CENTRAL FLORIDA EXPRESSWAY AUTHORITY

DRAFT STATE ENVIRONMENTAL IMPACT REPORT

PROJECT DEVELOPMENT AND ENVIRONMENT STUDY
SR 408 East Extension
From SR 50 to SR 50/SR 520 Intersection
Orange County, Florida

CFX Project Number: 408-254

Prepared for

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

METRIC ENGINEERING

APRIL 2018

CENTRAL FLORIDA EXPRESSWAY AUTHORITY
FINAL STATE ENVIRONMENTAL IMPACT REPORT

1. PROJECT DESCRIPTION AND PURPOSE AND NEED

A. Project Information

Project Name:	SR 408 East Extension
Project Limits:	from SR 50 to SR 50/SR 520 Intersection
County:	Orange
ETDM No.:	N/A
CFX Project No.:	408-254
Project Manager:	Will Sloup, P.E.

The Central Florida Expressway Authority (CFX) is presently evaluating the potential to extend State Road (SR) 408 from its current eastern terminus at SR 50, locally known as East Colonial Drive, to the vicinity of the SR 50 and SR 520 interchange in northeastern Orange County (**Figure 1**). This new, approximately seven-mile, eastern extension of SR 408 would constitute the first stage towards providing an east-west high-speed corridor with future connectivity to I-95, as well as enhance safety and increase capacity and mobility for the region and CFX's customers.

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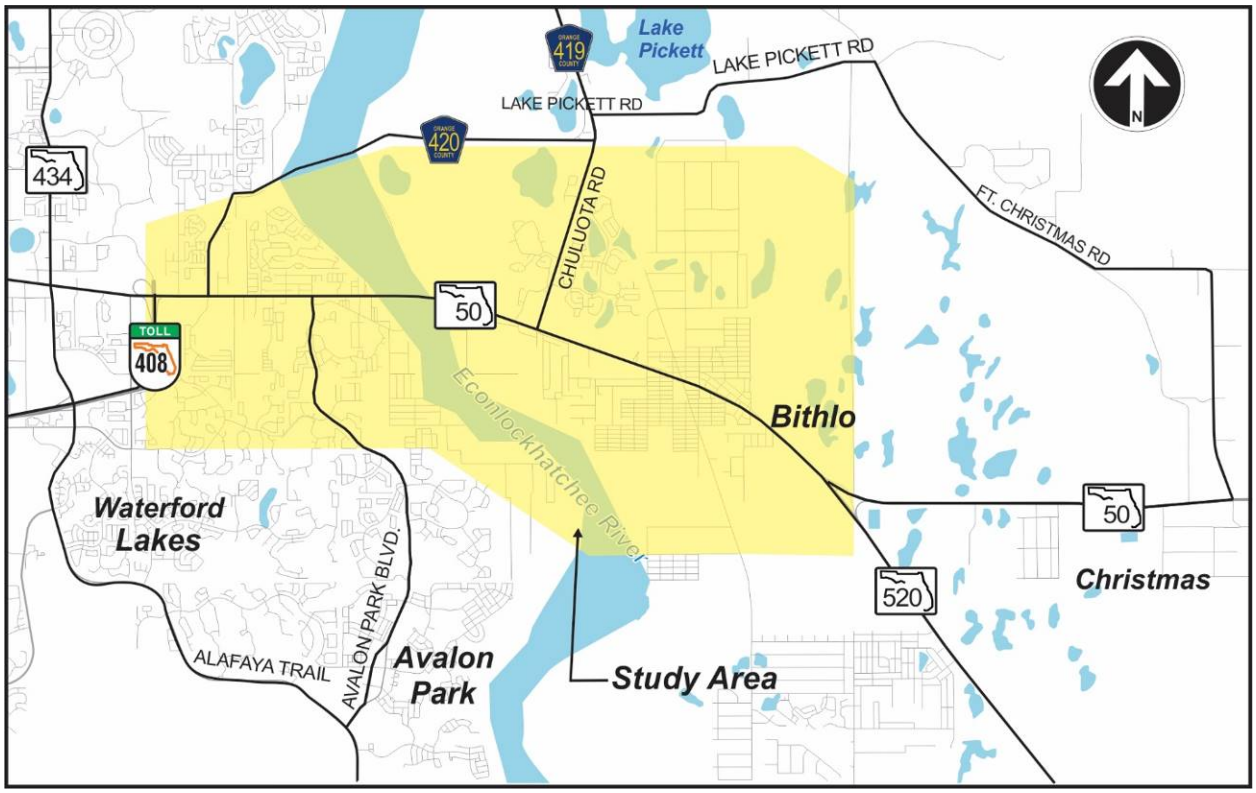

Figure 1 Project Location

B. Proposed Improvements

The project was divided into three segments and improvements were proposed for the roadway, bridges, and drainage within each segment. Segment 1 includes the study area west of Avalon Park Boulevard. Segment 2 is from Avalon Park Boulevard to County Road 419 (Chuluota Road). Segment 3 stretches from Chuluota Road to the eastern project terminus. The proposed improvements are shown on **Figure 2** and described below.

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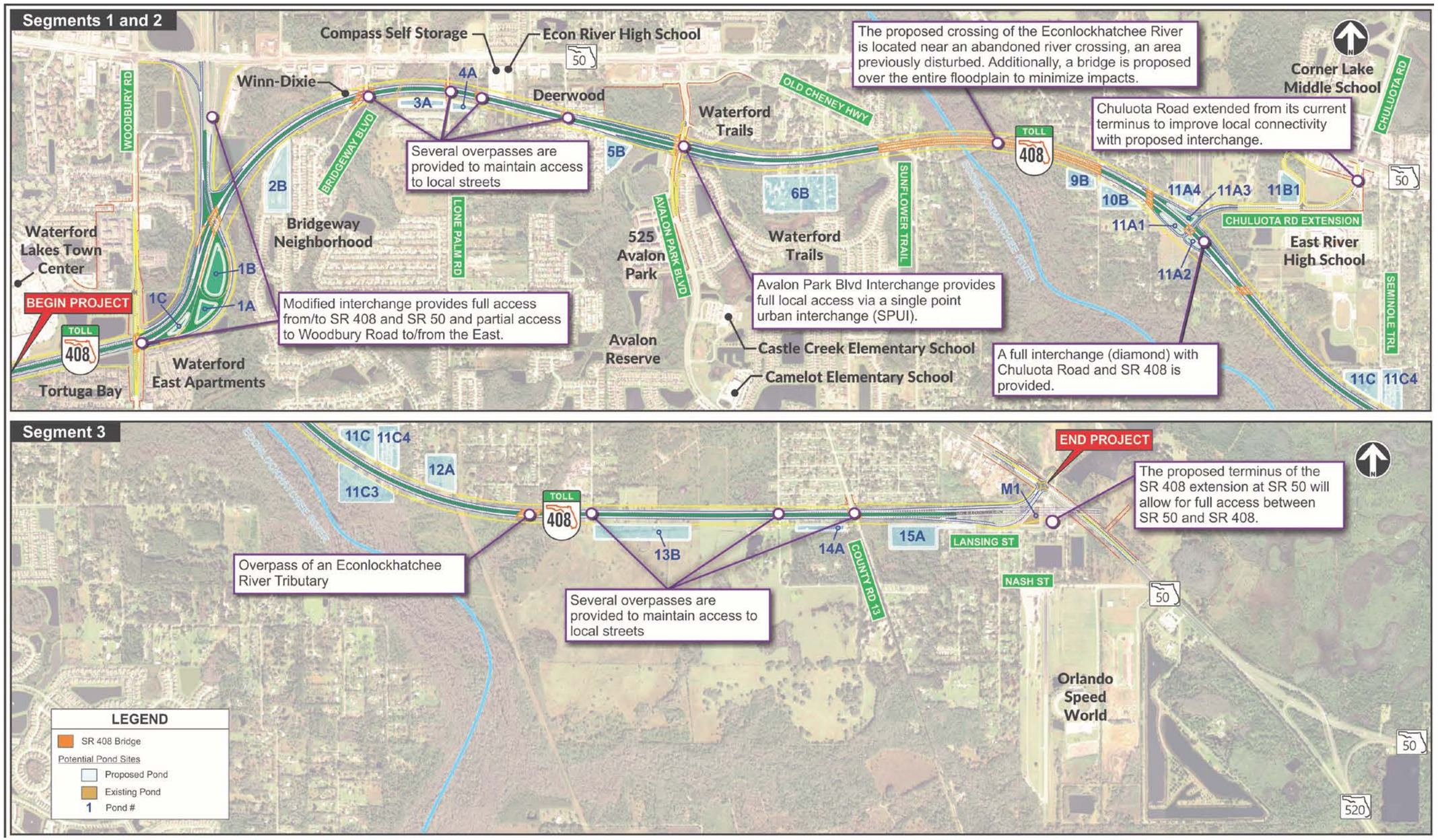

Figure 2 Recommended Alternative

Roadway

The proposed typical sections for the SR 408 mainline for the eastern extension are shown in **Figure 3** and are as follows:

- Segment 1: Within Segment 1, the recommended alternative features a 4-lane rural expressway typical section with 12-foot travel lanes, 12-foot outside shoulders, a 64-foot divided median, and a 94-foot border width. The section will feature several grade separations in order to provide access to local streets.
- Segment 2: Within segment 2, the recommended alternative continues the same typical section previously described under Segment 1.
- Segment 3: Within Segment 3, the recommended alternative continues the same typical section previously described under Segments 1 and 2.

The SR 408 Eastern Extension typical section has been designed to accommodate a possible 6-lane expansion if needed in the future. At the SR 408 and SR 50 interchange north of SR 520 the recommended alternative proposes to modify SR 50 by adding left turn lanes at the proposed intersection with SR 408. At Woodbury Road the recommended alternative features a four-lane urban typical section with 12-foot travel lanes, 6-foot sidewalks, and a 22-foot divided raised median. The section will feature a new grade separation over the SR 408 mainline.

Bridges

A total of 14 new bridges are proposed within Segment 1. Six of those bridges have long spans and are recommended to be composed of steel plate or steel tub girder type superstructures. The remaining 8 bridges have medium length spans and are recommended to be composed of prestressed concrete Florida I beam type superstructures. Unless otherwise noted, bridge superstructures are recommended to be supported by pile bent piers.

A total of 8 new bridges are proposed within Segment 2. Four of the proposed bridges are single span bridges composed of prestressed concrete Florida I beam type

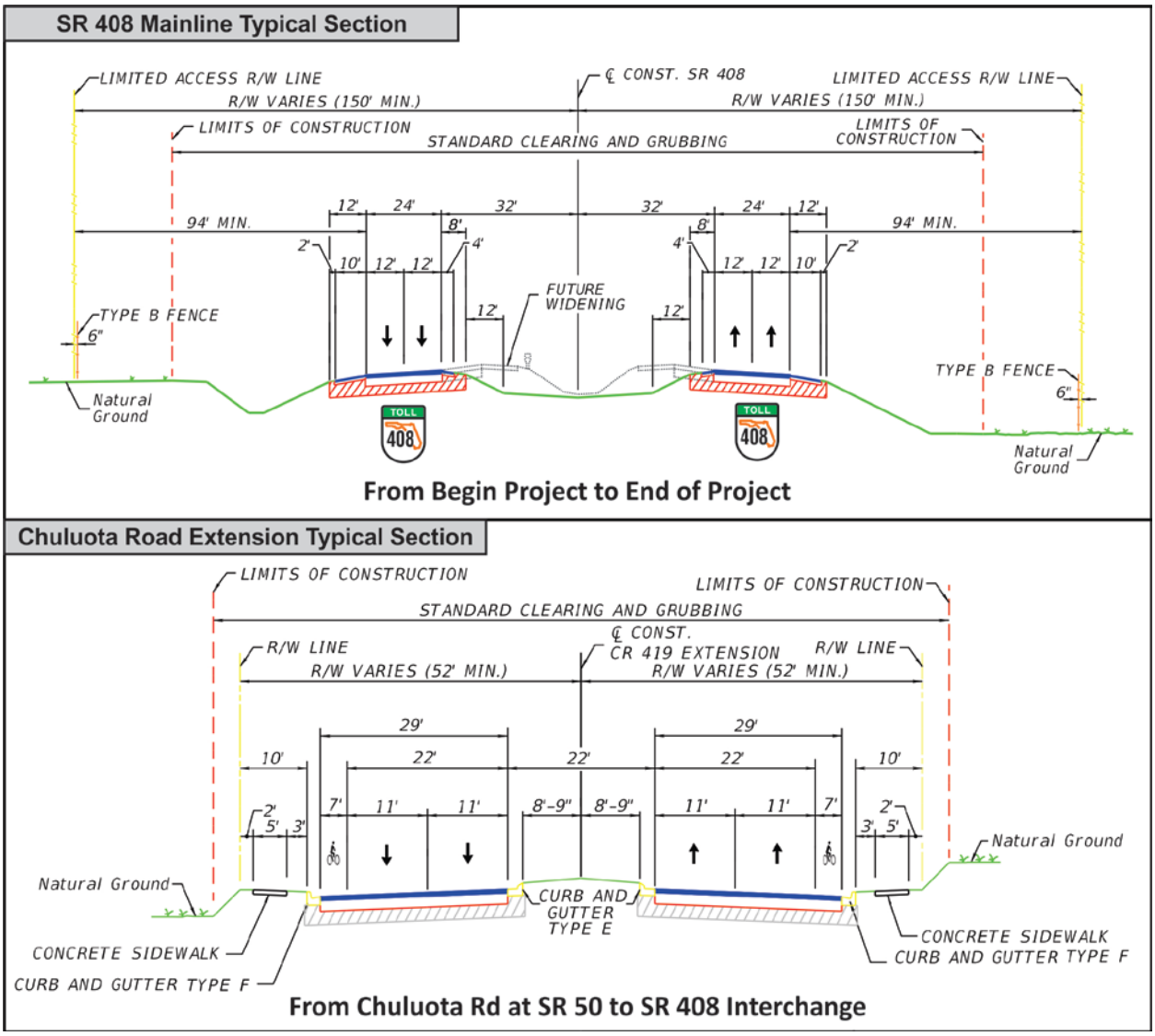

Figure 3 Recommended Alternative Typical Sections

superstructures founded on pile end bents. The bridges over the Econlockhatchee River are two-lane structures carrying east-bound and west-bound mainline SR 408 traffic over the Econlockhatchee River. The east-bound and west-bound bridges have an approximate required overall length of 3,835 and 3,808 feet, respectively, and each have 30 spans. The first two spans are designed to span over the intersection of Perdido Drive and Old Cheney Highway and the remaining spans are designed to go over the wetlands of the Econlockhatchee River.

A total of 12 new bridges are proposed within Segment 3. With the exception of two bridges, all of the bridges are single span bridges composed of prestressed concrete Florida I beam-type superstructures founded on pile end bents. The other two are span bridges over a tributary of the Econlockhatchee River and are recommended to be constructed of prestressed concrete Florida I beams. For all segments possible foundation types for the bridges in this segment include 18-inch and 24-inch square prestressed concrete piles, steel H-piles, steel pipe piles, and drilled shafts.

Drainage

The Pond Siting Report prepared for this project divided the corridor into fifteen drainage basins and identified recommended pond sites for each (**Table 1, Figure 2**). Scuppers may be used to collect runoff on the proposed bridges when the spread cannot be contained within the shoulder. Shoulder gutter inlets will be used to collect runoff from segments of the bridge with Mechanically Stabilized Earth (MSE) walls and at high-fill areas. Offsite runoff will be conveyed through proposed cross drains and bypass swales. A bypass swale will be required to provide flow connectivity from CD-5 to CD-6. The existing drainage system at Deerwood Mobile Home Park will be severed by the proposed project. Avalon and University Meadows neighborhoods will not be impacted by the proposed project.

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Table 1 Recommended Ponds

Segment	Basin	Pond Name	Preliminary Pond Site (ac)	Remarks
1	Basin 1	Pond 1A	1.98	Existing CFX Pond expanded
		Pond 1B	5.06	Existing CFX Pond expanded
		Pond 1C	1.10	CFX Property
	Basin 2	Pond 2B	10.23	Orange County School Board
	Basin 3-4	Pond 3A	3.06	Private Property
		Pond 4A	1.80	Private Property
	Basin 5	Pond 5B	4.10	Private Property
	Basin 6-8	Pond 6B	19.73	Private Property
2	Basin 9-10	Pond 9B	3.38	Private Property
		Pond 10B	5.00	Private Property
	Basin 11A	Pond 11A1	0.92	Private Property
		Pond 11A2	0.45	Private Property
		Pond 11A3	1.16	Private Property
		Pond 11A4	3.24	Private Property
	Basin 11B	Pond 11B1	3.98	FDOT Property
3	Basin 11C	Pond 11C	5.70	Private Property
		Pond 11C3	8.85	Private Property
		Pond 11C4	5.50	Private Property
	Basin 12	Pond 12A	6.88	Private Property
	Basin 13	Pond 13B	10.45	Private Property
	Basin 14	Pond 14A	2.57	Private Property
	Basin 15	Pond 15A	8.92	Private Property

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C. Purpose and Need

The purpose of the proposed SR 408 Eastern Extension is to provide an east-west high-speed corridor with future connectivity to I-95, enhance safety, and increase capacity and mobility for the region and CFX's customers. There are five existing/projected corridor needs that serve as the main justification for the proposed improvements. These needs are: 1) providing *additional capacity* in the west-east direction to mitigate or eliminate capacity deficiencies; 2) providing *additional emergency evacuation service* to supplement the limited number of evacuation routes in this area of Central Florida; 3) providing *improved transportation connectivity/linkage* necessitated by the continued population growth and land use development reflected in various local comprehensive plans; 4) providing *transit support*; and 5) providing *planning consistency*.

D. Project Planning Consistency

All proposed improvements are consistent with the CFX 2040 Master Plan, CFX Five-Year Work Plan, and MetroPlan Orlando 2040 Long Range Transportation Plan (**Table 2**). CFX programmed funding is shown in **Table 3**.

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Table 2 Local Transportation Plans

Plan	Improvement
CFX 2040 Master Plan	SR 408 Eastern Extension PD&E Study
CFX 2018-2022 Five-Year Work Plan	Project Development & Environmental Study – Funded 2017-2018 15% Line & Grade – Design Funded 2019-2021
MetroPlan Orlando 2040 Long Range Transportation Plan	Central Florida Expressway Authority (formerly Orlando-Orange County Expressway Authority) - Unfunded Needs SR 408 Eastern Extension Challenger Pkwy SR 520 New 4 Lane Expressway

Table 3 CFX Programmed Funding

PHASE	FISCAL YEAR	AMOUNT
PD&E	**2017-2018**	**$1,000,000**
Line and Grade	**2019-2020**	**$1,675,000**
Line and Grade	**2020-2021**	**$1,664,000**
2040 CFX Master Plan	**2040**	**$630,000,000-$800,000,000**

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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/Quantity	[ ]	[✓]	[ ]	[ ]	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 (including special basin criteria and Riparian Habitat Protection Zone requirements) and potential dewatering permit
☑ FDEP Authorization to use State-Owned Submerged Lands; FDEP NPDES permit

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 arterial facility (SR 50) 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 to I-95 on the east. Adoption of the “No Build” 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 could 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 includes 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 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 extension of SR 408 within the previously selected corridor. Alternatives were generated for two distinct system components: typical section options for the SR 408 Extension mainline and interchange configuration options.

Segmental Determination and Generation

The first step in the evaluation was to divide the project area 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 Avalon Park Boulevard) is generally more urbanized and exhibits a higher traffic demand than Segments 2 and 3. Segment 2 (Avalon Park Boulevard to Chuluota Road is more rural in nature and generally serves a lower density area with higher expected development growth while Segment 3 (from Chuluota Road to the eastern project terminus) has mostly industrial and low density residential development with a lower traffic demand.

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 significant drop in the traffic demand within Segment 3, the potential use of 2-lane options were also initially considered within that segment. However, the two-lane option would not fulfill the intended project needs, thus it was eliminated from further consideration.

Next, four distinct 4-lane typical sections were developed covering both urban and rural options.

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.

When evaluating the potential interchanges along the SR 408 Eastern Extension Corridor one parameter that was considered was that the future interchanges should be at least 600 feet away from the existing/future SR 50 in order to minimize potential detrimental traffic operational interfaces. Interchange locations have been analyzed based on the traffic models with areas of higher congestion and demand to alleviate the traffic from the neighboring local streets. The proposed interchange locations are as follows:

- Segment 1: The existing SR 50/Challenger Parkway and Avalon Park Boulevard
- Segment 2: Chuluota Road Extension
- Segment 3: End terminus at SR 50

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. The alignment through Segment 1 strives to avoid, or at least minimize, most detrimental impacts resulting from the proposed facility. It is important to note that the ample geometric requirements associated with high design speed facilities (e.g. – smooth long curves, etc.) limits the ability to entirely avoid some impacts. In addition, the location of the proposed interchanges requires that certain minimum distances to major arterial facilities (e.g. – SR 50) be maintained to ensure appropriate vehicular flow associated with proper merging, weaving and queueing distances.

Segments 2 and 3 are less dense in terms of urban development. The alignment through these areas strives to maintain a delicate balance to possibly avoid urban encroachment while minimizing impacts to the existing environmental conservation easements.

Closer inspection of the selected corridor revealed that a slight deviation to the south from just west of Avalon Park Boulevard to just east of the Econlockhatchee River would be beneficial. This deviation is necessary in order to reduce residential impacts and provide sufficient spacing between SR 50 and the SR 408 extension interchange at Avalon Park Boulevard. The results of a preliminary traffic analysis determined that a new interchange at Avalon Park Boulevard needs to be located more than 600 feet south of SR 50 in order to provide adequate operations at both the new 408 interchanges and the SR 50/Avalon Park Boulevard intersection.

5. COMMITMENTS

This section will be completed for the Final State Environmental Impact Report .

6. CFX SELECTED ALTERNATIVE

The No Build alternative was considered but it was determined that the No Build alternative would not address the project needs. After a comprehensive evaluation process, one build alternative was selected as being the most effective option within each of the project's segments. This alternative was selected by CFX and is illustrated on **Figure 2**. In general, the selected alternative was the result of the generation of various typical sections and horizontal and vertical alignment combinations along the three project segments as well as various interchange configurations at each access point.

The CFX selected alternative features a four-lane divided facility with a 60-foot median width, 12-foot lanes, and a design speed of 65 to 70 mph within a 300-foot right-of-way. **Figure 3** shows the typical sections of the CFX selected alternative. A partial interchange will be provided at Woodbury Road and full interchanges will be provided at SR 50/408, Avalon Park Boulevard, CR 419/Chuluota Road Extension and at the eastern project terminus with SR 50/SR 520.

Based on constructability and financial considerations, the project has been divided into three distinct construction segments. Construction Segment 1 is from the begin project

to Avalon Park Boulevard. This segment includes the construction of the SR 408 eastern extension from the begin project (just west of Woodbury Road) to Avalon Park Boulevard. It would thus provide an initial effective connection through the study area with the highest traffic demand. Construction Segment 2 is from Avalon Park Boulevard to Chuluota Road. This segment would extend SR 408 from Avalon Park Boulevard to Chuluota Road. It would provide a new Econlockhatchee River crossing, an interchange at Chuluota Road and the proposed Chuluota Road Extension connection to SR 50. Lastly, Construction Segment 3 from Chuluota Road to the eastern project terminus including the terminal interchange at SR 50.

7. ☐ APPROVED FOR PUBLIC AVAILABILITY

_____ ____/____/____

Environmental or Project Development Manager or Administrator **Date**

8. PUBLIC INVOLVEMENT

A public hearing will be held on April 26, 2018. This draft document is publicly available and comment can be submitted to CFX until May 7, 2018. Comments can be addressed to:

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Director of Engineering
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Orlando, FL 32807
(o) 407.690.5321
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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 SEIR 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

According to data from the 2013 American Community Survey, the majority of the population in Orange County, 65.19%, is identified as white. Major minority populations include African Americans, Asians, or “Multiple” or “Other” races. Racial composition is roughly similar in the study area, though the study area appears to contain proportionately fewer populations identified as “non-white” than does Orange County. No significant impacts to underserved populations, environmental justice concerns, community cohesion, or safety/emergency response are anticipated as a result of the proposed project.

Community Facilities and Services in the study area include seven community centers, six group care facilities (day cares), two fire stations, three community health/medical facilities, 23 mobile home parks, two schools, and six religious centers. The majority of the community facilities are located in the western portion of the study area or near Bithlo. Social impacts were avoided and minimized as much as possible during the corridor and alternatives evaluations. **No substantial** impacts to the social environment are anticipated.

2. Economic

Commercial and residential land uses in the study area are generally concentrated west of the Econlockhatchee River, as well as at the intersection of SR 50 and SR 419, and around Bithlo. The proposed project would provide a new corridor and would help link local areas, such as Waterford Lakes, Avalon Park, Central Florida Research Park, and Woodland Lakes, with larger population centers like the City of Orlando and the City of Titusville. For this reason, the project is anticipated to **enhance** economic conditions.

3. Land Use Changes

Within the study area, areas west of the Econlockhatchee River can be generally characterized as having higher density development that is expected to increase in the

future. Areas east of the Econlockhatchee River are less urbanized with pockets of development along SR 50 and around CR 419 and Bithlo. The project would convert various land use types, including residential, commercial, and green space, to transportation use and those impacts were minimized as much as possible. The proposed project is a limited access facility and is consistent the CFX 2040 Master Plan, CFX Five-Year Work Plan, and MetroPlan Orlando 2040 Long Range Transportation Plan. For these reasons, **no substantial** land use impacts are anticipated as a result of the proposed project.

4. Mobility

SR 408 is a limited access toll facility that originates at Florida's Turnpike near Gotha and extends eastward, crossing Interstate 4 in Orlando and terminating east of Orlando at the intersection with SR 50. In addition to Interstate 4, SR 408 intersects north-south travel corridors near the project area at SR 436, SR 551, and SR 417 near Azalea Park, and at SR 434 near University Park.

SR 50 is the sole east-west facility within the SR 408 East Extension study area and is a principal arterial that traverses the entire state from Hernando County to Brevard County. SR 50 in the area of the proposed project connects eastern Orange County, including the City of Orlando, with Brevard County to the east and is one of several east-west Hurricane evacuation routes in peninsular Florida from the Atlantic coast. SR 50 connects with SR 520 at the project end point. SR 50 continues east and intersects Interstate 95 southwest of Titusville before terminating at South Washington Avenue. SR 520 continues southeast from the project end point, intersects Interstate 95, and continues west past Cocoa, across Merritt Island, and terminates as North Atlantic Avenue near Cape Canaveral and the Atlantic coast. The proposed project would provide an east-west facility in addition to SR 50 and would **enhance** mobility.

5. Aesthetic Effects

Aesthetic impacts in and around developed portions of the study area are anticipated to be minimal because roadways and urbanization are already present. Portions of the study

area, particularly the Econlockhatchee River and areas eastward, are predominantly in a natural state and contain woodlands, pastures, and wetlands. Greater potential exists for aesthetic impacts in these undeveloped areas. However, they are no further than one half mile from an existing major roadway (SR 50), so **no substantial** impacts are anticipated as a result of the proposed project.

6. Relocation Potential

Commercial and residential properties occur throughout the project area and CFX is developing a precise estimate of residential and commercial relocations as part of this project. The proposed project would impact multiple residential properties, particularly west of the Econlockhatchee River, and in the Bithlo community. The majority of the impacts to commercial properties are along or near SR 50. Temporary impacts to access for some adjacent properties are anticipated during construction and access will be maintained as much as possible. Multiple replacement residential and commercial properties are available in the vicinity of the proposed project; therefore, **no substantial** impacts are anticipated.

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.

1. Historic Sites/Districts

The architectural survey resulted in the identification and evaluation of 107 historic resources within the SR 408 Eastern Extension Area of Potential Effects (APE), including three previously recorded historic resources and 104 newly recorded resources. The previously recorded resources include three historic buildings, all of which were determined ineligible for listing in the National Register of Historic Places (NRHP) by the State Historic Preservation Officer (SHPO) on December 28, 2015. The newly recorded historic resources include 101 historic structures, two resource groups, and one linear

resource. Based on the results of the current survey, it is the opinion of SEARCH that all of the historic resources within the SR 408 Eastern Extension APE lack the historical significance and architectural or engineering distinction necessary for listing in the NRHP and are therefore ineligible. No existing or potential historic districts were identified. No further work is recommended. For these reasons, **no substantial** impacts to historic sites/districts are anticipated.

2. Archaeological Sites

The archaeological surveys included the excavation of 88 shovel tests and the documentation of areas that could not be shovel tested due to extensive disturbance, urban development, buried utilities, drainage improvements, and/or wetland and pond areas within the corridor. No archaeological sites or occurrences were identified within the right-of-way, and no further archaeological survey is recommended. For these reasons, **no substantial** impacts to archaeological sites are anticipated.

3. Recreation Areas

The project would not impact any public parks or publicly owned lands intended for recreational use. The proposed project would bridge the Econlockhatchee River, which is used for recreation and is considered Sovereign Submerged Lands (SSL). However, this river crossing would not be within the bounds of, or adjacent to, any park or publicly owned recreation area. An easement for crossing the SSL is anticipated.

Impacts are proposed to two conservation lands owned by Orange County and referred to as the Nunnally Evans (Parcel No. 19-22-32-7876-05-170) and Sunflower (No. 29-22-32-7882-00-280) properties. These properties are part of the Orange County Green PLACES (Park Land Acquisition for Conservation and Environmental Protection) program intended to preserve, enhance, and restore environmentally sensitive lands. Orange County has indicated these properties are intended for environmental preservation only, not public recreation. Because the project is not anticipated to directly impact any parks or publicly owned recreation lands, **no substantial** impacts to recreational resources are anticipated.

C. NATURAL ENVIRONMENT

1. Wetlands and Other Surface Waters

In accordance with *Part 2, Chapter 9 (Wetlands and Other Surface Waters)* of the FDOT PD&E Manual, the project area was evaluated for wetlands and surface waters that have potential involvement with the proposed improvements. Wetlands in the project area as mapped by St. Johns River Water Management District (SJRWMD) include Mixed Wetland Hardwoods (FLUCCS 6170; six locations within the project area), Cypress (FLUCCS 6210; four locations in the project area), Wetland Forested Mixed (FLUCCS 6300; nine locations within the project area), Freshwater Marsh (FLUCCS 6410; seven locations within the project area), Wet Prairie (FLUCCS 6430; one location in project area), Emergent Aquatic Vegetation (FLUCCS 6440; two locations in project area), and Mixed Scrub-Shrub Wetland (FLUCCS 6460; one location in project area). Reservoirs (FLUCCS 5300) and ditches and swales 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 Riverine. Wetlands were assessed in the field and found to generally agree with SJRWMD and USFWS mapping.

It is anticipated that the recommended alternative would result in 61.1 acres of wetland impacts, 70.6 acres of impacts to wood stork (*Mycteria americana*) Suitable Foraging Habitat (SFH) and approximately 18 total acres of impacts to SJRWMD Econlockhatchee River Riparian Habitat Protection Zone (RHPZ). Impacts to Other Surface Waters (OSW) from the recommended alternative include approximately 9 acres mapped as Reservoirs (FLUCCS 5300) and an estimated 0.5 acre of roadside ditches and swales.

There are 23 recommended pond locations and 19 alternative pond locations proposed as part of this project. Potential wetland and OSW impacts are shown in **Table 1** for the recommended ponds and in **Table 2** for alternative ponds. The recommended pond

Table 1 Recommended Pond Wetland Impacts

Pond Name	6210: CYPRESS	6300: WETLAND FORESTED MIXED	6440: EMERGENT AQUATIC VEGETATION	6170: MIXED WETLAND HARDWOODS	6410: FRESHWATER MARSHES
	Impacts by acre				
Pond 1A					0.1
Pond 1B					3
Pond 1C					0.1
Pond 2B					
Pond 3A					
Pond 4A					
Pond 5B**					
Pond 6B					0.1
Pond 9B*				0.7	
Pond 10B					
Pond 11A1					
Pond 11A2					
Pond 11A3					
Pond 11A4			0.2		
Pond 11B1		1			
Pond 11C					
Pond 11C3*	4				
Pond 11C4					
Pond 12A					
Pond 13B***	0.1				0.1
Pond 14A					
Pond 15A					
M-1 (Existing, Modified)					2
TOTAL	**4.1**	**1**	**0.2**	**0.7**	**5.4**

* Impacts RHPZ, ** Impacts SJRWMD Regulatory Easement, *** Impacts SJRWMD Conservation Easement

Table 2 Alternative Pond Wetland Impacts

Pond Name	5300: RESERVOIRS - PITS, RETENTION PONDS, DAMS	6210: CYPRESS	6300: WETLAND FORESTED MIXED	6170: MIXED WETLAND HARDWOODS	6410: FRESHWATER MARSHES	6430: WET PRAIRIES
	Impacts by acre					
Pond 2C						
Pond 3B						
Pond 4B **						
Pond 5A **			0.8			
Pond 6A **						
Pond 7A						
Pond 7B						
Pond 9A						
Pond 10A						
Pond 11A1						
Pond 11A2						
Pond 11A3						
Pond 11A5						
Pond 11B2	0.5		0.1			
Pond 11C2*		0.7		5		
Pond 12B						
Pond 13A						0.1
Pond 14B						
Pond 15B					0.2	
TOTAL	**0.5**	**0.7**	**0.9**	**5**	**0.2**	**0.1**

* Impacts RHPZ, ** Impacts SJRWMD Regulatory Easement, *** Impacts SJRWMD Conservation Easement

locations would result in approximately 11.4 total acres of wetland impacts. The alternative ponds would result in approximately 7.4 total acres of wetland impacts.

Recommended pond 9B would impact 0.7 acre of RHPZ currently mapped as Mixed Wetland Hardwoods (FLUCCS 6170). Recommended Pond 11C3 would impact approximately 4 acres of RHPZ currently mapped as Cypress (FLUCCS 6210). Recommended pond 5B could impact approximately 4 acres of SJRWMD regulatory

easement. Recommended pond 13B would impact approximately 5 acres of SJRWMD conservation easement.

Alternative pond 11C2 would impact approximately 5 acres of RHPZ mapped as Mixed Wetland Hardwoods (FLUCCS 6170) and 0.7 acres mapped as Cypress (FLUCCS 6210). Alternative pond 4B would impact approximately 0.1 acre, alternative pond 5a would impact approximately 4 acres, and alternative pond 6a would impact approximately 0.1 acre of SJRWMD regulatory easements.

Impacts to wetlands were avoided and minimized through careful selection of a corridor and typical sections, and unavoidable impacts to jurisdictional wetlands will require mitigation. SJRWMD, U.S. Army Corps of Engineers, and Orange County mitigation credits are available from the TM-Econ Mitigation Bank. For issuance of an Environmental Resource Permit (ERP) from the SJRWMD, the Special Basin Criteria and the RHPZ requirements associated with the Econlockhatchee River must be met. Because impacts were avoided, minimized, and will be mitigated, the recommended alternative is expected to result in **no substantial** impacts to wetlands or surface waters.

2. Aquatic Preserves and Outstanding Florida Waters

The effects of the SR 408 east extension 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, so no impacts to aquatic preserves are anticipated. The project crosses the Econlockhatchee River, which is designated as an OFW, approximately 2.2 miles from the western project terminus. The project encompasses approximately 13 acres mapped as OFW. However, one area at the southern end of Story Partin Road is mapped as OFW but currently contains a mobile home park. It is not possible to realign the project to avoid the river entirely; however, the proposed action includes all practicable measures to minimize impacts to surface water resources from such use. One such measure was siting the river crossing at a previously disturbed location, where Old Cheney Highway previously crossed the river. Other minimization measures are described in Section C.3 Water

Quality and Water Quantity, below. Because it is an OFW, any discharges into the Econlockhatchee River will receive 50 percent greater treatment than under normal conditions. As a result of minimization measures, the recommended alternative is expected to result in **no substantial** impacts to wetlands or surface waters.

3. Water Quality and Water Quantity

A Location Hydraulic Report was completed for this project to identify existing cross-drains throughout the project corridor. A Pond Siting Report was completed to identify and discuss the stormwater management facilities for each of the 15 drainage basins within the project corridor. 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 stormwater runoff from proposed impervious areas will be treated in proposed stormwater facilities and in expanded existing ponds in the infield area at the beginning of the project. The runoff from the proposed alignment will be collected in roadside swales and closed storm sewer systems then directed to stormwater ponds for each respective basin. Water quality treatment and attenuation will be achieved from the construction of new wet detention ponds and the expansion of existing ponds at the infield area at the beginning of the project. There is a total of 15 basins within the project limits. Because it is an OFW, any discharges into the Econlockhatchee River will receive 50 percent greater treatment than under normal conditions.

The Recommended Alternative's stormwater management facilities have been developed in accordance with the water quality and quantity requirements of the SJRWMD. Further coordination between the CFX and SJRWMD will continue during the upcoming final

design, environmental permitting and construction phases. The Recommended Alternative is expected to result in **no substantial** impacts to water quality or quantity.

4. Wild and Scenic Rivers

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

5. Floodplains

The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) for Orange County shows that a portion of the project lies within the 100-year floodplain areas Zone AE (100-year base flood elevations are provided) and Zone A (100-year base flood elevations are not provided, areas with 1% change of flooding). Most of the project lies within flood Zone X (Areas of minimal flood hazard and above the 500-year flood zone). FEMA Map Nos. 12095C0280F, 129095C0285F, 12095C0295F and 12095C0315F, provide flood information for the project.

Floodplain impacts due to the proposed corridor were calculated and documented in the Pond Siting Report. Total floodplain impacts due to roadway fill for the entire proposed project corridor are 100.28 acre-feet. Available compensation in the proposed stormwater ponds and floodplain compensation ponds are 107.47 acre-feet. The dredge and fill volume are based on limited information available during the PD&E study. A detail evaluation has to be done during the final design. Based on the preliminary evaluation, the project will provide more floodplain compensation than the impacts. Therefore, a cup for cup compensation is provided by the project. Two floodplain compensation pond sites were identified for this project in Basin 11C. The pond sites are Pond 11C3 and Pond 11C4. Both Pond 11C3 and Pond 11C4 are selected as the recommended floodplain compensation ponds. Besides these two floodplain compensation ponds, several stormwater ponds located adjacent to floodplains will also provide floodplain compensation. For these reasons, **no substantial** impacts are anticipated to floodplains.

6. Coastal Barrier Resources

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

7. Protected Species and Habitat

This project was evaluated for potential impacts to wildlife and habitat resources, including protected species in accordance with 50 CFR Part 402 of the Endangered Species Act of 1973, as amended; 50 CFR 17 (federal animal list); 379.2291 F.S., Endangered and Threatened Species Act; Chapter 68A-27.003 F.A.C. (Endangered and Threatened species list); 68A-27.005 F.A.C. (Species of Special Concern list), and Part 2, Chapter 16 of FDOT's PD&E Manual, Protected Species and Habitat.

Through coordination with USFWS, field investigations, and data analysis, CFX has determined that ***no adverse effects*** to federally listed species are anticipated to occur in association with the proposed project. The project occurs in the USFWS consultation areas for Audubon's crested caracara (*Polyborus plancus audubonii)*, Everglade snail kite (*Rostrhamus sociabilis plumbeus*), and red-cockaded woodpecker (*Picoides borealis*). All of the project occurs within the core foraging area of the Lake Mary Jane wood stork colony. The westernmost portion of segment 1 also overlaps the core foraging area of the Lawne Lake wood stork colony.

A determination of ***no effect*** was made for the following federally listed species because none were detected during surveys and no potential habitat is found in the project area: Florida scrub-jay (*Aphelocoma coerulescens*), beautiful pawpaw (*Deeringothamnus pulchellus*), Britton's beargrass (*Nolina brittoniana*), Florida bonamia (*Bonamia grandiflora*), papery whitlow-wort (*Paronychia chartacea*), red-cockaded woodpecker and scrub buckwheat (*Eriogonum longifolium* var. *gnalphalifolium*). A determination of ***no effect*** was made for the state listed burrowing owl (*Athene cunicularia*).

A determination of ***may affect, not likely to adversely affect***, was made for the following federally listed species: American alligator (*Alligator mississippiensis*), Audubon's crested

caracara, eastern indigo snake (*Drymarchon corais couperi*), Everglade snail kite and wood stork (*Mycteria americana*).

A determination of ***may affect, not likely to adversely affect***, was made for the following state listed species: Florida pine snake (*Pituophis melanoleucus mugitus*), Florida sandhill crane (*Grus canadensis pratensis*), gopher tortoise (*Gopherus polyphemus*) (also a candidate for Federal listing), little blue heron (*Egretta caerulea*), roseate spoonbill (*Platalea ajaja*), Sherman's fox squirrel (*Sciurus niger shermani*), southeastern American kestrel (*Falco sparverius paulus*), and tri-colored heron (*Egretta tricolor*).

It is anticipated that the recommended alternative would result in 61.1 acres of wetland impacts, 70.6 acres of impacts to wood stork (*Mycteria americana*) Suitable Foraging Habitat (SFH) and approximately 18 total acres of impacts to SJRWMD Econlockhatchee River RHPZ.

There are 23 recommended pond locations and 19 alternative pond locations proposed as part of this project. The recommended pond locations would result in approximately 11.4 total acres of wetland impacts (**Table 3**). The alternative ponds would result in approximately 7.4 total acres of wetland impacts (**Table 4**). These wetlands form potential wildlife habitat and may also be considered wood stork SFH, depending on water depth and density of vegetation.

Bald eagles could occur in the project area and are protected under the Bald and Golden Eagle Protection Act, Migratory Bird Treaty Act and FWC's bald eagle rule (F.A.C. 68A-16.002). According to the FWC bald eagle nest locator tool, the nearest reported bald eagle nest (Nest ID OR074) is approximately 1.2 miles north of the project corridor. The project is outside the 660-foot buffer within which project activities may be restricted under the USFWS *Bald Eagle Management Guidelines and Conservation Measures*, so no impacts to bald eagles are anticipated.

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 suitable foraging habitat 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% gopher tortoise burrow survey in accordance with FWC rules and guidelines. For these reasons, **no substantial** impacts to protected species or their habitats are anticipated.

Table 3 Recommended Pond Impacts by FLUCCS Code

Rec. Pond Name	1100: RESIDENTIAL, LOW DENSITY	1180: RESIDENTIAL, RURAL	1200: RESIDENTIAL, MEDIUM DENSITY	1400: COMMERCIAL AND SERVICES	1700: INSTITUTIONAL	1900: OPEN LAND (URBAN)	2110: IMPROVED PASTURES	2120: UNIMPROVED PASTURES	2210: CITRUS GROVES	2430: ORNAMENTALS	3200: SHRUB AND BRUSHLAND	4110: PINE FLATWOODS	4340: UPLAND MIXED CONIFEROUS/ HARDWOOD	4410: PINE PLANTATION	6210: CYPRESS	6300: WETLAND FORESTED MIXED	6440: EMERGENT AQUATIC VEGETATION	6170: MIXED WETLAND HARDWOODS	6410: FRESHWATER MARSHES	8140: ROADS AND HIGHWAYS
	Impacts by acre																			
1A												2							0.1	0.1
1B												2							3	
1C												0.9							0.1	
2B					10															
3A	1											1	0.5							
4A	0.3											1								
5B											2	2								
6B	18																		0.1	
9B	3																	0.7		
10B	5																			
11A1									0.9											
11A2	0.3								0.1											
11A3	0.3								0.7	0.1										
11A4	0.1									3							0.2			
11B1												3				1				
11C		4				2														
11C3		0.2		0.8		3									4					
11C4		0.1		6																
12A	0.1							7												
13B	0.1						10								0.1				0.1	
14A	0.1		0.5								2	0.2								
15A			0.9								2	0.1		6						
M-1 (Existing, Modified)			0.1	0.1															2	
TOTAL	**28.3**	**4.3**	**1.5**	**6.9**	**10.0**	**5.0**	**10.0**	**7.0**	**1.7**	**3.1**	**6.0**	**12.2**	**0.5**	**6.0**	**4.1**	**1.0**	**0.2**	**0.7**	**5.4**	**0.1**

Table 4 Alternative Pond Impacts by FLUCCS Code

Alt. Pond Name	1100: RESIDENTIAL, LOW DENSITY	1200: RESIDENTIAL, MEDIUM DENSITY	1300: RESIDENTIAL, HIGH DENSITY	1400: COMMERCIAL AND SERVICES	1900: OPEN LAND (URBAN)	2110: IMPROVED PASTURES	2210: CITRUS GROVES	2430: ORNAMENTALS	3200: SHRUB AND BRUSHLAND	3300: MIXED UPLAND NONFORESTED	4110: PINE FLATWOODS	4340: UPLAND MIXED CONIFEROUS/ HARDWOOD	5300: RESERVOIRS - PITS, RETENTION PONDS, DAMS	6210: CYPRESS	6300: WETLAND FORESTED MIXED	6170: MIXED WETLAND HARDWOODS	6410: FRESHWATER MARSHES	6430: WET PRAIRIES	8320: ELECTRICAL POWER TRANSMISSION LINES
	Impacts by acre																		
2C				5															0.1
3B						3													
4B										2									
5A									0.5		3				0.8				
6A	5																		
7A	0.9								2										
7B									5										
9A	2																		
10A	4																		
11A1							0.9												
11A2	0.3						0.1												
11A3	0.3						0.7	0.2											
11A5	0.9						4												
11B2				2									0.3		0.1				
11C2	2													0.7		5			
12B	0.7	3	1									0.4							
13A						5			3									0.1	
14B		3																	
15B		4															0.2		
TOTAL	**16.1**	**10**	**1**	**7**	**0.00**	**8**	**5.7**	**0.2**	**10.5**	**2**	**3**	**0.4**	**0.3**	**0.7**	**0.9**	**5**	**0.2**	**0.1**	**0.1**

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 analysis 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 June 14, 2017). 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 2015 (existing) conditions, and for the 2045 (Design Year) No-build Alternative and Build Alternative. Approximately 824 residences, including single-family homes and mobile homes, were identified as being sensitive to traffic noise along the proposed SR 408 Extension within the limits of this project. Also, seven non-residential or special-use noise-sensitive sites, including a sports field, a recreation center, community playgrounds, and a medical office, were identified along the project corridor. Design Year traffic noise levels at nearby residences are predicted to range from 45.3 to 75.0 dB(A). The Build Alternative noise levels at special land use sites are predicted to range from 39.7 dB(A) at an interior location at the Orlando Center for Women's Health to 64.6 dB(A) at the Deerwood Mobile Home Park pool area during the Design Year. Noise impacts are predicted to occur at 159 residences. 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). Approximately 347 residences and 3 Special Land Uses (SLUs) (Waterford Creek Playground, Bridgewater Recreation Center, and Deerwood Mobile Home Park pool) are expected to experience a noise level increase greater than 15.0 dB(A) over existing levels with the Build Alternative.

Noise barriers were considered for all noise-sensitive receptor sites where Design Year traffic noise levels were predicted to equal or exceed the NAC. As such, noise barriers were considered at 13 locations to mitigate noise impacts. 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. Noise abatement was determined to not be feasible or reasonable at 89 impacted homes, most of which are projected to realize a noise level increase of at least 15 dB(A) under the Build Alternative. Because a noise study identified sensitive receptors and potential noise barriers will be considered, **no substantial** impacts from noise are anticipated.

2. Air Quality

An Air Quality Technical Memorandum was prepared for this project in accordance with FDOT's *PD&E Manual, Part 2, Chapter 19* (*Air Quality*), updated June 14, 2017, which incorporates the requirements of the National Environmental Policy Act (NEPA), and related federal and state laws. The proposed project is located in Orange County, an area currently designated as being in attainment for the following criteria air pollutants: ozone/nitrogen dioxide/particulate matter (2.5 microns in size and 10 microns in size)/sulfur dioxide/carbon monoxide/lead.

The project's alternatives were subjected to a carbon monoxide (CO) screening model that makes various conservative worst-case assumptions related to site conditions, meteorology and traffic. FDOT's screening model for CO uses the latest United States Environmental Protection Agency (EPA)-approved software to produce estimates of one-hour and eight-hour CO at default air quality receptor locations. The one-hour and eight-hour estimates can be directly compared to the current one-and eight-hour National Ambient Air Quality Standards (NAAQS) for CO. Estimates of CO were predicted for default receptors which are located 10 feet to 150 feet from the edge of the roadway. Based on the results from the screening model, the highest project-related CO one- and eight-hour levels are not predicted to meet or exceed the one- or eight-hour NAAQS for this pollutant under either the No-Build or Build alternatives. As such, the project "passes"

the screening model. The project is expected to improve traffic flow in the surrounding area by providing a new roadway corridor to reduce congestion and improve mobility, which should reduce operational greenhouse gas emissions. 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) was prepared for this project in accordance with the FDOT's *PD&E Manual, Part 2, Chapter 20* (*Contamination Impacts*), updated June 14, 2017, which incorporates the requirements of NEPA, and related federal and state laws. This report identifies and evaluates known or potential contamination issues from the recommended alternative, presents recommendations concerning these issues, and discusses possible impacts to the proposed project in relation to the recommended alternative.

Information was obtained for the CSER from Florida Department of Environmental Protection (FDEP) and US Environmental Protection Agency (USEPA) databases as well as field investigations and reviews of historic and aerial photographs. A total of 22 sites were identified with potential contamination concerns. After evaluation, 2 of those sites were assigned a risk rating of None, 4 sites were assigned a risk rating of Low, 13 sites were assigned a risk rating of Medium, and 3 sites were assigned a risk rating of High. One brownfield is adjacent to the recommended alternative. Multiple auto salvage yards that are not represented in regulatory contamination databases are present in the project area.

There are one High-risk, two Medium-risk, and two Low-risk sites proposed for right-of-way acquisition under the recommended alternative. Additionally, two High-risk sites are adjacent to the recommended alternative. The two proposed floodplain compensation ponds, 11C3 and 11C4, are located on or adjacent to the property of Sporty's Auto Repair, a Medium-risk contamination site previously identified in the CSER. Sporty's Auto Repair would also be impacted by the alignment under the recommended alternative.

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 and planned additional assessment, **no substantial** contamination impacts are anticipated.

4. Utilities and Railroads

Utility companies with known facilities within the proposed project limits were contacted and requested to submit as-built plans and information on any proposed utilities within the project limits. **Table 5** presents a list of utility types and owners, based on the responses received. **No substantial** impacts are anticipated to utilities or railroads as a result of the project.

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Table 5 Existing Utilities

Utility	Contact Information	Utility Type
American Traffic Solutions	Santiago Martinez - (480) 596-4595	Communications/Electric
Charter Communications	Marvin Usry Jr - (407) 532-8509	Internet, Cable T.V., Phone, Fiber
City of Orlando-Wastewater	David Breitrick - (407)246-3525	Wastewater/Reclaim Water
Advanced Cabling Solutions Inc	Robert Ford - (407) 883-8881	Electric and Fiber
Duke Energy	Megan Vonstetina - (727) 893-9394	Electric
Fibernet Direct	Danny Haskett - (305) 552-2931	Fiber
Lovelace Gas Service	Garry Lovelace - (407) 277-2966	Gas
MCI	Dean Boyers - (469) 886-4238	Communications/Fiber Optic
Orange County Utilities - Waste Water	David Shorette - (407) 254-9764	Wastewater
Orange County Public Works	Roger Smith - (407) 836-7900	Traffic Signals & Fiber
Central Florida Expressway Authority	Vu Vu - (407) 843-5120	Fiber Optic
Orange County Utilities	Marc Brown - (407) 836-6869	Water
Orlando Telephone Company Inc	Jack Leopard - (407) 996-6297	Fiber and Telephone
Duke Energy	Megan Vonstetina - (727) 893-9394	Fiber
Teco Peoples Gas - Orlando	Deborah Frazier - (407)420-6609	Gas
Centurylink	George Mcelvain - (303) 992-9931	Telephone
AT&T/Distribution	Dino Farruggio - (561) 997-0240	Telephone
Comcast Cable Communications	Wade Mathews - (352) 516-3824	CATV

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

SR 408 is proposed as a limited access facility; therefore, no bicycle or pedestrian facility will be provided along the SR 408 Eastern Extension. Along the extension of Chuluota Road there are proposed seven-foot bicycle lanes and continuous five-foot concrete sidewalks along the north and south side of the Chuluota Road Extension. Also, there are various grade separations that will be provided along the mainline of SR 408 which will

allow pedestrian connectivity throughout various local streets. For these reasons, **no substantial** impacts to bicycles and pedestrians are anticipated as a result of the proposed project.

7. Navigation

The Econlockhatchee River is not navigable in the vicinity of this project. As a result, the project is expected to have **no involvement** with navigation.