Project Environmental Impact Report

Northeast Connector Expressway – Phase 1
From Cyrils Drive to Nova Road (CR 532)
Project Development and Environment Study

Central Florida Expressway Authority

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

CFX Project No.: 599-228
Contract No.: 001546

October 2021

Project Environmental Impact Report

1. Project Description and Purpose and Need:

a) Project Information:

Project Name: Northeast Connector Expressway – Phase I Project Development and Environment (PD&E) Study

Project Limits: Cyrils Drive to Nova Road (CR 532)

County: Osceola

Central Florida Expressway Authority Project Number: 599-228

Consultant Project Manager: Dan Kristoff, P.E.

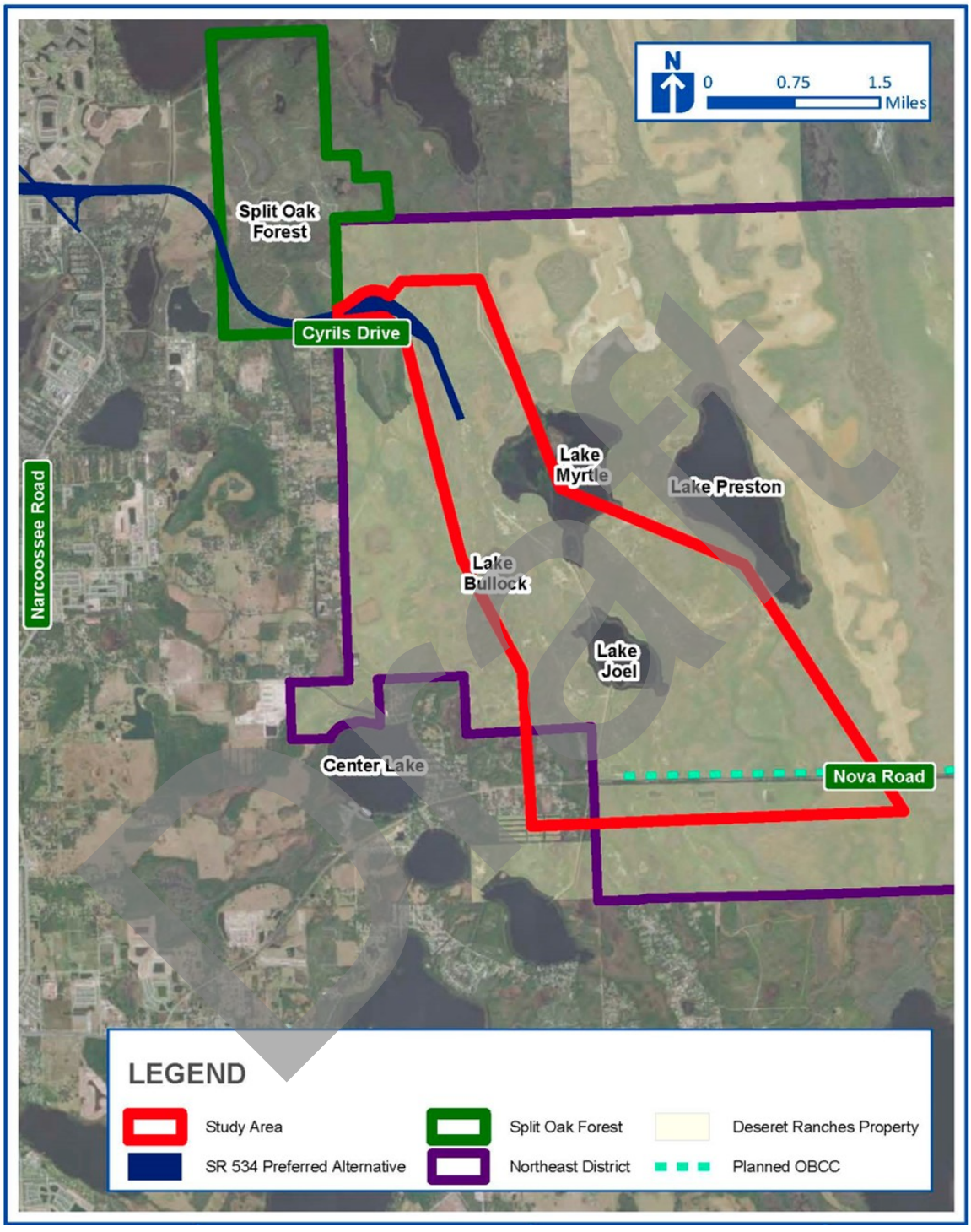
b) Proposed Improvements:

The Central Florida Expressway Authority (CFX) is studying a new expressway connection between Cyrils Drive and Nova Road in Osceola County. The study area begins at the terminus of the planned Osceola Parkway Extension (SR 534) near Cyrils Drive and extends to Nova Road, a distance of approximately 4.3 miles. The study area is located primarily on Deseret Ranches property. Figure 1 shows the Northeast Connector Expressway – Phase 1 (hereafter referred to as Northeast Connector) study area.

The goal of the Northeast Connector is to enhance north-south mobility and provide connections between existing and future east-west corridors in the study area. The Northeast Connector will link the planned SR 534, which is based on an approved Project Development and Environment (PD&E) Study, with the planned Osceola/Brevard County Connectors (OBCC).

The project proposes a four-lane tolled expressway within a 330-foot right-of-way footprint. The proposed right-of-way footprint can accommodate an ultimate eight-lane section with two multi-modal lanes separated by concrete median barrier wall, if needed in the future. The project includes a proposed interchange at Jack Brack Road, a bridge over the C-32C canal, as well as bridges over planned local roadways. Stormwater management facilities are also proposed.

Figure 1: Project Study Area



c) Purpose and Need:

The purpose of the Northeast Connector is to enhance north-south mobility and provide connections between existing and future east-west corridors in the study area. The Northeast Connector will link the planned SR 534 with the planned OBCC. These connections will promote regional connectivity, provide for transit opportunities, and enhance mobility in Osceola County and the entire Central Florida region. The link between the planned SR 534 and OBCC will also provide a seamless limited access, high-speed connection from the Orlando International Airport (OIA) to I-95 in Brevard County.

The need for the project is to provide system linkage and regional connectivity, meet social and economic needs, provide additional transportation capacity, achieve consistency with transportation plans, provide for multimodal opportunities, and improve safety and evacuation routes. Additionally, the East Central Florida Corridor Task Force Report recommended continuing the project development process for the Northeast Connector. The following sections describe the need for the project in more detail.

<u>Project Status</u>

The Osceola County Expressway Authority (OCX) included the Northeast Connector Expressway in their Master Plan 2040. As part of an interlocal agreement, CFX incorporated portions of the OCX Master Plan 2040 into CFX's Visioning + 2040 Master Plan. As part of this interlocal agreement, CFX conducted Concept, Feasibility, and Mobility (CF&M) Studies for four transportation corridors to determine if they are viable and fundable in accordance with CFX policies and procedures. One of the corridors was the Northeast Connector Expressway. The CF&M Study evaluated numerous corridor alternatives and ultimately determined that there were no fatal flaws, but the project was not considered financially viable (toll revenue over 30 years did not cover at least 50% of project costs). The CFX Governing Board approved the findings of the Northeast Connector Expressway CF&M Study at the March 8, 2018 board meeting but decided not to advance the project to the next study phase at that time.

At the June 11, 2020, CFX Governing Board meeting, the Board authorized the initiation of the Northeast Connector Expressway – Phase 1 PD&E Study. The proposed project is consistent with multiple planning documents, including:

- OCX Master Plan 2040;
- CFX Visioning + 2040 Master Plan;

- CFX Five Year Work Program – Fiscal Year 2022 – 2026 (termed Osceola Parkway Extension – Cyrils Drive to Nova Road PD&E Study);
- MetroPlan Orlando 2045 Metropolitan Transportation Plan (MTP);
- East Central Florida Corridor Task Force Final Report;
- Osceola County Northeast District Conceptual Master Plan;
- Osceola County North Ranch Sector Plan; and
- Osceola County 2040 Comprehensive Plan.

System Linkage and Regional Connectivity

System linkage indicates how well the project fits into the area's existing and future transportation system. The Northeast Connector is an important limited access high-speed toll facility segment that is designed to serve Osceola County's urban growth area. Together, SR 534, the Northeast Connector Expressway, the Southport Connector Expressway, and the Poinciana Parkway Extension/I-4 Connector are a significant part of the CFX Visioning + 2040 Master Plan. The proposed expressway system connects high-density residential and commercial areas to the regional limited access network (I-4 and Florida's Turnpike) and the existing CFX expressway system (SR 417, SR 528, and SR 429).

Florida's Strategic Intermodal System (SIS) is a statewide network of high-priority transportation facilities, including highways, freight rail lines, airports, seaports, and other key intermodal facilities. Near the study area, there are no existing SIS corridors. Access to SIS facilities from the Northeast District and adjacent areas is provided through a network of county roads. The Northeast Connector would provide a key connector linking the Northeast District to other residential and commercial areas and major roadway facilities.

The Northeast Connector will also provide a vital north-south connection between the planned SR 534 and the planned OBCC. These connections will promote regional connectivity, provide for transit opportunities, and enhance mobility in Osceola County and the entire Central Florida region. The link between the planned SR 534 and OBCC will also provide a seamless limited access, high-speed connection from the OIA to I-95 in Brevard County.

Capacity

The Northeast Connector is needed to provide additional roadway capacity in the study area, distribute local and regional trips, and relieve congestion on the local roadway network.

A preliminary capacity analysis was conducted to determine the future 2045 No-Build network capacity. The No-Build scenario assumes the currently planned and programmed projects already committed in Metroplan Orlando's 2045 MTP and SR 534 are constructed. Narcoossee Road is the only existing north-south roadway that serves the study area and is therefore, the focus of the No-Build analysis.

The volume to capacity (V/C) ratios documented from the travel demand model forecasts for Narcoossee Road indicates that in the 2045 No-Build condition several segments of Narcoossee Road are expected to exceed the capacity of the roadway, as presented in Table 1.

Table 1: 2045 No-Build – Narcoossee Road Analysis

Narcoossee Road Segment	Number of Lanes	V/C Ratio
North of SR 417	6	0.95
Boggy Creek Road to SR 417	6	1.15
Boggy Creek Road to Jack Brack Road	6	1.64
Jack Brack Road to US 192	6	1.21
South of US 192	6	1.11

Note: V/C > 1 indicates the roadway is over capacity

The Northeast Connector is anticipated to improve traffic operations on Narcoossee Road.

Transportation Demand

The East Central Florida Corridor Task Force recommended a north-south multimodal corridor (Corridor I) to serve the planned population areas within the North Ranch and establish connectivity to other regional destinations and east-west corridors. The current roadway network serving the Northeast District cannot adequately accommodate the anticipated increase in residential units or commercial properties. Portions of the Northeast District are already under construction including the Del Webb Sunbridge development, which will include more than 1,350 homes at its completion, Weslyn Park, which includes 577 homes in the first phase, and the Marina District.

Social Demand and Economic Development

In August 2017, Fishkind and Associates (FKA) developed socioeconomic data for the CF&M Studies for the 2015 base year and 2025, 2035, and 2045 forecast years for the pertinent traffic analysis zones (TAZs). The study area for the FKA analysis includes all of Osceola County and the southern portion of Orange County. This section provides an overview of the population, employment, and economic characteristics of Osceola County.

According to the FKA report, Osceola County represents the tenth fastest-growing county in Florida from 2000 to 2015 with a population increase of 150,000 people. The University of Florida's Bureau of Economic and Business Research (BEBR) and FKA's population forecast for Osceola County anticipate that the population will almost double from 2015 to 2045, from a population in the low 300,000's to a population in the low 600,000's, depending on the model being utilized. Similarly, employment in Osceola County is anticipated to double between 2015 and 2045 from 115,035 to 227,612.

Employment/Population (E/P) ratios are a function of the economic linkages from community to community and the pace at which economic development occurs. According to the FKA report, the Osceola County E/P ratios indicate that Osceola County functions economically as a "bedroom" community for Orange County. By 2045, employment in Orange County and Osceola County is expected to increase by almost 66 percent and 36 percent, respectively.

There are currently 46 approved Developments of Regional Impact (DRI) in Osceola County. FKA estimates that the unbuilt residential and commercial holding capacity of the 46 DRIs within Osceola County total the following: 67,789 residential units, 31.6 million square feet of commercial space and 30,235 hotel rooms. The information in the Socioeconomic Data Forecast Analysis supports the Northeast District Conceptual Master Plan and Osceola County future land use map showing a significant increase in residential and commercial development in the study area.

Based on the anticipated population and employment growth in Osceola County, the Northeast Connector is needed to provide a reliable transportation option.

Modal Interrelationships

Osceola County's Northeast District Conceptual Master Plan created a Multimodal Transit District. Development in the area will follow principles of smart growth and seek to reduce automobile use by enabling multimodal travel. The design will place

transit stations within the dense central core with multimodal access via pedestrian and bicycle trails. A significant portion of residents will have pedestrian or bicycle trail access to the transit station in the central core.

The Northeast Connector will connect the Northeast District Multimodal Transit District to SR 534 and therefore also provide connections to the OIA and Lake Nona/Medical City. The connector will also tie into the planned OBCC, which will provide connections to I-95.

CFX has established a multimodal policy to fund or partner on multimodal initiatives where revenue generated from the investment equals the project cost or where toll user benefits are equal to or exceed the project cost. Opportunities to provide multimodal improvements will be considered as part of the alternatives developed to address the purpose and need for this project.

Safety

The Northeast Connector will provide an enhanced evacuation route during emergency evacuations. The East Central Florida Corridor Task Force expressed concern over the region's ability to support effective evacuation and response during extreme weather events and other emergencies.

The Florida Division of Emergency Management identified I-4, Florida's Turnpike, and SR 417 as significant evacuation routes in the region. Nova Road is also a critical evacuation route in the study area. The Northeast Connector would provide an indirect connection to SR 417 via the proposed SR 534 and a direct connection to Nova Road. Therefore, the Northeast Connector will enhance emergency evacuation in the study area.

2. Environmental Analysis

*Issues/Resources	*Substantial Impacts? Yes	No	Enhance	NoInv	**Supporting Information
A. SOCIAL and ECONOMIC					
1. Social	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.A.1
2. Economic	[ ]	[ ]	[X]	[ ]	See Attachment 1, Section 1.A.2
3. Land Use Changes	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.A.3
4. Mobility	[ ]	[ ]	[X]	[ ]	See Attachment 1, Section 1.A.4
5. Aesthetic Effects	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.A.5
6. Relocation Potential	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.A.6
B. CULTURAL					
1. Historic Sites/Districts	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.B.1
2. Archaeological Sites	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.B.2
3. Recreational Areas and Protected Lands	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.B.3
C. NATURAL					
1. Wetlands and Other Surface Waters	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.C.1
2. Aquatic Preserves and Outstanding FL Waters	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.C.2
3. Water Resources	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.C.3
4. Wild and Scenic Rivers	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.C.4
5. Floodplains	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.C.5
6. Coastal Barrier Resources	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.C.6
7. Protected Species and Habitat	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.C.7
8. Essential Fish Habitat	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.C.8
D. PHYSICAL					
1. Highway Traffic Noise	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.D.1
2. Air Quality	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.D.2
3. Contamination	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.D.3
4. Utilities and Railroads	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.D.4
5. Construction	[ ]	[X]	[ ]	[ ]	See Attachment 1, Section 1.D.5
6. Bicycles and Pedestrians	[ ]	[ ]	[X]	[ ]	See Attachment 1, Section 1.D.6
7. Navigation	[ ]	[ ]	[ ]	[X]	See Attachment 1, Section 1.D.7

* Substantial Impacts?: Yes = Substantial Impact; No = No Substantial Impact; Enhance = Enhancement; NoInv = Issue Absent, no involvement

** Supporting Information is documented in the referenced attachment(s).

3. Anticipated Permits

Table 2 summarizes the eight permits that are anticipated on the project.

Table 2: Anticipated Permits

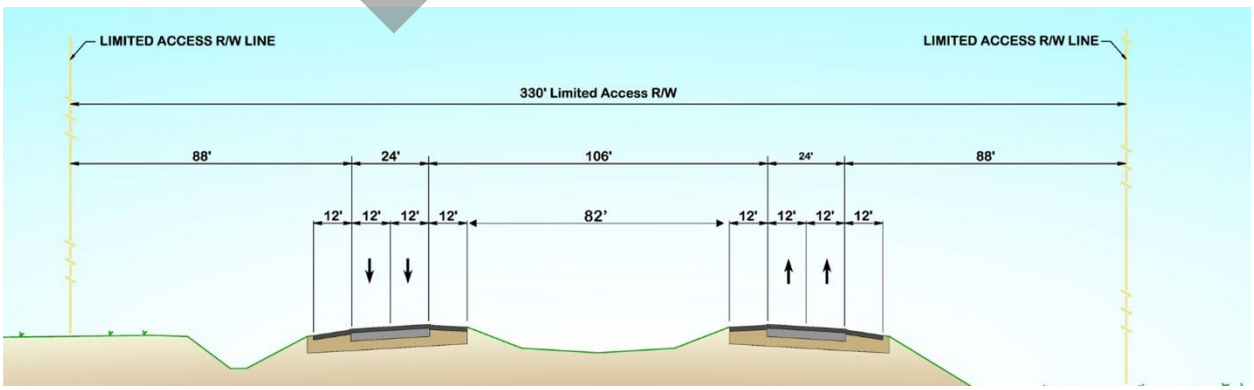
Anticipated Permit	Agency
Section 404 Clean Water Act Dredge and Fill Permit	USACE and FDEP
Section 408 Clean Water Act Permit	USACE
Environmental Resource Permit	SFWMD
Right-of-Way Occupancy Permit	SFWMD
National Pollutant Discharge Elimination System	FDEP
Gopher Tortoise Conservation Permit	FFWCC
Listed Species Incidental Take Permit	USFWS
Bridge Permit	USCG

4. Engineering Analysis

As part of the PD&E Study, an engineering analysis was conducted to evaluate the existing and future conditions, develop alternatives for the proposed improvements, and provide a comparison between Build Alternatives and the No-Build alternative. The following is a brief summary of the Build Alternatives analyzed during the PD&E Study.

One typical section was evaluated for the length of the project. The proposed typical section features two 12-foot travel lanes in each direction flanked by 12-foot paved inside and outside shoulders. The proposed median width is 82 feet wide, which can accommodate future widening. The ultimate typical section features an eight-lane section and two potential multi-use lanes with a concrete median barrier wall. The proposed typical section requires 330 feet of limited access right-of-way, which includes a border width of 88 feet on both sides of the Northeast Connector as shown on Figure 2.

Figure 2: Proposed Typical Section



The alternatives for the project are split into two geographic areas:

- Jack Brack Road Segment: Cyrils Drive to south of Jack Brack Road; and
- Nova Road Connection: south of Jack Brack Road to Nova Road.

Jack Brack Road Segment

The Cyrils Drive to south of Jack Brack Road segment features one mainline alignment with three interchange alternatives at the Jack Brack Road extension. The three interchange alignments are identified as follows:

- Partial Cloverleaf Interchange;
- Diamond Interchange; and
- Tighter Diamond Interchange.

The mainline alignment extends south from the proposed SR 534 Preferred Alternative. The alignment is located between the Del Webb community to the west and the planned Sunbridge neighborhoods to the east. Continuing further south, the alignment is located just east of the Tavistock utility site, currently under construction. The mainline alignment then continues between Lake Myrtle and Bullock Lake, remaining close to the east side of Bullock Lake.

The Partial Cloverleaf Interchange, shown on Figure 3 is located at the proposed extension of Jack Brack Road. The Partial Cloverleaf Interchange is located on the northern side of Jack Brack Road in order to avoid impacts to Bullock Lake and the associated wetlands. The southbound lanes will have an exit ramp and entrance loop ramp on the west side of the expressway while the northbound lanes will have an entrance ramp and exit loop ramp on the east side. Easy access to and from the expressway will be present for eastbound and westbound traffic on Jack Brack Road.

The Diamond Interchange as shown on Figure 4 has exit ramps in the southeast and northwest quadrants of the interchange that will allow for traffic exiting the expressway to continue east or west along Jack Brack Road. There are also entrance ramps in the northeast and southwest corners of the interchange that will allow for traffic traveling in the eastbound or westbound direction to enter the expressway in either direction.

The Tighter Diamond Interchange is identical to the Diamond Interchange as shown in Figure 5 except for the configuration of the two ramps located south of Jack Brack Road. To accommodate the planned Orlando Utility Commission transmission line, the ramp in the southwest quadrant of the interchange needed to be tightened to allow space for transmission poles to be placed west of the limited access right-of-way, but east of Lake Bullock. The southeast quadrant ramp was similarly tightened to minimize wetland impacts.

Figure 3: Jack Brack Road – Partial Cloverleaf Interchange

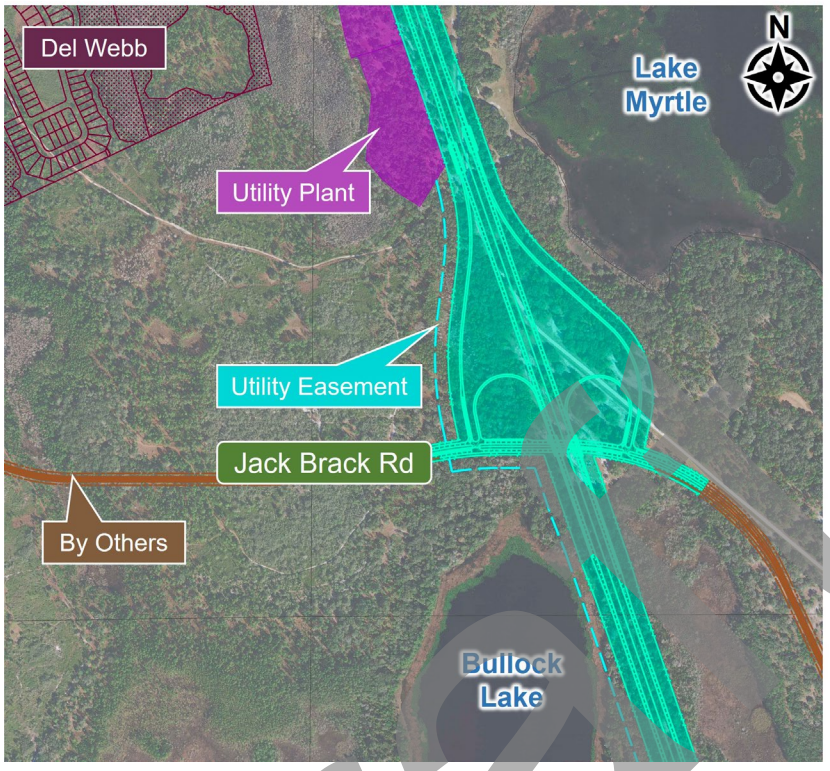


Figure 4: Jack Brack Road – Diamond Interchange

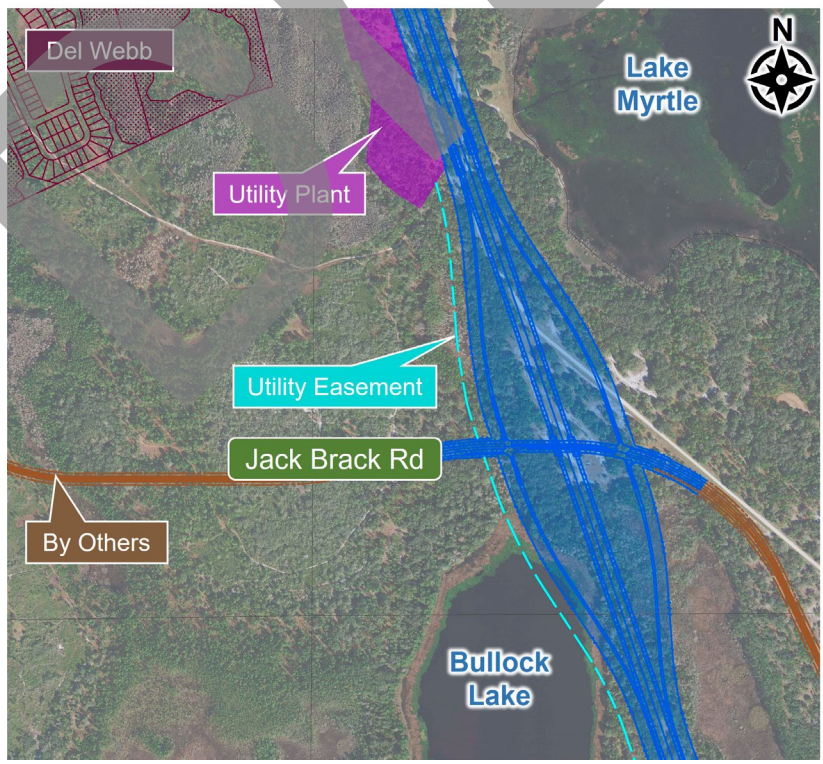
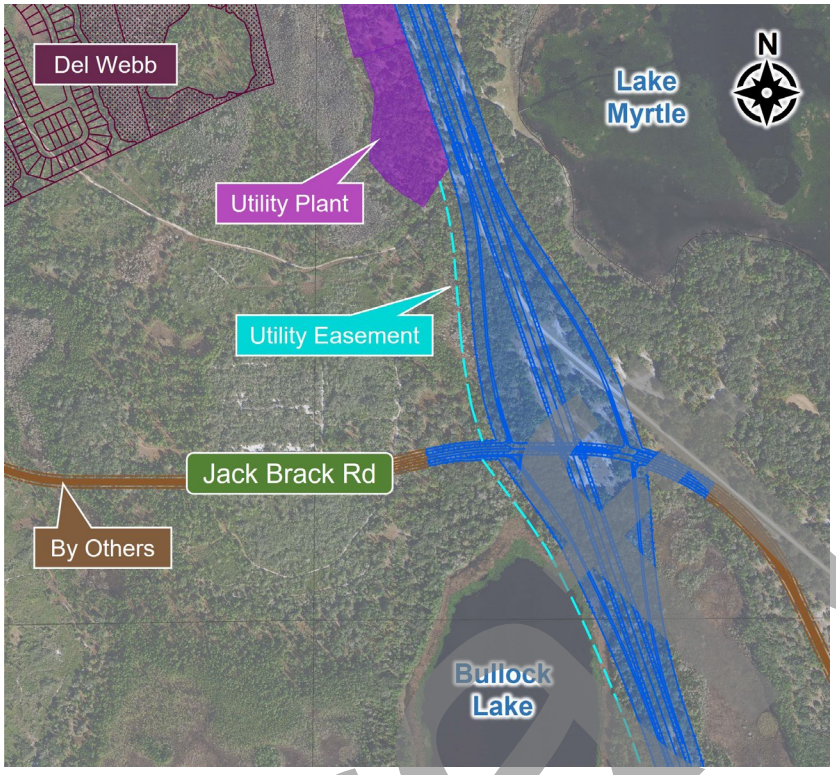


Figure 5: Jack Brack Road – Tighter Diamond Interchange



Nova Road Segment

The segment south of Jack Brack Road to Nova Road features two mainline alignments with connections to Nova Road in different locations. Continuing south from Jack Brack Road, the alignment for the two Nova Road Connection alternatives begin to diverge from each other. The two alternatives in this segment are identified as follows:

- Nova Road Connection – Option 1; and
- Nova Road Connection – Option 2.

South of the proposed Jack Brack extension, the mainline alignment diverges between the two alternatives. Nova Road Connection – Option 1, as shown on Figure 6 continues a southeasterly tangent, crosses the C-32C canal, and continues that tangent until it terminates at Nova Road. Just north of Nova Road, the alignment bends to provide a 90-degree T-intersection at Nova Road. At this time, the expressway would end at Nova Road, but a future easterly extension of the expressway is possible if the OBCC project moves forward at this location.

Nova Road Connection – Option 2 as shown on Figure 7 is similar to Option 1; however, the alignment differs slightly. Option 2 introduces a reverse curve in the alignment to shift the alignment closer to Lake Joel. The crossing of the C-32C canal is less skewed than in Option

1. This reverse curve also shifts the T-intersection at Nova Road further to the east. Similar to Option 1, the alignment terminates at Nova Road with a 90-degree T-intersection. At this time, the expressway would end at Nova Road, but a future easterly extension of the expressway is possible if the OBCC project moves forward at this location.

Figure 6: Nova Road Connection – Option 1

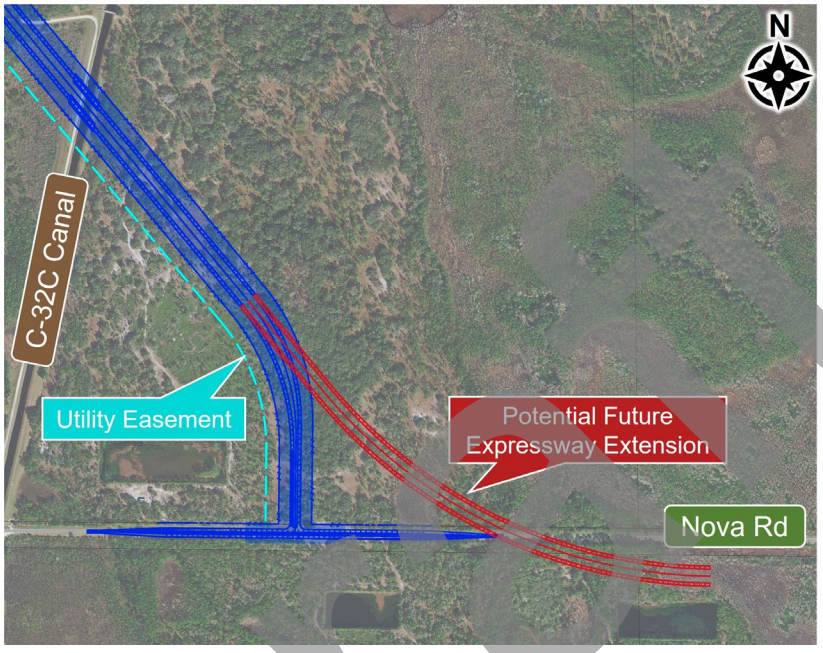
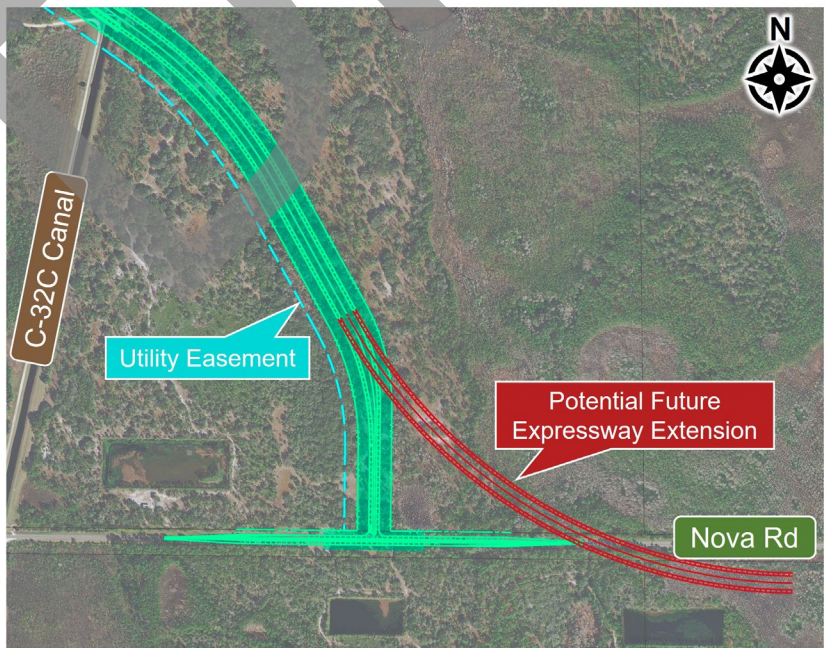


Figure 7: Nova Road Connection – Option 2



5. Commitments

CFX commits to the following:

- 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.
- Any species-specific surveys will first be coordinated with the United States Fish and Wildlife Service (USFWS) and Florida Fish and Wildlife Conservation Commission (FFWCC), then conducted as agreed to with USFWS and FFWCC during permitting phase.
- A preconstruction gopher tortoise burrow survey and any resultant permitting will be conducted in accordance with FFWCC protocols.
- The project will implement the USFWS-approved Standard Protection Measures for the Eastern Indigo Snake (updated August 1, 2017) during the proposed roadway improvements.
- Avoidance and minimization of wetland and listed species impacts will continue to be evaluated and all possible and practicable measures to avoid or minimize these impacts will be incorporated.
- Best Management Practices to control erosion and sedimentation in accordance with Standard Specifications for Road and Bridge Construction will be implemented.
- A Noise Study Addendum will be prepared during the final design phase to identify any new noise sensitive sites. Noise abatement measures will be implemented when identified as reasonable and feasible.
- The final location, number, and design of wildlife crossings will be determined during design, based on site specific conditions and in coordination with Osceola County.

6. Preferred Alternative

After considering the various social, cultural, environmental, and engineering issues with all of the alternatives, the Tighter Diamond Interchange Alternative, and Nova Road Connection – Option 2 Alternative were determined to be the best alternatives to move forward to the Public Hearing as the Preferred Alternative.

7. Approval of Draft Document

Approved for Public Availability on October 20, 2021.

8. Public Involvement

A Public Hearing will be held on November 18, 2021. This draft document is publicly available and comments can be submitted to CFX until November 28, 2021.

CFX Project Manager Contact Information:

Will Hawthorne, P.E.
Director of Engineering
Central Florida Expressway Authority
4974 ORL Tower Road
Orlando, FL 32807
407-690-5337
Will.Hawthorne@cfxway.com

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 Executive Director Date

Attachment 1: Environmental Analysis

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Attachment 1: Environmental Analysis

The following sections summarize the results of the socio-economic, cultural, natural, and physical environmental data collection and analysis conducted as part of this PD&E Study.

A. Social and Economic

The project will not have significant social and economic impacts. Below is a summary of the evaluation performed.

1. Social

Community Focal Points

Community focal points are public or private locations or organizations that are important to the local residents and communities. Community focal points include: schools, places of worship, community centers, civic centers, cultural centers, parks, cemeteries, fire stations, law enforcement facilities, government buildings, healthcare facilities, hospitals, day cares, and social service facilities.

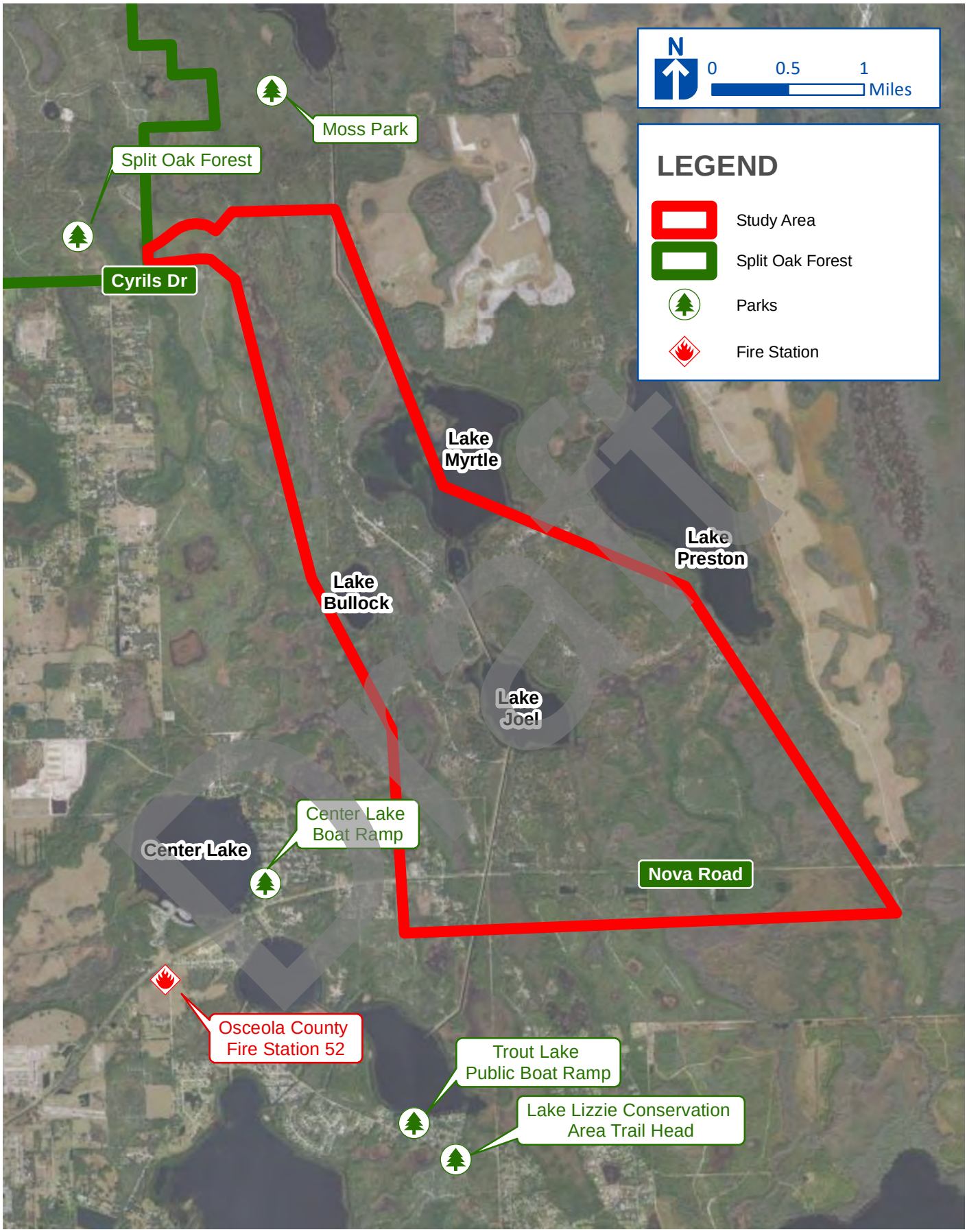
No community focal points are located within the study area. Although there are no parks within the study area, five are located adjacent to the study area, shown on Figure A.1.1. Osceola County Fire Station 52 is also located near the study area.

Demographics

The US Environmental Protection Agency (EPA) developed an Environmental Justice (EJ) screening tool, called EJSCREEN. This tool uses the American Community Survey (ACS) data to derive demographic indicators, one of which is referred to as the Demographic Index. The demographic index is a combination of percent low-income[1] and percent minority[2], the two demographic factors that were explicitly named in Executive Order 12898 on Environmental Justice. The demographic index for the study area is 31%, compared to 41% for the State of Florida, based on ACS 2014 to 2018 data. The study area has below average demographic indices as compared to the state, indicating that there is a smaller percentage of minority and low-income persons in the project corridor.

[1] Percent low-income is defined by the EPA as the percent of a census block group's population in households where the household income is less than or equal to twice the federal "poverty level."

[2] Percent minority is defined by the EPA as the percent of individuals in a census block group who list their racial status as a race other than white alone.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road**	**Figure A.1.1: Community Focal Points**	**Page Number: 1-2**

The EJSCREEN data indicates that there are 38% people of color in the census block groups that intersect the study area, compared to 46% in the State of Florida. Similarly, 25% of the households in the study area are categorized as low-income, compared to 35% in the State of Florida. Figures A.1.2 and A.1.3 show the percent poverty[3] and percentage of minority populations in the study area, based on ACS 2018 census block group data. Census block groups are an area defined by the Census Bureau that usually has between 600 and 3,000 residents. Table A.1.1 contains the percent of the population by race. The largest minority percentage in the study area is Hispanic at 33%.

Table A.1.1: Population by Race in the Study Area

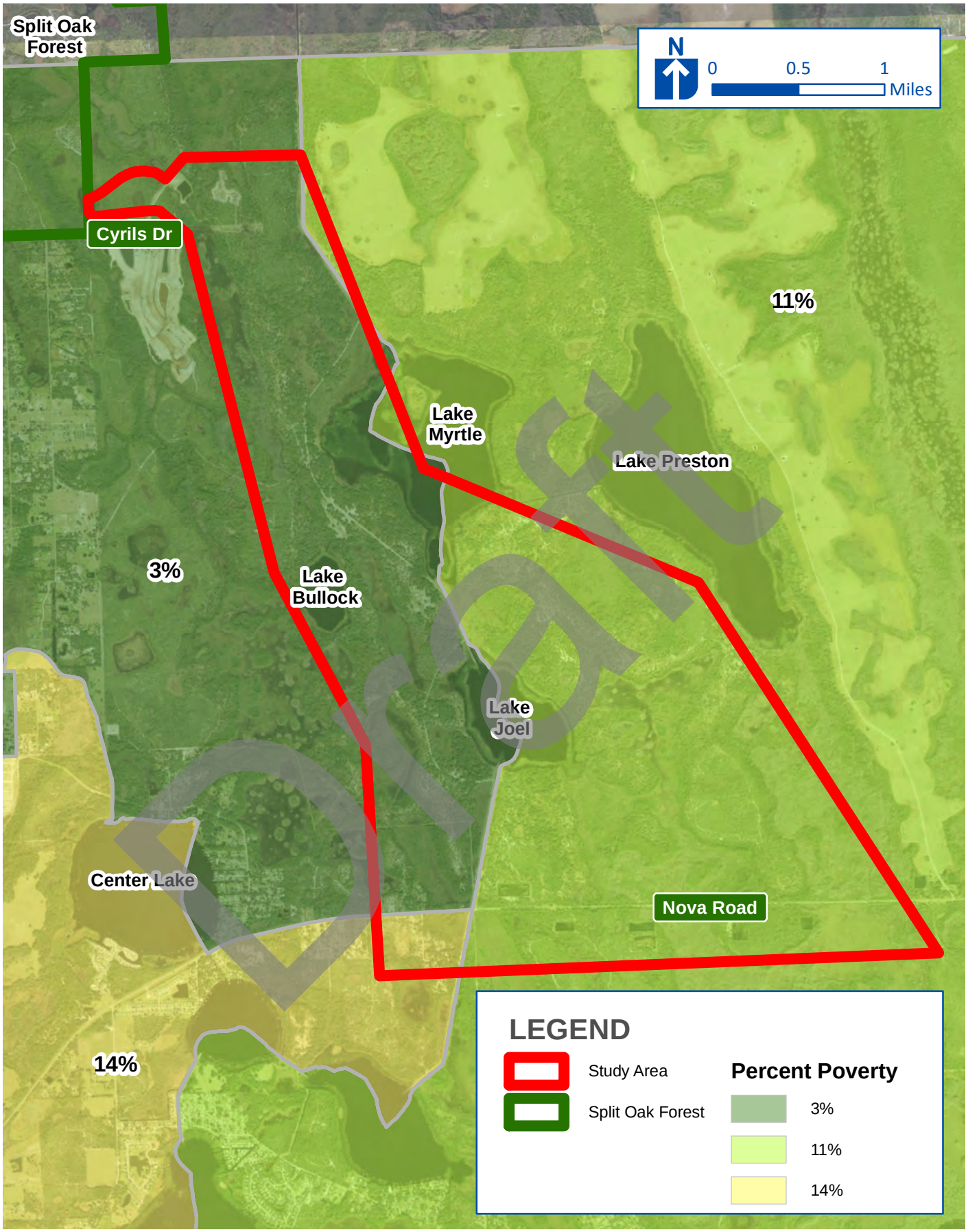
Race	Percentage in Study Area
White	62%
Hispanic	33%
Black	2%
Pacific Islander	1%
Two or more Races	1%

Other demographic indicators in the EJSCREEN report include: linguistically isolated populations, population with less than a high school education, population under age 5, and population over age 64. Table A.1.2 shows all of the demographic indicators for the study area.

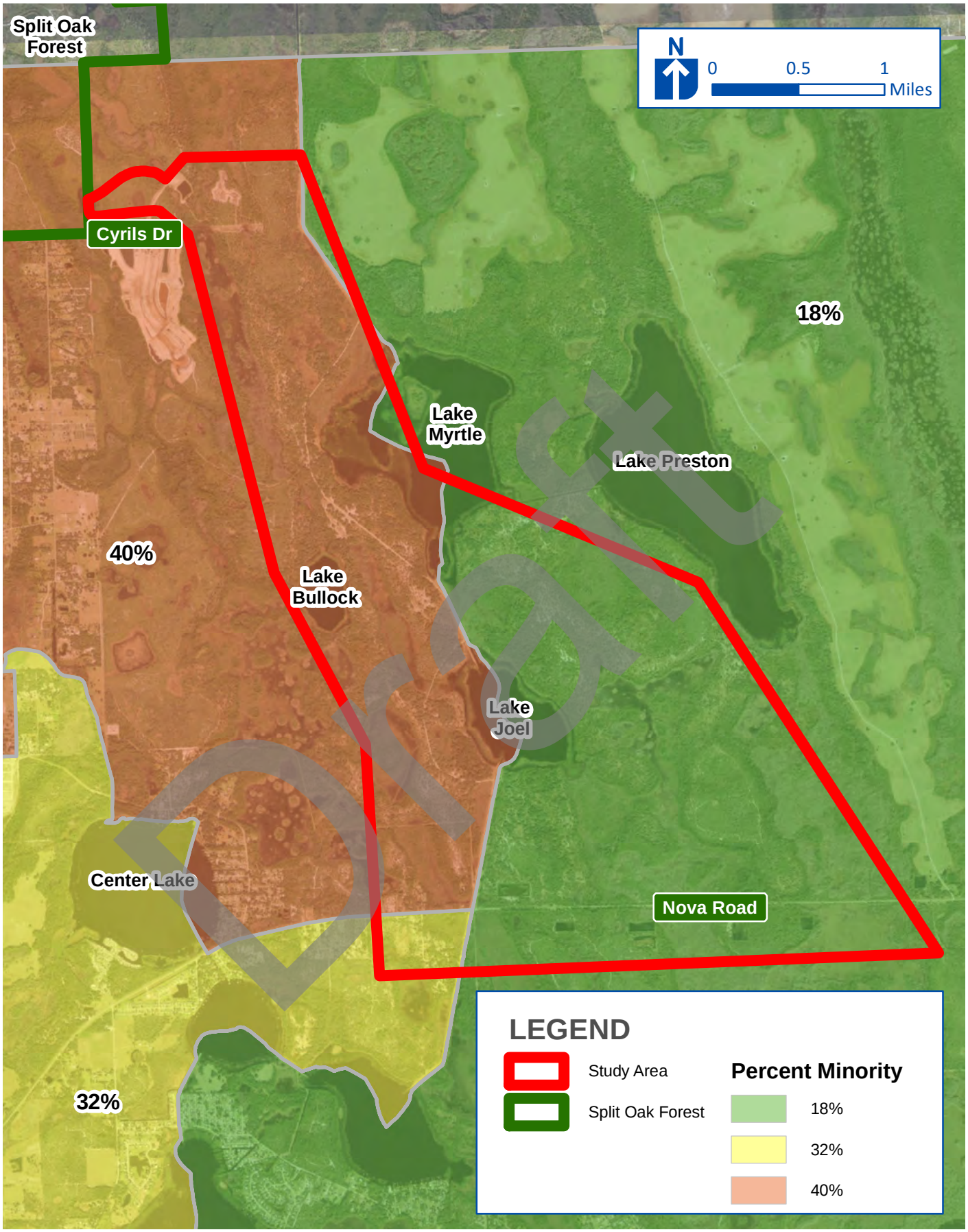
Table A.1.2: EJSCREEN Demographic Indicators

Demographic Indicator	Study Area Percentage	State of Florida Percentage
Demographic Index	31%	41%
People of Color Population	38%	46%
Low Income Population	25%	35%
Linguistically Isolated Population	1%	7%
Population with Less than High School Education	8%	12%
Population under Age 5	7%	5%
Population over Age 64	19%	20%

[3] Percent poverty is defined by the Census Bureau as the percent of the population with income in the past 12 months below the defined poverty level.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road	Figure A.1.2: Percent Poverty in the Study Area	Page Number: 1-4



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road	Figure A.1.3: Percent Minority in the Study Area	Page Number: 1-5

The study area has lower demographic indicators than the State of Florida in every category, except for population under the age of five years old. The study area has seven percent of the population age five or less, compared to five percent in the State of Florida. Interestingly, although 33% of the population in the study area is Hispanic, only one percent of the population is linguistically isolated.

No changes to the population or demographic characteristics of the study area are anticipated to result from the project as the proposed corridor traverses through undeveloped land. Based on the analysis, the project will not cause disproportionately high and adverse effects on any minority or low-income population in accordance with the provisions of the President's Executive Order on Environmental Justice (EO 12898).

2. Economic

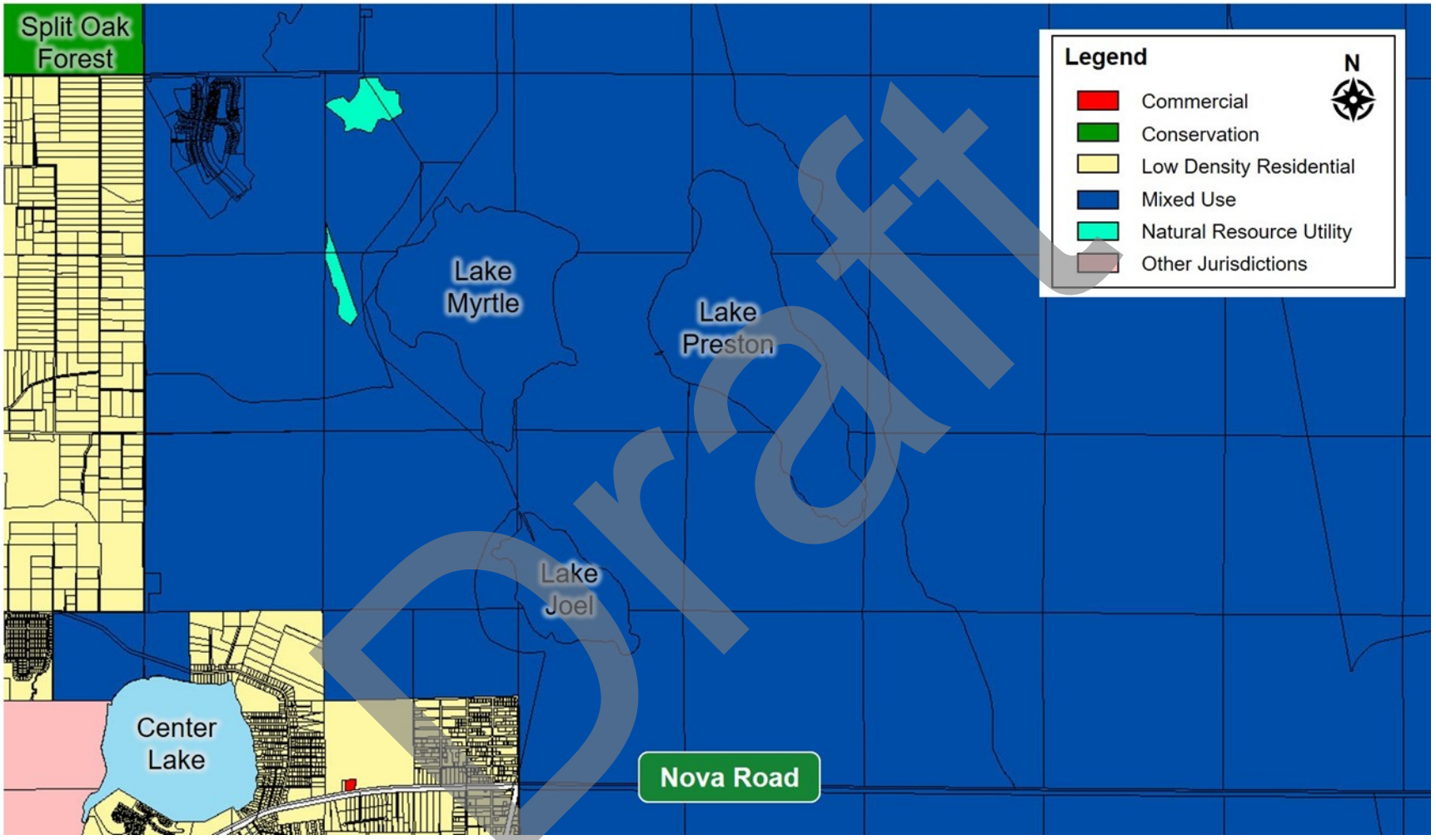
The Northeast District Conceptual Master Plan is an approved development that encompasses the majority of the study area. This planned development is anticipated to add 29,320 residential dwellings, 8.5 million square feet of commercial/office/industrial, almost two million square feet of institutional/civic, and 5,000 hotel rooms. The Northeast Connector will serve the planned Northeast District with a high-speed limited access facility connecting the various residential and commercial hubs. Therefore, the proposed project is anticipated to enhance the economic viability and growth in Osceola County and the greater Central Florida region.

3. Land Use Changes

The existing land in the corridor is primarily agricultural. According to the Osceola County property appraiser 2019 data, 99% of the land in the study area is agricultural, 0.6% is public/semi-public (waterbodies), and approximately 0.2% is residential and vacant residential. Forty structures/buildings are located within the study area. The majority of those are located in the southwest quadrant of the study area, near Nova Road.

The Osceola County 2040 Future Land Use Map indicates the study area will be converted to entirely mixed use, as shown on Figure A.3.1. This land use is consistent with the approved Northeast District Conceptual Master Plan which accounted for the addition of a north-south limited access roadway through the development. Therefore, this project is not anticipated to change or effect land use patterns. The land use within the study area is changing based on the approved Northeast District Conceptual Master Plan and Phase 1 is currently under construction.

Figure A.3.1: Osceola County Future Land Use Map



4. Mobility

The Northeast Connector is an important limited access high-speed toll facility segment that is designed to serve Osceola County's urban growth area. Together, SR 534, the Northeast Connector Expressway, the Southport Connector Expressway, and the Poinciana Parkway Extension/I-4 Connector are a significant part of the CFX Visioning + 2040 Master Plan. The proposed expressway system connects high-density residential and commercial areas to the regional limited access network (I-4 and Florida's Turnpike) and the existing CFX expressway system (SR 417, SR 528, and SR 429).

The Northeast Connector will provide significant improvements to mobility by extending SR 534 to Nova Road and thereby providing residents of the Northeast District direct access to a high-speed limited access roadway. The Northeast Connector will also provide a vital north-south connection between the planned SR 534 and the planned OBCC. These connections will promote regional connectivity, provide for transit opportunities, and enhance mobility in Osceola County and the entire Central Florida region. The link between the planned SR 534 and OBCC will also provide a seamless limited access, high-speed connection from the OIA to I-95 in Brevard County.

5. Aesthetic Effects

The study area is primarily undeveloped with a nature-based viewshed. However, the study area is being developed as part of the Northeast District Conceptual Master Plan. Residential development has begun on the northern portion of the study area. The Del Webb master plan community, Weslyn Park, and the Marina District are currently under construction. These developments will alter the aesthetics of the area. The views from these developments will be minimally impacted by the addition of the expressway. However, the Northeast Connector was planned as part of the Northeast District, and therefore, the developments are designed with the proposed expressway in mind. No substantial aesthetic effects are anticipated as a result of the project.

6. Relocation Potential

The roadway Preferred Alternative impacts six parcels, owned by one property owner, Deseret Ranches. A total of 184.6 acres of right-of-way are needed for the roadway portion of the Preferred Alternative. The preferred pond and floodplain compensation sites will require another 57.1 acres and will impact one additional parcel, also owned by Deseret Ranches. The proposed project, as presently conceived, will not displace any residences or businesses within the community. Should this change over the course of the project, CFX will carry out the procedures as identified in its Property Acquisition, Disposition, and Permitting Procedures Manual.

B. Cultural

The project will not have significant impacts to cultural resources. Below is a summary of the evaluation performed.

1. Historic Sites/Districts

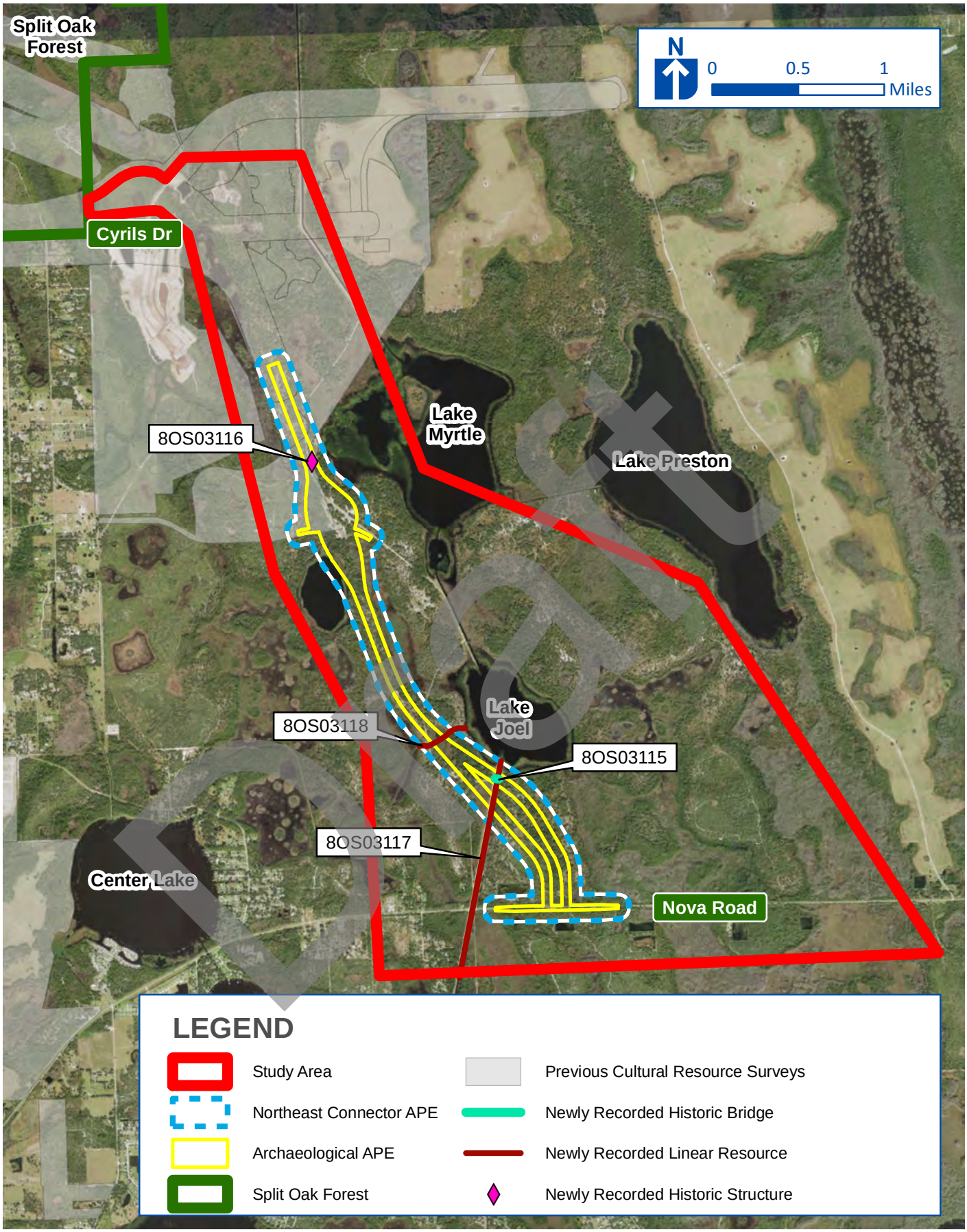
A Cultural Resource Assessment Survey (CRAS), conducted in accordance with 36 CFR Part 800, was performed for the project, and the resources described in this section were identified within the project Area of Potential Effects (APE). FDOT found that these resources do not meet the eligibility criteria for inclusion in the National Register of Historic Places (NRHP), and State Historic Preservation Officer (SHPO) concurred with this determination on August 5, 2021. Therefore, CFX, in consultation with SHPO, has determined that the proposed project will result in No Historic Properties Affected.

The cultural resources APE was defined to include the proposed Northeast Connector right-of-way and approximately 3,500 feet of existing right-of-way along Nova Road. The APE was extended to the back or side property lines of parcels adjacent to the right-of-way, or a distance of no more than 328 feet from the proposed right-of-way. The historic structure survey was conducted within the entire APE.

The Florida Master Site File (FMSF) data from January 2021 was reviewed to identify any previously recorded cultural resources within the project APE. The FMSF review indicates that three previous cultural resource surveys have been conducted within the current study area, all of which are located at the northern end of the APE. Two of these surveys were conducted for the Osceola Parkway Extension PD&E Study and the third was completed to meet permitting requirements for the Sunbridge development. No historic sites or districts were identified during these surveys.

The architectural survey resulted in the identification and evaluation of four newly recorded historic resources within the Northeast Connector APE. The newly recorded historic resources include two linear resources (8OS03117 and 8OS03118), one bridge (8OS03115), and one structure (8OS03116), shown on Figure B.1.1. The two linear resources are the C-32C canal and the Sungrove Lane canal, the bridge carries the dirt road over the C-32C canal, and the structure is an old barn built around 1944.

Based on the results of the current survey, all four resources are ineligible for the NRHP due to a lack of significant historic associations and architectural and/or engineering distinction. No further architectural work is recommended.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road

Figure B.1.1: Historic Resources Recorded in the APE

2. Archaeological Sites

As described in Section B.1, the FMSF was reviewed and three previous cultural resource surveys have been conducted within the study area. As a result of those surveys, one archaeological site was recorded within the Northeast Connector APE. The Sunbridge 3 Site 3 (8OS02933) archaeological site represents a low-density, historic artifact scatter dated to the twentieth century. Sunbridge Site 3 is situated outside of the proposed right-of-way but is located within the APE. This site has been determined to be ineligible for the NRHP by SHPO. For more information on this resource's location, refer to the CRAS, available under separate cover.

The archaeological survey was conducted within the existing and proposed right-of-way. The archaeological field survey consisted of systematic subsurface shovel testing according to the potential for buried archaeological sites. Flooding and saturated soils were significant problems throughout much of the APE. Shovel tests could not be excavated in standing water, and in some cases, these areas could not be pedestrian surveyed. Shovel testing in these areas was concentrated on raised oak or pine hammocks, which were considered to have a high probability for prehistoric archaeological deposits if they were located within 328 feet of a freshwater or wetland resource. No shovel testing was conducted in previously surveyed areas at the northern end of the APE as these previous surveys used testing methodology consistent with current standards.

With the exception of the 10 shovel tests along Nova Road and eight shovel tests in proximity to access roads and hunting camps, soils in the Northeast Connector archaeological APE appeared to be undisturbed. However, soil saturation and the water table affected the depth to which some shovel tests could be excavated. The archaeological survey included the excavation of 246 shovel tests, of which two were positive for cultural material. Based on these two positive shovel tests and a single surface find, three archaeological occurrences were recorded within the Northeast Connector archaeological APE. Archaeological occurrences are, by definition, ineligible for consideration in the NRHP. No other archaeological occurrences or archaeological sites were recorded within the Northeast Connector archaeological APE. SHPO concurred with the findings of the CRAS on August 5, 2021.

3. Recreational Areas and Protected Lands

No recreation areas or protected lands are located within the study area.

C. Natural

The project will not have significant impacts to natural resources. Below is a summary of the evaluation performed.

1. Wetlands and Other Surface Waters

The project has been evaluated for potential impacts to wetlands in accordance with Executive Order 11990, "Protection of Wetlands." Formal wetland boundary delineations and surveys were not conducted as a part of this study and will be completed as part of the state and federal permit process. Limited ground truthing by biologists was conducted during field reviews on November 17, 2020. During the field review, a representative sample of wetlands were visited by biologists. There are no wetlands or surface waters designated as Outstanding Florida Waters within the project study area.

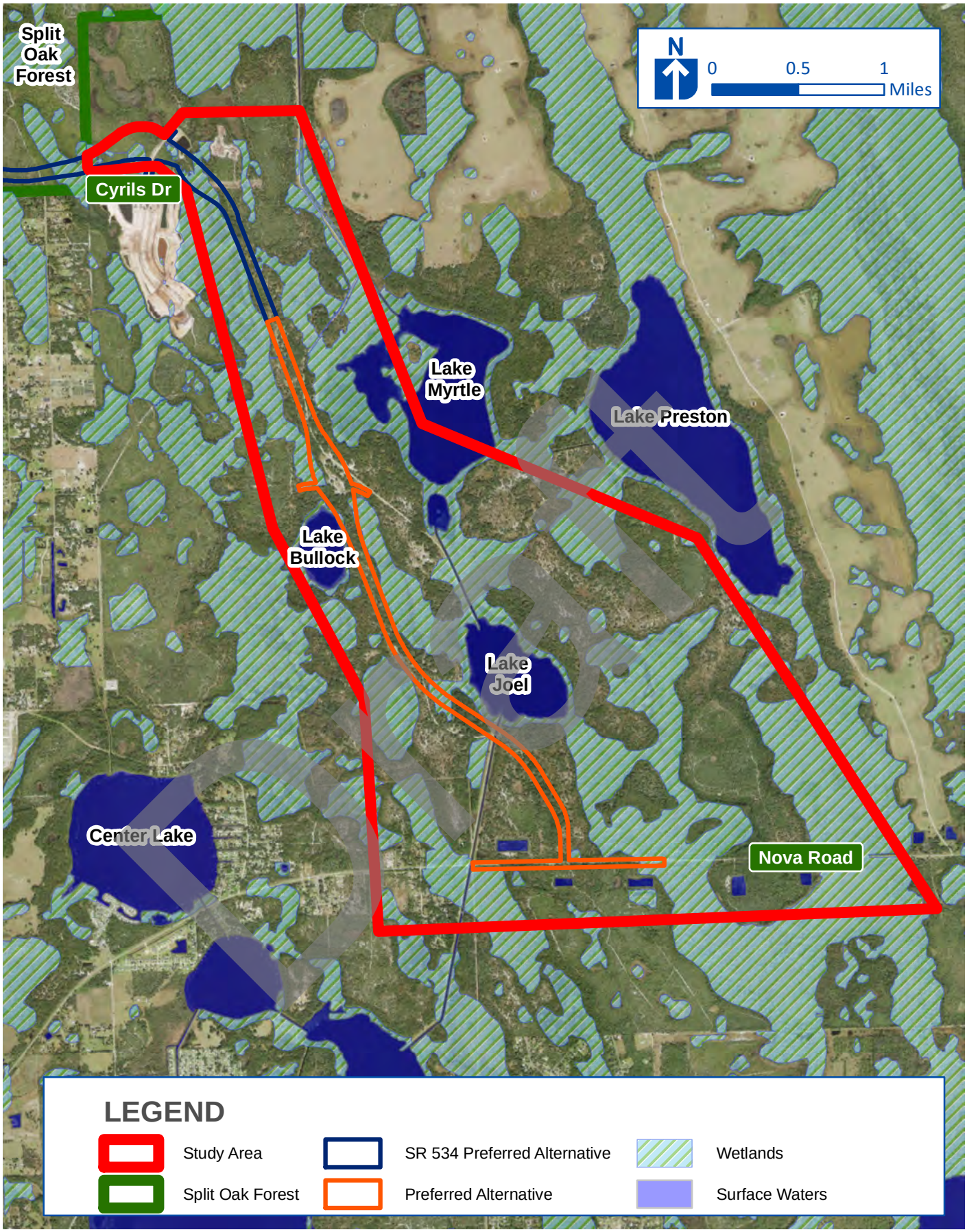
Approximately 406 acres of surface waters are present within the study area. The majority of the surface waters in the study area are named waterbodies: Lake Myrtle, Lake Bullock, and Lake Joel. Wetlands account for approximately 2,167 acres in the study area, constituting approximately 38% of the land area. Wetland types within the study area can be categorized as herbaceous or forested wetland types and include mixed wetland hardwoods, cypress, hydric pine flatwoods, wetland forested mixed, freshwater marshes, wet prairies, and emergent aquatic vegetation. Figure C.1.1 shows the surface waters and wetlands in the study area.

Table C.1.1 shows the potential wetland impacts for the Preferred Alternative. Within the Jack Brack Road segment, the Tighter Dimond Interchange has 0.5-acre of surface water impacts and 11.0 acres of wetland impacts. Within the Nova Road Connection segment, Option 2 has 0.5-acre of surface water impacts and 6.5 acres of wetland impacts. The Preferred Alternative has a total of 1.0 acre of surface water impacts and 17.5 acres of wetland impacts.

Table C.1.1: Wetland Impact Analysis

Segment	Alternative	Description	Impact (Acres)
Jack Brack Road	**Tighter Diamond Interchange**	Other Surface Waters	0.5
		Freshwater Marshes	11.0
		Total Wetland Impacts	**11.0**
Nova Road Connection	**Option 2**	Other Surface Waters	0.5
		Wet Prairie	6.5
		Total Wetland Impacts	**6.5**

Note: Wetland impact estimates are based on available geographic information systems (GIS) data and are rounded to the nearest one-half acre.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road

Figure C.1.1: Wetlands and Surface Waters in the Study Area

For more information on wetland impacts, refer to the Natural Resources Evaluation (NRE), available under separate cover.

The Uniform Mitigation Assessment Methodology (UMAM) per Chapter 62-345, F.A.C., is a state and federally approved method used to assess wetlands in the State of Florida. UMAM was developed by the Florida Department of Environmental Protection (FDEP) and the water management districts to determine the amount of mitigation required to offset adverse impacts to wetlands. The methodology was designed to assess functions provided by wetlands, the amount those functions are reduced by a proposed impact, and the amount of mitigation necessary to offset the proposed functional losses. This method is also used to determine the degree of improvement in ecological value that will be created by proposed mitigation activities.

For this PD&E Study, representative UMAM scores were developed for representative wetlands (by Florida Land Use, Cover and Forms Classification System (FLUCFCS) category) directly impacted by the proposed project. In order to calculate functional loss, the difference between the existing condition (current) scores and the proposed condition (with) scores for each habitat type (see Table C.1.2) was multiplied by the acreage of proposed impact to determine the lost value of functions to fish and wildlife resulting from construction of the proposed project (see Table C.1.2). Functional loss was calculated by habitat type for the Preferred Alternative.

Within the Jack Brack Road segment, the Tighter Diamond Interchange Alternative is anticipated to result in a loss of 8.0 UMAM Functional Units. Within the Nova Road Connection segment, Option 2 is anticipated to result in a loss of 4.7 UMAM Functional Units. The estimated functional loss values are based on existing conditions with limited ground-truthing. The UMAM scores and values presented in Table C.1.2 are subject to agency review and are likely to change during any state and federal permitting process.

CFX has undertaken all actions to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agency's responsibilities. Nonetheless, CFX has determined that there is no practicable alternative to construction impacts occurring in wetlands. Any unavoidable wetlands will be mitigated to achieve no net loss of wetland function.

Table C.1.2: Preliminary UMAM Functional Loss for Preferred Alternative

Description	FLUCFCS	Location and Landscape	Water Environment	Community Structure	Score (Sum/30)	Delta	Impacted Acres	Functional Loss
Freshwater Marsh	641	7	6	6	0.73	-0.73	11.0	-8.0
Wet Prairie	643	7	6	6	0.73	-0.73	6.5	-4.7

Wetland impact estimates are based on available GIS data. Wetland impacts represented in this table are rounded to the nearest one-half acre.

2. Aquatic Preserves and Outstanding Florida Waters

There are no aquatic preserves or Outstanding Florida Waters within the study area and therefore, the Preferred Alternative will not impact either of these resources.

3. Water Resources

A Water Quality Impact Evaluation (WQIE) was conducted for the project to comply with the Clean Water Act, and is available under separate cover. The results of the WQIE indicate that the project will not result in significant effects to water quality. The project will meet all applicable South Florida Water Management District (SFWMD) criteria related to water quality. The project is currently a non-federal action receiving no federal monies; therefore, concurrence from the United States Environmental Protection Agency (USEPA) is not required according to the Safe Drinking Water Act. Best Management Practices (BMPs) that would control erosion, sediment release, and storm water runoff to minimize adverse impacts on surface water resources will be implemented during design, permitting, and construction.

The Pond Siting Report (PSR) prepared for this project identified seven drainage basins and recommended two pond sites for each basin. Two types of ponds were evaluated in the PSR: stormwater management facilities, which treat and attenuate the proposed roadway, and floodplain compensation (FPC) ponds, which provide equivalent floodplain storage that is displaced by the proposed roadway. Additionally, the FPC pond will provide attenuation for the 100-year storm event volume that is not already included in the stormwater management ponds. All stormwater management facilities are assumed to be wet.

Design considerations for each pond site location included a desktop review of the best available data, which included hydraulic data, hydrology, contamination sites, wetland limits, wildlife sightings, archaeological or historical sites, and conservation areas. No site-specific investigations have been performed or used in this analysis; this includes field survey, geotechnical testing, wetland delineation, threatened and endangered species observations, archaeological/cultural resource investigations, or contamination screenings. The pond siting results are summarized in Table C.3.1, the ponds highlighted in blue indicate a preferred pond site. The ponds are also shown on Figure C.3.1.

Table C.3.1: Pond Site Matrix

Pond Site	Wetland Impacts	Wildlife Habitat	Contamination Risk	Floodplain Impacts	Cultural or Archaeological Resource Impacts	Access Issues	Number of Property Owners	Pond Right-of-Way Area (acres)	Construction Cost ($)
1A	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**2.2**	**224 k**
1B	0	Moderate	Low	0.6	Low	None	1	2.2	224 k
2A	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**3.9**	**384 k**
2B	0	Moderate	Low	0	Low	None	1	3.9	384 k
3A	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**3.1**	**306 k**
3B	0	Moderate	Low	1.5	Low	None	1	3.1	305 k
4A	0	Moderate	Low	0	Low	None	1	5.9	601 k
4B	**0**	**Moderate**	**Low**	**0.3**	**Low**	**None**	**1**	**3.7**	**369 k**
5A	**2.55**	**Moderate**	**Low**	**3.2**	**Low**	**None**	**1**	**4.5[1]**	**449 k**
5B	0.4	Moderate	Low	3.1	Low	None	1	4.5	473 k
6A	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**4.2[1]**	**435 k**
6B	0	Moderate	Low	0	Low	None	1	4.2	452 k
7A	0.1	Moderate	Low	0.2	Low	None	1	3.3	332 k
7B	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**3.4**	**334 k**
FPC Lake Joel	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**7.0**	**389 k**
FPC Bullock Lake	**0**	**Moderate**	**Low**	**0**	**Low**	**None**	**1**	**25.1**	**1.5 M**

[1] Ponds 5A and 6A are located inside the roadway right-of-way footprint and do not require any additional right-of-way.

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road**	**Figure C.3.1: Pond Sites**	**Page Number: 1-18**

4. Wild and Scenic Rivers

There are no designated Wild and Scenic Rivers or other protected rivers in the project area and therefore, the Preferred alternative will not impact this resource.

5. Floodplains

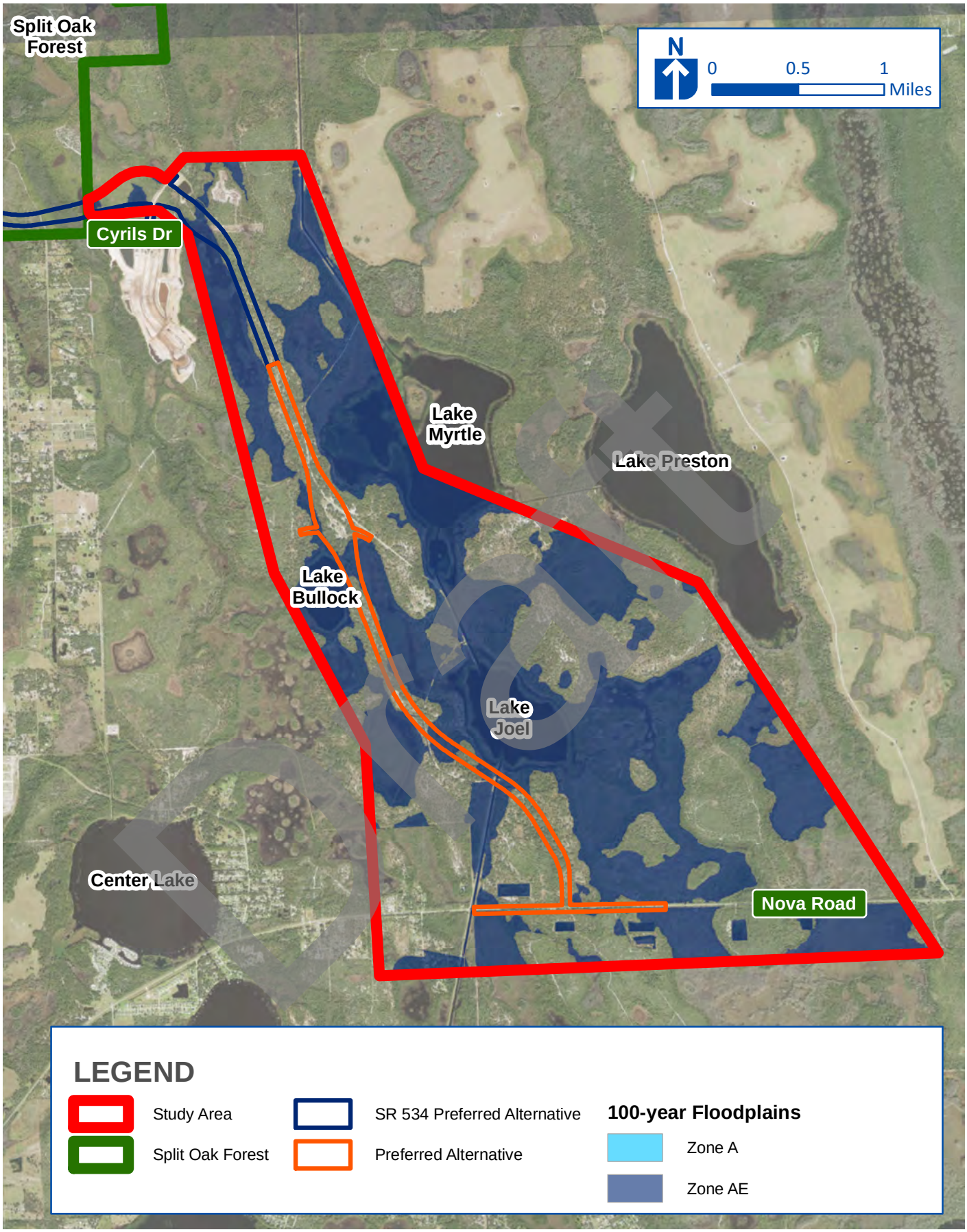
Floodplain impacts resulting from the project were evaluated pursuant to Executive Order 11988 of 1977, Floodplain Management.

The project limits are within the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) Panel No's. 12097C0120G and 12097C0110G for Osceola County, effective June 18, 2013. The major floodplain impacts are associated with Jim Branch, Lake Myrtle, and Lake Preston. Only flood zones classified as Zone X, Zone AE, and Zone A are present along the corridor. Zone X is an area of minimal flood hazard and was not evaluated for floodplain impacts. Zone AE has an established Base Flood Elevation (BFE) that has been approved by FEMA and ranges from 63 feet to 68 feet North American Vertical Datum (NAVD) within the study area. Zone A has an identified area of inundation resulting from the 100-year storm event, but no BFE has been established. The 100-year floodplains in the study area are shown on Figure C.5.1.

The Location Hydraulics Report (LHR) prepared for this project identified five cross drains (CD) for the Preferred Alternative, as indicated in Table C.5.1.

Table C.5.1: Proposed Cross Drain

Cross Drain	Pipe Size	Flow Direction	Within FEMA Floodplain
CD-1	Double 48"	East	No
CD-2	Double 48"	East	Yes, mitigated within FPC pond
CD-4	Double 10'x9'	East	Yes, mitigated within FPC pond
CD-5	Quadruple 6'x3'	South	Yes, mitigated within FPC pond
CD-6	Triple 60"	East	No



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road**	**Figure C.5.1: 100-Year Floodplains in the Study Area**	**Page Number: 1-20**

Floodplain impacts are not expected to occur within the contributing areas for cross drains CD-1 and CD-6. There is some encroachment of the existing 100-year FEMA floodplain at cross drain CD-2, CD-4, and CD-5 which will be mitigated by routing the floodplain impacted volume to the proposed stormwater management facility or floodplain compensation pond. Floodplain impacts at the footprint of the bridge over C-32C canal were not considered and will be evaluated during the final design phase.

This new alignment project will have encroachments into the floodplain. Proposed cross drains and bridges will perform hydraulically in a manner equal to or greater than the existing condition, and backwater surface elevations are not expected to increase. Floodplain encroachments will be mitigated on a cup-for-cup basis in floodplain compensation sites and treatment/attenuation pond sites, which should result in no increase to the floodplain elevations. These changes will not result in any adverse impacts on the natural and beneficial floodplain values or any changes in flood risk or damage. There will not be a change in the potential for interruption or termination of emergency service or emergency evacuation routes. Therefore, it has been determined that the encroachment type for this study is classified as "minimal."

6. Coastal Barrier Resources

There are no Coastal Barrier Resources in the project area and therefore, the Preferred alternative will not impact this resource.

7. Protected Species and Habitat

A protected species and habitat assessment was conduced based on available resources and confirmed by qualified ecologists during limited field reviews. Ecologists documented the types and quality of habitats in the study area. This information was used in conjunction with publicly available GIS resources and field surveys conducted on November 17, 2020, for the purpose of supporting effect determinations for protected resources.

The United States Fish and Wildlife Service's (USFWS's) Environmental Conservation Online System (ECOS) provided the list of potentially occurring federally protected species shown in Table C.7.1. Potentially occurring species which are state-listed or included in *Florida's Imperiled Species Management Plan* (December 2018) are also included in Table C.7.1.

Table C.7.1: Listed Species Likelihood of Occurrence

Common Name	Scientific Name	Federal Status	State Status	Likelihood of Occurrence
Mammals				
Florida Panther	*Puma concolor coryi*	*E*	*E*	Low
Florida Black Bear	*Ursus americanus floridanus*	*N*	*N**	Moderate
Reptiles				
Eastern Indigo Snake	*Drymarchon corais couperi*	*T*	*T*	High
American Alligator	*Alligator mississippiensis*	*T(S/A)*	*N*	High
Gopher Tortoise	*Gopherus polyphemus*	*C*	*T*	High
Florida Pine Snake	*Pituophis melanoleucus mugitus*	*N*	*T*	High
Birds				
Everglade Snail Kite	*Rostrhamus sociabilis plumbeus*	*E*	*E*	Moderate
Florida Grasshopper Sparrow	*Ammodramus savannarum floridanus*	*E*	*E*	Low
Red-Cockaded Woodpecker	*Picoides borealis*	*E*	*E*	Low
Wood Stork	*Mycteria americana*	*T*	*T*	High
Audubon's Crested Caracara	*Polyborus plancus audubonii*	*T*	*T*	Low
Florida Scrub-Jay	*Aphelocoma coerulescens*	*T*	*T*	Low
Florida Sandhill Crane	*Grus canadensis pratensis*	*N*	*T*	High
Florida Burrowing Owl	*Athene cunicularia floridana*	*N*	*T*	Low
Little Blue Heron	*Egretta caerulea*	*N*	*T*	High
Tricolored Heron	*Egretta tricolor*	*N*	*T*	High
Roseate Spoonbill	*Ajaia ajaja*	*N*	*T*	Moderate
Bald Eagle	*Haliaeetus leucocephalus*	*N***	*N***	Moderate

E= Endangered; T=Threatened; T(S/A)=Threatened due to Similarity of Appearance; SSC=Species of Special Concern; C – Candidate Species; N=Not Listed;
*The Florida black bear is still protected under Florida Black Bear Conservation Rule 68A-4.009 (F.A.C.) and the FFWCC Florida Black Bear Management Plan
**The Bald eagle is still protected under the *Bald and Golden Eagle Protection Act*, *Migratory Bird Treaty Act* and FFWCC Management Plan regulations

Nine federally listed species were evaluated to determine if the proposed project will affect these species. Based on a review of available data, in conjunction with field reconnaissance and surveys, preliminary effects determinations have been made and are shown in Table C.7.2.

Table C.7.2: Federally Listed Species Preliminary Effect Determination

Common Name	Preliminary Effect Determination	Federal Status
Florida Panther	*no effect*	*E*
Eastern Indigo Snake	*may affect, not likely to adversely affect*	*T*
Florida Grasshopper Sparrow	*no effect*	*E*
American Alligator	*may affect, not likely to adversely affect*	*T(S/A)*
Everglade Snail Kite	*no effect*	*E*
Red-Cockaded Woodpecker	*no effect*	*E*
Wood Stork	*may affect, not likely to adversely affect*	*T*
Audubon's Crested Caracara	*may affect, not likely to adversely affect*	*T*
Florida Scrub-Jay	*no effect*	*T*
E= Endangered; T=Threatened; T(S/A)=Threatened due to Similarity of Appearance; SSC=Species of Special Concern; C=Candidate Species; N=Not Listed		

A review of USFWS's ECOS shows that the study area does not include any designated or proposed critical habitat for any threatened or endangered species. For more information on protected species and habitat, refer to the NRE, available under separate cover.

8. Essential Fish Habitat

There is no Essential Fish Habitat in the project area and therefore, the Preferred alternative will not impact this resource.

D. Physical

The project will not have significant impacts to physical resources. Below is a summary of the evaluation performed.

1. Highway Traffic Noise

A review of the Preferred Alternative determined that this project is a Type I project as defined in Part 2, Chapter 18 of the Florida Department of Transportation (FDOT) PD&E Manual (dated July 1, 2020); therefore, an assessment of potential traffic noise impacts and consideration of noise abatement was performed. The Federal Highway Administration (FHWA) has established Noise Abatement Criteria (NAC) for land use activity categories. Maximum noise threshold levels, or criteria levels, have been established for five of the seven activity categories. These criteria determine when an impact occurs and when consideration of noise abatement is required. Noise abatement measures must be considered when predicted noise levels approach or exceed the NAC levels or when a substantial noise increase occurs. A substantial noise increase occurs when the existing noise level is predicted to be exceeded by 15 dB(A) or more as a result of the transportation improvement project. The FDOT defines "approach" as within 1.0 dB(A) of the FHWA criteria. The land surrounding the Preferred Alternative is categorized by NAC as Category F, which includes lands such as agricultural, industrial, and retail that are not considered noise sensitive.

A review of the existing and future land use maps, and planned developments was performed to determine if there are noise sensitive receptors within the corridor. The review of the available land use data determined that there are no noise sensitive receptors within the project corridor that could be impacted by highway traffic noise since the study area consists of undeveloped and agricultural lands. In addition, a review was performed in June 2021 of building permits issued for future developments in the area that would require noise abatement consideration. There are planned developments in the area, however, none of these developments have active residential building permits, so they were not evaluated. In accordance with the FDOT PD&E Manual, no detailed noise modeling, impact analysis, or consideration of noise abatement measures were performed or warranted. Therefore, the project is not anticipated to result in any traffic noise impacts. To avoid incompatible land uses, noise contours were developed and are included in the Noise Study Technical Memorandum, available under separate cover. It is recommended that the status of planned developments be confirmed and those that have obtained active residential building permits be evaluated during the design phase.

2. Air Quality

The proposed project is located in Osceola County, an area currently designated as being in attainment for all National Ambient Air Quality Standards (NAAQS) including ozone, nitrogen dioxide, particulate matter (2.5 microns in size and 10 microns in size), sulfur dioxide, carbon monoxide and lead. As part of this PD&E Study, the project has been reviewed for air quality impacts consistent with the guidance provided in Part 2, Chapter 19 of the Florida Department of Transportation (FDOT) PD&E Manual entitled Air Quality (dated July 1, 2020).

Based on this review, the project alternatives did not require any detailed Air Quality analysis. The project does not meet the criteria for a Carbon Monoxide (CO) screening and does not meet the thresholds per Section 19.2.2.1, Part 2, Chapter 19 of the FDOT PD&E Manual.

Florida is in attainment for particulate matter; therefore, no project level analysis is needed. In addition, since the Class of Action has been determined to be a Project Environmental Impact Report, the project has no potential meaningful Mobile Source Air Toxics (MSAT) effects and is exempt from a MSAT analysis.

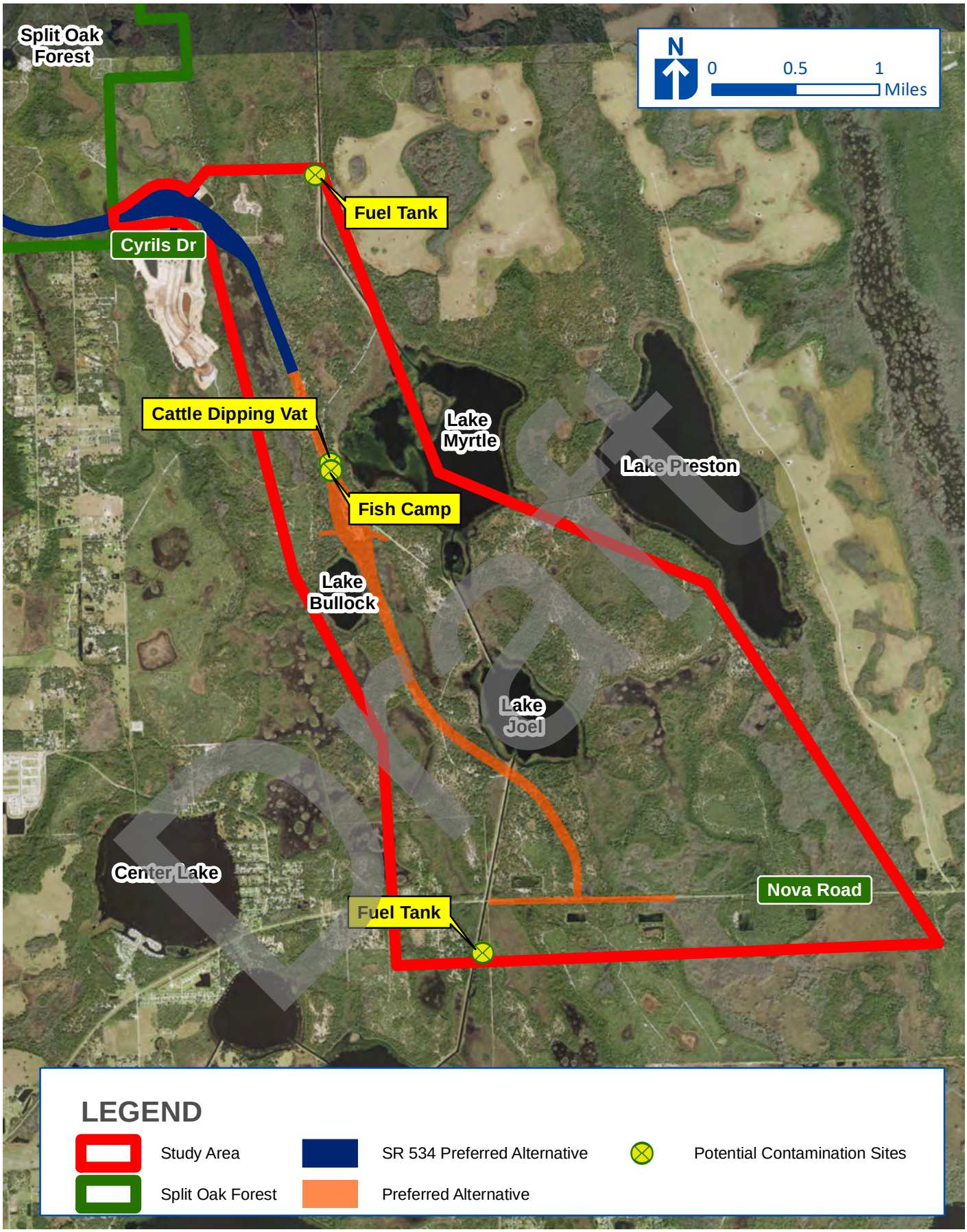
In conclusion, this project is not expected to create adverse impacts on air quality because the project area is in attainment for all NAAQS and would not contribute to any exceedance of any NAAQS. In addition, this project is not funded by state or federal funds, but by an expressway authority; therefore, the state and federal air quality regulations are not applicable. Additional information on air quality analysis is contained in the Air Quality Technical Memorandum (AQTM), available under separate cover.

3. Contamination

A desktop contamination screening was performed for the study area using aerial photography, a Google Earth railroad map layer, and the FDEP's Map Direct website. The following contamination concerns exist within the study area and are shown on Figure D.3.1:

- Cattle ranching;
- A fishing camp; and
- Two petroleum tanks.

No superfund sites were identified within one mile of the study area.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Northeast Connector Expressway - Phase 1 PD&E Study from Cyrils Drive to Nova Road**	**Figure D.3.1: Potential Contamination Sites in the Study Area**	**Page Number: 1-26**

A Level I contamination screening was performed based on the proposed right-of-way footprint. The purpose of this Level I evaluation was to assess the risk of encountering petroleum or hazardous substance contamination of soil, groundwater, surface water, or sediment that could adversely affect this project. The following activities were performed as part of this evaluation: review of public regulatory files, review of historical data sources, a site reconnaissance, and interviews.

The contamination study area was defined by the following distances from the proposed right-of-way:

- All sites within 500 feet;
- Non-landfill solid waste sites within 1,000 feet;
- Solid waste landfills, superfund sites, and national priority list sites within ½ mile.

The Level I contamination evaluation resulted in the identification of two potential contamination risks: the "Fish Camp," and a cattle dipping vat.

The "Fish Camp" shown on Figure D.3.1 has a medium risk of potential contamination. The "Fish Camp" site had one cattle pen visible on aerial photographs from 1944 through 1983. During the site reconnaissance, a farm building (barn), a crop sprayer, a historical cattle pen, a burn pile containing metal objects, and an apparent camp septic tank were observed in the vicinity of the identified "Fish Camp." A noteworthy point is that the potentially historic structure (8OS03116) referenced in Section B.1 is the same site/building identified as the "Fish Camp."

The cattle dipping vat, also shown on Figure D.3.1, has a high risk of potential contamination. The cattle dipping vat was identified through discussions with Mr. JD Humpherys of Suburban Land Reserve who learned of the site from a Deseret Ranches ranch hand. Cattle dipping vats were used until the 1960s to apply pesticides to cattle and other livestock to kill ticks and eliminate tick-borne diseases.

The Preferred Alternative was designed to avoid or minimize involvement with known or potential contamination sites, where possible. However, some sites could not be avoided, and minor right-of-way acquisition is required. A Level II contamination assessment is recommended for both the Fish Camp and the cattle dipping vat. Additional information on contamination conditions is contained in the Contamination Screening Evaluation Report (CSER), available under separate cover.

4. Utilities and Railroad

No railroads or railroad crossings are located within or adjacent to the study area.

Five utility agency/owners (UAOs) were identified in the study limits: CenturyLink, Comcast Communications, Duke Energy, Orlando Utilities Commission (OUC), and Tohopekaliga Water Authority (TWA). Due to the undeveloped nature of the corridor, no major utility impacts are anticipated. Comcast, Duke Energy (Distribution and Transmission), and OUC Lighting indicated that they have no facilities within the project limits.

CenturyLink has buried copper lines present along both sides of Nova Road starting at Sungrove Lane and extending to the west, and also along Absher Road and Cyrils Drive. No impacts to these facilities are anticipated.

OUC has aerial distribution lines along the south side of Nova Road and into the adjacent side street and single-family homes in the project study area. OUC overhead transmission with fiber cable is also present in the study area near Nova Road and the C-32C canal. No impacts to the existing overhead transmission lines are anticipated. The aerial distribution line along Nova Road will be impacted. OUC plans to relocate the line to the north side of Nova Road and estimates the cost of relocation as $20,000. The planned OUC transmission line is anticipated to be parallel to the Northeast Connector on the west side of the roadway.

TWA has utilities located along Cyrils Drive and is the utility provider for the water treatment plant currently under construction just north of the future Jack Brack Road extension. The utilities along Cyrils Drive will not be impacted by the project. The Northeast Connector alignment parallels the water treatment plant under construction, but no impacts are anticipated.

Additional information on utilities in the study area is contained in the Utility Assessment Report, available under separate cover.

5. Construction

Construction activities for the proposed improvements will have temporary air, noise, water quality, traffic flow, and visual impacts for those residents and travelers within the immediate vicinity of the project. The air quality impact 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 using watering or the application of calcium chloride in accordance with Standard Specifications for Road and Bridge Construction.

The contractor will adhere to the most current version of the Standard Specifications for Road and Bridge Construction to minimize or eliminate potential construction noise and vibration impacts.

Water quality impacts resulting from erosion and sedimentation will be controlled in accordance with the Standard Specifications for Road and Bridge Construction and using BMPs.

Maintenance of Traffic and Sequence of Construction will be planned and scheduled to minimize traffic delays throughout the project. Signs will be used as appropriate to provide notice of lane closures and other pertinent information to the traveling public.

By following Standard Specifications for Road and Bridge Construction, no substantial impacts from construction are anticipated.

6. Bicycle and Pedestrians

The Northeast Connector is a proposed limited-access facility; therefore, no bicycle or pedestrian facilities will be provided along the expressway. At this time, no multimodal improvements are recommended as part of the Northeast Connector. However, the median can accommodate additional lanes and/or a potential multimodal corridor, if warranted in the future. Seven-foot buffered bicycle lanes, a five-foot sidewalk on the north side, and a 10-foot shared use path on the south side are proposed for Jack Brack Road within the limits of the proposed interchange. Similarly, the section of Nova Road that will be upgraded to four-lanes will include seven-foot buffered bicycle lanes and five-foot sidewalk per direction from Osceola County.

7. Navigation

There are no navigable waterways located within the study area and therefore, the Preferred alternative will not impact this resource.