of the proposed corridors are located within the area (0.5 miles) of three facilities identified in the FDEP STCM program (Genesis Equipment and Services Corporation, Palm Beach County fire station #26, and ITID Pump Station #2) and one State Underground Environmental Response Act (SUPER Act) Risk Site (ITID Office).

The Genesis Equipment and Services Corporation site is located approximately 1000 feet east of 140th Avenue North, on the south side of Temple Boulevard. This facility is listed as closed and is pending petroleum cleanup. Fire station #26 and the ITID office are located on the southwest and southeast corners of the Avocado Boulevard-61st Street North intersection, respectively. Based on review of the FDEP Contamination Locator Map and associated OCULUS database files, Fire station #26 and the ITID office had no reported contaminations or waste cleanup activities. One AST was observed at the fire station and one emergency diesel generator with AST was observed at the ITID facility during site reconnaissance.

The ITID Pump Station #2 is located within the B Canal along 130th Avenue North and between 70th Place North and 71ST Place North. During field reconnaissance, vent pipes were observed protruding from a concrete enclosure purportedly housing an AST. No records of contamination were found based on review of the FDEP Contamination Locator Map and associated OCULUS Database files.

5.8 Right-of-Way Requirements and Relocation Potential

The number of potential property impacts was also tabulated for each corridor in addition to the number of acres required outside of public ownership. This data was obtained from the FDOT's review of the potential right-of-way cost and the number of parcels/relocations anticipated based on the conceptual layout of each corridor (***Table 5-4***).

Table 5-4 – Affected Parcels and Relocations

	130th Trail (acres)	130th Avenue N (acres)	Bridge over B Canal (acres)	140th Avenue N – West (acres)	140th Avenue N – East (acres)
Single Family Parcels (No.)	95	86	84	124	124
Single Family Relocations (No.)	72	54	24	75	46
Vacant Sites (No.)	19	20	24	28	28
Other (No./type)	0	1/church	0	4/park, church, school, FPL substation	1/church
Total Parcels	**114**	**107**	**108**	**156**	**153**

Source: Florida Department of Transportation

In addition to the impacts described, almost all of the streets and canals in the project study area that are not located on the 60th Street portion of the project have been created with easement rights from vacant and improved parcels. Thus, project acquisitions of existing roadways and canals are actually acquisitions from local property owners.

5.9 Socio-Cultural Effects

5.9.1 Land Use

The project study area consists primarily of rural single family development. The area consists of grid pattern of paved and unpaved roads with platted lots. Lot sizes range from 1.5 – 2.5 acres on average, though some may be slightly larger or smaller. The area could be classified as medium density (2-5 dwelling units per acre). Horses were observed scattered throughout this area and evidence of equestrian use was noted. The construction of any of these corridors could substantially disrupt the rural character of the community. As shown in the concept plans, some of the roads that normally extend to 130th Trail, 130th Avenue North or 140th Avenue North would have to dead end and traffic rerouted. Though public meetings have not been conducted, it is anticipated that the substantial disruption to the rural character of the community would be considered adverse to the residents living in the area.

5.9.2 Community Resources

There are several community resources within the Study Area. The community resources are shown on ***Figure 5-7***.

Churches

Horizon Baptist Church – Northeast corner of Orange Boulevard and 130th Avenue North – Corridor 130th Avenue North would impact this church resulting in the need to relocate. All other corridors avoid direct impacts to the church. However, secondary impacts could occur including temporary construction impacts as well as potential longer term noise impacts with the construction of Corridor 130th Trail.

Cornerstone Fellowship (Loxahatchee Baptist Mission Church listed as owner in the property appraiser records) – Northeast corner of Orange Boulevard and 140th Avenue North - Corridor 140th Avenue North (East) would directly impact this church resulting in the need to relocate. All other corridors avoid direct impacts to the church. However, secondary impacts could occur including temporary construction impacts as well as potential longer term noise impacts with the construction of Corridor 140th Avenue North (West).

Public Services

Acreage Fire Station No.26 – This facility is located north of 60th Street between 130th Trail and 140th Avenue North. None of the corridors evaluated would directly impact this facility. Secondary impacts could occur as result of construction along 60th Street, but these impacts would be temporary. It is possible that response times could be improved with any of the corridors evaluated in this study but the same would be true for the alignments evaluated in the SR 7 Extension PD&E Study. An analysis of response times though has not been performed.

FPL Substation – There is a large power transmission corridor that extends across 60th Avenue North and 140th Avenue North. Each of the alternatives would cross through this transmission corridor. Corridor Bridge over Alternative B, 130th Trail, and 140th Avenue North (east and west) would require relocation of power transmission poles.

In addition, there is a FPL substation at the southwest corner of 140th Avenue North and 72nd Court North. Corridor 140th Avenue North (West) would directly impact the substation. All other corridors avoid direct impacts to this facility. Based on FDOT's discussions with FPL, cost of relocating the substation could range from 30-40 million dollars.

Schools

Western Pines Community Middle School – This school is located southwest of the 140th Avenue North corridors. There would be no direct impact to this school. Sidewalks and bike lanes are included in the typical section providing improved pedestrian and bicycle mobility.

Golden Grove Elementary School – this school is also located southwest of the 140th Avenue North Corridors. There would be no direct impact to this school. Sidewalks and bike lanes are included in the typical section providing improved pedestrian and bicycle mobility

Acreage Pines Community Elementary School – This school is located on Orange Boulevard approximately 0.3 miles west of 140th Avenue North. There would be no direct impacts to this school. Secondary impacts noise, dust, and travel delays could occur during construction, but are expected to be temporary.

Pierce Hammock Elementary School – this school is located on Hamlin Boulevard approximately 0.24 miles west of 140th Avenue North. There would be no direct impacts to this school. Secondary impacts noise, dust, and travel delays could occur during construction, but are expected to be temporary.

The entire study area and areas adjacent to the study area are included within one or more attendance school boundaries of these schools. From a brief review of the bus routes for the schools a number of the bus stops are located on 140th Avenue North and 130th Avenue North and 130th Trail as well as most of the major cross streets in the project area. As such, temporary impacts would also occur to existing bus routes during construction. For residents living within 2 miles of the schools, bus service is not provided. Based on discussions with a local resident, a number of students walk to the various schools in and near the study area especially the middle school and Acreage Pines Community Elementary. The access for walking to school would be temporarily interrupted during construction. Sidewalks currently exist along 140th Avenue North, but are not located on 130th Trail or 130th Avenue. Sidewalks and bike lanes would be provided if the improvements were made along these corridors.

Parks and Recreation Areas

Acreage Pines Natural Area and Acreage Community Park – These park and recreation areas would be avoided by all alternatives except 140th Avenue North (West). See Section 5.6 for the impact acreages.

Coconut Park and Citrus Grove Park – Citrus Grove Park is within the study area and Coconut Park is in the vicinity. Neither of these facilities will be directly impacted.

5.9.3 Environmental Justice

Based on a review of the 2010 Census data, the study area is predominately within Census Tract 79.10 with the west side of 140th Avenue North in Census Tract 79.08. The areas along 60th Avenue are in Census Tracts 78.20, 78.21 and 78.39. The median household income ranges from $76,071 (Tract 79.10) to $84,271 (Tract 78.20) and the percent below poverty level ranges from 0.5% (Tract 78.21) to 7.0% (79.08). The population in this area is primarily non-minority with the majority of the study area (62.4%) is white, 16.5% Hispanic or Latino, 14.7 % Black/African American and 6.5% listed as other. The majority of the proposed corridor from the PD&E study is adjacent to Census Tracts 78.37 and 79.09 (Ibis Golf and Country Club and Bay Hill Estates). The median income for these areas ranges from $70,875 to $118,650. Percent of families below poverty level are 1.6% - 6.5%. The race for these two Census Tracts is predominately white (62.4% and 84.2%, respectively) with minorities making up 37.3% and 15.8%, respectively. Disproportionate impacts to low income or minority populations are not expected with any of the corridors evaluated.

5.9.4 Mobility Considerations

As described in Section 4.0, these corridors would result in a reduction in the ability to address the capacity issues associated with the project. Facilities this far west would accommodate more local trips whereas the existing alignment better serves the purpose and need providing capacity relief on a more regional level. The proposed corridors would also have an effect on local traffic patterns. The existing roads are in a grid pattern with most of the side streets connecting directly onto 140th Avenue North, 130th Avenue North and 130th Trail. For the corridors along 130th Avenue North and 130th Trail, the proposed road would require more controlled access. Thus, as shown on the Concept plans for each alternative (***Appendix A***) controlled median openings would be constructed and side street connections modified to

coincide with the medians. The main side streets – Tangerine Boulevard, Orange Boulevard, Key Lime Boulevard, Temple Boulevard, Citrus Grove Boulevard, and Hamlin Boulevard – would continue to have full median openings. However, there would be a substantial change in traffic patterns for many residents along 130th Avenue North, Bridge over Canal B and 130th Trail including the need to make U-turns.

Each of the corridors evaluated in this study as well as the current PD&E alignment would provide an enhancement in multi-modal access with the construction of bike lanes and sidewalks. None of the corridors would limit or enhance access to business or service facilities in the corridor.

5.9.5 Aesthetic Considerations

As described in Section 5.9.1, the existing land use in the project study area consists of rural, medium density residential. Many of the roads are unpaved and the lot sizes are larger with a greater percentage of open space than in a typical subdivision or gated community. Corridors along 140th Avenue North would have less of a visual effect because the road is already paved with sidewalks and though the typical section is expanded visually it is expected to blend visually with the area. However, the corridors along 130th Avenue North and 130th Trail would be visually much different especially with the change in median openings and the side street connections. The Bridge over the B Canal Corridor could affect the current viewshed the most. The bridge would be constructed 22 feet above the elevation of the side streets. It is anticipated that this would be considered an adverse effect to the local community.

In addition, there are noise sensitive sites adjacent to all corridors. The number of noise sensitive receivers (homes) within 500 feet of the corridors is as follows:

- Corridor 130th Avenue North - 382
- Corridor 130th Trail - 377
- Corridor Bridge over B Canal - 358
- Corridor 140th Avenue North (East) - 482
- Corridor 140th Avenue North (West) – 442

In addition to the homes, the churches and parks would also be considered noise sensitive receivers.

5.9.6 Community Cohesion

The study corridors would not divide neighborhoods or result in social isolation. However, for the alternatives along 130th Avenue North and Trail, it is anticipated that the conversion of a dirt road to a 4-lane divided, paved facility would introduce what could feel like a visual barrier within the community.

6.0 CONCLUSION

The FDOT conducted a PD&E Study to determine the appropriate corridor and alignment for the extension of SR 7 from Okeechobee Boulevard to Northlake Boulevard. On March 21, 2012 the FDOT conducted a Public Hearing and presented the Recommended Alternatives, located adjacent to the City of West Palm Beach Catchment Area, and the No Build Alternative. Minimal, 2.77 acres of property acquisition would be required for the Recommended Alternative. At the Public Hearing a document submitted by the City of West Palm Beach questioned the corridor identified at the Public Hearing for the Recommended Alternative. The FDOT decided to undertake this study to evaluate additional corridors

before determining the appropriate Preferred Alternative that will be submitted to the Federal Highway Administration for approval.

This report evaluated two new corridors, one along 60th Street and 130th Avenue North/Trail and the other along 60th Street and 140th Avenue. Three alignments were developed and evaluated within the 130th Avenue North/Trail corridor and two alignments within the 140th Avenue corridor. An alternative was also considered that placed two large culverts within the ITID B Canal located between 130th Avenue North and 130th Trail with the SR 7 Extension built on top of the culverts. Although this alternative did not require the acquisition of homes within the 130th Avenue/Trail corridor, its negative impact on the stormwater system associated with ITIB B Canal made this a non-viable alternative.

After careful evaluation of the five alignments developed within the two additional study corridors (i.e., 130th Avenue North/Trail and 140th Avenue), we have concluded than none are acceptable alternatives to the Recommended Alternative that was presented at the March 21, 2012 Public Hearing. The following is a brief summary of the disadvantages of each Corridor Alternative that led to this conclusion:

130th Avenue North Alignment 1 (East)

- Impacts 107 parcels and requires 54 residential relocations
- The secondary impacts to properties that remain are over a larger area than those impacted by the Recommended Alternative presented at the Public Hearing
- The SR 7 Extension will be constructed above the 100-year flood plain but will act as a dam for stormwater that inundates the residential areas to the east. This could exacerbate flooding in the area.
- Attracts only 15,500 vehicles compared to 21,600 for the Recommended Alignment presented at the Public Hearing

130th Trail Alignment 2 (West)

- Impacts 114 parcels and requires 72 residential relocations
- The secondary impacts to properties that remain are over a larger area than those impacted by the Recommended Alternative presented at the Public Hearing
- The SR 7 Extension will be constructed above the 100-year flood plain but will act as a dam for stormwater that inundates the residential areas to the west. This could exacerbate flooding in the area.
- Attracts only 15,500 vehicles compared to 21,600 for the Recommended Alignment presented at the Public Hearing.

130th Avenue North/Trail Alignment 3 (Bridge)

- Impacts 108 parcels and requires 24 residential relocations
- The secondary impacts to properties that remain are over a larger area than those impacted by the Recommended Alternative presented at the Public Hearing
- For safety reasons, SR 7 is elevated over the six existing side streets that cross the ITID B Canal. This elevates SR 7 about 22 feet above the side streets and will be a substantial impact visually to the surrounding properties
- Attracts only 15,500 vehicles compared to 21,600 for the Recommended Alignment presented at the Public Hearing

- The total cost for this corridor located within the ITID B Canal is approximately $279 million, about 3.5 times more than the other alternatives evaluated

140th Avenue North/Trail Alignment 4 (East)

- Impacts 153 parcels and requires 46 residential relocations
- The secondary impacts to properties that remain are over a larger area than those impacted by the Recommended Alternative presented at the Public Hearing
- The SR 7 Extension will be constructed above the 100-year flood plain but will act as a dam for stormwater that inundates the residential areas to the east. This could exacerbate flooding in the area.
- Attracts only 15,400 vehicles compared to 21,600 for the Recommended Alignment presented at the Public Hearing.

140th Avenue North/Trail Alignment 4 (West)

- Impacts 156 parcels and requires 75 residential relocations
- The secondary impacts to properties that remain are over a larger area than those impacted by the Recommended Alternative presented at the Public Hearing
- This alignment impacts two 4(f) resources and requires relocation of a portion of an FPL sub-station and has been determined to be non-viable.

Table 6.1 provides a summary matrix of the effects of each alternative.

TABLE 6-1 – ANALYSIS MATRIX

Evaluation Factors	No Build	Corridor 130th Avenue	Corridor 130th Trail	Corridor Bridge over B Canal	Corridor 140th Avenue (East)	Corridor 140th Avenue (West)
ENGINEERING (ROADWAY)						
Factor						
Area Wide Traffic Relief	None	Reduced capacity relief from existing PD&E corridor[1]. Less of a regional facility.	Reduced capacity relief from existing PD&E corridor[1]. Less of a regional facility	Reduced capacity relief from existing PD&E corridor[1]. Less of a regional facility	Reduced capacity relief from existing PD&E corridor[1]. Less of a regional facility	Reduced capacity relief from existing PD&E corridor[1]. Less of a regional facility
Potential R/W (acres)	0	94.7	90.3	70.6	83.8	85.1
Potential Property Impacts (No. of Parcels) / Potential Residential Relocations (No. of Relocations)[2]	0	107/54	114/72	108/24	153/46	156/75
ENVIRONMENTAL						
Factor						
Potential Direct Wetland Impacts (acres)	None	3.6	2.2	0.12	2.5	4.5
Potential Surface Water Impacts (acres)	None	2.8	1.1	33.6	0.7	0.9
Potential Floodplain impacts (acres) – Zone B	None	None	None	None	None	None
Length Adjacent to Water Catchment Area (WCA)[3] (miles)	0	0	0	0	0	0
Impacts to Pond Cypress Natural Area and WCA[3] (acres)	0	0	0	0	0	0
Potential Wildlife and Habitat Impact[3]	None	Minimal	Minimal	Minimal	Minimal	Moderate
Potential Cultural Resources[5]	None	1	1	1	1	1
Potential Section 4(f)	None	0	0	0	0	3
Potential Contamination sites (within a 0.5 mile)	None	2	3	2	3	3
Potential Noise Sensitive Receivers within 500 feet of Centerline	None	382	377	358	482	442
Potential Impacts to Community Resources [6]	None	1	0	1	1	3
Potential Social Impacts (Community Cohesion, Traffic Disruption, Visual and Aesthetic, Mobility and Noise)[7]	None	Substantial	Substantial	Substantial	Substantial	Substantial
COSTS						
Right-of-Way Cost[8]	0	$29 M	$37 M	$16 M	$29 M	$81 M
Construction/ Design/CEI Cost ($ mil)	0	$47 M	$47 M	$263 M	$49 M	$49 M
TOTAL COST ($ mil)	0	$76 M	$84 M	$279 M	$78 M	$130 M

[1] Based on traffic projects for the 2040 design year (See Appendix B) between 15,400 and 15,500 vehicles will utilize this corridor. The preferred corridor in the PD&E study would attract 21,600 vehicles.
[2] Corridor 130th Avenue and 140th Avenue (east) also results in impacts to 1 church on each alignment. Corridor 140th Avenue (west) also results in impacts to a church, parks, a school and FPL substation.
[3] The evaluated corridors do not impact these areas but there is an impact to Acreage Pines Natural Area with Corridor 140th Avenue (West)
[4] Project study area is located in the Consultation Area of 4 species and within in the Core Foraging Area of 4 wood stork colonies. However, minimal impacts to native habitat would occur.
[5] M-Canal – This resource is not listed or eligible for listing on the National Register of Historic Places.
[6] Includes impact to community resources such as parks, schools and churches.
[7] See discussion of social impacts in Section 5.9.
[8] Assumes stormwater management accommodated in the right of way or within the excess area from parcel acquisition with the exception alternatives along 140th Avenue. Parcel acquisition required for stormwater ponds. This has been accounted for in the R/W cost based on 2.5 acres per 5000 feet.