CENTRAL FLORIDA EXPRESSWAY AUTHORITY

PROJECT ENVIRONMENTAL IMPACT REPORT

PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

FEASIBILITY / PROJECT DEVELOPMENT AND ENVIRONMENT STUDY

Lake / Orange County Connector (US 27 to SR 429)

Lake and Orange Counties, Florida

CFX Project Number: 599-225

Prepared for

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

METRIC ENGINEERING

JUNE 2019

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
FINAL PROJECT ENVIRONMENTAL IMPACT REPORT

1. PROJECT DESCRIPTION AND PURPOSE AND NEED

A. Project Information

Project Name:	Lake / Orange County Connector
Project Limits:	From US 27 to SR 429
County:	Lake and Orange
ETDM No.:	N/A
CFX Project No.:	599-225
Project Manager:	William Sloup, PE

The Central Florida Expressway Authority is conducting a Project Development and Environment (PD&E) Study of the Lake/Orange County Connector, a proposed roadway connecting US 27 and State Road (SR) 429 (**Figure 1**). The purpose of the Lake/Orange County Connector PD&E Study is to develop a proposed alternative that is technically sound, environmentally sensitive, and publicly acceptable. The primary objectives of this transportation improvement project are to: expand regional system linkage and connectivity in Lake and Orange counties; enhance mobility between US 27 and SR 429; and accommodate the expected increase in traffic due to population and employment growth within the study area, while being consistent with accepted local and regional plans.

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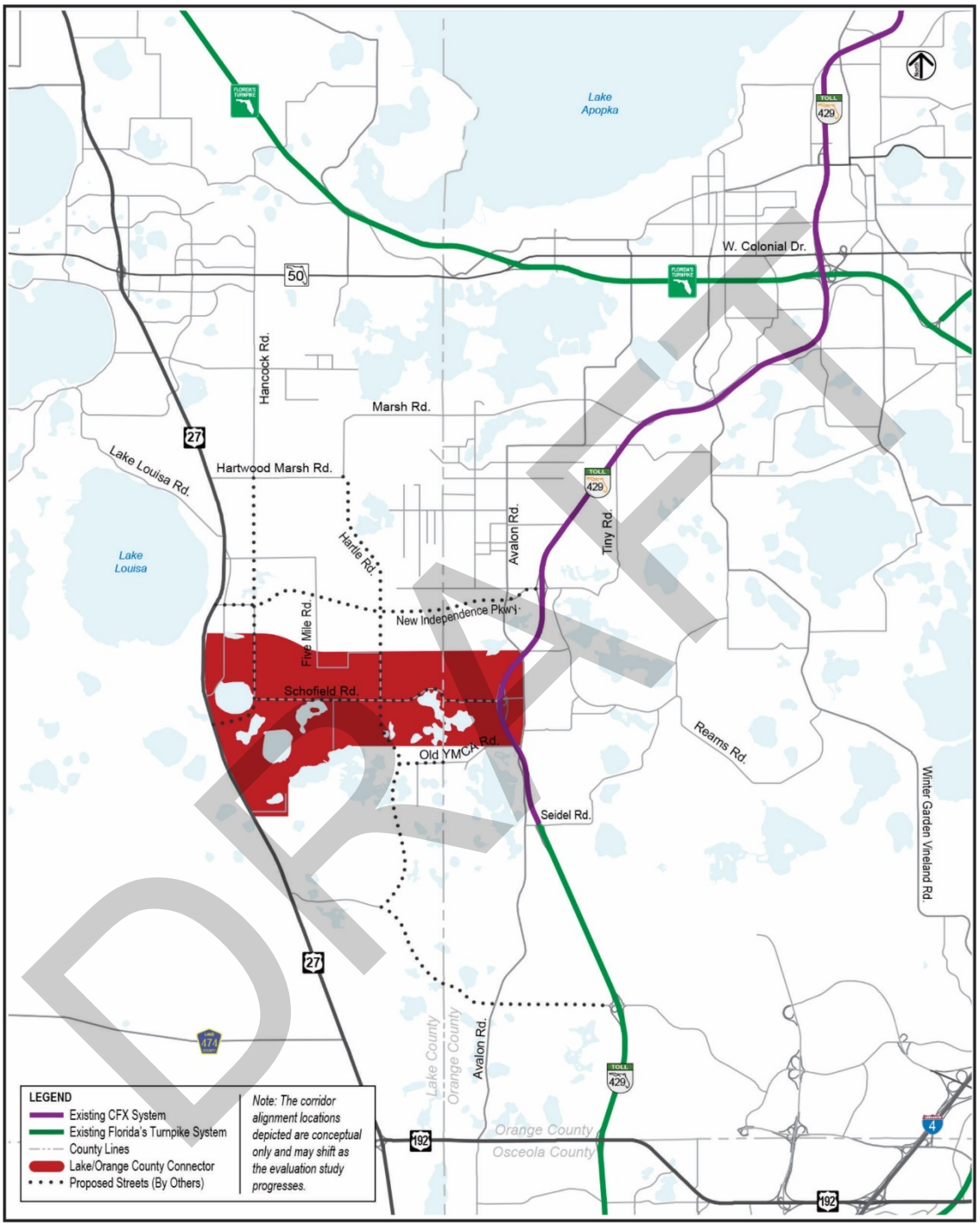


Figure 1 Project Location

B. Proposed Improvements

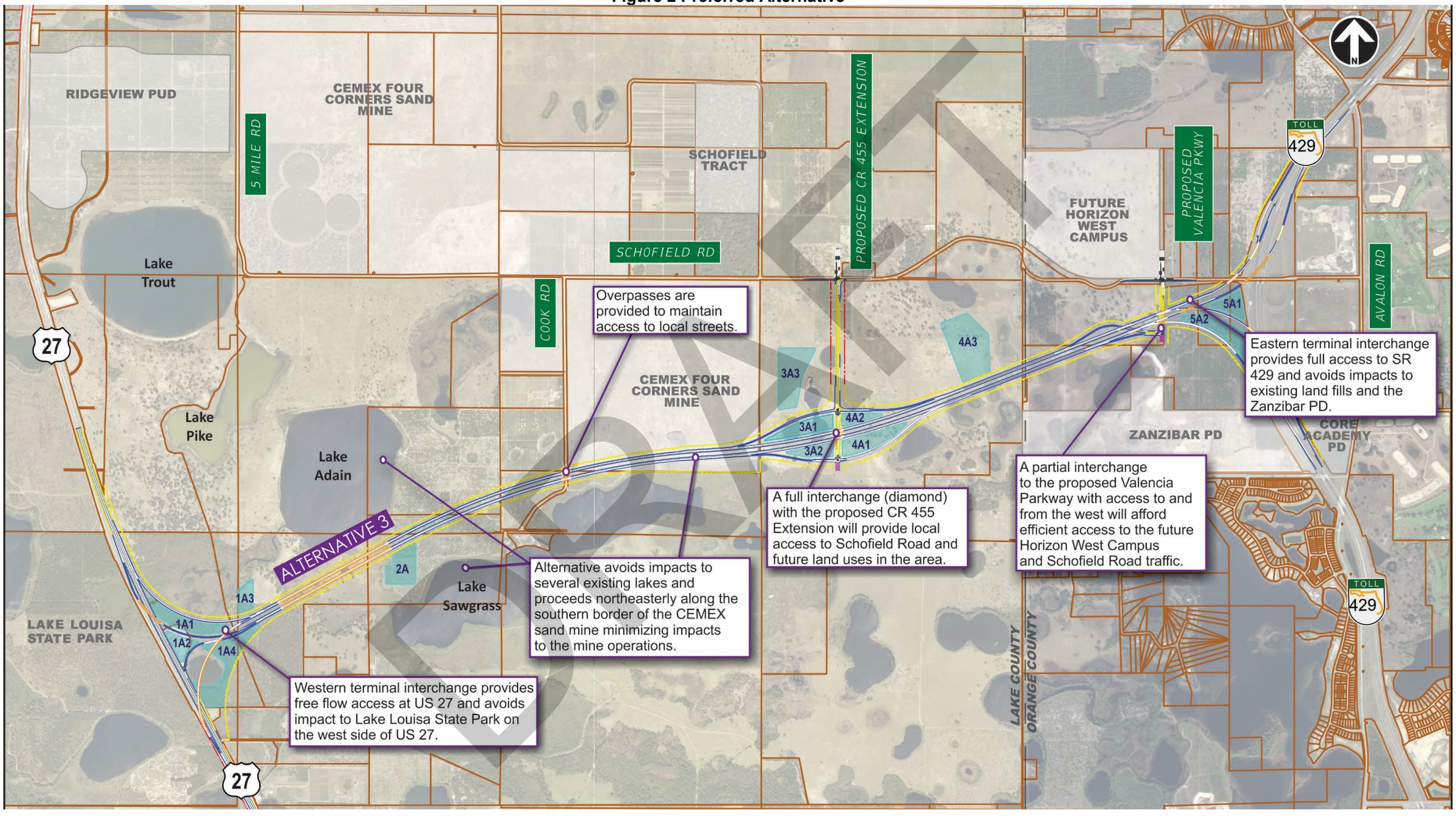
A multiphase alternative development evaluation and selection process was employed to properly assess all alternatives considered for the proposed Lake / Orange County Connector. The "No Build" alternative assumes the retainment of existing conditions and was maintained as a viable option providing an effective baseline condition by which other project alternatives were compared.

The study area was divided into three segments that reflect predominant land uses, natural resources, etc. to facilitate the analysis. The segmental breakdown approach ensures that the generated corridor alternatives are more responsive to the needs of each segment rather than only to the generalized project needs.

In general, all build alternatives were the result of combinations of the three project segments as well as various interchange configurations at each access point. After a comprehensive evaluation process, one alternative was recommended as being the most effective option (**Figures 2** and **3)**. A brief description of that alternative follows:

Segment 1, from US 27 (Begin Project) to Cook Road: Within Segment 1, the preferred alternative features a four-lane rural expressway typical section, with 330 feet of right-of-way, 12-foot travel lanes, 12-foot outside shoulders, an 88-foot divided median and a 94-foot border width. The section will feature grade separations in order to provide access to local facilities. The western interchange at US 27 provides direct connect ramps with free flow access to/from US 27. In order to avoid impacts to the abutting Lake Louisa State Park, a portion of US 27 will be slightly shifted to the east. Within this segment, the preferred alternative generally follows a northeast direction, thus avoiding impacts to Lakes Adain and Sawgrass.

Figure 2 Preferred Alternative



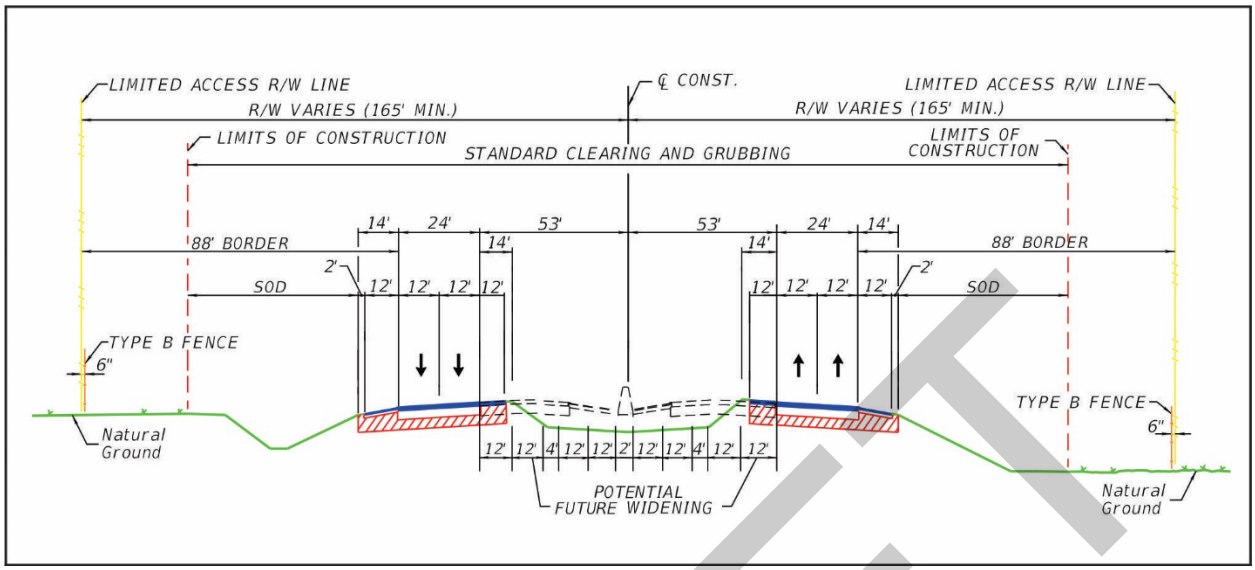


Figure 3 Preferred Alternative Typical Section

Segment 2, from Cook Road to the Lake/Orange County Line: Within this segment, the preferred alternative continues with the same typical section previously described under Segment 1. The alignment generally shifts slightly southward just east of Cook Road in order to minimize impacts to the CEMEX Four Corners Sand Mine property. A full diamond interchange will be provided at the proposed CR 455 Extension facility to provide local access.

Segment 3, from the Lake/Orange County Line to the SR 429 and Schofield Road interchange (End Project): Within Segment 3, the preferred alternative continues the same typical section described under Segment 1. A partial interchange at the proposed Valencia Parkway will provide access to and from the west. At the SR 429 and Schofield Road interchange, direct connect ramps will provide access to/from both Northbound and Southbound SR 429.

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C. Purpose and Need

The purpose of the Lake/Orange County Connector PD&E Study is to develop a proposed improvement strategy that is technically sound, environmentally sensitive and publicly acceptable. As with every PD&E Study, emphasis has been placed on the development, evaluation and documentation of detailed engineering and environmental studies including data collection, conceptual design, environmental analyses, project documentation and the preparation of a Preliminary Engineering Report (PER).

There are six project needs that serve as justification for the proposed improvements. These needs are: 1) Provide improved system connectivity/linkage; 2) Accommodate anticipated transportation demand; 3) Provide consistency with local and regional plans; 4) Support economic viability and job creation; 5) Support intermodal opportunities; and 6) Enhance evacuation and emergency service.

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2. ENVIRONMENTAL ANALYSIS

Issues/Resources	*Substantial Impacts? Yes	No	Enhance	No Inv	**Supporting Information
A. SOCIAL and ECONOMIC					
1. Social	[ ]	[✓]	[ ]	[ ]	Attachment 1.A.1
2. Economic	[ ]	[ ]	[✓]	[ ]	Attachment 1.A.2
3. Land Use Changes	[ ]	[✓]	[ ]	[ ]	Attachment 1.A.3
4. Mobility	[ ]	[ ]	[✓]	[ ]	Attachment 1.A.4
5. Aesthetic Effects	[ ]	[✓]	[ ]	[ ]	Attachment 1.A.5
6. Relocation Potential	[ ]	[✓]	[ ]	[ ]	Attachment 1.A.6
B. CULTURAL					
1. Historic Sites/District	[ ]	[✓]	[ ]	[ ]	Attachment 1.B.1
2. Archaeological Sites	[ ]	[✓]	[ ]	[ ]	Attachment 1.B.2
3. Recreation Areas	[ ]	[✓]	[ ]	[ ]	Attachment 1.B.3
C. NATURAL					
1. Wetlands and OSW	[ ]	[✓]	[ ]	[ ]	Attachment 1.C.1
2. Aquatic Preserves and Outstanding Florida Waters	[ ]	[ ]	[ ]	[✓]	Attachment 1.C.2
3. Water Quality and Stormwater	[ ]	[✓]	[ ]	[ ]	Attachment 1.C.3
4. Wild and Scenic Rivers	[ ]	[ ]	[ ]	[✓]	Not Present
5. Floodplains	[ ]	[✓]	[ ]	[ ]	Attachment 1.C.5
6. Coastal Barrier Resources	[ ]	[ ]	[ ]	[✓]	Not Present
7. Protected Species and Habitat	[ ]	[✓]	[ ]	[ ]	Attachment 1.C.7
8. Essential Fish Habitat	[ ]	[ ]	[ ]	[✓]	Not Present
D. PHYSICAL IMPACTS					
1. Highway Traffic Noise	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.1
2. Air Quality	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.2
3. Contamination	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.3
4. Utilities and Railroads	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.4
5. Construction	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.5
6. Bicycles and Pedestrians	[ ]	[✓]	[ ]	[ ]	Attachment 1.D.6
7. Navigation	[ ]	[ ]	[ ]	[✓]	Not Present

*Substantial Impacts?: Yes = Substantial Impact; No = No Substantial Impact; Enhance = Enhancement; NoInv = Issue absent, no involvement
** Supporting information is documented in the referenced attachments

3. ANTICIPATED PERMITS

☑ Individual Dredge and Fill Permit- USACE
☐ Nationwide Permit- USACE
☐ Bridge Permit- USCG
☑ Environmental Resource Permit (SJRWMD and/or SFWMD) and potential dewatering Permits (SFWMD and/or SJRWMD)

4. ENGINEERING ANALYSIS

A multi-phase alternative development, evaluation and selection process was employed to properly assess all alternatives considered for the proposed improvements. Three different phases comprised the alternative selection process for the proposed project:

Phase 1 - Initial Evaluation

No Build Alternative

The only existing major east-west transportation facility (Schofield Road) within the project confines is inadequate not only in terms of future projected capacity needs but, more importantly, it would not provide the desirable redundancy in evacuation and emergency response potential nor the required additional regional connectivity between US 27 and SR 429 on the east. Adoption of this alternative would not solve many of the existing needs associated with the goals of this project. However, the "No Build" alternative was maintained as a viable option providing an effective baseline condition by which other project alternatives will be compared throughout the project alternative selection process.

Build Alternatives

Build Alternative options need to consider various major components of providing a new, multilane facility which include the selection of a preferred corridor in conjunction with the most efficient typical section and alignment options as well as access point locations and configurations. The following sections provide a detailed discussion concerning other critical system components of the Build Alternative options.

Phase 2 - Preliminary Conceptual Expressway Evaluation

This phase entailed the generation and evaluation of alternatives for the provision of an effective freeway connection within the previously selected corridor. Alternatives were generated for two (2) distinct system components: typical section options for the Lake/Orange County Connector mainline and interchange configuration options.

Segmental Determination and Generation

The first step in the evaluation of the mainline options was to divide the project into distinct segments. The segmental breakdown methodology ensures that alternatives are more responsive to the needs of each segment rather than only to the generalized project's needs. Each segment has rather unique characteristics as well as potential differences in environmental, engineering and socio-economic features. In general terms, for example, Segment 1 (from the begin project to Cook Road) features several lakes, the project's western terminal interchange at US 27 and Lake Louisa State Park abutting the segment on the west side of US 27. Segment 2 (from Cook Road to the Lake/Orange County line) is rural in nature and features the proposed CEMEX Four Corners Sand Mine, higher expected development growth and the proposed future extension of CR 455. Segment 3 (from the Lake/Orange County to the study's eastern terminus at the SR 429/Schofield Road interchange) features the proposed Horizon West Town Center, Valencia College Horizon West Campus and the future Valencia Parkway Extension.

Expressway Extension Typical Sections

This task entailed the generation and preliminary evaluation of various mainline typical section options. In view of the fact that traffic projections indicate a relatively modest traffic demand, the potential use of two-lane options were also initially considered. However, the two-lane option would not fulfill the intended project needs, thus it was eliminated from further consideration.

Conceptual Interchange Configuration Evaluation

The main objective of this task was to screen out all non-viable (inferior) interchange configurations and thus identify at an early stage what configuration(s) would work best at each interchange location. Several additional interchange options were conceptually developed and preliminarily evaluated for fatal flaws from a traffic and geometric standpoint. Several options were eliminated due to serious operational and/or constructability concerns.

The interchange locations have been analyzed based on the traffic models with areas of higher congestion and demand to alleviate the traffic from the neighboring existing/future local streets. The proposed interchange locations are as follows:

- Segment 1: US 27/Lake/Orange County Connector Interchange (Begin Project)
- Segment 2: Lake/Orange County Connector/Proposed CR 455 Extension Interchange
- Segment 3: Lake/Orange County Connector/SR 429 Interchange (End Project)

Phase 3 - Horizontal Alignment Considerations

In order to evaluate different alternative roadway concepts, it is also necessary to take into account their horizontal alignment or relative position within the chosen corridor. Four different alignment alternatives were developed and evaluated. In summary according to the results obtained, Alternatives 3 and 4 are generally superior than Alternatives 1 and 2. The results of the evaluation show that Alternatives 3 and 4 are generally similar and the only difference between the two corridors occurs within Segment 1, thus additional factors must be considered for the selection of the preferred alternative. Alternative 3 received positive feedback from the public and major stakeholders. The Alternative 4 interchange with US 27 is slightly closer to the Lake Louisa State Park cabins and main entrance while the Alternative 3 interchange with US 27 is farther south. In addition, although much of the development in the area has not yet been approved, according to project stakeholders Alternative 3 would be most beneficial for future/planned developments in the area. Based on the feedback received from the public and major stakeholders during public meetings as well as during the Environmental and Project

Advisory Group meetings (see Section 8 for more details), Alternative 3 was determined to be generally superior to Alternative 4 and is thus selected as the preferred alternative.

5. COMMITMENTS

CFX commitments are listed below.

- To minimize adverse impacts to the eastern indigo snake, during construction, CFX will adhere to the USFWS *Standard Protection Measures for the Eastern Indigo Snake*.
- CFX will mitigate for any unavoidable impacts to wood stork SFH at an approved mitigation bank and in accordance with the USFWS *Wood Stork Effect Determination Key* (U.S. Army Corps of Engineers and USFWS 2008).
- A preconstruction gopher tortoise burrow survey and any resultant permitting will be conducted in accordance with Florida Fish and Wildlife Conservation Commission (FWC) protocols.
- CFX will mitigate for unavoidable impact to wetlands consistent with state and Federal standards.
- CFX will continue to coordinate with stakeholders and impacted property owners during final design regarding pond locations and potential design modifications.
- CFX will continue to coordinate with Lake and Orange Counties regarding final location and design of the future CR 455 and Valencia Parkway.
- CFX will coordinate with FDOT in final design regarding joint use ponds for impacts to the existing FDOT stormwater ponds located along US 27 in the project study area.
- CFX will maintain the proposed alignment as south as possible to minimize impacts to the future mining operations of the CEMEX Four Corners Sand Mine.
- CFX will maintain previous access agreements for private property owners that were put in place when the SR 429 was constructed.

6. CFX SELECTED ALTERNATIVE

A brief description of the preferred alternative follows:

Segment 1, from US 27 (Begin Project) to Cook Road: Within Segment 1, the preferred alternative features a four-lane rural expressway typical section, with 330 feet of right-of-way, 12-foot travel lanes, 12-foot outside shoulders, an 88-foot divided median and a 94-foot border width. The section will feature grade separations in order to provide access to local facilities. The western interchange at US 27 provides direct connect ramps with free flow access to/from US 27. In order to avoid impacts to the abutting Lake Louisa State Park, a portion of US 27 will be slightly shifted to the east. Within this segment, the preferred alternative generally follows a northeast direction, thus avoiding impacts to lakes Adain and Sawgrass.

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7. ☐ APPROVED FOR PUBLIC AVAILABILITY

_____ ____/____/____
Environmental or Project Development Manager or Administrator **Date**

8. PUBLIC INVOLVEMENT

A public hearing will be held on June 27, 2019. This draft document is publicly available and comments can be submitted to Glenn M. Pressimone, P.E. until July 11, 2019.

Contact Information:

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9. APPROVAL OF FINAL DOCUMENT

This project has been developed without regard to race, color, national origin, age, sex, religion, disability, or family status.

The final PEIR reflects consideration of the PD&E Study and the public hearing.

_____ ____/____/____
CFX Designee **Date**

10. SUPPORTING INFORMATION

For Supporting Information for each issue/resource please see Attachment 1, Environmental Analysis, as well as the Preliminary Engineering Report.

ATTACHMENT 1: ENVIRONMENTAL ANALYSIS

A. SOCIAL and ECONOMIC

1. Social

The 2010 Demographic Profile Data from the US Census Bureau shows the majority of the populations in Orange County (63.6 percent) and Lake County (82 percent) are identified as white. Major minority populations include African Americans, Asians, or "Multiple" and "Other" races. Demographics are similar in the study area, though the study area appears to contain proportionately fewer populations identified as "non-white" than does Orange County. There is limited potential for environmental justice concerns or impacts to underserved populations, community cohesion, or safety/emergency response due to the proposed project.

Community facilities and services in or adjacent to the study area include the Orange County National Golf Center and Lodge and Lake Louisa State Park. Lake Louisa is a navigable water body open to the public for recreational activity. There are no proposed direct impacts to the Orange County National Golf Center and Lodge or to Lake Louisa State Park. Social impacts were avoided and minimized as much as possible during the corridor and alternatives evaluations. This project has been developed without regard to race, color, national origin, age, sex, religion, disability, or family status. **No substantial** impacts to the social environment are anticipated.

2. Economic

Agricultural nurseries, a golf course, planned residential developments, Lake Louisa State Park, and other businesses are located within or adjacent to the study area. The Four Corners Sand Mine and additional residential developments are approved or planned within the study area. The proposed project is anticipated to provide economic enhancements by creating additional transportation infrastructure that links employment and residential areas. For this reason, the project is anticipated to **enhance** economic conditions.

3. Land Use Changes

Much of the study area is undeveloped or agricultural with scattered water bodies and wetlands and some limited residential areas. Existing development is predominantly along US 27 and State Road (SR) 429. There are residential areas immediately south of the study area, near US 27 and SR 429, as well as to the east of SR 429, around Orange County National Golf Center and Lodge. Lake Louisa State Park is located west of US 27 and provides recreational opportunities to the public. The Four Corners Sand Mine is a mining operation proposed within the study area. Multiple developments are also planned within the study area and the surrounding region that include residential and commercial land uses. A conservation parcel known as the Schofield Tract is located immediately north of Schofield Road, two miles west of SR 429, and was purchased using Florida Forever Funds. Lake Louisa State Park, west of SR 27, was also purchased using Florida Forever Funds. Direct impacts to Lake Louisa State Park and the Schofield Tract were avoided and impacts to the Four Corners Sand Mine were minimized. Extensive coordination has occurred with project stakeholders including private land owners and developers in the area to ensure that the project provides opportunities and minimizes impacts for future development. Additionally, a Project Advisory Group was formed and convened three times and input obtained at the meetings was taken into consideration for development of the project alternatives. For these reasons, **no substantial** land use impacts are anticipated as a result of the proposed project.

4. Mobility

The project would provide an expressway option in the east-west direction linking US 27 and SR 429. This would accommodate additional anticipated development under the Wellness Way Area Plan in southern Lake County and the Horizon West Special Planning Area (including a future state college) in southwest Orange County. For these reasons, the project would **enhance** mobility.

5. Aesthetic Effects

Aesthetic impacts in and around developed portions of the study area, including Schofield Road, Five Mile Road, US 27, and SR 429, are anticipated to be minimal because

roadways are already present. Other portions of the study area are predominantly in a natural or agricultural setting, with citrus orchards, cattle pastures, small woodlands, and wetlands. Greater potential exists for aesthetic impacts to occur in these undeveloped areas; however, those impacts are anticipated to be minimal as well. Future planned development, including the Four Corners Sand Mine, residential developments, and utility infrastructure, are anticipated to further impact the undeveloped portions of the study area. For these reasons, **no substantial** impacts are anticipated as a result of the proposed project.

6. Relocation Potential

There are no anticipated residential or business relocations anticipated as part of this project. Temporary impacts to access for some adjacent properties are anticipated during construction and access will be maintained as much as possible. For these reasons, **no involvement** is anticipated with relocation.

B. CULTURAL

A Phase I Cultural Resource Assessment Survey (CRAS) was prepared by SEARCH Inc. for the proposed roadway alignment and included surveys for historic and archaeological sites. In addition to a CRAS of the proposed roadway improvements, a CRAS Addendum was also completed for 15 preferred pond locations.

1. Historic Sites/Districts

The architectural survey resulted in the identification and evaluation of eight historic resources within the Lake/Orange County Connector Area of Potential Effect, including one previously recorded resource and seven newly recorded resources. The previously recorded resource represents one historic structure (8LA02814). The newly recorded resources include one linear resource (8LA04779), one object (8OR11171), two structures (8LA04795 and 8LA04796), and three resource groups (8LA04717, 8LA04727, and 8LA04731). Additionally, during field reviews one previously recorded resource (8LA02129) was found to have been demolished.

Based on the results of the current survey for the roadway and ponds and due to a lack of historic associations, architectural significance, and/or historic integrity, all eight historic resources identified within the Lake/Orange Connector Area of Potential Effect are likely ineligible for the National Register of Historic Places (NRHP), individually or as contributing resources to a historic district. For these reasons, **no substantial** impacts to historic sites/districts are anticipated.

2. Archaeological Sites

An archaeological survey was conducted and involved 470 shovel tests within the existing and proposed right-of-way for the roadway and ponds. There were seven shovel tests that were positive for containing cultural materials. A total of 88 shovel tests were excavated within the two ponds requiring survey, all of which were negative for cultural material. As a result of the archaeological survey, two newly documented prehistoric archaeological sites, Killer Cattle (8LA04797) and Citrus Slope (8LA04829), and two archaeological occurrences (AO 1 and AO 2) were identified. Nine previously recorded archaeological sites are within or intersect the Lake/Orange County Connector Area of Potential Effect, including 8LA02204-8LA02207, 8LA02806-8LA02809 and 8LA02869. All of these sites except 8LA02869 are at least partially within the existing or proposed right-of-way. The State Historic Preservation Officer (SHPO) determined that all of the previously recorded archaeological sites are ineligible for listing in the National Register of Historic Places (NRHP).

No features, midden, or other clearly discernable intact deposits were documented during the archaeological investigation. Both of the newly recorded archaeological sites (8LA04797 and 8LA04829) exhibited a low density of cultural materials and a lack of diagnostic artifacts. These sites do not appear to contain archaeological deposits that have the potential to yield further information important in the prehistory or history of the region. In the opinion of SEARCH, 8LA04797 and 8LA04829 are ineligible for the NRHP. Archaeological occurrences are categorically ineligible for the NRHP. No further work is recommended for 8LA04797, 8LA04829, AO 1, or AO 2. For these reasons, **no substantial** impacts to archaeological sites are anticipated.

3. Recreation Areas

The project would not directly impact any public parks or publicly owned lands intended for recreational use. Lake Louisa State Park is located immediately west of US 27, by the western project terminus; however, this project will not encroach into the park and no substantial noise impacts are anticipated. For these reasons, **no substantial** impacts to recreational resources are anticipated.

C. NATURAL ENVIRONMENT

1. Wetlands and Other Surface Waters

As part of the documentation for this PD&E study, a Natural Resources Evaluation was developed that documents wetlands and Others Surface Waters as well as potential impacts from the project. Wetlands in the project area, as mapped by St. Johns River Water Management District (SJRWMD), include Wetland Forested Mixed (FLUCCS 6300; three locations within the project area), Freshwater Marsh (FLUCCS 6410; nine locations within the project area), and Mixed Scrub-Shrub Wetland (FLUCCS 6460; one location in project area). Lakes (FLUCCS 5200) and Surface Water Collection Basins (FLUCCS 8370) also occur in the project area and are considered Other Surface Waters (OSW). Wetlands and OSW in the project area as mapped by the U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) include Freshwater Emergent Wetlands, Freshwater Forested/Shrub Wetlands, Freshwater Ponds, and Lakes. Wetlands were assessed in the field and found to generally agree with SJRWMD and USFWS mapping.

It is anticipated that the preferred alternative would result in 64 acres of wetland impacts, 49 acres of impacts to wood stork (*Mycteria americana*) Suitable Foraging Habitat (SFH), and 71 acres of impacts to Other Surface Waters (OSW). There are four ponds proposed as part of this project which are located outside the footprint of the preferred alternative. Impacts by FLUCCS code for the preferred alternative and each of the four ponds are listed in **Table 1**.

Impacts to wetlands were avoided and minimized throughout the development of alternatives and there was no practicable alternative to construction in wetlands. Wetland impacts which will result from the construction of this project will be mitigated pursuant to Section 373.4137, F.S., to satisfy all mitigation requirements of Part IV of Chapter 373, F.S., and 33 U.S.C. §1344. The potential wetland impacts from the project occur within the service areas of the Collany, Reedy Creek, Southport Ranch, Shingle Creek, Hammock Lakes, and the Lake Louisa and Green Swamp Mitigation Banks. Because wetland impacts were avoided, minimized and will be mitigated, the recommended alternative is expected to result in **no substantial** short-term or long-term adverse impacts to wetlands or OSW.

Table 1 Direct Impacts by FLUCCS codes

Land Cover	FLUCCS CODE	Preferred Alternative (acres)	Pond 1A6 (acres)	Pond 2A (acres)	Pond 3A3 (acres)	Pond 4A3 (acres)
Improved Pastures	2110	131	-	-	15	21
Field Crops	2150	19	-	-	-	-
Citrus Groves	2210	65	-	9	-	-
Horse Farms	2510	2	-	-	-	-
Herbaceous (Dry Prairie)	3100	16	3	-	-	-
Upland Hardwood Forests	4200	3	-	-	-	-
Xeric Oak	4210	11	-	-	-	-
Pine Plantation	4410	35	2	-	-	-
Lakes	5200	18	-	-	-	-
Hydric Pine Flatwoods	6250	0.05	-	-	-	-
Wetland Forested Mixed	6300	10	-	-	-	-
Freshwater Marshes	6410	50	0.13	-	-	-
Mixed Scrub-Shrub Wetland	6460	4	-	-	-	-
Solid Waste Disposal	8350	0.54	-	-	-	-
Surface Water Collection Basins	8370	53	-	-	-	-
	TOTAL	**417.59**	**5.13**	**9**	**15**	**21**

2. Aquatic Preserves and Outstanding Florida Waters

The effects of the project on Aquatic Preserves and Outstanding Florida Waters (OFW) were considered as required under *Part 2, Chapter 19* of the FDOT PD&E Manual. The project area does not include any aquatic preserves. All wetlands and surface waters within state parks are considered OFW. Lake Louisa State Park is immediately west of US 27 but outside the project footprint. There would be no direct impacts to Lake Louisa State Park and no discharge of stormwater into the park, so **no involvement** with Aquatic Preserves or OFW are anticipated.

3. Water Quality and Stormwater

A Water Quality Impact Evaluation Checklist was developed as part of this project. The project is a non-Federal action; therefore, concurrence from the US Environmental Protection Agency is not required according to the Safe Drinking Water Act. A Location Hydraulic Report (LHR) was completed for this project to identify existing cross-drains throughout the project corridor. A Pond Siting Report (PSR) was completed to identify and discuss the stormwater management. These reports utilized the National Flood Insurance Program maps to determine highway location encroachments and evaluated risks associated with the implementation of the project, impacts on natural and beneficial floodplain values, support of incompatible floodplain development, and measures to minimize floodplain impacts. Local, state, and federal water resources and floodplain management agencies were consulted to determine that the proposed project is consistent with existing floodplain management programs. The PSR and LHR were under development at the time of this PEIR. This section will be updated with the Final PEIR.

The Preferred Alternative's stormwater management facilities have been developed in accordance with the water quality and quantity requirements of the St. Johns River Water Management District (SJRWMD) and South Florida Water Management District (SFWMD). Further coordination between the Central Florida Expressway Authority (CFX) and SJRWMD/SFWMD will continue during the upcoming final design, environmental permitting and construction phases. The Preferred Alternative and stormwater ponds are expected to result in **no substantial** impacts to water quality or stormwater.

4. Wild and Scenic Rivers

The proposed project would have **no involvement** with wild and scenic rivers.

5. Floodplains

The PSR and LHR were under development at the time of this PEIR. This section will be updated with the Final PEIR.

Modifications to existing drainage structures included in this project (consisting of extending cross drains along US 27) will result in an insignificant change in their capacity to carry floodwater. These modifications will cause minimal increases in flood heights and flood limits which will not result in any significant adverse impacts on the natural and beneficial floodplain values or any significant change in flood risks or damage. There will be no significant change in the potential for interruption or termination of emergency service or emergency evacuation routes as the result of modifications to existing drainage structures. Throughout the corridor, along the mainline alignment, cross drains have been designed to maintain hydraulic connectivity in areas in which the proposed roadway severs the floodplain. Therefore, it has been determined that this encroachment is not significant.

6. Coastal Barrier Resources

The proposed project would have **no involvement** with coastal barrier resources.

7. Protected Species and Habitat

A Natural Resources Evaluation was developed as part of this PD&E study and documented the potential impacts to protected species and their habitats. No adverse impacts to listed species are anticipated from the proposed project. Federally listed species which the project May Affect but is Not Likely to Adversely Affect include the American alligator, Audubon's crested caracara, Britton's beargrass, bluetail mole skink, Carter's mustard, clasping warea, eastern diamondback rattlesnake, eastern indigo snake, Everglade snail kite, Lewton's polygala, papery whitlow-wort, pygmy fringe tree, sand skink, scrub blazingstar, scrub plum, striped newt, and wood stork. A determination

of No Effect was made for Florida bonamia, Florida scrub-jay, red-cockaded woodpecker, scrub buckwheat, scrub lupine, and short-leaved rosemary.

No Adverse Effects are Anticipated for the state listed burrowing owl, Florida pine snake, Florida sandhill crane, gopher tortoise, little blue heron, southeastern American kestrel, or tri-colored heron.

It is anticipated that the preferred alternative and stormwater ponds would result in 64 acres of wetland impacts, 71 acres of OSW impacts, 49 acres of impacts to wood stork SFH, and 332 acres of impacts to vegetated uplands (**Table 2**). The four proposed stormwater ponds that are outside the preferred alternative alignment (1A6, 2A, 3A3, 4A3) would result in 0.13 acre of impacts to wetlands and wood stork SFH as well as 50 acres of impacts to vegetated uplands. Direct impacts by FLUCCS code are shown in **Table 1**. The locations of unavoidable wetland and SFH impacts from the project occur within the service areas of the Collany, Reedy Creek, Southport Ranch, Shingle Creek, Hammock Lakes and the Lake Louisa and Green Swamp Mitigation Banks.

Table 2 Summary of Direct Impacts

Alternative	Wetlands (acres)	OSW (acres)	Wood Stork SFH (acres)	Vegetated Uplands (acres)
No Build	-	-	-	-
Preferred Alternative	64	71	49	282
Stormwater Ponds 1A6, 2A, 3A3, 4A3	0.13	-	0.13	50

To avoid and minimize impacts during construction, CFX will adhere to the most recent version of the *USFWS Standard Protection Measures for the Eastern Indigo Snake*. CFX will mitigate for any unavoidable impacts to wood stork SFH at an approved mitigation bank and in accordance with the USFWS *Wood Stork Effect Determination Key* (U.S. Army Corps of Engineers and USFWS 2008). CFX will conduct a 100 percent gopher tortoise burrow survey in accordance with Florida Fish and Wildlife Conservation

Commission rules and guidelines. For these reasons, **no substantial** impacts to protected species or their habitats are anticipated.

8. Essential Fish Habitat

The proposed project would have **no involvement** with Essential Fish Habitat.

D. PHYSICAL IMPACTS

1. Highway Traffic Noise

A traffic Noise Study Report was performed following Code of Federal Regulations Title 23 Part 772 (23 CFR 772), *Procedures for Abatement of Highway Traffic Noise and Construction Noise*, using methodology established by the FDOT in the *Project Development and Environment Manual*, Part 2, Chapter 18 (dated January 14, 2019). The purpose of the noise study was to identify noise-sensitive sites that would be impacted with the proposed project and evaluate abatement measures at impacted noise-sensitive sites.

Traffic noise levels were predicted for the noise-sensitive locations along the project corridor for the 2018 (existing) conditions, and for the 2045 (Design Year) No-build Alternative and Preferred Alternative. Approximately 51 residences, single-family homes, were identified as being sensitive to traffic noise along the proposed Lake/Orange County Connector within the limits of this project. Also, two non-residential special-use noise-sensitive sites, including a community pool and trail were identified along the project corridor. Design Year traffic noise levels at nearby residences are predicted to range from 52.3 to 69.8 dB(A). The Preferred Alternative noise levels at special land use sites are predicted to range from 52.3 dB(A) at the Zanzibar pool area to 56.7 dB(A) at the Zanzibar Wingspread Loop Trail during the Design Year. Noise impacts are predicted to occur at three residences. The three impacted residences are located in the Zanzibar residential community located just west of the eastbound Lake/Orange County Connector ramp to southbound SR 429. No other noise-sensitive sites within the project study area are predicted to experience traffic noise levels equal to or exceeding the Noise Abatement

Criteria (NAC). None of the noise-sensitive sites are expected to experience a substantial noise level increase [i.e., greater than 15.0 dB(A) over existing levels] with the Preferred Alternative. For these reasons, **no substantial** impacts from noise are anticipated.

Noise barriers were considered for the three Zanzibar residences where Design Year traffic noise levels were predicted to equal or exceed the NAC. Since traffic management and alignment modifications were determined to not be viable abatement measures, noise barriers were determined to be the only potentially viable abatement measure that could be implemented for this project.

Five noise barrier concepts were evaluated for the three impacted noise-sensitive sites. Although the five noise barrier concepts met the noise reduction criterion of 7.0 dB(A), noise abatement was not considered cost reasonable ($42,000 per benefited receptor) in accordance with the policy used by CFX.

Based on the noise analysis performed to date, there are no apparent solutions available to mitigate the noise impacts at these locations. Therefore, noise barriers are not recommended for further consideration or construction.

2. Air Quality

This project is not expected to create adverse impacts on air quality because the project area is in attainment for all National Ambient Air Quality Standards (NAAQS) and because the project is expected to improve the Level of Service (LOS) on connecting roadways and reduce delay and congestion on all facilities within the study area. Construction activities may cause short-term air quality impacts in the form of dust from earthwork and unpaved roads. These impacts will be minimized by adherence to applicable state regulations and to the FDOT latest edition of *Standard Specifications for Road and Bridge Construction*. For these reasons, **no substantial** impacts to air quality are anticipated as a result of the proposed project.

3. Contamination

A Level I Contamination Screening Evaluation Report (CSER) has been prepared in accordance with the FDOT's *PD&E Manual, Part 2, Chapter 20* (*Contamination Impacts*), updated January 14, 2019. The report identifies and evaluates known or potential contamination issues, presents recommendations concerning these issues, and discusses possible impacts to the proposed project in relation to the proposed project alternatives.

Information was obtained for the CSER from Florida Department of Environmental Protection and US Environmental Protection Agency databases as well as field investigations and reviews of historic and aerial photographs. A total of nine sites (**Table 3**) were identified with potential contamination concerns. After evaluation, one of those sites was assigned a risk rating of None, five sites were assigned a risk rating of Medium, and three sites were assigned a risk rating of High. All Medium- and High-Risk sites are recommended for additional assessment, including soil and groundwater testing, if right-of-way acquisition or subsurface work (including construction of any structures or stormwater ponds) is proposed on or adjacent to them. Because of the database and field reviews as well as the planned additional assessment of Medium- and High-Risk sites, **no substantial** contamination impacts are anticipated.

4. Utilities and Railroads

Utility companies with known facilities within the proposed project limits were contacted via email informing them of the PD&E Study and requested that they mark one set of the base plans enclosed with their principal existing and proposed facilities. They were also requested to submit any general concerns and/or comments that would be useful in the evaluation process. See **Table 4** for a list of utilities present within the project limits.

The majority of the existing/proposed overhead and buried utilities run along US 27 and Schofield Road. As a result of the construction of the preferred alternative, most utilities located within the major interchanges where reconstruction may occur (such as US 27

and SR 429/Schofield Road) will be impacted and will need to be relocated. The preferred alternative also encroaches onto the Duke Energy Transmission Lines/Poles that are located on the east of US 27. Due to this encroachment, there are approximately 36 transmission poles that are being impacted and may require relocation. There are also impacts to the AT&T Transmission buried cable conduit which runs along US 27 from South Bradshaw Road to approximately 0.5 mile south of Frank Jarrell Road. CFX will continue to coordinate the utility owners during Final Design and Construction.

Table 3 Potentially Contaminated Sites

Site #	Facility Name	Address	Facility ID (FDEP/RCRA)	Databases	Concern	Owner	Contaminated Parcel Location Relative to Project Corridor	Risk Rating
1	Lake Louisa State Park	7305 US 27	FLR000148049	RCRA	Hazardous Waste (small quantity generator)	State of Florida	Adjacent	None
2	Arnold Groves Storage Tank	15625 Frank Jerrell Road	9100695	STCM	Petroleum	JJJR Properties LLC	560 feet south	Medium
3	Sun Ridge Four MGMT Inc.	6535 Cook Road	9803085	STCM	Petroleum	Catherine E Ross Groves Inc	1,200 feet north	Medium
4	Island Lake Storage Tank- Lake County Grove	Cook Road	9700467	STCM	Petroleum	Lake Louisa LLC	Co-located	Medium
5	Lake County Grove Storage Tank	732 Schofield Road	9201649	STCM	Petroleum	Davidson Harvest LLC et al	Co-located	Medium
6	Schofield Corporation of Orlando/545 Landfill	8050 Avalon Road	25291 / 9801128 / FLD984216531	FDEP Solid Waste / STCM / RCRA	Landfill	Schofield Corporation of Orlando Inc	Co-located	High
7	West Orange Environmental Resources C&D	7706 Avalon Road	85524 / 25291	FDEP Solid Waste	Landfill	Oce West Orange LLC	Co-located	High
8	Braun Properties	8815 Avalon Road	FLD984216531	RCRA	Farm Chemicals	Undetermined	Co-located	High
9	Former Agricultural Areas	Throughout Project Area	None	None	Farm Chemicals	Multiple	Co-located	Medium

Table 4 Existing Utilities

Utility	Utility Type
AT&T Corp/PEA	Telephone
AT&T Florida	Telephone
Centurylink	Telephone
Centurylink	Telephone
Duke Energy	Electric
Duke Energy	Electric
Lake Utilities Services, Inc.	Water
Level 3 Communications, LLC	Fiber Optic
Orange County Utilities	Water
Orlando Telephone Company, Inc.	Fiber and Telephone
Smart City Solutions	
Bright House Networks Charter	Internet, Cable TV, Telephone
Sumter Electric Cooperative	Electric
Verizon Business	Telephone
Water Conserv II	Water

5. Construction

Construction activities for the proposed project will have short-term air, noise, vibration, water quality, traffic flow, and visual impacts for those residents and travelers within the immediate vicinity of the project. The air quality effect will be temporary and will primarily be in the form of emissions from diesel-powered construction equipment and dust from embankment and haul road areas. Air pollution associated with the creation of airborne particles will be effectively controlled through the use of watering or the application of other controlled materials in accordance with the FDOT's latest edition of *Standard Specifications for Road and Bridge Construction*.

During construction of the project, there is the potential for noise impacts to be substantially greater than those resulting from normal traffic operations because heavy equipment is typically used to build roadways. In addition, construction activities may result in vibration impacts. Therefore, early identification of potential noise/vibration-

sensitive sites along the project corridor is important in minimizing noise and vibration impacts. The project corridor does include residential, institutional, and commercial areas that may be affected by noise and vibration associated with construction activities. Construction noise and vibration impacts to these sites will be minimized by adherence to the controls listed in the latest edition of the FDOT's *Standard Specifications for Road and Bridge Construction*. Adherence to local construction noise and/or construction vibration ordinances by the contractor will also be required, where applicable.

Water quality effects resulting from erosion and sedimentation will be controlled in accordance with the FDOT's latest edition of *Standard Specifications for Road and Bridge Construction* and through the use of Best Management Practices (BMPs). Maintenance of traffic and sequence of construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used to provide notice of access to local businesses and other pertinent information to the traveling public. All provisions of the FDOT's latest edition of *Standard Specifications for Road and Bridge Construction* will be followed, so **no substantial** impacts from construction are anticipated as a result of the proposed project.

6. Bicycles and Pedestrians

Lake / Orange County Connector is proposed as a limited access facility; therefore, no bicycle nor pedestrian facility will be provided along the Lake / Orange County Connector. The proposed project will have no impacts on any existing bicycle or pedestrian facility. For these reasons, **no substantial** impacts to bicycles and pedestrians are anticipated as a result of the proposed project.

7. Navigation

There are no navigable waterways within the project corridor. As a result, the project is expected to have **no involvement** with navigation.