PROJECT ENVIRONMENTAL IMPACT REPORT RE-EVALUATION

Osceola Parkway Extension
SR 417 to Cyrils Drive

Engineering Analysis Technical Memorandum

FINAL

Central Florida Expressway Authority

Contract No.: 001250

January 2020

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Engineering Analysis Technical Memorandum
Osceola Parkway Extension

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1.0 Project Summary

1.1 Project Description

The Central Florida Expressway Authority (CFX) is studying a new expressway connection between State Road 417 near Boggy Creek Road in Orange County and Cyrils Drive in Osceola County. Figure 1.1.1 shows the Osceola Parkway Extension (OPE) study area.

Beginning at an interchange with State Road (SR) 417, the OPE study area extends approximately one and a half miles south, at which point it turns eastward just north of the Orange County / Osceola County line. Generally paralleling the county line, OPE extends east / southeast for approximately eight miles before connecting to Cyrils Drive. The OPE provides opportunities to connect to the proposed Sunbridge Parkway to the east and to a future Northeast Connector to the south.

OPE will provide direct, high-speed connections between several of Central Florida's economic generators, such as the Orlando International Airport (OIA) and Lake Nona Medical City in Orange County and the Northeast District (NED) in Osceola County. OPE will advance the expanded regional roadway network adopted by the East Central Florida Corridor Task Force, which recognized the need to provide enhanced east / west multi-modal travel capacity between Central Florida and Florida's east coast[1].

The OPE was originally conceived to extend the existing Osceola Parkway that begins on the Walt Disney World Resort property and ends approximately 20 miles east near the intersection of Boggy Creek Road and Simpson Road. The original OPE proposed to extend the Osceola Parkway nine miles east to the proposed Northeast Connector Expressway. During the 2017 Osceola County Expressway Authority (OCX) Project Development and Environment (PD&E) study, a direct extension of Osceola Parkway was determined not to be viable due to high residential and community cohesion impacts. Therefore, the OPE alternatives described in this PD&E Study do not directly extend the existing Osceola Parkway but rather provide the same regional connectivity and relief that the original study attempted to resolve.

[1] East Central Florida Corridor Task Force Final Report: Recommendations for Connecting Established and Emerging Economic Centers in Brevard, Orange, and Osceola Counties, December 1, 2014

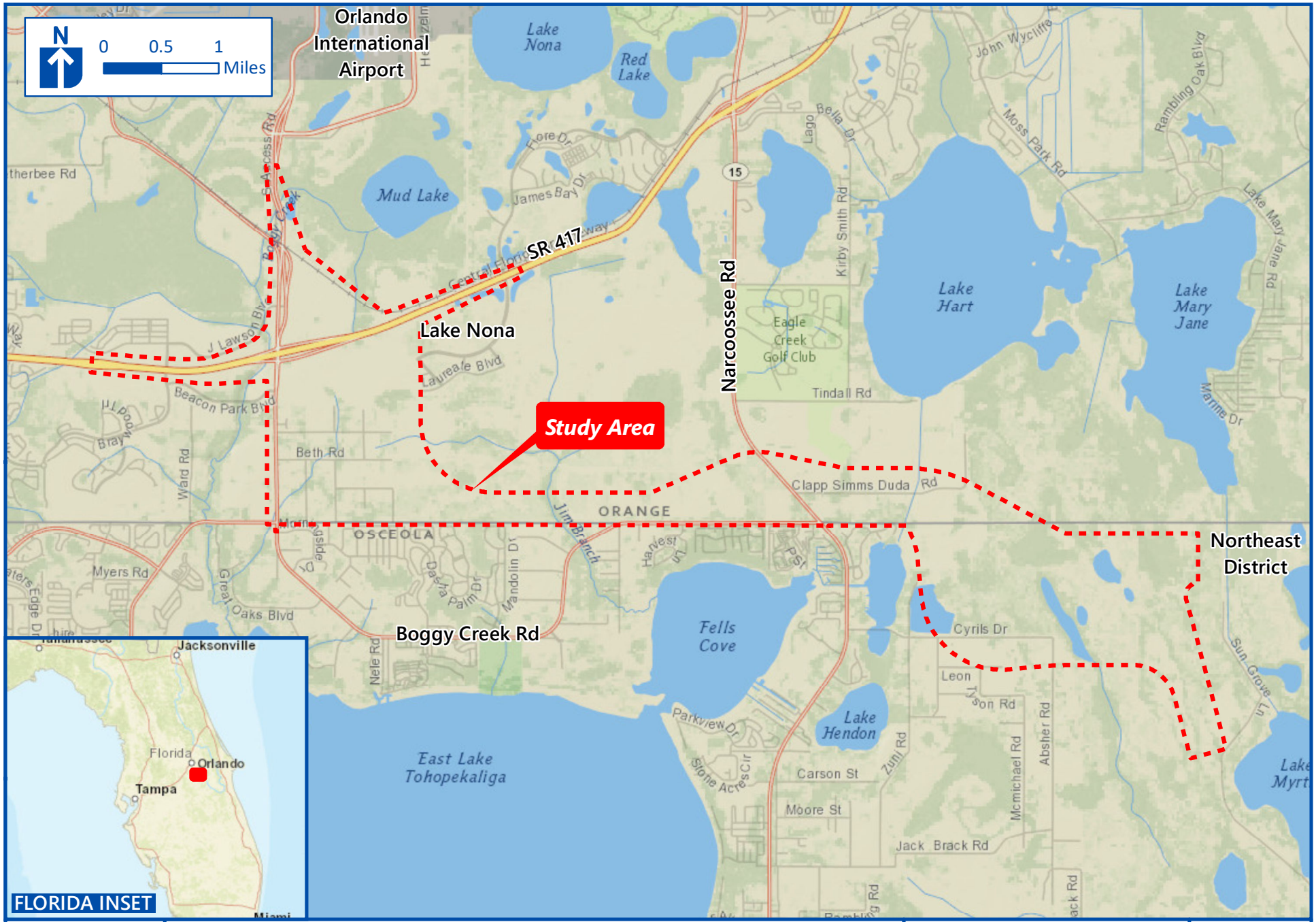

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Figure 1.1.1
Project Location Map

1.2 Purpose and Need

The primary purpose of the OPE is to accommodate the projected traffic caused by future growth planned and approved in the City of Orlando's Southeast Sector Plan [including the Lake Nona Development of Regional Impact (DRI)], Orange County's Innovation Way Overlay, Orlando International Airport's DRI, and Osceola County's Narcoossee Planning Initiative area and the NED and North Ranch planning areas. Additionally, the OPE will promote regional system linkage and network connectivity to existing SR 417 in east Orange County and the proposed Osceola-Brevard County Connector that is planned to provide further connectivity to Interstate-95 and Florida's east coast.

The need for the project is based on several factors, including accommodating future travel demand and capacity needs, and improving system linkages. Current infrastructure will not adequately accommodate the planned development in Orange and Osceola Counties. Future growth and travel demand are anticipated in the region because of approved planned developments. As a result, local and regional facilities are expected to exceed capacity, creating a gap between proposed developments and a regional transportation system. Additionally, the East Central Florida Corridor Task Force Summary Report recommended potential study areas for new or significantly upgraded east-west corridors around the OPE study area. The following sections describe the need for the project in more detail.

1.2.1 Project Status

In 2012, Osceola County completed a Preliminary Feasibility Study to evaluate an easterly extension of Osceola Parkway from west of Boggy Creek Road to east of the proposed Northeast Connector Expressway. This nine-mile extension would cross northern Osceola County near the Orange County line and would act as a major east-west corridor, relieving congestion on US 192 to the south and SR 417 to the north.

After the Preliminary Feasibility Study, OCX, in coordination with Florida's Turnpike Enterprise (FTE), initiated the OCX PD&E study to further evaluate alternatives, develop preliminary estimates of project impacts and cost, and solicit public and agency input. A public hearing was held on January 24, 2017, and the Final Preliminary Environmental Impact Report was approved by OCX in May 2017. The PD&E Preferred Alternative included an interchange at SR 417 and Boggy Creek Road with direct connections to the OIA. The OPE alignment then paralleled Boggy Creek Road before turning east near Simpson Road and paralleling the Orange / Osceola County line before turning southeast through Split Oak Forest and ultimately connecting to a future Northeast Connector Expressway.

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 OPE. The CF&M Study evaluated numerous corridor alternatives and ultimately recommended that six alternatives be carried forward for further study in a future PD&E Study. Refer to Chapter 3 for more information on the previous studies and alternatives considered.

The CFX Board approved the findings of the OPE CF&M Study and authorized the initiation of this PD&E Study at the March 8, 2018, CFX Board meeting.

The proposed OPE is consistent with the multiple planning documents, including:

- CFX Visioning + 2040 Master Plan;
- CFX Five Year Work Program – Fiscal Year 2019 - 2023 (Design, Partial Right-of-way, and Partial Construction);
- OCX Master Plan 2040;
- Osceola County 2025 Comprehensive Plan Future Transportation Plan;
- Orange County Comprehensive Plan 2010 – 2030;
- Osceola County Northeast District Element;
- Osceola County North Ranch Sector Plan;
- Orlando International Airport (South Complex) DRI;
- MetroPlan Orlando 2040 Long Range Transportation Plan (LRTP); and
- East Central Florida Corridor Task Force Final Report.

1.2.2 System Linkage and Regional Connectivity and Mobility

System linkage indicates how well the project fits into the area's existing and future transportation system. The proposed OPE provides a key link in CFX's *Visioning + 2040 Master Plan* to the existing expressway system in the region via its connection to SR 417. Together, the OPE, 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 existing CFX expressway system (SR 417, SR 528, and SR 429). The OPE will provide a vital east-west connection between existing and planned development and SR 417 and the OIA.

The 2017 OCX PD&E Study originally proposed that the OPE western terminus begin at the current eastern terminus of existing Osceola Parkway. After review of multiple alternatives, a connection to the Osceola Parkway was eliminated from further study because of impacts to existing and planned residential developments. A direct connection to SR 417 is the currently recommended western terminus.

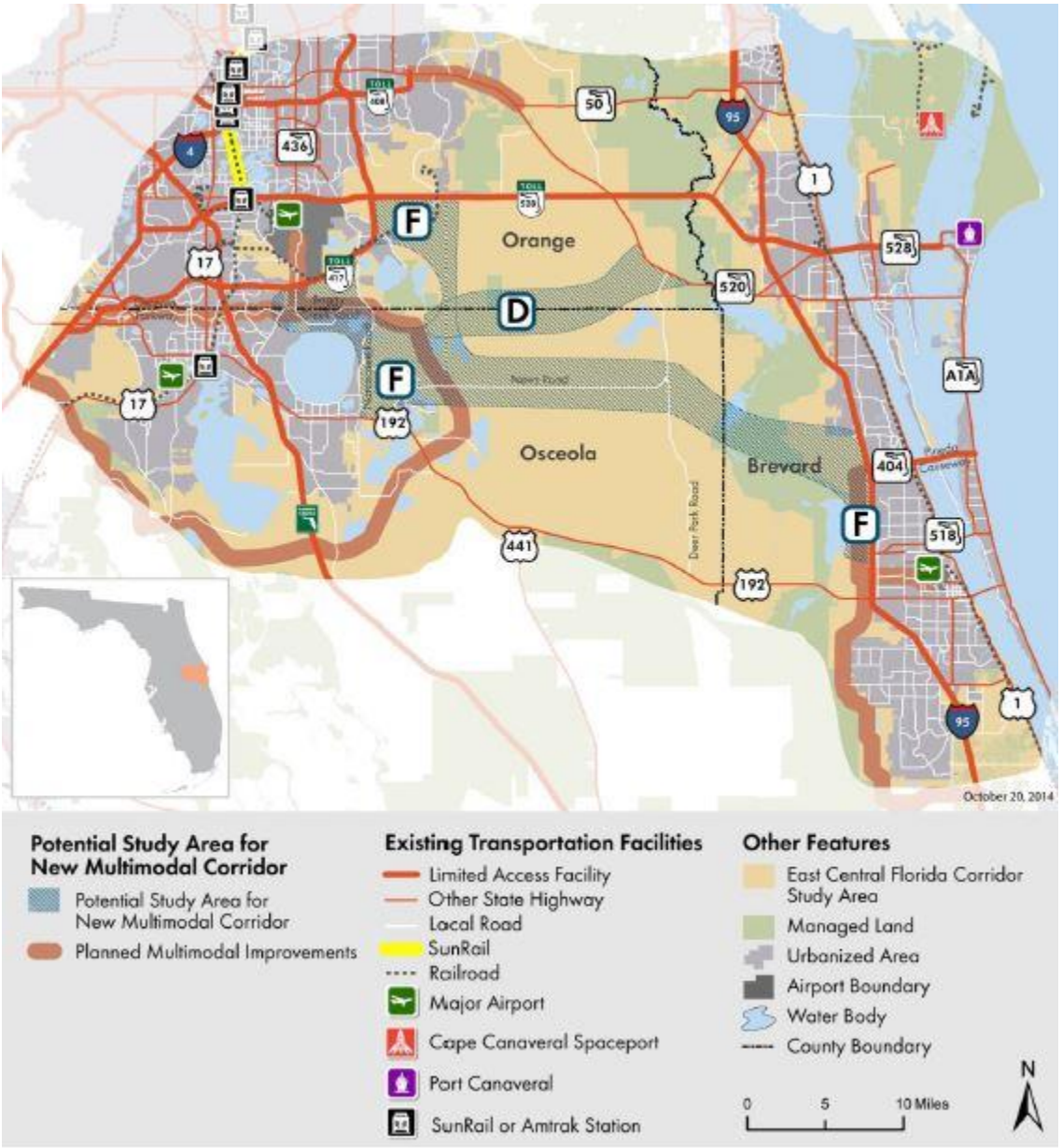
The two eastern termini are consistent with local plans and policies and promote regional connectivity. The southeastern terminus connects to the future Osceola-Brevard County Connector that is planned to provide further connectivity to Interstate-95 and Florida's east coast. The eastern terminus provides the opportunity to connect to the future Sunbridge Parkway for further north-south connectivity and mobility to SR 528 and the future NED.

The East Central Florida Corridor Task Force was created in 2013 through Executive Order 13-319 to develop consensus recommendations for future transportation corridor planning in portions of Brevard, Orange, and Osceola Counties. The Task Force findings as it relates to the OPE study area include:

- The population of the three counties is projected to nearly double from 2 to 3.8 million residents during the next 50 years.
- Multiple trends point to significant increases in demand for travel between the three counties during the next 50 years, including:
    - Planned development of mixed-use centers on the eastern edge of existing concentration of urban development in Orange and Osceola Counties;
    - Ongoing development under Florida's sector planning law of a long-term master plan for 133,000 acres of Deseret Ranches in eastern Osceola County (North Ranch Sector Plan); and
    - The emergence of life sciences and related technology - based clusters in central Orlando, Innovation Way, Lake Nona, Cape Canaveral, and Melbourne.
- The Task Force noted concerns about the region's ability to achieve economic opportunities and to support growing populations related to planned growth resulting from limited options for both east - west and north-south travel. Of particular concern was the ability to support effective evacuation and response during extreme weather events and other emergencies, especially to and from Brevard County. Limitations include:
    - Of the three east-west highway connections between the three counties (SR 520, SR 528, and SR 50), only SR 528 is a high-speed, high-capacity corridor.
    - Only one east-west highway connection (US 192) exists between Orange, Osceola, and southern Brevard County.

The East Central Florida Corridor Task Force recommended a new or significantly upgraded, multimodal corridor along the Orange / Osceola County line from the OIA / Lake Nona area to the SR 520 corridor to serve the NED and North Ranch / Deseret Ranches. Also recommended is a multimodal corridor from the OIA / Lake Nona area to central / southern Brevard County to provide a more direct connection between their economic centers, and to serve the emerging population centers in NED and Deseret Ranches. A map showing the interconnectivity of the proposed corridors from the Governor's Task Force is shown on Figure 1.2.1.

Figure 1.2.1: Task Force Recommended Improvements for New East-West Corridors



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. Within the region of the study area, SR 417, SR 528, Florida's Turnpike, and the CSX Railway Corridor are designated SIS corridors that link Florida's economic regions to other regions and states. Access to SIS facilities from Lake Nona, Narcoossee, and NED areas is provided through a network of county roads. The only designated SIS connector within the study area is SR 417. The OPE would provide a key connector linking these destinations.

1.2.3 Capacity

The OPE is needed to provide additional roadway capacity in the study area, distribute local and regional trips, and relieve congestion on the local roadway network. The East Central Florida Corridor Task Force recommended a multimodal corridor along the Orange / Osceola County line to give NED and portions of North Ranch / Deseret Ranches better access to the OIA / Lake Nona area and the SR 520 corridor. Planned growth related to the Narcoossee Planning Initiative area, the NED, and the Lake Nona DRI is anticipated to increase congestion within the study area.

A preliminary capacity analysis was conducted to determine the future (2045) No-Build and Build network capacity. The No-Build scenario assumes no changes to the transportation facilities beyond currently planned and programmed projects already committed in MetroPlan Orlando's 2040 LRTP and Transportation Improvement Program (TIP). The system network for the 2045 No-Build condition includes the proposed Sunbridge Parkway and the Northeast Connector Expressway.

The Level of Service (LOS) was determined for the major facilities in the study area in accordance with the procedures outlined in the Quality / Level of Service Handbook using the 2012 Generalized Service Volumes Tables. This analysis indicates that in the 2045 No-Build condition, several facilities in the study area are likely to fail (LOS E / F) including: Boggy Creek Road north of SR 417 to Lake Nona Boulevard, Boggy Creek Road west of Narcoossee Road, and Narcoossee Road south of SR 417, as well as south of Boggy Creek Road.

The Build Condition was analyzed using a generalized build alternative. This analysis shows that the 2045 future Build of the OPE appears to improve the LOS of the 2045 future No-Build failing facilities to a LOS C or better for Narcoossee Road south of Boggy Creek Road; however, the segments of Boggy Creek Road remain LOS F, as presented in Table 1.2.1. Although the project LOS is still F, Build volumes on the located roadways are lowered. Chapter 5 provides more information on the existing and future traffic in the study area.

Table 1.2.1: 2045 Build versus No-Build Segment LOS

Roadway	Lanes	2045 No Build		2045 Build	
		AADT	LOS	AADT	LOS
SR 417 S of Boggy Creek Rd	8L	149,500	D	159,900	E
SR 417 S of Lake Nona Blvd	8L	120,900	C	128,800	D
SR 417 S of Narcoossee Rd	8L	125,200	C	130,200	D
SR 417 N of Narcoossee Rd	8L	128,800	D	137,100	D
Airport Access Road (North of SR 417)	4L	23,900	B	53,300	C
Boggy Creek Rd - N of SR 417	4L	42,400	F	41,100	F
Boggy Creek Rd - Lake Nona Blvd to SR 417	4L	48,600	F	44,300	F
Boggy Creek Rd - W of Narcoossee Rd	2L	28,600	F	24,200	F
Narcoossee Rd N of SR 417	6L	49,800	C	51,300	C
Narcoossee Rd S of SR 417	6L	73,600	F	68,400	F
Narcoossee Rd N of Boggy Creek Road	6L	55,100	C	56,400	C
Narcoossee Rd. S of Boggy Creek Road	6L	64,800	F	53,200	C

1.2.4 Transportation Demand

One of the primary needs for this project is to provide additional east-west capacity within the study area, but a major transportation need within Osceola County is to move people north-south to and from the City of Orlando / Orange County employment centers. The roadway facilities that are currently near or at capacity are Boggy Creek Road and Narcoossee Road. These two facilities provide north-south access to Osceola County residents. Preliminary travel demand forecasts developed during the study indicate that traffic volumes on a majority of the current highway network will exceed the existing and the anticipated improved capacity in the design year.

Another primary need for the corridor is to provide an additional connection to SR 417. Current access to SR 417 for residents of Osceola County is located at existing interchanges on Narcoossee Road and Boggy Creek Road. These interchanges are nearing or at capacity during AM and PM peak hours. An additional access point to SR 417 will provide congestion relief to these existing interchanges and provide a system-to-system interchange that can handle future transportation demand.

1.2.5 Social Demands 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 analyses 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 Orange and Osceola Counties, including the project study area.

According to the FKA report, Orange County and, specifically the City of Orlando, represent the major population and employment center for the FKA study area market. Overall, Orange County added approximately 390,000 people between 2000 and 2015. During that same period, Osceola County represented the 10th fastest-growing county in Florida, adding an estimated 150,000 people. In 2015, Osceola County had a population of approximately 324,000. By 2045, the population of Osceola County is expected to increase to almost 635,000, an increase of 96 percent. Within the Orange County study area, the population is expected to increase by 120 percent.

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.

Based on the anticipated population and employment growth in both Orange and Osceola Counties, the OPE is needed to provide a reliable transportation option.

1.2.6 Modal Interrelationships

Osceola County's NED Element Plan created a Multimodal Transit District as part of the Northeast 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 reasonable pedestrian or bicycle trail access to the transit station in the central core.

The OPE will connect the NED Multimodal Transit District to other multimodal facilities, including OIA and Lake Nona / Medical City. OPE will also provide a connection to the Innovation Way Corridor envisioned by Orange County. The Innovation Way Corridor would connect the University of Central Florida to the OIA / Medical City area. Transit connections

from the NED to OIA and Medical City would be able to use the Innovation Way transit corridor to access the University of Central Florida and the associated Research Park area. The NED Multimodal Transit District will also be connected to the Innovation Way Corridor in Orange County by a separate roadway, Sunbridge Parkway, to be constructed by others.

The OIA Intermodal Transit Facility (ITF) is currently under construction. This facility will be a Superstop for the Central Florida Regional Transportation Authority (LYNX) buses, including express buses from Kissimmee and Lake Nona. The ITF will be the Orlando station for the Virgin Trains USA (formerly Brightline) high-speed rail service from Miami which is currently under construction. Planning is underway for a SunRail station at the ITF and for possible connections to the International Drive area by elevated maglev (magnetic levitation) trains or light rail. All of the above projects are described in MetroPlan Orlando's 2040 LRTP.

By offering better connections to OIA, the OPE will give users access to a wide range of multimodal transit options.

1.2.7 Safety

The proposed OPE will likely enhance the overall safety of the corridor by improving traffic flow and relieving congestion along Boggy Creek Road, and Narcoossee Road. The OPE will also provide an enhanced evacuation route during emergency evacuations. As noted above, 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 OPE will enhance emergency evacuation in the study area.

1.3 Commitments

The following text describes the commitments that CFX has made during the course of this PD&E Re-evaluation Study:

- CFX will continue to coordinate with Orange County and Osceola County during the design and construction phases of the project.
- The Preferred Alternative will include a local interchange just east of Split Oak Forest. The interchange will provide access to the future Sunbridge Parkway and the local roadway network.
- Landscape buffers and / or privacy walls will be considered during design to minimize viewshed effects at existing residential areas.
- Shifts in alignments may be considered during design to minimize impacts on conservation easements or preserves, listed plants or wildlife.

- Conservation easements will require a release of easement from either South Florida Water Management District (SFWMD) or Orange County and mitigation will be required to off-set the lost conservation area.
- Additional cultural resource analysis will be conducted for the preferred route within Split Oak Forest and for proposed pond sites during the design phase.
- Coordination will occur with Orange and Osceola Counties on bridge aesthetics for bridge crossings within Split Oak Forest.
- During design, non-intrusive roadway and bridge lighting will be evaluated adjacent to natural and residential areas. Measures to minimize illumination outside of the right-of-way will include the use of shielded light fixtures, mounting height or aiming adjustments, and using reduced wattage light fixtures.
- Bridges or other structures will be considered during design to maintain water flows as well as connectivity in larger slough systems that would extend on either side of the proposed expressway.
- The road within Split Oak Forest will generally be constructed at grade.
- Structures will be designed to accommodate flood flows and a no rise certification will be prepared as part of the design phase.
- Compensating storage will be provided for impacts to the 100-year floodplain.
- Panther telemetry or other available data will be reviewed to confirm no changes with regards to dispersal of panthers.
- Wildlife crossings will be implemented and sized to allow for movement of both large and small mammals. Final location, number and design of crossings would be determined during design, based on site specific conditions and in coordination with Osceola and Orange counties, Florida Fish and Wildlife Conservation Commission (FWC), and SFWMD.
- Fencing or other barriers will be considered to avoid accidental encroachment by wildlife into the right-of-way.
- Surveys will be conducted for listed species as required.
- Gopher tortoise burrows will be avoided where practical and relocation permits obtained for unavoidable impacts.
- Updated listed plant surveys will be conducted as required. Unavoidable impacts to listed plant species will be coordinated with the appropriate regulatory authority.
- Implement *Standard Protection Measures for the Eastern Indigo Snake*.
- Consider other structures, accommodations, and co-location opportunities for pedestrian trails, (such as the Florida Scenic Trails Path), wildlife crossings, equestrian trails, and equipment used in land management within and outside of Split Oak Forest.
- Coordinate with Osceola and Orange Counties, FWC and SFWMD for features that will assist in the continued maintenance of the preserve.

- Conduct listed species surveys of potential pond sites.
- Stormwater management facilities will be constructed outside the limits of the Split Oak Forest and Eagles Roost properties. Additionally, low impact development stormwater treatment designs will be considered during design.
- For those locations identified in Attachment 2.D.3 (of the PEIR Re-evaluation) as "Medium" or "High" risk, Level II field screening will be conducted for sites potentially requiring right-of-way or in close proximity to the expressway that could potentially be affected during construction.
- The PD&E Re-evaluation indicated that noise barriers are potentially feasible and reasonable. The noise barriers will be re-analyzed during the design phase of this project, when more refined engineering data can be incorporated into the barrier analysis. CFX is committed to the construction of noise barriers found to be reasonable and feasible during the design phase of this project.
- As stipulated in the Florida Department of Transportation's Project Development and Environment Manual, any noise sensitive receptor that is permitted between the completion of the Noise Study Report and the Date of Public Knowledge, will be analyzed for traffic noise impacts and feasible and reasonable abatement considered during the design phase of a project.

1.4 Description of Preferred Alternative

The Preferred Alternative is the Lake Nona Alternative between SR 417 and Narcoossee Road and the Split Oak Minimization Alternative from Narcoossee Road to the eastern terminus. Figure 1.4.1 shows the Preferred Alternative for the project.

The Lake Nona Alternative begins with a system interchange with SR 417 that provides access to the OIA. The system interchange is configured so that local access to an extended Medical City Drive is feasible in the future. The alignment then travels south through the Lake Nona property, where a partial interchange is proposed with Laureate Boulevard. The alternative continues south until the Orange / Osceola County line, where the alignment curves to the east. Simpson Road is proposed to be extended east of Boggy Creek Road to connect to the Poitras property. An interchange will be provided with this extension of Simpson Road, near the county line. The alignment continues along the Orange / Osceola County line and includes a proposed interchange at Narcoossee Road. Due to the proximity of the proposed interchange with Narcoossee Road, Clapp Simms Duda Road is proposed to be relocated south to align with the existing Boggy Creek Road signalized intersection on Narcoossee Road.

The Split Oak Minimization Alternative travels north of and parallel to Clapp Simms Duda Road before turning southeast near Canal C-29A. The alternative traverses the southwestern edge of Split Oak Forest and includes a local access interchange with Cyrils Drive just east of Split Oak Forest. More information about the Preferred Alternative is contained in Section 6.4.

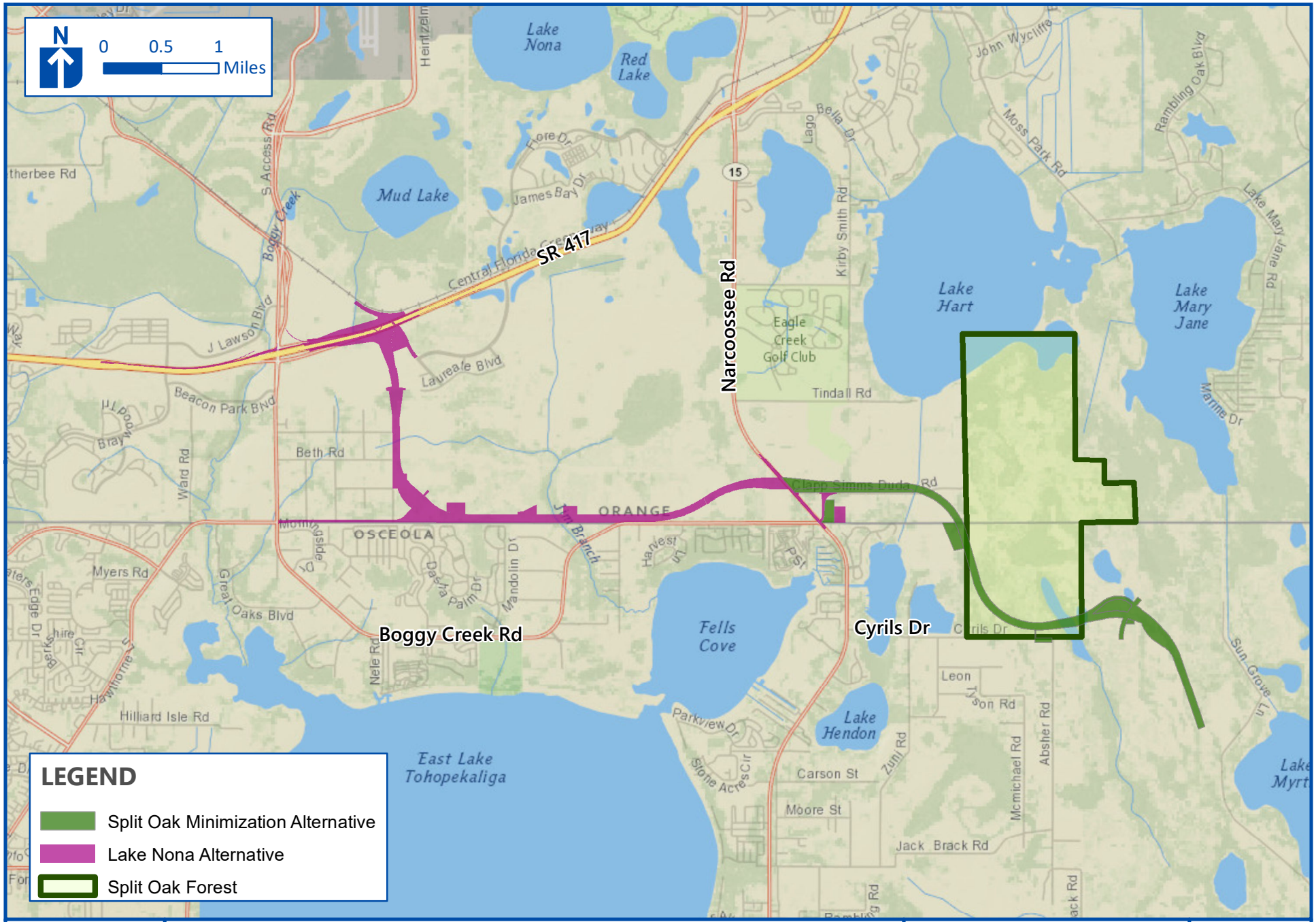


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Figure 1.4.1
Preferred Alternative

2.0 Existing Conditions

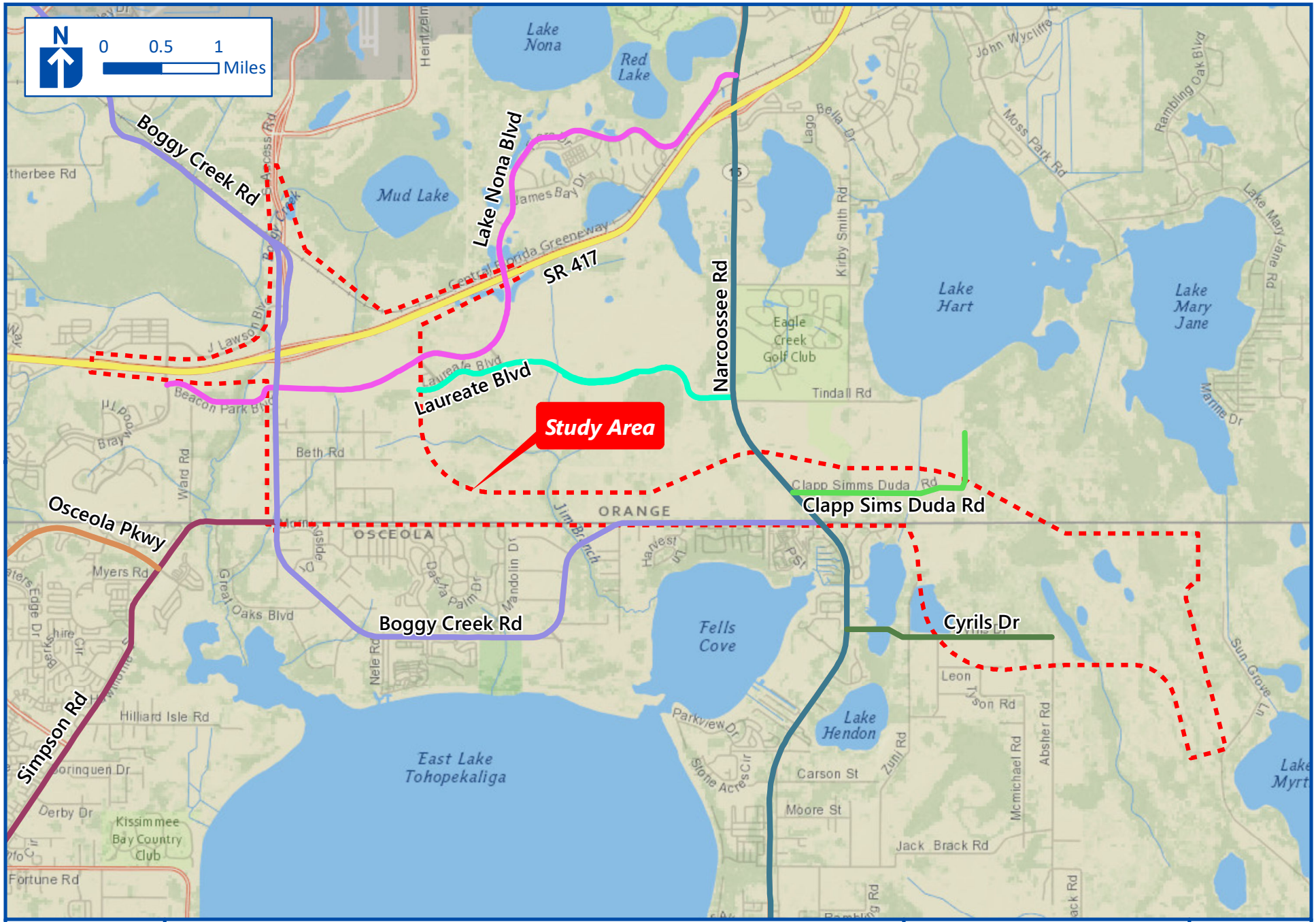
OPE is a proposed limited-access, tolled expressway on a new alignment. As such, there are no existing conditions related to the OPE alignment. This chapter will document the existing conditions of adjacent roadways and the general study area.

2.1 Functional Classification

There are a number of adjacent roadways in the study corridor with various functional classifications. The Florida Department of Transportation (FDOT) assigns each roadway a functional classification based on the character of service it provides in relation to the total roadway network. The following are the roadway functional classifications within the study area:

- SR 417 – Principal Arterial – Freeway and Expressways;
- Boggy Creek Road (Orange County between SR 417 and Simpson Road) – Minor Arterial – Urban;
- Lake Nona Boulevard – Minor Collector – Urban;
- Laureate Boulevard – Minor Collector – Urban;
- Osceola Parkway – Principal Arterial – Other – Urban;
- Boggy Creek Road (Osceola County) – Major Collector – Urban;
- Simpson Road – Principal Arterial – Other – Urban;
- Narcoossee Road – Principal Arterial – Other – Urban;
- Cyrils Drive – No functional classification; and
- Clapp Simms Duda Road – No functional classification.

Figure 2.1.1 shows the primary roadways in the study corridor.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension** **SR 417 to Cyrils Drive** **Engineering Analysis Technical Memorandum**	**Figure 2.1.1** **Primary Roadways in Study Area**	**Page No.** **2-2**

2.2 Typical Section

The following section discuss the typical sections for the primary roadways in the study area.

SR 417

The existing expressway typical section for SR 417 consists of four 12-foot wide travel lanes separated by a 64-foot wide grassed median. The inside shoulders are eight feet wide with four feet of pavement and four feet of sod. The typical section was developed to allow for future inside widening to six lanes, with a 40-foot grassed median. The outside shoulders are 12 feet wide and are comprised of 10 feet of pavement and two feet of sod. The limited-access right-of-way width is approximately 320 feet. Drainage is conveyed by roadside swales to stormwater ponds.

Boggy Creek Road

Boggy Creek Road is a two-lane rural roadway which has been widened to multiple lanes through, or approaching, its intersections with SR 417, Lake Nona Boulevard, Simpson Road and Narcoossee Road. Orange County has plans to widen Boggy Creek Road to four lanes from Simpson Road to Lake Nona Boulevard. This proposed widening project includes sidewalks, bicycle lanes, and median landscaping. The project is currently in the right-of-way acquisition phase.

Lake Nona Boulevard

Lake Nona Boulevard is a four to six lane divided urban roadway with bicycle lanes and sidewalk. The typical section includes 11-foot lanes, a 48-foot median, and four-foot bicycle lanes. A five-foot sidewalk is located on the south side of the road and a 12-foot wide shared use path is located on the north side of the road. The right-of-way width is approximately 200 feet.

Laureate Boulevard

Laureate Boulevard is a two to four-lane divided urban roadway with sidewalk and bicycle lanes. The typical section includes 11-foot lanes, a maximum of a 32-foot median, and four-foot bicycle lanes. A five-foot sidewalk on the south side of the road and a 10 to 12-foot wide shared use path is located on the north side of the road. The right-of-way width ranges from 75 to 155 feet.

Osceola Parkway

Osceola Parkway is a four-lane divided roadway. The typical section for Osceola Parkway consists of four 12-foot lanes with a 38 to 46-foot median and six-foot sidewalks on both sides of the road.

Simpson Road

Simpson Road is currently a two-lane rural roadway which has been widened to multiple lanes through, or approaching, its intersections with Osceola Parkway and Boggy Creek Road. The typical section for the Simpson Road mainline consists of two 12-foot lanes. Osceola County has plans to widen Simpson Road to four lanes.

Narcoossee Road

In Orange County, Narcoossee Road is a six-lane divided urban roadway from SR 417 to the Osceola County line. The typical section includes six 11-foot lanes, four-foot bicycle lanes in each direction with a 17-foot median. In Osceola County, Narcoossee Road is a four-lane divided urban roadway. The typical section includes four 12-foot lanes, four-foot bicycle lanes in each direction with a 19.5 to 47-foot median. The right-of-way width is approximately 150 feet wide.

Cyrils Drive

Cyrils Drive is currently a two-lane rural roadway. The typical section for Cyrils Drive, from Narcoossee Road to Zuni Road, includes one westbound 12-foot travel lane and one eastbound 12-foot travel lane. Travel lane widths are reduced to 10.5-foot lanes from east of Zuni Road to Absher Road. Narrow grass shoulders and shallow grass swales exist on both sides of the road. The right-of-way width varies from 60 to 80 feet wide. Osceola County (via Tavistock Development Company) is starting construction to widen and extend Cyrils Drive. When complete, Cyrils Drive will be a four-lane divided urban roadway with 11-foot lanes, a 22-foot raised median, a five-foot sidewalk on the north side of the road, and a 12-foot multi-use trail on the south side of the road. The proposed typical section will require additional right-of-way.

Clapp Simms Duda Road

Clapp Simms Duda Road is currently a two-lane rural roadway. The typical section includes two 12-foot travel lanes and six-foot grass shoulders. Roadside swales are present on both sides of the road. The existing right-of-way is approximately 60 feet wide.

2.3 Multimodal Facilities

2.3.1 Pedestrian and Bicycle Facilities

Within the study area, pedestrian and bicycle facilities are located throughout Lake Nona, along segments of Boggy Creek Road, and along Narcoossee Road. Figure 2.3.1 shows the sidewalk and bicycle lanes along Narcoossee Road. At the intersection of Laureate Boulevard and Narcoossee Road, there are marked pedestrian crosswalks on all four approaches facilitating access to Lake Nona Middle School. Along the two-lane facilities within Lake Nona, illustrated on Figure 2.3.2, there are sidewalks and bicycle lanes, and along some roads (Lake Nona Boulevard and Tavistock Lakes Boulevard), a 10 to 12-foot multi-use path is also present. Existing pedestrian and bicycle facilities within the study area are shown on Figure 2.3.3.

Figure 2.3.1: Pedestrian and Bicycle Facilities along Narcoossee Road

Figure 2.3.2: Pedestrian and Bicycle Facilities along Laureate Boulevard

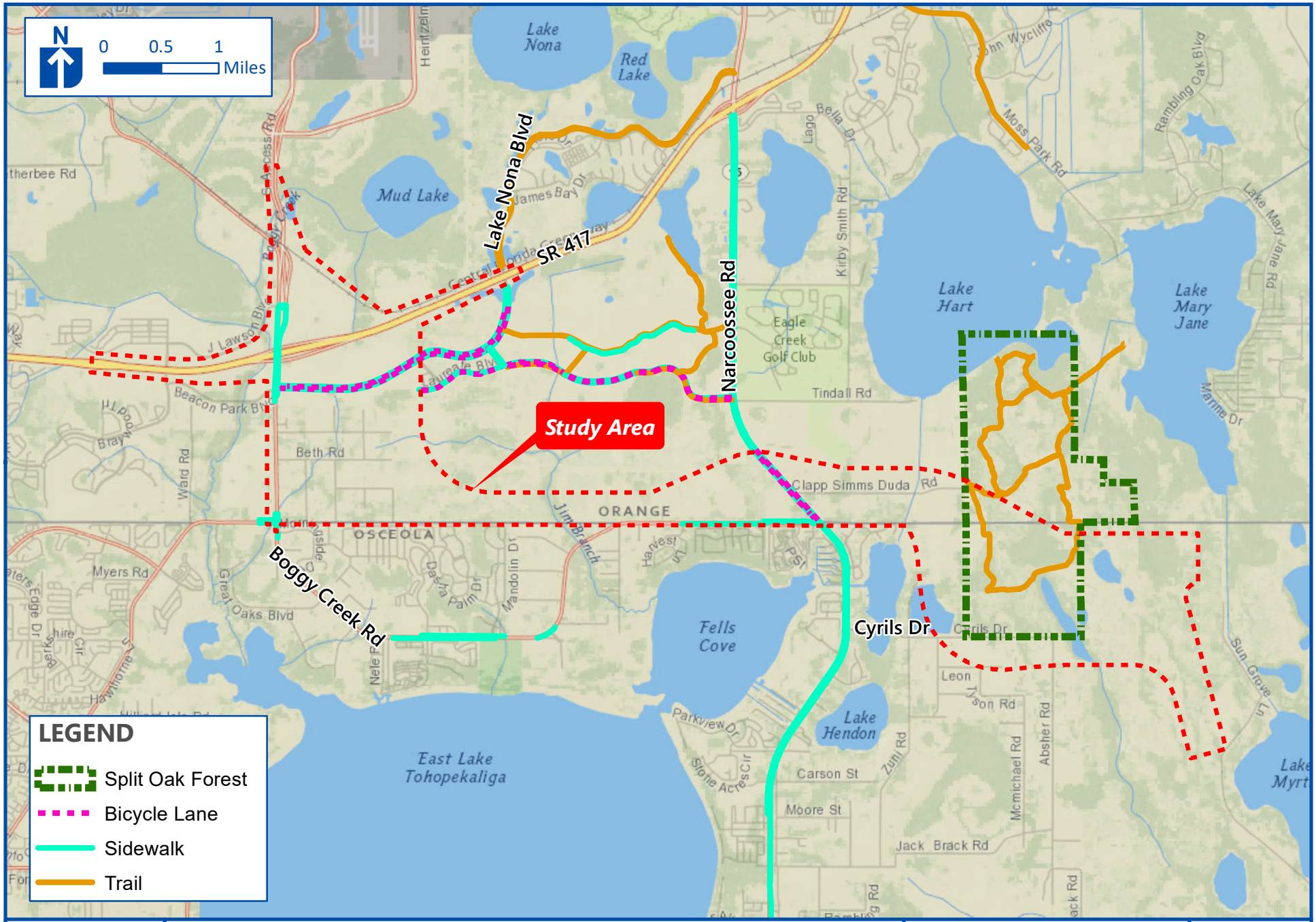


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Figure 2.3.3
Existing Bicycle and Pedestrian Facilities

2.3.2 Transit

LYNX serves the study area with two existing bus routes, the FastLink 407 and FastLink 418 as shown on Figure 2.3.4.

LYNX FastLink routes are commuter-based bus routes along specific corridors to provide a faster trip. The two bus routes in the study area are described below:

- FastLink 407 serves the Kissimmee Intermodal Station / SunRail, OIA, the United States Tennis Association National Campus, and Medical City at Lake Nona. In fiscal year 2016, FastLink 407 served 17,587 passenger trips.
- FastLink 418 serves the Meadow Woods SunRail Station, the Meadow Woods Recreation Center, Medical City at Lake Nona, and the Florida Mall SuperStop. In fiscal year 2016, FastLink 418 served 60,564 passenger trips.

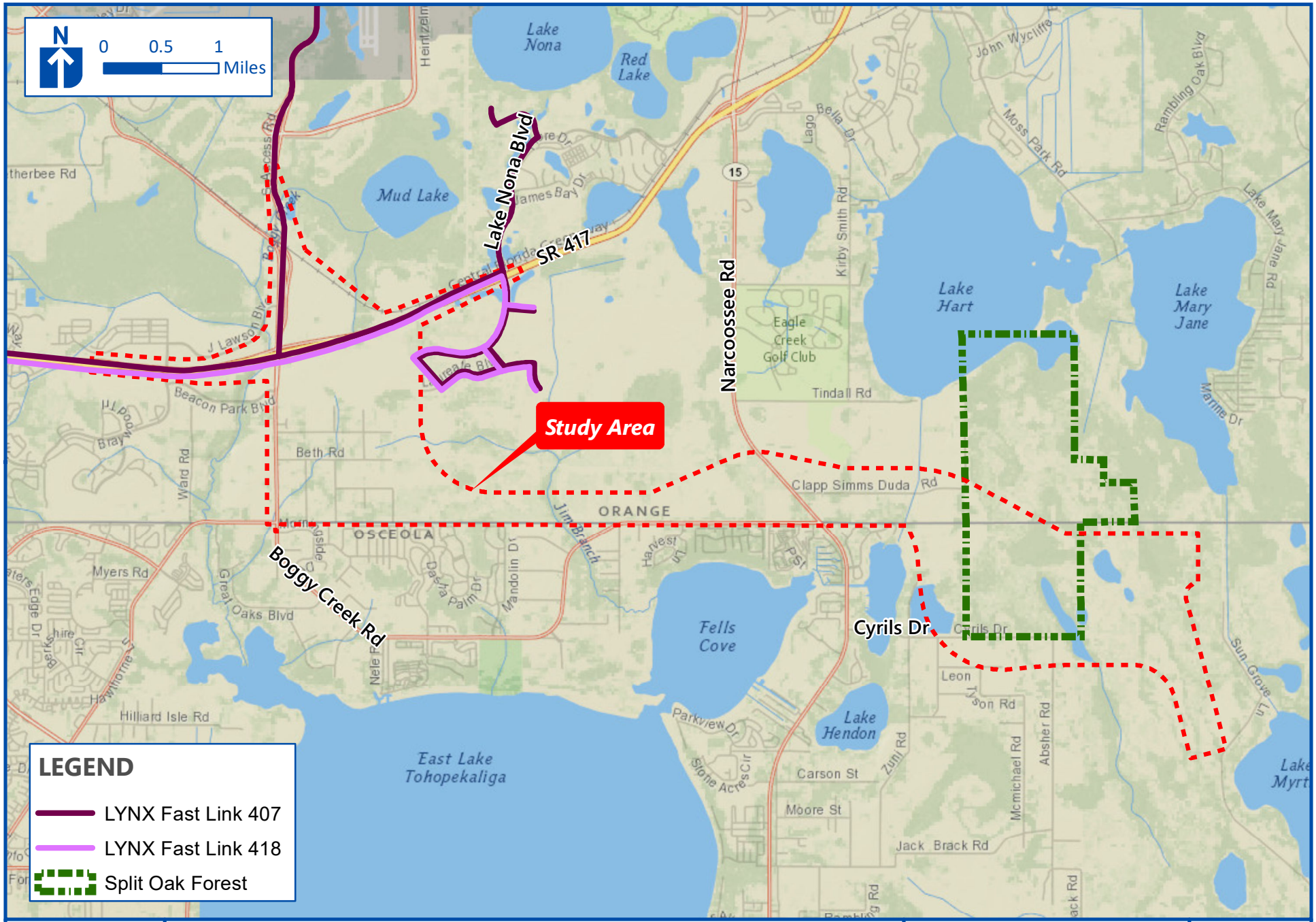

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Figure 2.3.4
Existing LYNX Routes in Study Area

2.4 Right-of-Way

The OPE is a proposed facility, requiring new right-of-way.

2.5 Horizontal Alignment

The OPE is a proposed facility. The horizontal alignment design criteria is contained in Section 4.1.

2.6 Vertical Alignment

The OPE is a proposed facility. The vertical alignment design criteria is included in Section 4.1.

2.7 Drainage

The OPE is a proposed facility; therefore, no existing drainage system exists. The proposed drainage design will maintain the existing drainage patterns. An analysis was completed to ensure no adverse impacts to the water quality or quantity and is included in the Pond Siting Report, available under separate cover.

2.8 Geotechnical Data

The soil survey published by the Natural Resource Conservation Service (NRCS) was reviewed as part of this study for Orange and Osceola Counties. The soil survey identifies 22 primary mapping soil units within the project vicinity. The soil units are presented in Table 2.8.1 and Figure 2.8.1. The most prevalent soil types are as follows: Smyrna, Samsula, Immokalee, Pomello, Myakka, and Basinger. The majority of soils in the project corridor are "Poorly Drained" or "Very Poorly Drained."

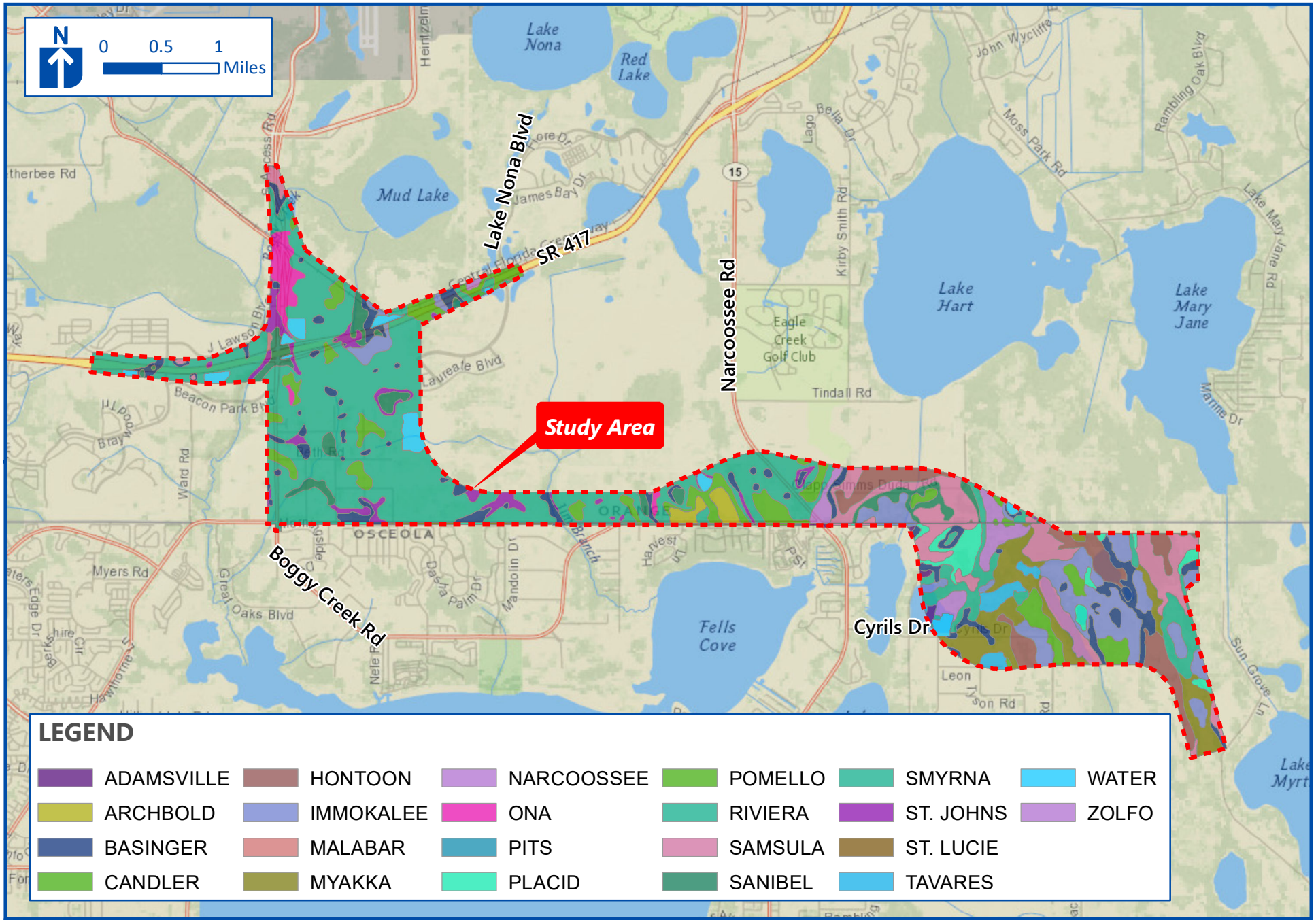

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Figure 2.8.1
NRCS Soils

Table 2.8.1: Soils in the Study Area

Soil Classification	Acres	Percent of Study Area	Drainage Class
Adamsville	13.4	0.2%	Somewhat Poorly Drained
Archbold	54.1	1.0%	Moderately Well Drained
Basinger	372.4	6.7%	Poorly Drained
Candler	5.1	0.1%	Excessively Drained
Hontoon	294.0	5.3%	Very Poorly Drained
Immokalee	454.0	8.1%	Poorly Drained
Malabar	3.4	0.1%	Poorly Drained
Myakka	350.9	6.3%	Poorly Drained
Narcoossee	78.7	1.4%	Moderately Well Drained
Ona	95.0	1.7%	Poorly Drained
Pits	0.5	0.0%	-
Placid	127.1	2.3%	Very Poorly Drained
Pomello	447.9	8.0%	Moderately Well Drained
Riviera	3.7	0.1%	Very Poorly Drained
Samsula	462.7	8.3%	Very Poorly Drained
Sanibel	205.5	3.7%	Very Poorly Drained
Smyrna	2,204.6	39.5%	Poorly Drained
St. Johns	155.6	2.8%	Poorly Drained
St. Lucie	4.1	0.1%	Excessively Drained
Tavares	64.7	1.2%	Moderately Well Drained
Water	118.7	2.1%	-
Zolfo	58.6	1.1%	Somewhat Poorly Drained

2.9 Crash Data

Crash data for years 2012 to 2016 was obtained from Signal Four Analytics for the study area. Signal Four Analytics is an interactive, web-based system designed to support the crash mapping and analysis needs of law enforcement, traffic engineering, transportation planning agencies, and research institutions in the state of Florida. This system is developed by the GeoPlan Center at the University of Florida and funded by the state of Florida through the Traffic Records Coordinating Committee.

A total of 821 crashes, including 303 injury crashes and nine fatal crashes, were reported over the five-year period. Below is a summary of the crash statistics in the study area:

- 11 fatalities;
- 500 injuries;
- 12 crashes involved drugs or alcohol;
- 211 crashes were contributed to distracted driving;
- 16.9% of all crashes occurred at an intersection;
- 10.7% of all crashes were intersection-related;
- 5% of all crashes were entrance / exit ramp related;
- 673 crashes occurred in Orange County (82%); and
- 148 crashes occurred in Osceola County (18%).

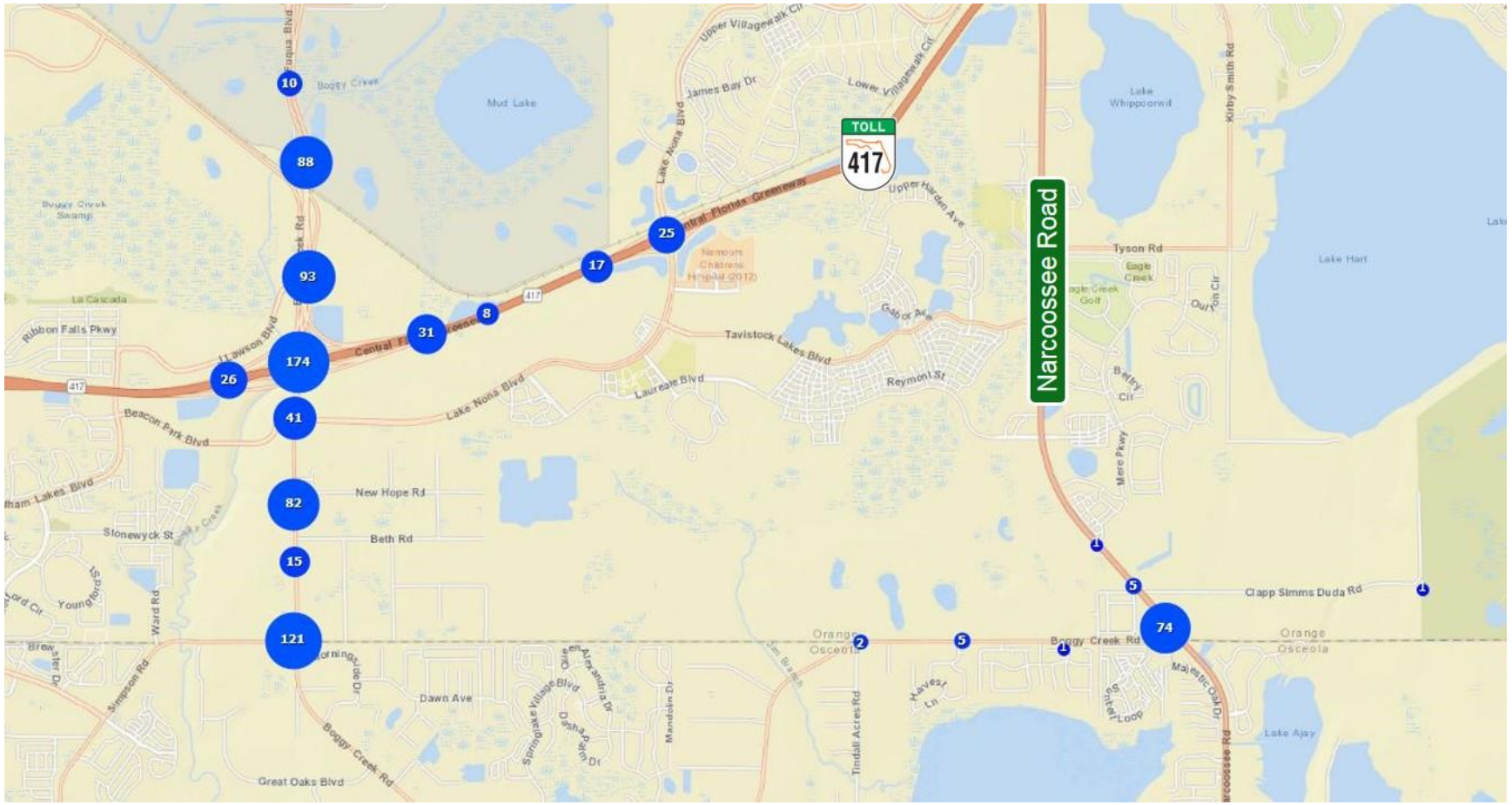
The highest crash frequency occurred on the following roadways in the study area:

- Boggy Creek Road (57%);
- SR 417 (19%);
- South Access Road (10%); and
- Narcoossee Road (7%).

Figure 2.9.1 displays the crash data in the study area.

The most common crash type in the study area is "Rear-end" accounting for 377 crashes (46%), followed by "Off Road" at 90 crashes (11%), "Left Entering" at 77 crashes (9%) and Sideswipe at 71 crashes (9%). The number of crashes in the study area has generally increased over time with 131 crashes in 2012 and 200 crashes in 2016.

Figure 2.9.1: Crashes in the Study Area



2.10 Intersections and Signalization

The OPE is proposed as a new limited access facility with connections via interchanges with the surrounding roadway network. Key intersections in the study area are identified in Table 2.10.1.

Table 2.10.1: Key Intersections in the Study Area

Roadway	Intersecting Roadway	Intersection / Interchange	Signalization Status
SR 417	Boggy Creek Road	Interchange	Signals at ramp exits
SR 417	Lake Nona Boulevard	Interchange	Signals at ramp exits
Boggy Creek Road	Lake Nona Boulevard	Intersection	Signalized
Boggy Creek Road	Simpson Road	Intersection	Signalized
Boggy Creek Road	Narcoossee Road	Intersection	Signalized
Narcoossee Road	Clapp Simms Duda Road	Intersection	Full median
Narcoossee Road	Eagle Creek entrance	Intersection	Full median
Cyrils Drive	Absher Road	Intersection	Full median

2.11 Intelligent Transportation System

The OPE is a proposed facility; therefore, no existing intelligent transportation system is currently associated with this roadway.

2.12 Lighting

The OPE is a proposed facility; therefore, no lighting currently exists for the proposed facility. Existing roads in the study area that have lighting include:

- SR 417 – Cobra heads on mainline and at interchanges;
- Lake Nona Boulevard – Cobra heads; and
- Laureate Boulevard – Cobra heads.

2.13 Utilities and Railroad

Twenty-four Utility Agency Owners (UAOs) were identified within the study limits based on the Sunshine 811 Design Ticket. In addition, there were two UAOs listed in the previous study (OCX PD&E Study) that were not identified in the Sunshine 811 Design Ticket. The result is a total of 26 UAOs evaluated for this study. Of the 26 UAOs identified, contacts for six could not be established based on the preliminary contact information. Table 2.13.1

identifies the UAOs in the study area. For more information on the existing utilities in the study area, reference the Utility Assessment Package, available under separate cover.

Table 2.13.1: Utilities in the Study Area

Utility Owner	Facilities
AT&T Distribution	Aerial and buried cables - Telephone
Charter Communications	Aerial and buried cables – Fiber, Telephone, CATV
CFX	Fiber
Century Link	Fiber, Telephone
City of St. Cloud	Reclaimed Water, Water, Sewer
City of Orlando – Water Reclamation	Reclaimed Water, Wastewater
City of Orlando – Traffic Eng Signal & Fiber Electric	Fiber, Traffic Signals, Electric
Comcast	CATV
Duke Energy Distribution	Distributed Electric
Duke Energy Transmission	Transmission
Embarq Communications Inc.	Fiber
Hotwire Communications	Fiber, Telephone, CATV
MCI	Fiber, Communication Lines
Orlando Telephone Company	Fiber, Telephone
Orlando Utilities Commission – Electric	Distributed Electric
Orlando Utilities Commission – Transmission	Transmission
Orlando Utilities Commission – Water	Water
Orange County Utilities Wastewater	Wastewater
Orange County Public Works	Fiber, Traffic Signals
Orange County Utilities Water	Water
Osceola County	Fiber, Traffic Signals
Sprint	Buried Fiber
Summit Broadband	Buried Fiber
Teco Peoples Gas – Orlando	Gas
Toho Water Authority	Water, Sewer
UNITI Fiber LLC	Fiber

The Orlando Utilities Commission (OUC) railroad mainline runs north of and parallel to SR 417 from just east of Narcoossee Road to just west of Lake Nona Boulevard. The rail line then turns northwest and is at-grade adjacent to Boggy Creek Road under the Jeff Fuqua Boulevard overpass.

2.14 Pavement Conditions

The OPE is a proposed facility; therefore, there is no existing pavement to evaluate.

2.15 Bridges

The OPE is a proposed facility; therefore, there are no existing bridges currently associated with this roadway.

2.16 Toll Collections

The OPE is a proposed facility; therefore, there are no existing toll collections currently associated with this roadway.

The only toll facility in the study area is SR 417. At most toll locations, three toll rates are available: one for customers paying through electronic toll collection (ETC), i.e., E-PASS, SunPass or E-Z Pass; one for customers paying with cash; and pay-by-plate, which is the cash rate plus a small processing fee. A single mainline toll plaza is located on SR 417 in the study area, Boggy Creek Main, which has a toll of $1.43 for ETC and $1.75 for Cash. Ramp toll plazas at Boggy Creek Road, Lake Nona Boulevard and Narcoossee Road capture traffic to / from the north. The Boggy Creek Road ramps have a toll rate of $1.13 for ETC and $1.25 for cash, and Lake Nona Boulevard and Narcoossee Road have toll rates of $0.86 for ETC and $1.00 for cash.

2.17 Human Environment

2.17.1 Existing Land Use

The existing land use in the study area is predominantly Agricultural (38% of land use). Other major land use categories in the study area include Public / Semi-Public Property (34%), and Residential (14%). Of note is the majority of Public / Semi-Public Property was owned by the Greater Orlando Airport Authority (GOAA). This property has recently been sold to Tavistock Development Company and is anticipated to be dense residential development with some mixed use. The other large portion of the Public / Semi-Public land use is Split Oak Forest within Osceola County. Figure 2.17.1 shows the existing land use in the project corridor.

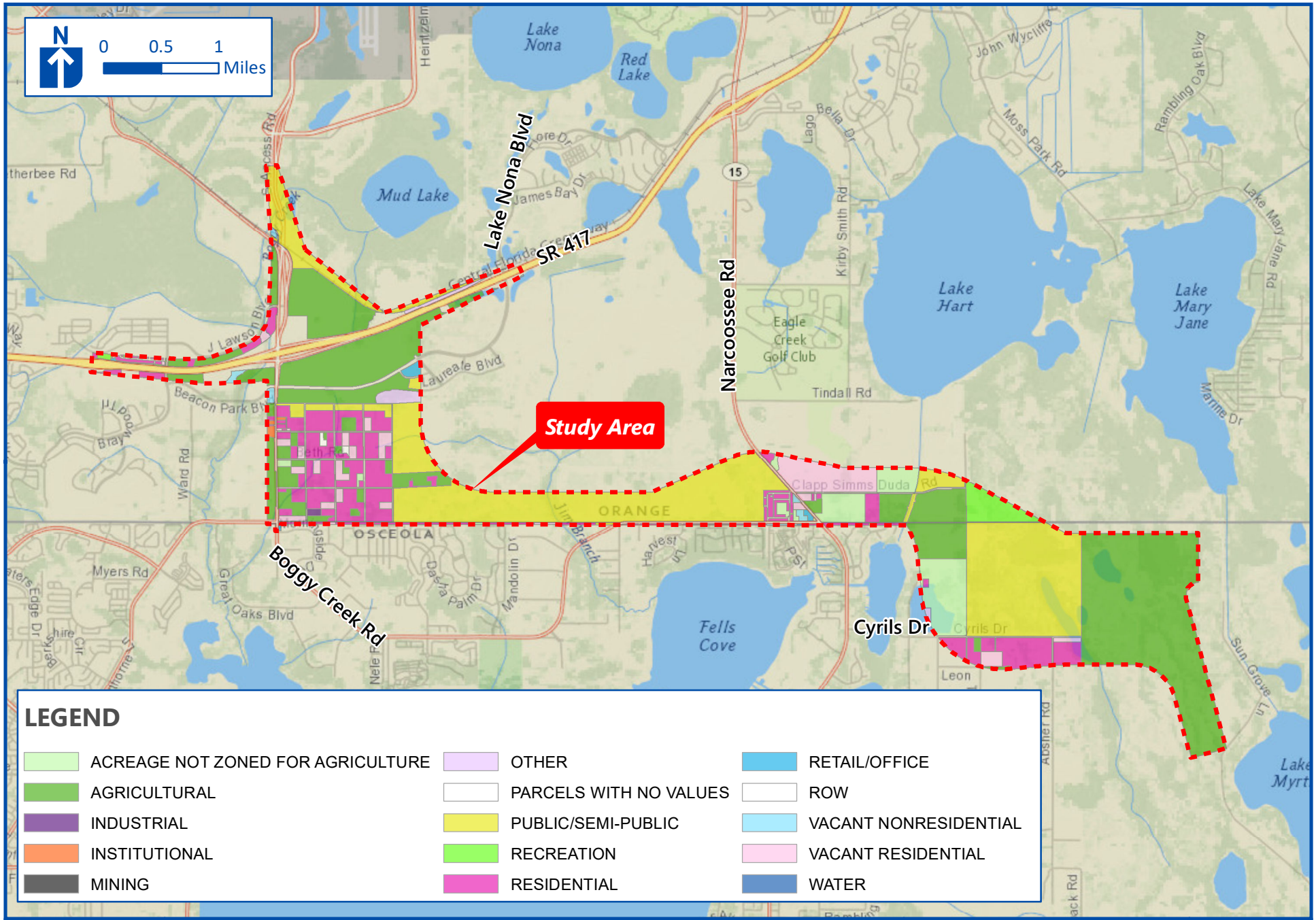


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Figure 2.17.1
Existing Land Use in the Study Area

2.17.2 Future Land Use

The future land use map from the East Central Florida Regional Planning Council shows that the land use in the study area is anticipated to become more developed than it is today. Large portions of Agricultural and Public / Semi-Public land use are anticipated to become Mixed Use. The percent of the future land use anticipated to be Agricultural is 16%, down about 22% from the existing condition (of note is that the existing residential property along Boggy Creek Road is shown as agricultural, when it is currently low density residential). The majority of this property is anticipated to become mixed use which is the most common land use in the future (44% of land use). Figure 2.17.2 shows the future land use in the project corridor.

2.17.3 Community and Neighborhood Features

Community focal points / facilities 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, parks, cemeteries, fire stations, law enforcement facilities, government buildings, healthcare facilities, and social service facilities.

Below is a list of community features located within one mile of the project study area and shown on Figure 2.17.3.

Cemeteries

- East Lake Cemetery (also known as Boggy Creek Cemetery);

Places of Worship

- Centro Cristiano Genesis;
- Lock Haven Baptist Church;
- Centro de Adoracion y Alabanza;
- Iglesia Critiana Luz de Salvacion;
- Iglesia Hispana Pentecostal Asamblea De Iglesias Cristianas;
- Kingdom Hall of Jehovahs Witnesses;

Healthcare Facilities and Hospitals

- University of Florida Research & Academic Center;
- Sanford-Burnham Medical Research Institute;
- Veterans Affairs Medical Center – Orlando;
- Nemours Children's Hospital;

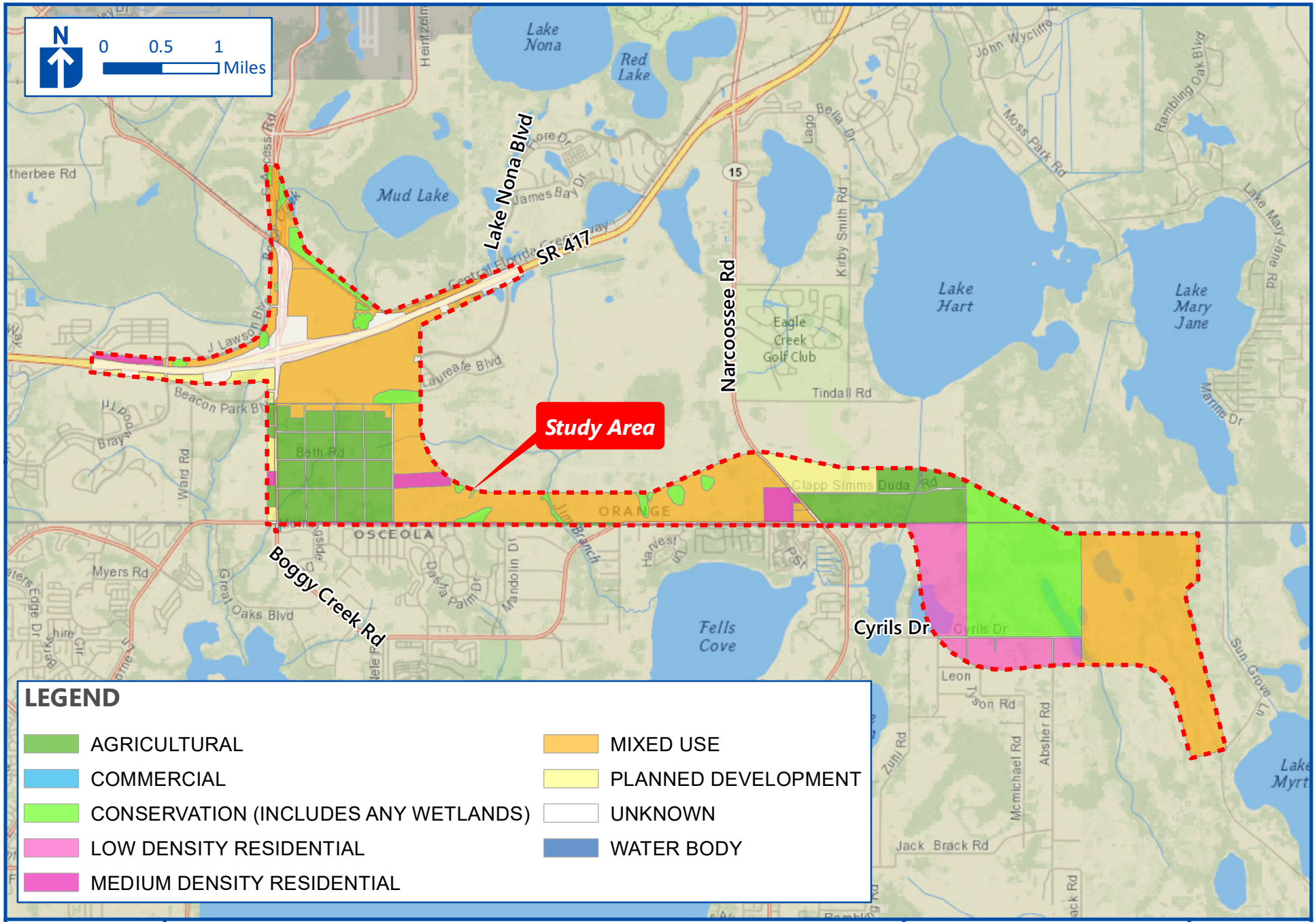

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Figure 2.17.2
Future Land Use
in the Study Area

Schools

- East Lake Elementary School;
- Lake Nona Middle;
- Eagle Creek Elementary;
- UCF College of Medicine;
- Laureate Park Elementary School;
- Burnett School of Biomedical Sciences;

Parks

- Eagles Roost Park;
- Moss Park; and
- Split Oak Forest.

No law enforcement facilities, social service facilities, assisted living facilities, civic centers, community centers, cultural centers, daycare centers, or government buildings are located within the one-mile OPE study area.

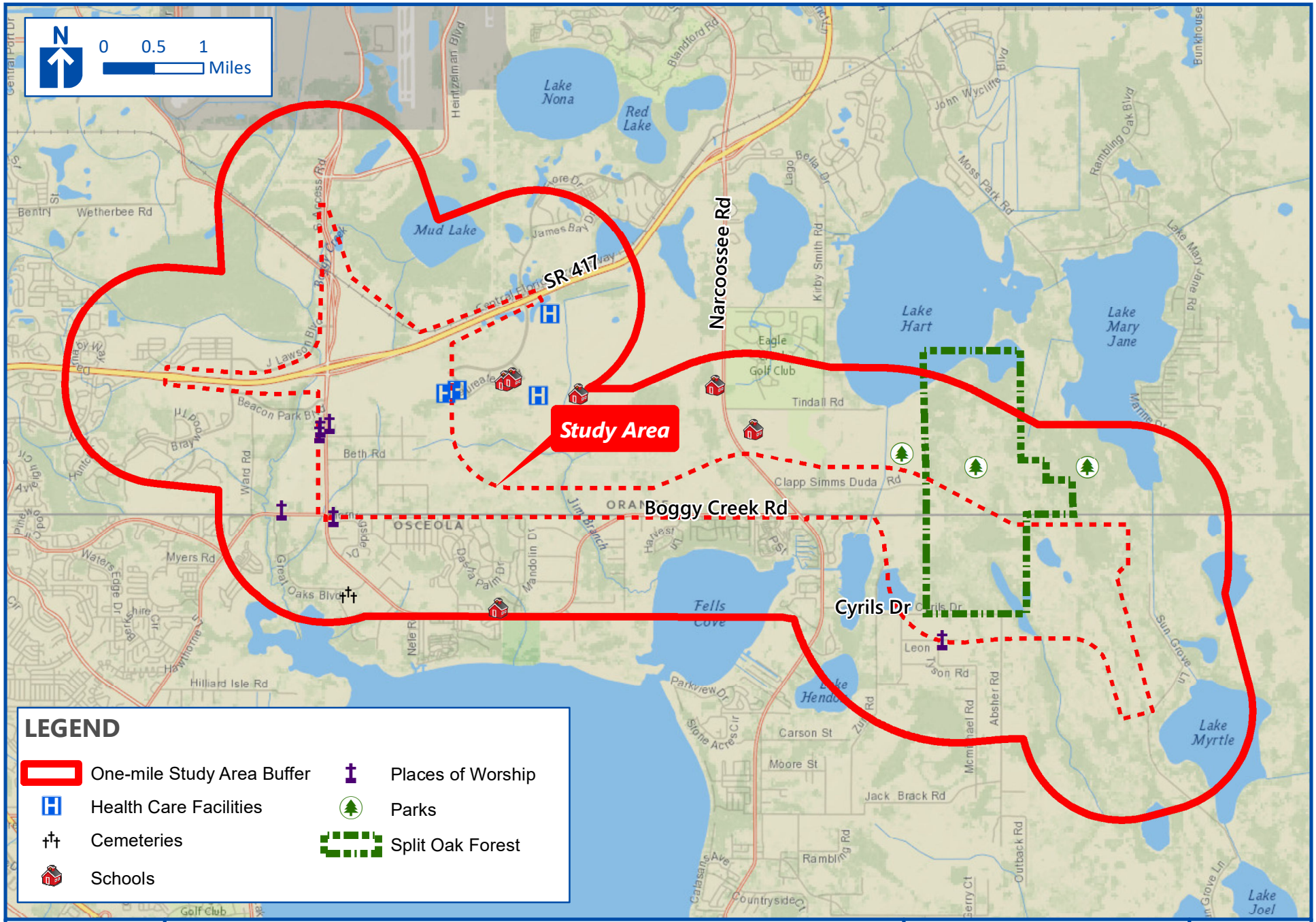

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Figure 2.17.3
Community Features within one-mile of Study Area

2.17.4 Demographic and Socioeconomic Characteristics

Demographic data describes a community's structure and is primarily collected by local, state, or federal agencies, such as the Census Bureau, as well as other local government departments. Demographic data covers a range of community topics, including: population size, gender, age composition, ethnic backgrounds, household characteristics, and geographic distribution. This data assists in designing public participation, outreach, and education strategies that reflect the age, education, and economic backgrounds of the community.

The 2010 Census Block Group Data, which contains the most recent demographic profile, was used to complete the demographic analysis. The United States Census Bureau defines Block groups as "statistical divisions of census tracts and are generally defined to contain between 600 and 3,000 people." Census blocks are statistical areas bounded by visible features, such as streets, roads, streams, and railroad tracks, and by nonvisible boundaries, such as selected property lines and city, township, school district, and county limits.

The one-mile buffer around the OPE study area intersects 10 census block groups in Orange and Osceola Counties. After grouping the 10 census blocks intersecting this area, the averages of specific demographic information were compared to the demographic information for Orange and Osceola Counties and is shown in Table 2.17.1 to Table 2.17.6.

Table 2.17.1: Demographic Comparison: Population

Evaluation Criteria	Orange County	Osceola County	Study Area
Total population	1,145,956	268,685	73,599
Percent of the population that is White	36.7%	25.5%	25.2%
Percent of the population that is Black	20.8%	11.3%	9.9%
Percent of the population that is Hispanic	26.9%	45.5%	45.7%
Percent of the population that is Asian	4.9%	2.8%	4.9%
Percent of the population that is Other	10.7%	15.0%	14.3%
Percent of the population that is considered "Minority"	63.3%	74.5%	74.8%
Median population age	37.1	39.2	36.6
Percent of the population that is above 65 years old	12.1%	14.6%	9.4%

Table 2.17.2: Demographic Comparison: Density

Evaluation Criteria	Orange County	Osceola County	Study Area
Total acres	642,087	963,778	106,524
Population density (persons per acre)	5.2	0.3	1.79
Household density (houses per acre)	2.4	1.6	0.6
Percent of housing units occupied	88.0%	78.0%	86.2%
Percent of housing units vacant	12.0%	22.0%	13.8%
Average family size	3.1	3.1	3.2
Average household size	2.5	2.8	3.0

Table 2.17.3.: Demographic Comparison: Income

Evaluation Criteria	Orange County	Osceola County	Study Area
Median Household Income ($)	$ 54,735	$ 45,395	$ 62,912
Median Family Income ($)	$ 65,235	$ 47,628	$ 63,699
Percent of households below the poverty line	12.2%	12.8%	7.9%
Percent of the population below the poverty line	12.9%	12.6%	8.8%

Table 2.17.4: Demographic Comparison: Transportation

Evaluation Criteria	Orange County	Osceola County	Study Area
Percent of the population that commute to / from work via a car, truck, or van	90.1%	91.2%	91.6%
Percent of the population that does not commute to / from work	4.2%	3.9%	5.8%
Percent of the population that bikes, walks, or takes public transportation to / from work	4.1%	2.6%	0.6%
Percent of the population that travels to / from work via a motorcycle	0.3%	0.3%	0.5%
Percent of the population that travels to / from work via “other” means	1.3%	2.1%	1.6%
Percent of occupied housing units that do not have a vehicle	5.7%	5.4%	1.9%

Table 2.17.5: Demographic Comparison: Language

Evaluation Criteria	Orange County	Osceola County	Study Area
Percent of the population that speaks only English	67.4%	55.5%	51.7%
Percent of the population that speaks a language other than English and also speaks English "very well"	19.8%	25.9%	29.1%
Percent of the population that is considered to be Limited English Proficient	12.8%	18.7%	19.2%

Note: People with Limited English Proficiency (LEP) speak English "less than very well" or "not at all". These people have a limited ability to read, write, speak, or understand English.

Table 2.17.6: Demographic Comparison: Education

Evaluation Criteria	Orange County	Osceola County	Study Area
Percent of the population that is over 25 years old and has less than a 9th grade education	5.2%	6.5%	5.0%
Percent of the population that is over 25 years old and has completed more than 9th grade but does not have a high school diploma	8.0%	9.2%	6.4%
Percent of the population that is over 25 years old and has a high school diploma	86.9%	84.4%	88.5%
Percent of the population that has some college or an associate's degree	29.2%	30.9%	30.5%
Percent of the population that has a bachelor's, master's, doctorate, or professional degree	30.3%	18.3%	20.1%

As shown in the Demographic Comparison tables, the study area has a similar demographic profile as the whole of Orange County and Osceola County. Within the study area, a very small percentage of the population is white (25.2%) and a very large percentage of the population is Hispanic (45.7%). Therefore, the total percentage of the population that is considered a minority is also very high (74.8%) and is similar to the demographics in Osceola County (74.5%). The percentage of the study area that is LEP is 19.2%, which is slightly higher than Osceola County (18.7%) but much higher than Orange County (12.8%).

The study area has a higher median household income than Orange or Osceola County, $62, 912 compared to $54,735 and $45,395, respectively. Similarly, the percent of households and population below the poverty line is lower than either county. The study area also has a lower percentage of households that do not have a vehicle, 1.9% compared to 5.7% and 5.4%. Figure 2.17.4 shows the census block groups and some of the relevant socioeconomic data.

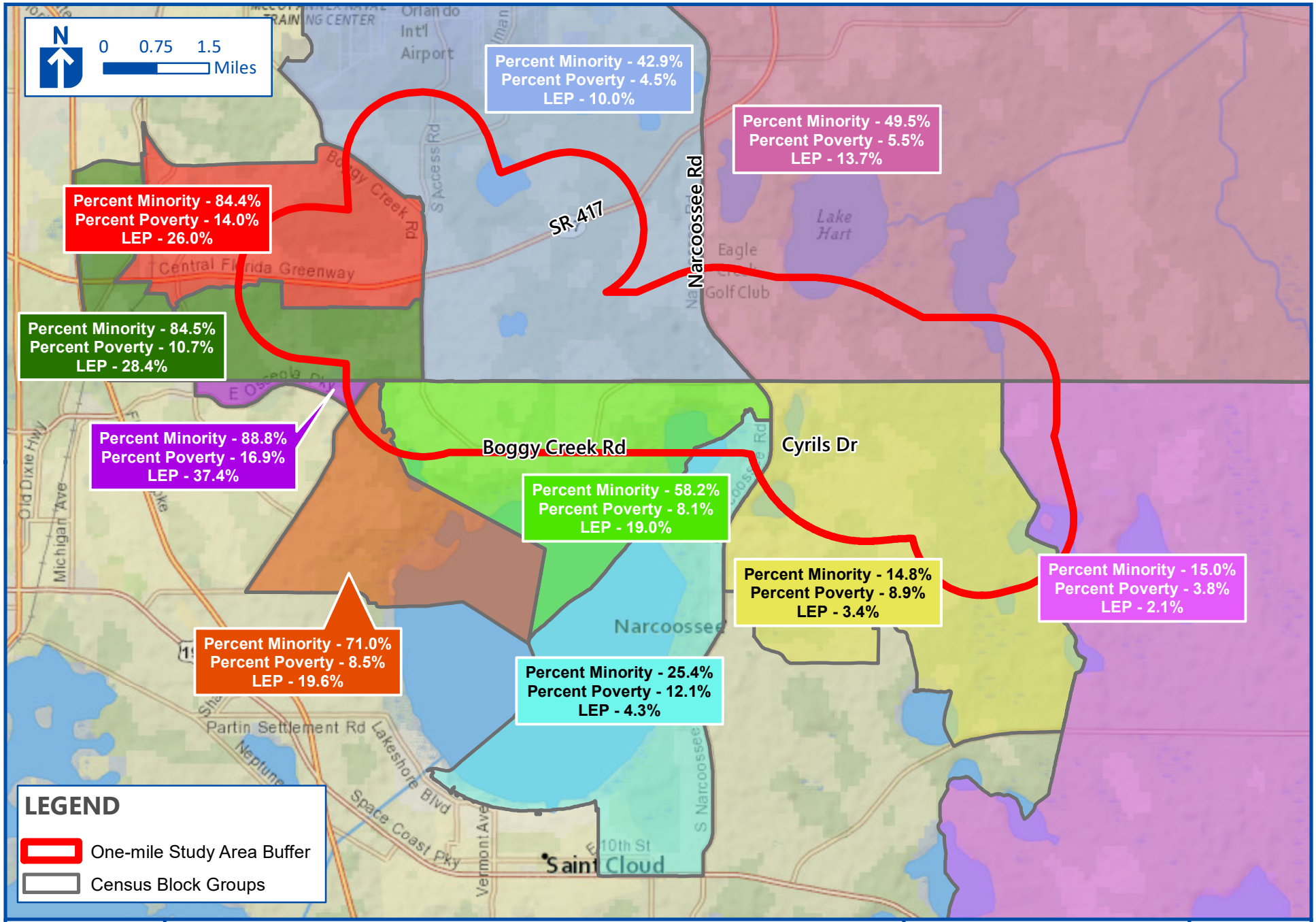

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Figure 2.17.4
Demographics within one-mile of Study Area

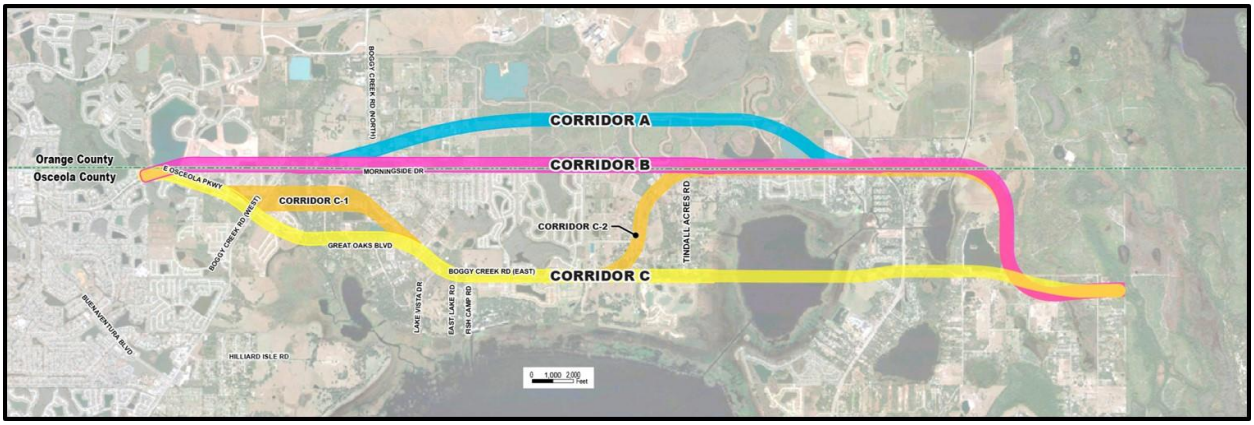
3.0 Previous Studies

The OPE has undergone numerous studies to identify the feasibility and viability of adding an east-west limited access, tolled expressway to alleviate traffic congestion associated with the Osceola Parkway. A summary of the previous studies is contained in the following sections.

3.1 Preliminary Feasibility Study

In 2010, Osceola County began the OPE Preliminary Feasibility Study. This study evaluated an easterly extension of Osceola Parkway from west of Boggy Creek Road to east of the Northeast Connector Expressway. This nine-mile extension would cross northern Osceola County near the Orange County line and would act as a major east-west corridor, relieving congestion on US 192 to the south and on SR 417 to the north. Three corridors were evaluated during this feasibility study as shown on Figure 3.1.1.

Figure 3.1.1: Feasibility Study Corridors



Source: OCX Osceola Parkway Extension – Part II – Engineering Analysis Report, May 2017

Corridor A

This corridor begins on existing Osceola Parkway approximately two miles east of the intersection of Buenaventura Boulevard and Osceola Parkway. As Osceola Parkway curves to the south, Corridor A proceeds in a northeast direction until it reaches the Osceola-Orange County line. Corridor A then continues eastward along the county line, and just west of Boggy Creek Road, it turns in a northeast direction and curves eastward, proceeding to a point approximately 2,000 feet west of Narcoossee Road. Corridor A then curves southwest, traveling along the county line crossing Narcoossee Road. At a point approximately 3,500 feet east of Narcoossee Road, Corridor A turns due south followed by due east, transitioning to the south of Cyrils Drive and continues eastward to the proposed Northeast Connector.

Corridor B

The alignment of Corridor B is similar to Corridor A. Corridor B also begins on existing Osceola Parkway approximately two miles east of the intersection of Buenaventura Boulevard and Osceola Parkway. Like Corridor A, Corridor B curves northeast until it reaches the Osceola-Orange County line. Corridor B then proceeds east along the county line until it crosses Narcoossee Road and continues east to the proposed Northeast Connector.

Corridor C

This corridor also begins on existing Osceola Parkway approximately two miles east of the Buenaventura Boulevard and Osceola Parkway intersection. Corridor C traverses existing Osceola Parkway, crosses over Simpson Road, proceeds southeast through open land and residential areas for approximately 2,500 feet, then turns east and ties to existing Boggy Creek Road in the vicinity of Lake Vista Drive. Corridor C follows Boggy Creek Road westward but continues due east and crosses over Fells Cove. Corridor C then curves slightly southward and proceeds easterly along the south side of Cyrils Drive until it connects to the Northeast Connector.

Corridor C-1

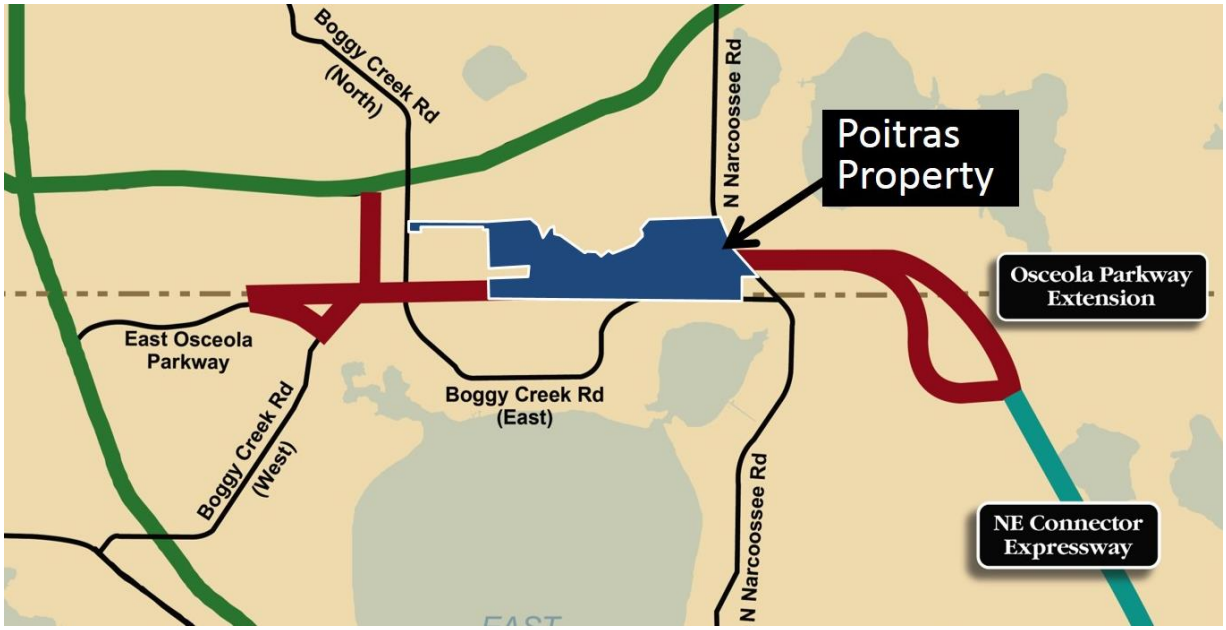
Corridor C-1 is a variation of Corridor C between Simpson Road and Boggy Creek Road and is located approximately 2,000 feet to the north of Corridor C.

Corridor C-2

This corridor follows the alignment of Corridor C but turns northeast, following the alignment of existing Boggy Creek Road to its intersection with Narcoossee Road. East of Narcoossee Road, Corridor C-2 follows the alignment of Corridors A and B.

Corridor A was recommended to be eliminated from further consideration due to the significant impacts to the Poitras property (shown on Figure 3.1.2). The portion of Corridor C that extends across Fells Cove was recommended to be dropped from future consideration due to the wetland impacts and cost associated with bridging Fells Cove. The Feasibility Study was completed in 2012 and recommended that the remaining alignments continue into a PD&E Study.

Figure 3.1.2: Poitras Property



Source: OCX Osceola Parkway Extension – Part II – Engineering Analysis Report, May 2017

3.2 OCX PD&E Study

After the Preliminary Feasibility Study, OCX, in coordination with Florida's Turnpike Enterprise (FTE), initiated the OCX PD&E study to further evaluate alternatives, develop preliminary estimates of project impacts and cost, and solicit public and agency input.

3.2.1 Public Kick-off Meeting

A Public Kick-off Meeting was held in March of 2013 to present the three corridors evaluated during the Feasibility Study. An evaluation matrix was prepared to compare the three corridors as shown in Table 3.2.1. Corridor B was selected as the recommended corridor to move further in the PD&E study. The majority of the public agreed with Corridor B and strongly opposed Corridor C.

Table 3.2.1: Evaluation Matrix Corridors

Evaluation Factors	2012 Feasibility Study Corridors					
	A	B [1]	B [2]	C	C1	C2
Meets Purpose and Need of the project	Yes	Yes	Yes	Yes	Yes	Yes
Provides a transportation system for future development	Yes	Yes	Yes	Yes	Yes	Yes
Consistent with OCX Master Plan	Yes	Yes	Yes	No	No	No
Ability to utilize toll revenues for funding	Yes	Yes	Yes	No	No	No
Directly impacts homes, requiring relocations	Yes	Yes	Yes	Yes	Yes	Yes
Number of potential relocations						
Range	80-90	70-80	510-530	220-240	210-230	315-335
Minimum Range [3]	15-25	5-15	n/a	n/a	n/a	n/a
Environmental Impacts						
Community Cohesion impacts	High	Moderate	Moderate	High	High	High
Wetland impacts	Moderate	High	Moderate	High	High	Moderate
Consistent with the Poitras Master Plan	No	Yes	No	No	No	No
Interchange intersection spacing provided along Narcoossee Road	Poor [4]	Poor [4]	Poor	Good	Good	Poor
Desirable geometric alignment	Poor [5]	Poor [5]	Poor [5]	Good	Good	Poor
Relative construction / engineering cost	Base	Base	Base	High	High	High
Relative right of way cost	Base	Base	High	High	High	High

Notes:

1 - If constructed on Orange County side of county line.

2 - If constructed on Osceola County side of county line.

3 - Impacts can be reduced by revising alignment around Fells Landing and Wyndham Lakes.

4 - Can become "Good" with realignment north of Fells Landing.

5 - Can become "Good" with straightening of curves on east end of alignment.

3.2.2 Public Alternatives Meetings

After the Public Kick-off Meeting, several alternatives were developed and evaluated within Corridor B. The alternatives were divided into three segments: west, central, and east.

The western segment begins at Osceola Parkway and extends to approximately 3,500 feet east of Boggy Creek Road. The OPE typical section for the western segment is generally 252 feet wide consisting of two 12-foot lanes in each direction with an 84-foot median that can

accommodate one additional lane in each direction (resulting in a 60-foot median), and 60-foot border width on each side. Five alternatives were presented at the July 10, 2014, Alternatives Public Meeting for the western segment and are briefly described below and shown on Figure 3.2.1. Each of the western alternatives includes interchanges at SR 417, Simpson Road, and Boggy Creek Road.

Alternative W-1 extends east from Osceola Parkway, entering Orange County approximately one mile west of Simpson Road. The alternative then travels east along the north side of the Orange and Osceola County line (through the Wyndham Lakes subdivision). A north / south expressway connection from proposed OPE to SR 417 is provided along the east side of Ward Road.

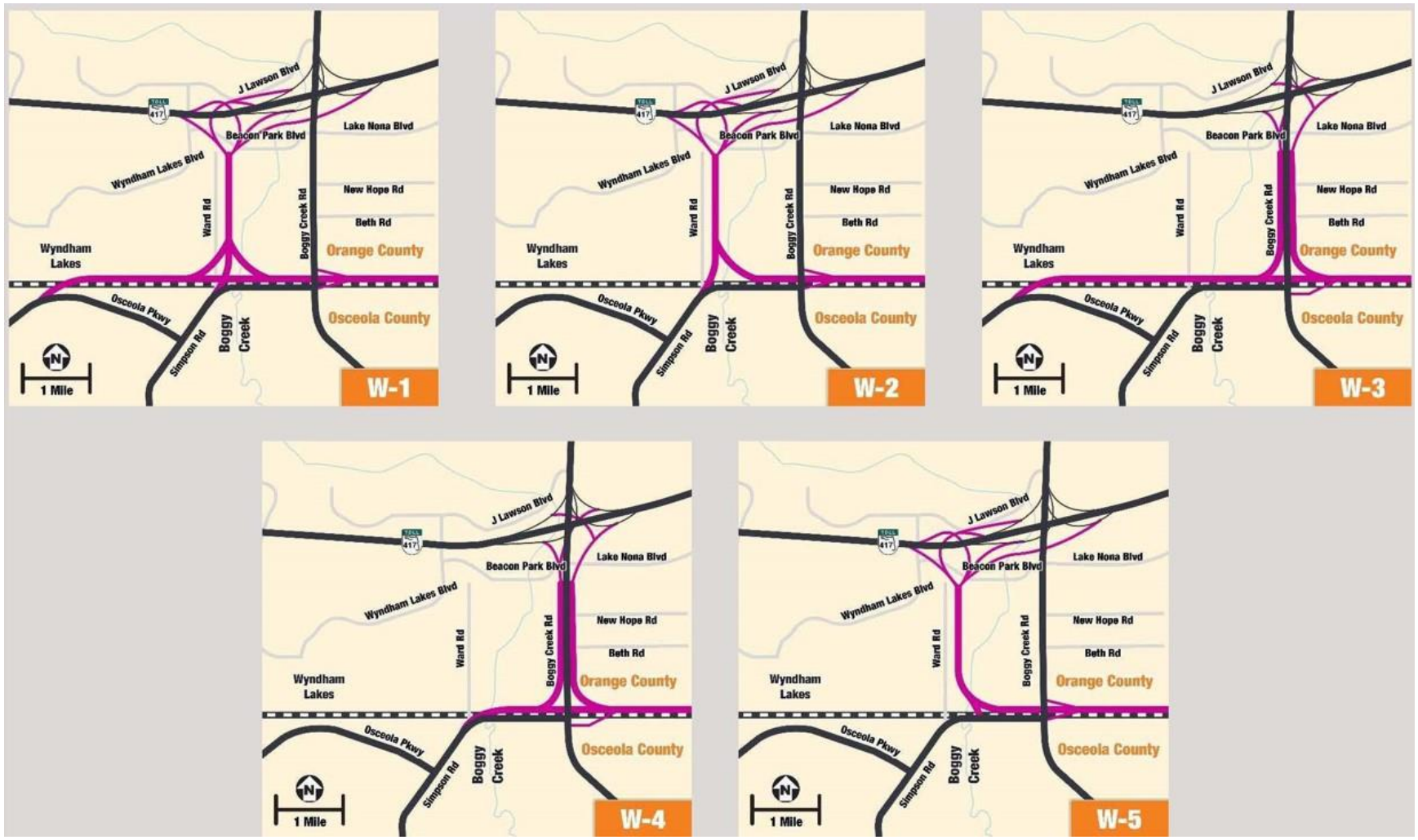
Alternative W-2 includes an improved intersection between Osceola Parkway and Simpson Road and improvements to Simpson Road but avoids impacts to the Wyndham Lakes subdivision. The expressway begins approximately 0.8 mile west of Boggy Creek Road and travels east. A north / south expressway connection from proposed OPE to SR 417 is provided along the east side of Ward Road.

Alternative W-3 extends east from Osceola Parkway, entering Orange County approximately one mile west of Simpson Road. The alternative then travels east along the north side of the Orange and Osceola County line (through the Wyndham Lakes subdivision). A north / south expressway connection from proposed OPE to SR 417 is provided in the median of a reconstructed Boggy Creek Road.

Alternative W-4 includes an improved intersection between Osceola Parkway and Simpson Road and improvements to Simpson Road but avoids impacts to the Wyndham Lakes subdivision. The expressway begins approximately 0.8 mile west of Boggy Creek Road and travels east. A north / south expressway connection from proposed OPE to SR 417 is provided in the median of a reconstructed Boggy Creek Road.

Alternative W-5 includes an improved intersection between Osceola Parkway and Simpson Road and improvements to Simpson Road but avoids impacts to the Wyndham Lakes subdivision. The expressway begins at SR 417 and extends south along the east side of Ward Road before traveling east along the north side of the Orange and Osceola County line.

Figure 3.2.1: Western Segment Alternatives



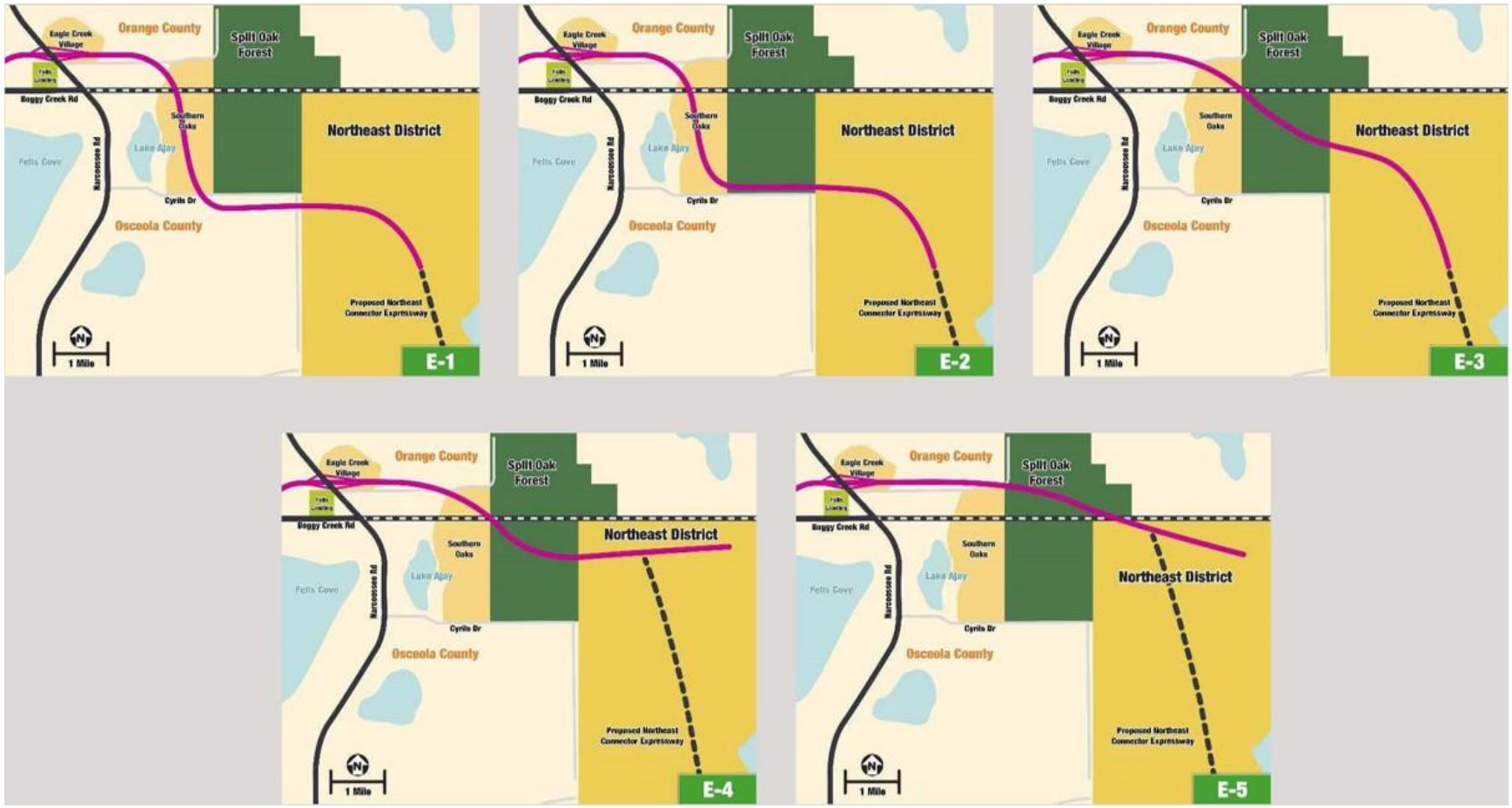
Source: OCX Osceola Parkway Extension – Part II – Engineering Analysis Report, May 2017

Two of the alternatives extended Osceola Parkway directly (W-1 and W-3) and both were dropped after the Alternatives Public Meeting because the traffic analysis indicated that improvements to the Osceola Parkway and Simpson Road intersection, as well as improvements to Simpson Road would be sufficient. Additionally, W-2, was eliminated from further consideration because direct connect ramps around Boggy Creek Road and Simpson Road were not considered necessary from a traffic perspective. Alternatives W-4 and W-5 were recommended for further study.

The central segment begins approximately 3,500 feet east of Boggy Creek Road and extends to Narcoossee Road. The typical section for the central segment is generally 257 feet wide consisting of two 12-foot lanes in each direction with an 84-foot median that can accommodate one additional lane in each direction (resulting in a 60 foot median), and 60-foot border on the left side and a 65-foot border on the right side. The additional five feet on the right side accommodates additional separation between the expressway and the adjacent residential development for enhanced landscaping. One alternative was presented at the July 10, 2014, Alternatives Public Meeting for the central segment. The primary reason that only one alternative was presented for the central segment is that approximately one mile east of Boggy Creek Road is the beginning of the Poitras property, owned by GOAA and extending east to Narcoossee Road (approximately 3.2 miles). The master plan for the Poitras property includes a 250-foot wide area along the north side of the Orange / Osceola County line (located entirely within Orange County) that was set aside for the OPE.

The eastern segment begins at Narcoossee Road and extends to the proposed Northeast Connector Expressway. The initial typical section for the eastern section was generally 400 feet wide consisting of two 12-foot lanes in each direction with an 88-foot median that can accommodate one additional lane in each direction (resulting in a 64 foot median), 94 feet of border width on each side, a 50-foot transit corridor and a 26-foot multiuse trail. To reduce impacts through Split Oak Forest, the typical section for the eastern section was reduced to 264 feet wide consisting of two 12-foot lanes in each direction with a 96-foot median that can accommodate one additional lane in each direction and a 44-foot transit corridor and 60 feet of border width on each side. Five alternatives were presented at the July 10, 2014, Alternatives Public Meeting for the eastern section and are briefly described later and shown on Figure 3.2.2.

Figure 3.2.2: Eastern Segment Alternatives



Source: OCX Osceola Parkway Extension – Part II – Engineering Analysis Report, May 2017

Alternative E-1 extends east from Narcoossee Road, then travels south on the east side of Lake Ajay, west of Split Oak Forest then east (south of Split Oak Forest) before connecting to the Northeast Connector Expressway. This alternative avoids directly impacting Split Oak Forest; however, it travels through several planned developments, including Eagle Creek and others which are north and east of Lake Ajay.

Alternative E-2 extends east from Narcoossee Road, then travels south on the east side of Lake Ajay (west of Split Oak Forest) then east along the southern boundary of Split Oak Forest before connecting to the Northeast Connector Expressway. This alternative attempts to minimize the impacts to Split Oak Forest; however, it travels through several planned developments, including Eagle Creek and others which are north and east of Lake Ajay.

Alternative E-3 extends east from Narcoossee Road, then travels southeast and enters the Osceola County portion of Split Oak Forest. After exiting Split Oak Forest, this alternative connects to the Northeast Connector Expressway. This alternative attempts to reduce the impacts to planned developments north and east of Lake Ajay; however, the impacts to the development are still significant.

Alternative E-4 is very similar to E-3; however, the eastern alignment is shifted north to connect to the proposed Sunbridge Parkway (and includes a two-mile extension of OPE). This alignment extends east from Narcoossee Road, then travels southeast and enters the Osceola County portion of Split Oak Forest. After exiting Split Oak Forest, this alternative travels east toward the proposed Sunbridge Parkway. With this alternative, the Northeast Connector Expressway would need to be extended to connect to the OPE.

Alternative E-5 extends east from Narcoossee Road into Split Oak Forest, then travels southeast, enters Osceola County just east of Split Oak Forest, and travels east toward the proposed Sunbridge Parkway. With this alternative, the Northeast Connector Expressway would need to be extended to connect to the OPE. This alternative avoids significant impacts to planned developments north and east of Lake Ajay; however, it does impact the planned development in Eagle Creek. Alternative E-5 was recommended to be carried forward for further study.

A second Alternatives Meeting was held on April 28, 2015, to present the refinements of the recommended alternatives for the western and central segments. At this meeting, three western alternatives were presented, as shown in the evaluation matrix in Table 3.2.2. In addition to the western alternatives, one central alternative was presented, and the evaluation matrix is shown in Table 3.2.3. On November 3, 2015, a public meeting was held

to discuss the eastern segment. At this meeting, four eastern alternatives were presented, and the evaluation matrix is shown in Table 3.2.4.

Table 3.2.2: Western Alternatives Evaluation Matrix

Evaluation Criteria	W-4A	W-4A2	W-5
Meets Purpose and Need of the project	Yes	Yes	Yes
Provides a transportation system for future development	Yes	Yes	Yes
Directly impacts homes within Wyndham Lakes, requiring relocations	No	No	No
Directly impacts developments along Ward Road (under construction) and homes on Ward Road	No	No	Yes
Directly impacts developed areas along east side of Boggy Creek Road	Yes	Yes	No
Provides direct access to the Orlando Airport from SR 417 Connector	No	Yes	Yes
Community impacts	High	High	High*
Wetland impacts	Moderate	Moderate	Moderate
Impacts to Boggy Creek waterway	Low	Low	Moderate
Conservation easement impacts	Low	Low	High
Number of potential relocations	11	11	196*
Estimated construction / engineering cost	$187,450,000	$264,700,000	$221,850,000*
Estimated right of way cost	$62,460,000	$62,460,000	$232,710,000*
TOTAL WESTERN PROJECT COST	$249,910,000	$327,160,000	$454,560,000*

* Represents a change from the Alternatives Meeting

Alternative W-4A2 was selected as the Preferred Alternative for the following reasons:

- Served higher traffic volumes (resulting in lower traffic volumes on the surrounding roadway network);
- Higher traffic volumes improve its financial feasibility as a toll road;
- Lower costs;
- Provided direct access to the OIA; and
- Fewer number of potential relocations.

Table 3.2.3: Central Alternatives Evaluation Matrix

Evaluation Criteria	C-1
Meets Purpose and Need of the project	Yes
Provides a transportation system for future development	Yes
Provides an interchange with Medical City Drive	Yes
Utilizes available R/W within the Poitras property owned by GOAA	Yes
Community impacts	Medium
Scrub-Jay impacts	Low
Number of residential relocations	1
Conservation easement impacts	High
Estimated construction/engineering cost	$62,620,000
Estimated right-of-way cost	$22,360,000
TOTAL CENTRAL PROJECT COST	$84,980,000

Alternative C-1 was selected as the Preferred Build Alternative due to its utilization of the alignment identified in the Poitras Master Plan and fewer number of potential relocations associated with other potential alignments.

Table 3.2.4: Eastern Alternatives Matrix

Evaluation Criteria	E-2A	E-5A1	E-5A2	E-5A2B
Meets Purpose and Need of the project	Yes	Yes	Yes	Yes
Provides a transportation system for future development	Yes	Yes	Yes	Yes
Desirable geometric alignment	Medium	Medium	Good	Good
Compatibility with Northeast District	Good	Good	Good	Very Good
Connectivity to Northeast Connector Expressway and eastern extension of Osceola Parkway	Medium	Medium	Good	Good
Community impacts	High	High	High	High
Wetland impacts within Split Oak	Moderate	High	High	High
Wetland impacts outside Split Oak	High	High	High	High
Scrub-Jay impacts	Low	Low	Low	Low
Number of potential residential	329	153	153	153
Conservation easement impacts	High	High	High	High
Passes through south portion of Eagle Creek Village	Yes	Yes	Yes	Yes
Passes through Southern Oaks	Yes	No	No	No
Estimated construction / engineering cost	$366,000,000	$418,000,000	$384,000,000	$404,000,000
Estimated right of way cost*	$476,000,000	$231,000,000	$231,000,000	$231,000,000
TOTAL EASTERN PROJECT COST*	$842,000,000	$649,000,000	$615,000,000	$635,000,000

* Does not include mitigation cost

Alternative E-5A2B was selected as the Preferred Build Alternative for the following reasons:

- More desirable geometric alignment which is safer than more curved alignment alternatives;
- Better compatibility with the Northeast District Master Plan and fewer number of potential relocations;
- Provides a good connection to the Northeast Connector Expressway; and
- Tied with Alternatives E-5A1 and E-5A2 for fewest potential relocations.

3.2.3 Public Hearing

A public hearing was held on January 24, 2017, and the Final Preliminary Environmental Impact Report (PEIR) was approved by OCX in May 2017. The PD&E Preferred Alternative included an interchange at SR 417 and Boggy Creek Road with direct connections to the OIA. The OPE alignment then paralleled Boggy Creek Road before turning east near Simpson Road and paralleling the Orange / Osceola County line before turning southeast through Split Oak Forest and ultimately connecting to a future Northeast Connector Expressway. The Preferred Alternative is shown on Figure 3.2.3.

The comments from the public hearing focused on avoiding Split Oak Forest (59 comments), opposition to the eastern segment (26 comments), and expressed other concerns about noise, traffic, or drainage (18 comments).

Figure 3.2.3: Preferred Alternative

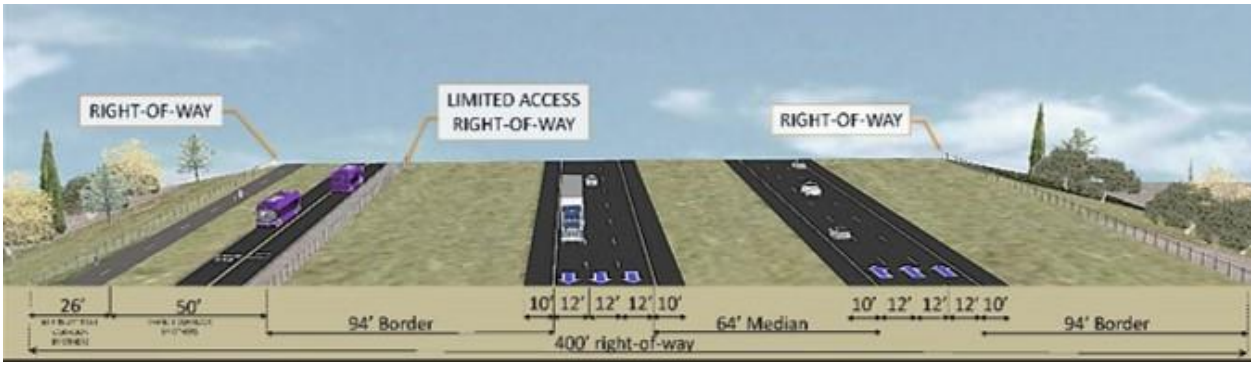
Source: OCX Osceola Parkway Extension – Part II – Engineering Analysis Report, May 2017

3.3 CFX Concept, Feasibility, and Mobility Study

As part of an interlocal agreement between CFM and OCX, CFX has incorporated portions of the OCX Master Plan 2040 into CFX's *Visioning + 2040 Master Plan*. As part of this interlocal agreement, CFX conducted 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 OPE.

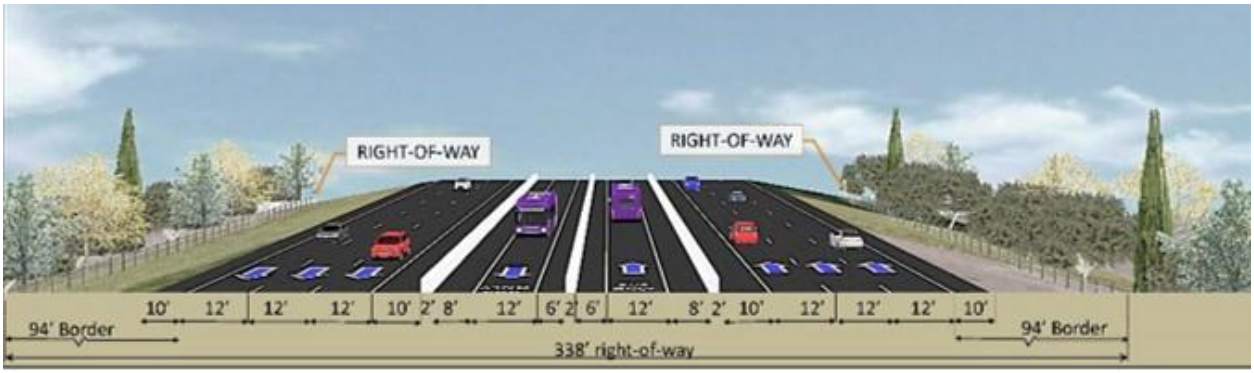
The CF&M Study began with the OCX's OPE PD&E Preferred Alternative as a "base case" with the goal to improve upon it. Each initial alignment was envisioned to be an improvement (i.e. fewer residential impacts, less wetland impacts, reduced cost, etc.) to the OCX PD&E Preferred Alternative. A 400-foot wide typical section was developed to accommodate an ultimate six-lane expressway and future transit facility in the median as shown on Figure 3.3.1. To lessen right-of-way impacts, the multimodal corridor and separate transit corridor were omitted west of Narcoossee Road resulting in a narrower, 338-foot-wide western typical section as shown on Figure 3.3.2.

Figure 3.3.1: Eastern Typical Section



Source: CFX OPE CF&M Study – CF&M Report, May 2018

Figure 3.3.2: Western (Ultimate) Typical Section



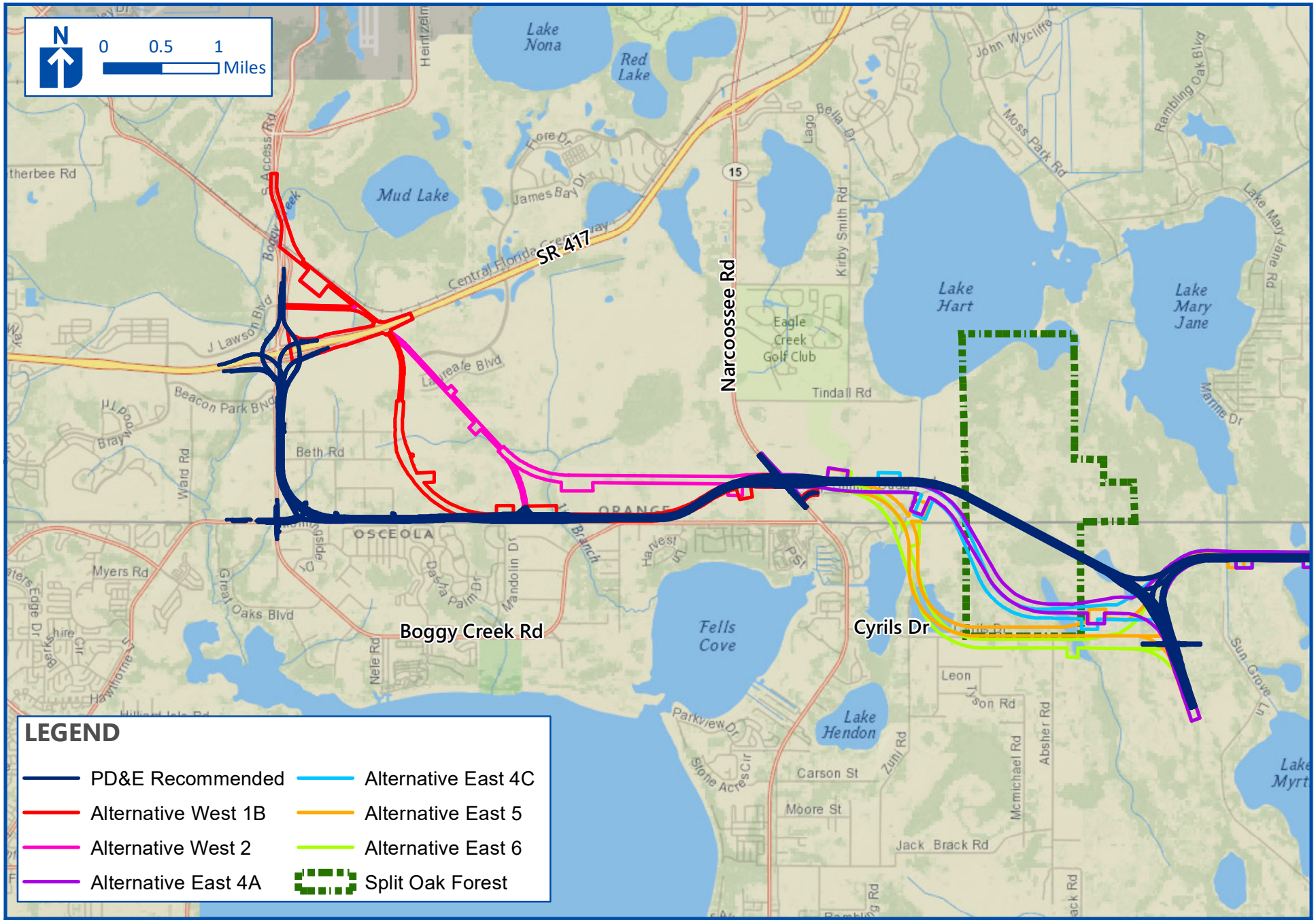
Source: CFX OPE CF&M Study – CF&M Report, May 2018

Nine initial alignments were developed during the CF&M Study. Four of the initial nine alignments were determined to have fatal flaws based on the level of residential impacts required and consequently those alternatives were dropped from further consideration. The remaining five alternatives included two west segment (SR 417 to Narcoossee Road) alternatives and three east segment (Narcoossee Road to future Northeast Connector Expressway) alternatives. One of the east segment alternatives includes two recommended sub-alternatives for a total of four eastern alternatives. The six alternatives for further consideration are shown on Figure 3.3.3.

Each of the east segment alternatives was paired with a west segment alternative for a total of eight distinct alternatives. The potential environmental impacts associated with each alignment were estimated by calculating the direct impacts to natural, sociocultural, physical, and environmental resources. These impacts were similar for each of the remaining alternatives and no other alternatives were determined to have a fatal flaw. Therefore, the CF&M Study recommended the six alternatives move forward into a PD&E Study.

In consultation with the environmental community and adjacent property owners, the East Alternatives were continually refined to minimize impacts through Split Oak Forest. In particular, Alternatives 4A and 4C could be further optimized to reduce the total impacts to Split Oak Forest to approximately 166 acres compared to 275 and 229 acres, respectively. This Split Oak optimization alternative was referred to as Refinement 1A and is shown on Figure 3.3.4.

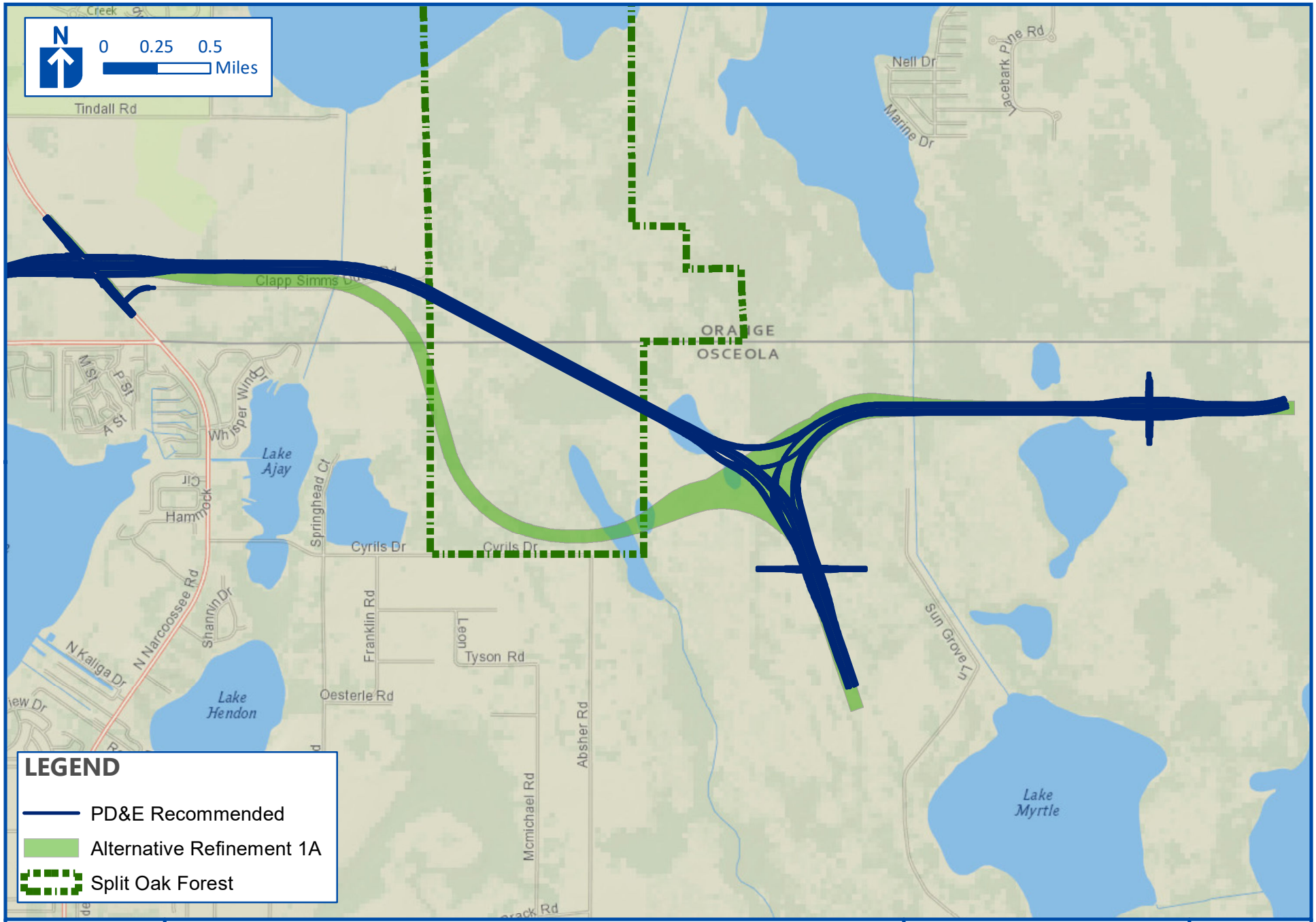
The CFX Board approved the findings of the OPE CF&M Study and authorized the initiation of the current OPE PD&E Study at the March 8, 2018, CFX Board meeting. Based on stakeholder input and public comments, West 1B and Refinement 1A would be used as a starting point for alternatives in the new PD&E Study. In addition, a Split Oak Avoidance Alternative would be developed. The PD&E Alternatives are discussed in Section 6.4 of this report.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Figure 3.3.3
Alternatives Considered in CF&M Study



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Figure 3.3.4
Refinement 1A

4.0 Design Criteria

4.1 Roadway Design Criteria

The design criteria used in the development of the OPE alternatives is per the CFX scope of services and is detailed below in Table 4.1.1.

Table 4.1.1: Geometric Design Criteria

Design Element	Design Standard	Source
Design Year	2045	Scope of Services
Design Vehicle	WB-62FL / WB-67	AASHTO 2004, Pg. 18
Design Speed Rural Freeway Urban Freeway Urban Arterial Rural Arterial Other Frontage Road Service Road Access Road Ramp Directional Loop	 70 mph 60 mph 45 mph 55 mph 45 mph 50 mph As appropriate 50 mph 30 mph	FDOT PPM Vol. 1, Tbl. 1.9.1, 1.9.2
Lane Widths Freeway Ramp 1-lane 2-lane Turning Roadway Arterial Collector / Service Road Bicycle Rural / Urban	 12-ft 15-ft 24-ft Case dependent 12-ft 12-ft 5-ft / 4-ft (designated or undesignated)	FDOT PPM Vol. 1, Tbl. 2.1.1, 2.1.2, 2.1.3, & 2.14.1
Cross Slopes (lanes 1 – way) Roadway 2 – lane (2) 3 – lane (3) 4 – lane (4) Bridge Section Max. Lane "Roll – over" DS 35 mph DS 35 mph	 -0.02 ft / ft (2) -0.02 ft / ft (2), -0.03 ft / ft (1) +0.02 ft / ft (1), -0.02 ft / ft (2), -0.03(2) -0.02 (typical, uniform, no slope break) 4.0% 5.0% (between through lane & aux. lane) 6.0% (between through lane & aux. lane)	FDOT PPM Vol. 1, Fig. 2.1.1 FDOT PPM Vol. 1, Sec. 2.1.5 FDOT PPM Vol. 1, Fig 2.1.1 PPM Vol. 1, Table 2.1.4

Design Element	Design Standard				Source
Median Width					FDOT PPM Vol. 1, Tbl. 2.2.1
Freeway					
DS 60 mph	60 to (64-ft)				
DS 60 mph	40-ft				
All	26-ft (with barrier)				
Arterial & Collector					
DS 45 mph	22-ft				
DS 45 mph	40-ft				
Offset Left Turn Lanes					FDOT PPM Vol. 1, Sect. 2.13.3 & Fig. 2.13.2 AASHTO Exh. 9-98
Median width 30-ft	Parallel offset lane				
Median width 30-ft	Taper offset lane				
Shoulder Width (lanes 1-way)	Total (ft)		Paved (ft)		FDOT PPM Vol. 1. Tbl. 2.3.1 to 2.3.4, Fig. 2.3.1
Freeway	Outside	Left	Outside	Left	
3-lane or more	12	12	10	10	
2-lane	12	8	10	4	Design Standards Index No. 510
Ramp					
1-lane	6	6	4	2	
2-lane	10	8	8	4	
Aux. Lane	12	N/A	10	N/A	
Arterial & Collector (Norm. Volume)					
2-lane divided	10	8	5	0	
1-lane undivided	10	N/A	5	N/A	
Service Road, 2-Lane, 2-Way, Undivided	10	10	5	5	
Shoulder-Cross Slope	0.06	0.05	-	-	
Max. Shoulder "Roll-over"	7.0%	7.0%	-	-	
Bridge section (lanes 1-way)					
2-lane	10	6	-	-	
3-lane or more	10	10	-	-	
1-lane ramp	6	6	-	-	
2-lane ramp	10	6	-	-	
Service Road, 2-Lane, 2-Way, Undivided	10	10	-	-	FDOT PPM Vol. 1, Fig. 2.0.1, 2.0.2, 2.0.4
Border Width					
Freeway	94-ft, *(94-ft desirable)*				
Ramp	94-ft, *(L.O.C. plus 10-ft as minimum)*				
Arterial / Collector					FDOT PPM Vol. 1, Tbl. 2.5.1, 2.5.2 *(CFX Policy)*
DS 45 mph	40-ft				
DS 45 mph	33-ft				
Arterial / Collector (Curb & Gutter)					
DS = 45mph	14-ft (12-ft with bike lane)				
DS 40 mph	12-ft (10-ft with bike lane)				

Design Element	Design Standard		Source
Roadside Slopes	Fill Height (ft)	Rate	
Front slope	0.0-5	1:6	FDOT PPM Vol. 1, Tbl. 2.4.1
	5-10	1:6 to CZ & 1:4	
	10-20	1:6 to CZ & 1:3	
	>20	1:2 with guardrail *(Use 10-ft bench at half the height of fill)*	
Front slope (curb & gutter)	All	1:2 not flatter than 1:6	*(CFX Policy) Use 1:3 slopes, avoid 1:2 slopes except where necessary*
Back slope		1:4 or 1:3 w/ standard width trap. ditch & 1:6 front slope	
Back slope (curb & gutter)	All	1:2 not flatter than 1:6	
Max. Grade / Max. Change in Grade	Max. Grade	-	FDOT PPM Vol. 1, Tbl. 2.6.1. 2.6.2
Freeway (Rural / Urban)	3.0%	0.20% / 0.40%	
Ramp			
Directional	5.0%	0.60%	
Loop	7.0%	1.00%	
Arterial			
Rural	3.5%	0.50%	
Urban	6.0%	0.70%	
Collector	6.5% to 9.0%	-	
Frontage Road / Service Road	8.0%	0.70%	
Min. Grade Curb & Gutter	0.3%	-	FDOT PPM Vol. 1, Tbl. 2.6.4
Minimum Stopping Sight Distance (Grade 2.0%)	Dsgn. Speed (mph)	Distance (ft)	FDOT PPM Vol. 1, Tbl. 2.7.1
	70	730	
	60	570	
	55	495	
	50	425	
	45	360	
	30	200	
Decision Sight Distance (Per avoidance maneuver)	Dsgn. Speed (mph)	Distance (ft)	AASHTO Exh. 3-3
	70	780-1445	
	60	610-1280	
	55	535-1135	
	50	465-1030	
	45	395-930	
	30	220-620	

Design Element	Design Standard	Source
Horizontal Curve Length Freeway Others Max. Curvature (Degree of Curve) Freeway DS = 70 mph Rural DS = 60 mph Urban Arterial DS = 55 mph Rural DS = 45 mph Urban Collector DS = 45 mph Frontage Road DS = 50 mph Service Road Ramp DS = 50 mph Directional DS = 30 mph Loop	V = Design Speed 30V (15V min.) 15V (400-ft min.) 3 30' 00" 5 15' 00" 6 30' 00" 8 15' 00" 8 15' 00" 8 15' 00" 8 15' 00" 24 45' 00"	 FDOT PPM Vol. 1, Tbl. 2.8.2a FDOT PPM Vol. 1, Tbl. 2.8.3
Superelevation Transition Tangent Curve *Spirals* Superelevation Rates Freeway DS = 70 mph Rural DS = 60 mph Urban Arterial DS = 55 mph Rural DS = 45 mph Urban Collector DS = 45 mph Frontage Road DS = 50 mph Service Road Ramp DS = 50 mph Directional Loop DS = 30 mph Loop	80% (50% min.) 20% (50% min.) *(Curves < 1°30'00" do not use spirals)* e_{max} / SE Trans. Rate 0.10 / 1:200 0.10 / 1:225 0.10 / 1:225 0.05 / 1:150 0.05 / 1:150 0.10 / 1:200 0.10 / 1:200 0.10 / 1:150	FDOT PPM Vol. 1, Sect. 2.9 *(CFX Policy)* FDOT PPM Vol. 1, Tbl. 2.9.1. 2.9.2, 2.9.3, 2.9.4 Design Standards Ind. No. 510, 511 AASHTO Exh. 3-28
Vertical Curves Length, L = KA Minimum Lengths Freeway DS = 70 mph Rural DS = 60 mph Urban Arterial DS = 55 mph Rural DS = 45 mph Urban Collector DS = 45 mph Frontage Road DS = 50 mph Service Road Ramp DS = 50 mph Directional Loop DS = 30 mph Loop	Design Speed (mph) / K – value Crest / K – value Sag 70 / 401 / 181 60 / 245 / 136 55 / 185 / 115 50 / 136 / 96 45 / 98 / 79 30 / 31 / 37 Crest / Sag 500-ft / 400-ft 400-ft / 300-ft 350-ft / 250-ft 135-ft / 135-ft 135-ft / 135-ft 300-ft / 200-ft 300-ft / 200-ft 90-ft / 90-ft	FDOT PPM Vol. 1, Tbl. 2.8.5, 2.8.6 AASHTO Exh. 3-72 (crest), 3-75 (sag) *CFX Policy* *Note: FDOT K-values for "ALL OTHER FACILITIES" are available*

Design Element	Design Standard		Source
Ramps Ramp Terminals Length Taper Minimum Spacing Entrance to Exit Exit to Entrance Entrance Exit to Exit Turning Roadways	Entrance "Parallel – Type" 900 to 1200-ft 300-ft (25:1) 1,600 to 2000-ft 500-ft 1,000-ft 1,000-ft 600 to 800-ft	Exit "Taper – Type" 550-ft (2° to 5°, 3° desirable)	Design Standards Ind. No. 525 AASHTO Pg. 850-856 AASHTO Exh. 10-68, Pg. 844
Lane Drop Taper	L = WS (DS = 45mph) L = WS² / 60 (DS ≤ 40 mph) 50:1 min, 70:1 desirable (freeways)		Design Standards Ind. No. 525, 526 AASHTO Pg. 818
Clear Zone Freeway DS = 70 mph Rural DS = 60 mph Urban Arterial DS = 55 mph Rural DS = 45 mph Urban Collector DS = 45 mph Frontage Road DS = 50 mph Service Road Ramp DS = 50 mph Directional 1 to 2-lane DS = 30 mph Loop 1 to 2-lane	 36-ft 36-ft 30-ft 4-ft (Curb & Gutter) as appropriate 4-ft (Curb & Gutter) as appropriate 24-ft 14-ft to 24-ft 10-ft to 18-ft		FDOT PPM Col. 1, Tbl. 2.11.11
Vertical Clearance Over Roadway Over Railroad Sign over Roadway Over Water	 16'-6" 23'-6" 17'-6" 12'-0" min.		FDOT PPM Vol. 1, Tbl. 2.10.1 to 2.10.4, Sect. 2.10.1
limited-access Limits Rural Urban Crossroad overpass / no interchange	 300-ft min. 100-ft min. 200-ft		FDOT PPM Vol. 1, Sect. 2.14.1

4.2 Drainage Design Criteria

The design of the stormwater facilities will comply with the standards set forth by CFX, SFWMD, Orange County, Osceola County, and the FDOT. An Environmental Resource Permit will need to be acquired from SFWMD during the design of this project. A Pre-Application Meeting was held with the SFWMD on November 27, 2018, to discuss the project. More information about this meeting is included in the Pond Siting Report, available under separate cover.

All basins are considered open basins. Wet detention systems were analyzed to provide water quality improvements, as well as water quantity attenuation for the project runoff. Wet detention is based on the high-water table prevalent throughout the project limits. The stormwater ponds have been preliminarily designed and sized for the proposed alignments. Required pond sizes for each basin were calculated by evaluating runoff volume using the NRCS Curve Number (CN) method, calculating treatment volume requirements, and reviewing floodplain impacts. These volumes were added together and combined with landscaping and maintenance berm assumptions to result in the total required pond size. Please refer to the summary below for the water quality, water quantity, and detention pond facilities configuration criterion used for the project.

4.2.1.1 Water Quality Criteria

Per Section 4.2.1 of the 2016 SFWMD Environmental Resource Permit Applicant's Handbook Volume II, wet detention volume shall be provided for the first inch of runoff from the developed project, or the total runoff of 2.5-inches times the percentage of imperviousness, whichever is greater. Proposed offsite ponds are assumed to be wet detention.

Since this is a preliminary analysis for pond sizing capacity, recovery calculations for orifice sizing, and permanent pool calculations are not included in the pond sizing considerations.

Per Appendix E of the 2016 SFWMD Environmental Resource Permit Applicant's Handbook Volume II, as a part of the review of ERP applications, the District evaluates whether discharges from a project will be directed to an Outstanding Florida Water (OFW) or a water body that has been identified as impaired pursuant Chapter 62-303, F.A.C. If a proposed project discharges to an OFW or an impaired water body, the District will require additional protective measures. For an impaired water body, this would include a site-specific pollutant loading analysis; and for an OFW, this would include pond storage of an additional 50% water quality treatment volume above the amounts required pursuant to Section 4.2.1, Volume II. The project study area does not discharge to an OFW, but East Lake Tohopekaliga Drain (WBID 3172C) is impaired for nutrients. The Lake Toho Nutrient Reduction Plan, Final Report, prepared by CDM (December 2011) provides additional information on this topic. The entire project study area is also within the Lake Okeechobee Basin Management Action Plan (BMAP) which indicates that the impaired basins require the 50% additional water quality volume storage mentioned above.

A preliminary pre versus post pollutant loading analysis has been performed for this study, as suggest by the SFWMD, since a Nutrient Reduction Plan has been implemented for Lake Toho. The Lake Nona Alternative was used to determine if pollutant loading reduction could be achieved. The Boggy Creek Alternative is very similar to the Lake Nona Alternative as far

as impaired basin involvement so it was assumed that results would also be similar for both alternatives. The Split Oak Minimization and Split Oak Avoidance Alternatives are not within impaired basins and, as such, a pollutant loading analysis is not necessary for these alternatives. The preliminary results indicated that the required nutrient removal for both nitrogen and phosphorous is met for the overall Lake Nona Alternative.

4.2.1.2 Water Quantity Criteria

Per Section 5.2.1 of the 2019 FDOT Drainage Manual, the design must comply with the water quality, rate, and quantity requirements of Section 334.044(15), F.S., Chapter 14-86, F.A.C., Rules of the Department of Transportation only in closed basins or areas subject to historical flooding. The draft *Pond Sizing Report* for the OPE, dated December 2016 prepared by Inwood Consulting Engineers, contained information regarding historic flooding. The report noted that historic flooding has occurred in the vicinity of Boggy Creek Road and within the Boggy Creek basin per SFWMD. However, the proposed stormwater management facilities are expected to alleviate flooding, and not create adverse conditions.

Per Section 5.2.2 of the 2019 FDOT Drainage Manual, the design must comply with state, Water Management District, and – when delegated by the state – local government stormwater management programs.

Per Section 3.2 of the 2016 SFWMD Environmental Resource Permit Applicant's Handbook Volume II, off-site discharge rate is limited to rates not causing adverse impacts to existing off-site properties, and: (a) Historic discharge rates; or (b) Rates determined in previous Agency permit actions; or (c) Rates specified in District criteria. The project area does not discharge to any locations with rates specified in District criteria.

From previous permit documentation, Boggy Creek has an allowable discharge rate of 50 CSM (cubic feet per second per square mile). Due to the restrictive nature of the criteria, in conjunction with the examination of existing permits for the Boggy Creek widening project and SR 417, both projects were permitted by meeting the pre versus post limiting criteria, the resulting conclusion is that calculations for this report will be based the 50 CSM requirement. A potential exists that the proposed ponds will increase significantly in size if the criteria must be met. Consequently, further discussion with the SFWMD during the design phase is warranted.

Per Section 3.3 of the 2016 SFWMD Environmental Resource Permit Applicant's Handbook Volume II, unless otherwise specified by previous agency permits or criteria, a storm event of three-day duration and 25-year return frequency shall be used in computing off-site discharge rates. Applicants are advised that local drainage districts or local governments

may require more stringent design storm criteria. For this project, the local government criteria from Orange County and Osceola County will govern. All project basins are open basins. The criteria for the Orange County 25-year / 24-hour storm event is 8.6 inches of rainfall and the criteria for the Osceola County 10-year / 72-hour storm event is 8.0 inches of rainfall.

For this PD&E Study, 8.6 inches of rainfall was used to establish attenuation storage for all proposed ponds to be slightly conservative. All criterion was discussed during the Pre-Application Meeting at SFWMD.

4.2.1.3 Floodplain Compensation Criteria

A Pre-Application Meeting was held with the SFWMD on November 27, 2018, to discuss the project. The SFWMD will require cup-for-cup floodplain compensation between the 100-year elevation and estimated average wet season water table, and this volume can be provided within the proposed stormwater ponds. In addition, stormwater modeling is not allowed to demonstrate compensation, only cup-for-cup compensation will be allowed.

4.2.1.4 Pond Geometry Criteria

All proposed ponds within OPE are assumed to be wet detention facilities. Dimensions include 0.5-acre minimum surface area at the control elevation, and the pond bottom shall be a minimum of 12 feet below the control elevation. Side slopes shall not be steeper than 1:4, with a 20-foot wide berm. One foot of freeboard above the Design High Water (DHW) to the inside berm will be maintained. Side slopes and berms shall be sodded.

Consistent with the Highway Beautification Policy, the pond aesthetics design approach should be developed early in order to include aesthetic considerations in the determination of pond right-of-way acquisition needs (2019 FDOT Drainage Manual Section 5.4.4.2).

5.0 Traffic

5.1 Existing Traffic

The purpose of this section is to describe data collection efforts, document field observations, and summarize the existing (2018) operational characteristics of the roadway network in the OPE study area. To summarize this work, the existing traffic conditions were established using the turning movement counts collected at signalized and unsignalized intersections and supplemented with traffic counts collected by the FDOT, Orange County, and Osceola County. The peak hour turning movement volumes were developed from counts, and the intersection level of service was completed using SYNCHRO and HCS software. The roadway segment operational analysis utilized 2018 FDOT Quality and Level of Service Handbook tables.

5.1.1 Data Collection

The data collection tasks were performed during the second full week of November 2018. The study area for traffic analysis is bounded by County Road (CR) 419 on the east, Florida's Turnpike on the west, SR 528 on the north, and US 192 on the south. The counts were supplemented with historic traffic counts obtained by the FDOT, Orange County, and Osceola County.

5.1.2 Traffic Counts

Traffic counts were collected along Boggy Creek Road, Narcoossee Road, select cross streets, and the SR 417 ramp intersections. The traffic count locations are shown on Figure 5.1.1. Tables 5.1.1 and 5.1.2 contain the locations at which four-hour peak period intersection Turning Movement Counts (TMC) were collected at unsignalized intersections and signalized intersections, respectively. Table 5.1.3 shows the locations of 72-hour traffic counts taken and Table 5.1.4 shows the locations with vehicle classification.

Figure 5.1.1: Traffic Count Locations

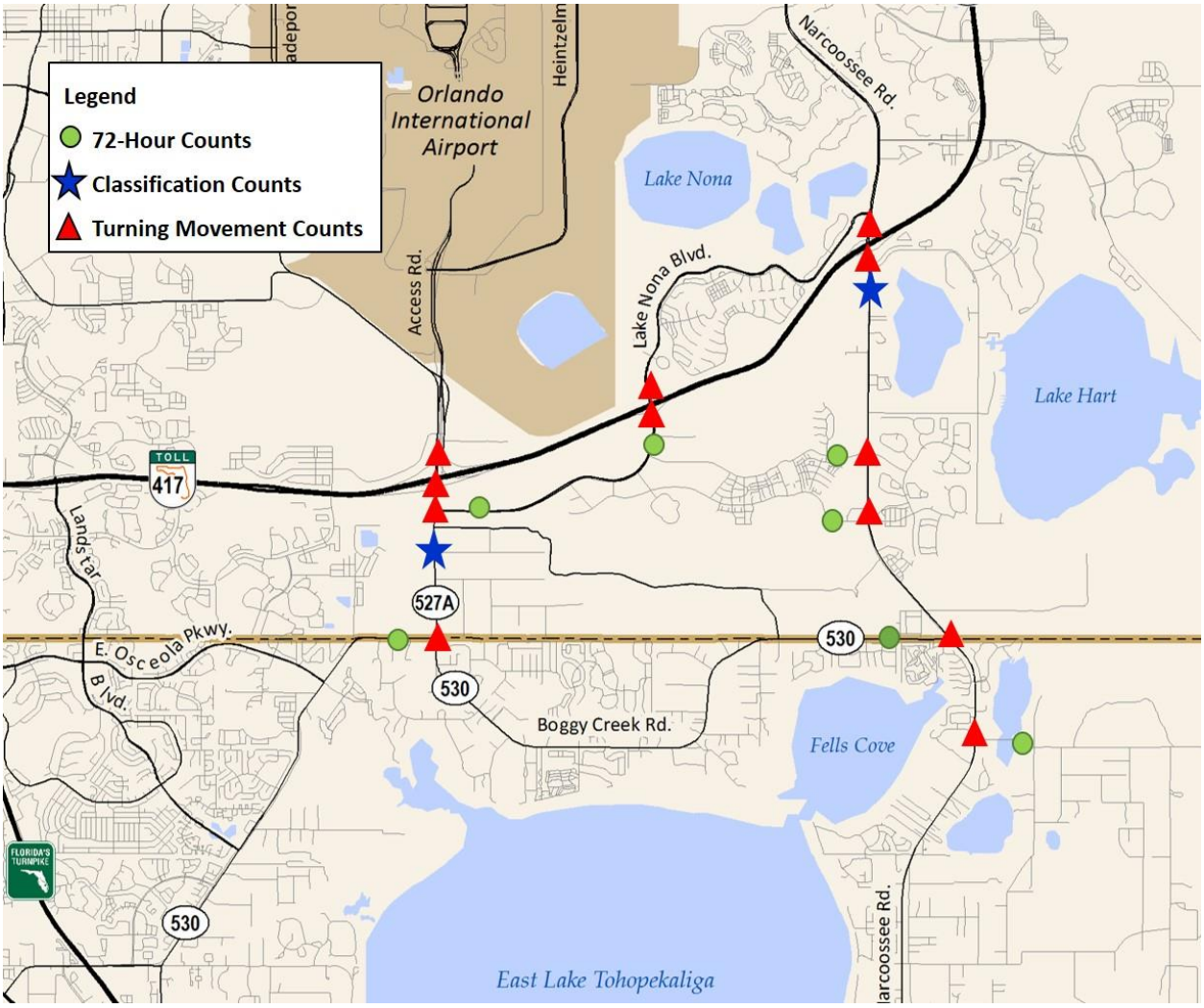


Table 5.1.1: Unsignalized Intersection TMC Locations

#	Count Location
1	Narcoossee Road and Cyrils Drive

Table 5.1.2: Signalized Intersection TMC Locations

#	Count Location
1	Boggy Creek Road and Narcoossee Road
2	Boggy Creek Road and Simpson Road
3	SR 417 East at Boggy Creek Road
4	SR 417 West at Boggy Creek Road
5	Boggy Creek Road at Lake Nona Boulevard
6	Laureate Boulevard at Narcoossee Road
7	Tavistock Boulevard at Narcoossee Road
8	SR 417 East at Lake Nona Boulevard
9	SR 417 West at Lake Nona Boulevard
10	SR 417 East at Narcoossee Boulevard
11	SR 417 West at Narcoossee Road

Table 5.1.3: 72-Hour Volume Count Locations

#	Count Location
1	Cyrils Drive East of Narcoossee Road
2	Laureate Boulevard West of Narcoossee Road
3	Tavistock Lake Boulevard West of Narcoossee Road
4	Boggy Creek Road West of Narcoossee Road
5	Lake Nona Blvd South of SR 417
6	Lake Nona Blvd East of Boggy Creek Road
7	Simpson Road West of Boggy Creek Road

Table 5.1.4: 72-Hour Classification Count Locations

#	Count Location
1	Narcoossee Road South of SR 417
2	Boggy Creek Road South of Lake Nona Boulevard

All traffic counts consisting of approach volumes were adjusted using the latest FDOT axle and seasonal correction factors for Orange and Osceola Counties to estimate the 2018 annual average daily traffic (AADT). The traffic count reports are presented in **Appendix D**.

5.1.3 Historical Count Data

An indicator of growth in the study area can be evaluated using historical counts on roadways near the project. CDM Smith collected historical count data from FDOT, Orange County, and Osceola County. The historical count data since 2012 and Compound Annual Growth Rates (CAGR) are presented in Table 5.1.5.

Table 5.1.5: Historical Traffic (2012-2017)

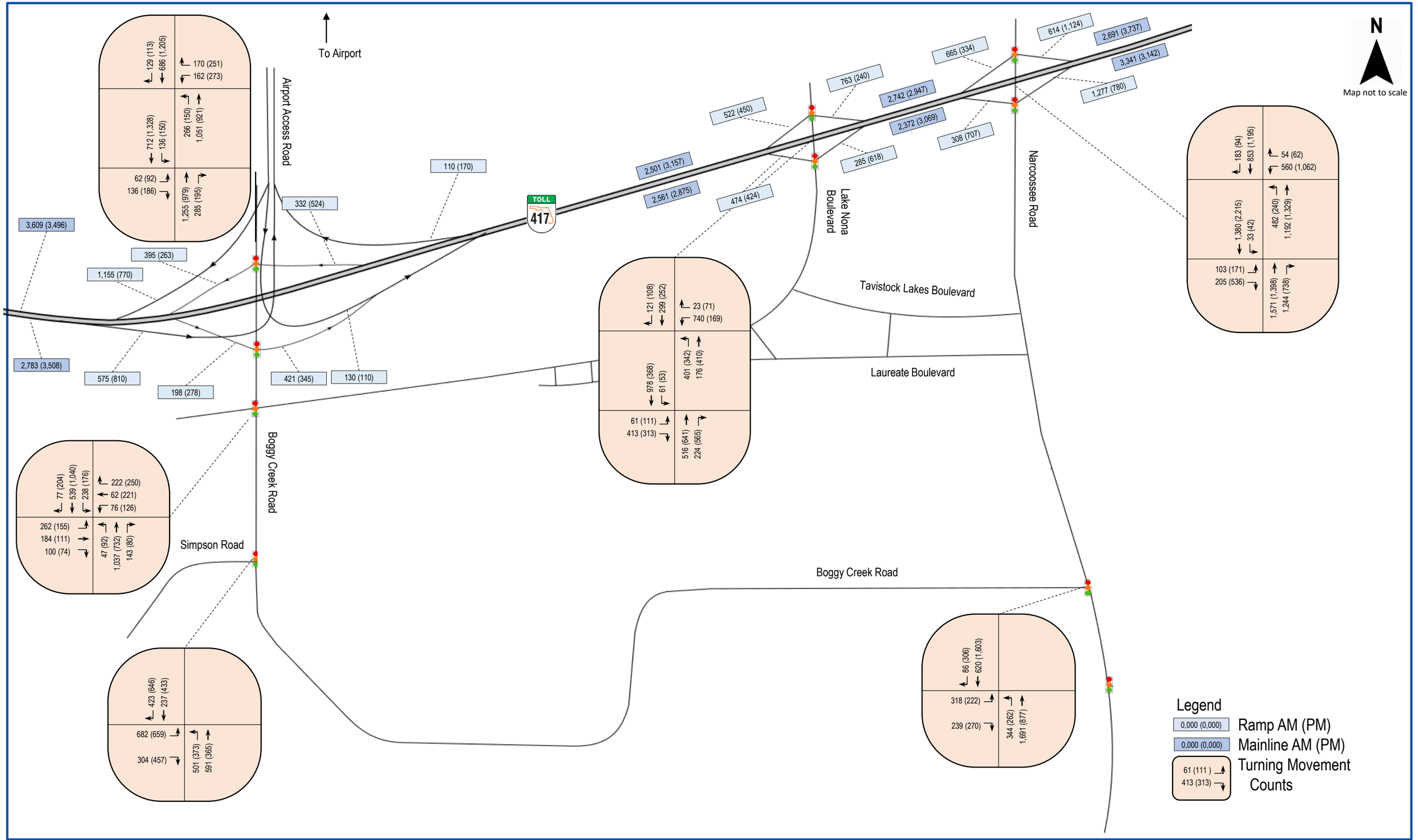
Location	2012	2013	2014	2015	2016	2017	CAGR
COSITE #: 757044 Boggy Creek Road South of Lake Nona Boulevard	19,800	17,900	18,100	20,200	20,400	20,500	0.70%
COSITE #: 758180 Lake Nona Boulevard West of Boggy Creek Road	2,000	2,000	2,000	2,000	2,000	6,800	27.73%
COSITE #: 927049 Simpson Road West of Boggy Creek Road	13,000	13,800	14,000	14,800	15,300	15,900	4.11%
COSITE #: 750557 Narcoossee Road North of Boggy Creek Road	13,800	13,900	29,000	30,000	31,000	35,500	20.80%
COSITE #: 927045 Narcoossee Road South of Boggy Creek Road	13,000	16,600	16,800	17,200	22,500	23,500	12.57%

5.1.4 Existing Traffic Volumes

Based on the results from the traffic count program and other available traffic data, CDM Smith prepared summaries of traffic volumes in the OPE study area, including historical counts, estimates of annual average daily traffic (AADT), and AM and PM peak hour traffic volumes. CDM Smith also prepared several other traffic characteristics that might influence design, such as the hourly distribution of traffic, weekly distribution of traffic, directional distribution of traffic, and vehicle classification patterns. Traffic factors used in the design process are also presented in Section 5.1.7.

5.1.5 Corridor Volumes

The FDOT Axle Correction and Seasonal Factors were applied to the approach volume counts to estimate the 2018 AADT. The 2018 AM and PM turning movement volumes at signalized and unsignalized intersections are shown on Figure 5.1.2 and the tube count locations are shown on Figure 5.1.3.

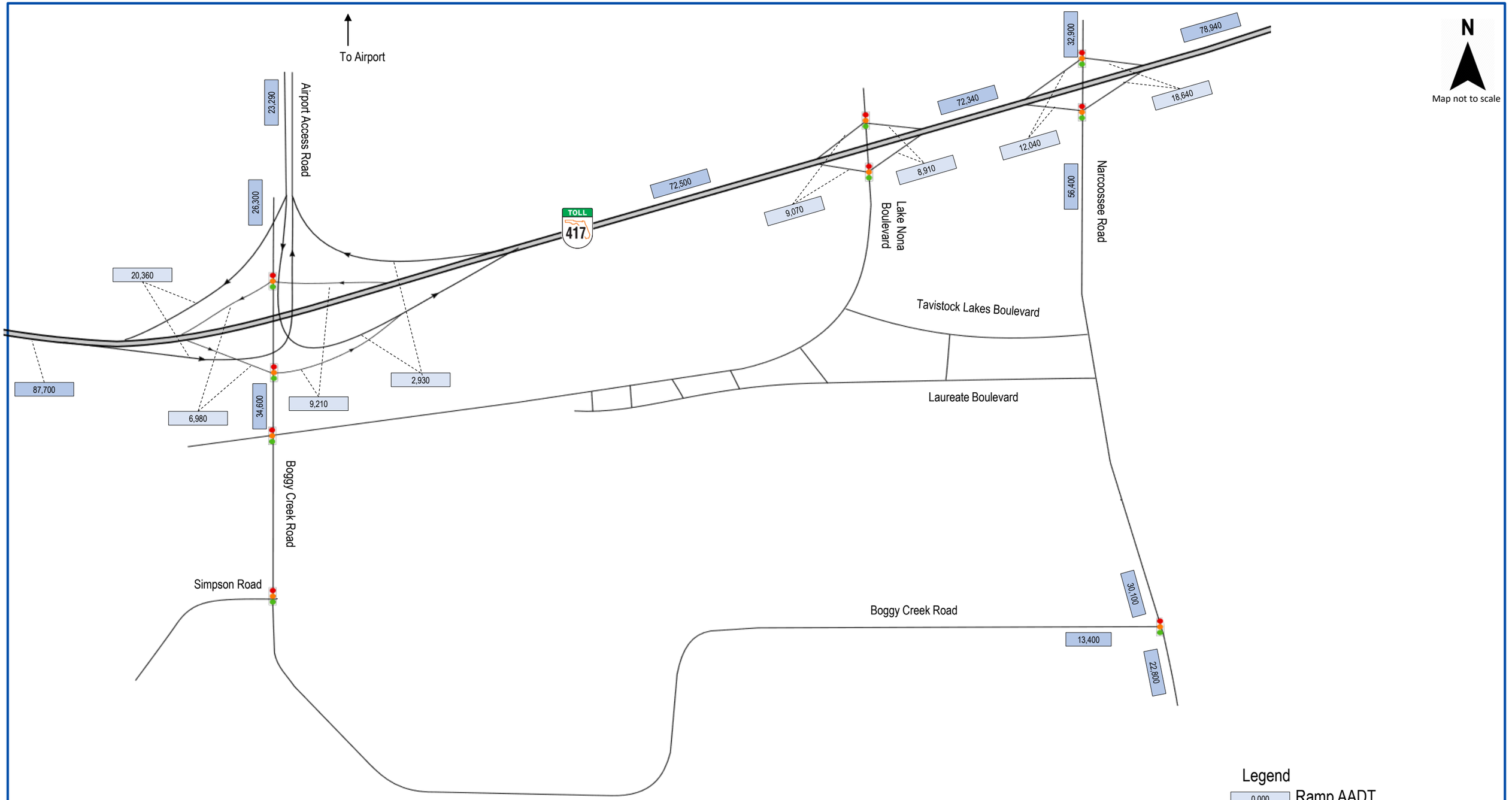


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
PD&E Re-evaluation

2018 Turning Movement Volume

Figure 5.1.2
Page 5-6

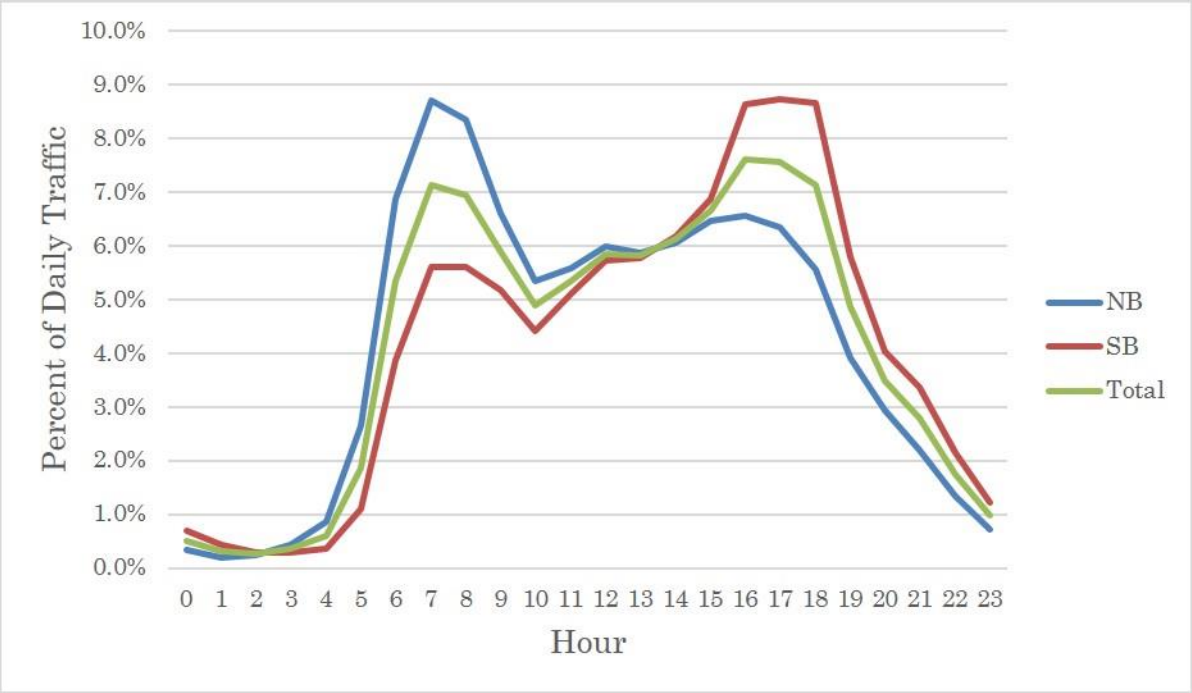


CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E Re-evaluation**	**2018 AADT**	**Figure 5.1.3 Page 5-7**

5.1.6 Hourly and Directional Distribution of Traffic

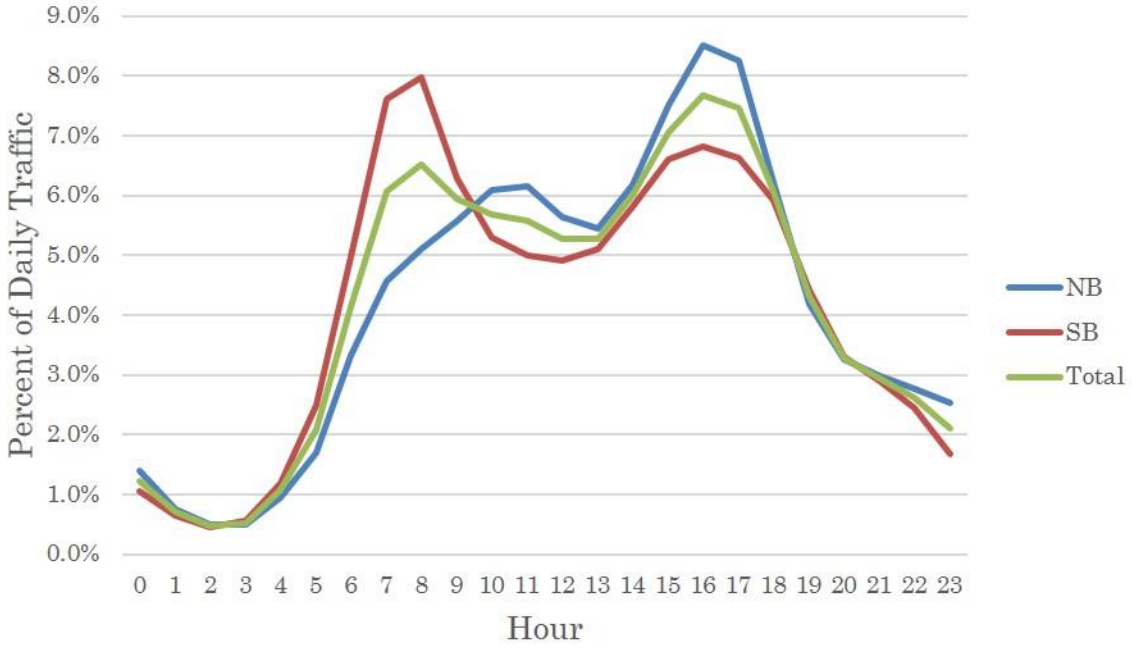
The hourly distribution of traffic includes information on the usage characteristics of the nearby facilities. The hourly distributions represent counts collected during a typical week from the Florida Transportation Information (FTI) webpage, the field, and CFX plaza data. Figures 5.1.4 through Figure 5.1.7 represent the hourly traffic distribution by direction for Narcoossee Road and for SR 417 mainline toll plazas at John Young Parkway (JYP), Curry Ford Road, and at Boggy Creek Road.

Figure 5.1.4: Hourly Distribution of Traffic (Narcoossee Road South of SR 417)



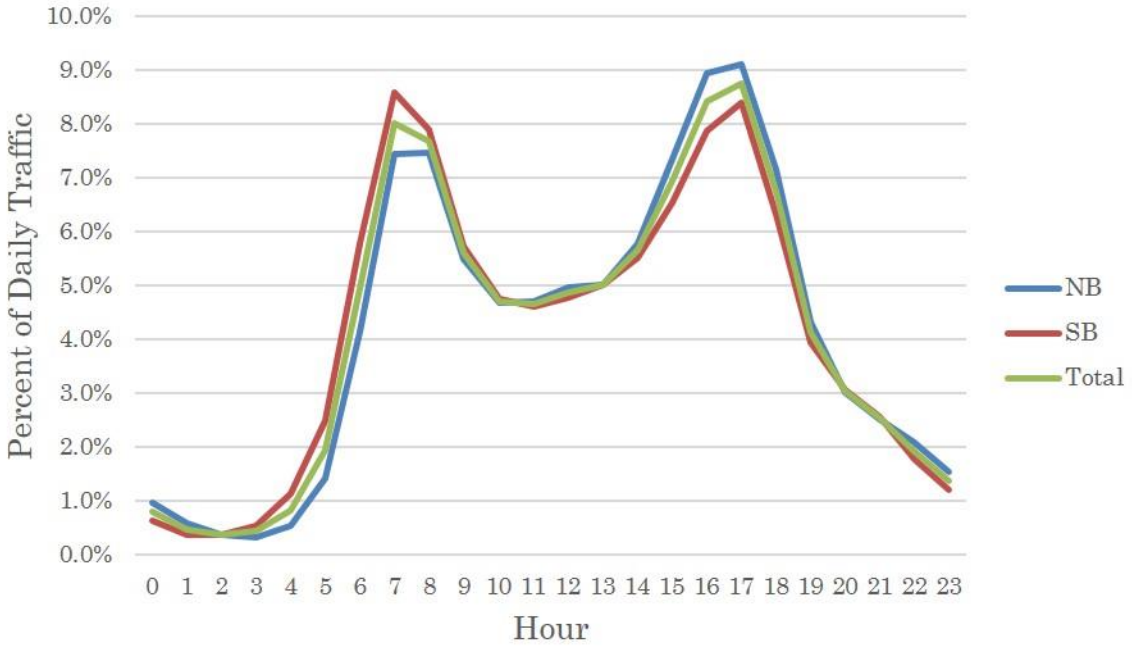
Traffic on Narcoossee Road, just south of SR 417, has a traffic pattern typical of commuting trips from Osceola County into Orange County with a strong AM peak and an even stronger PM peak traffic volume. The directionality is northbound in the morning and southbound in the afternoon.

Figure 5.1.5: Hourly Distribution of Traffic (SR 417 at Mainline JYP Plaza)



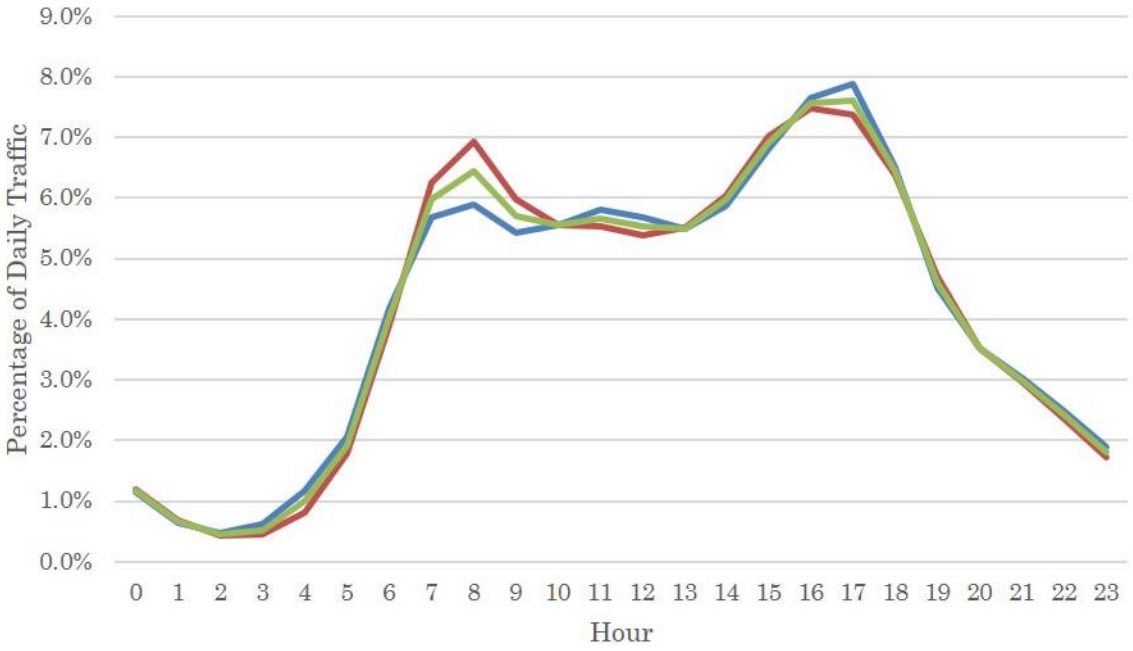
Traffic on SR 417 at the John Young Main Plaza has a commuter traffic pattern with strong morning peak and even stronger afternoon peak. The directionality is also southbound in the morning and northbound in the afternoon.

Figure 5.1.6: Hourly Distribution of Traffic (SR 417 at Mainline Curry Ford Plaza)



The Curry Ford Plaza hourly distribution shows a similar pattern with the northbound traffic slightly higher in the afternoon peak and the southbound traffic slightly higher in the morning peak. The curve also shows a tighter spread of traffic in the morning compared to the afternoon peak period.

Figure 5.1.7: Hourly Distribution of Traffic (SR 417 at Mainline Boggy Creek Plaza)



Traffic on SR 417 at the Boggy Creek Main Plaza is similar to other plazas with the peak volumes in the southbound direction in the morning and in the northbound direction in the afternoon. This scenario is typical of a commuter travel pattern with strong directional peaking characteristics, but the afternoon peak has only slightly higher traffic in northbound direction versus the southbound direction.

Table 5.1.6 shows the peak hour volumes along with the design hour factor (K-factor) and the directional distribution (D-factor) derived from traffic counts on roadways in the vicinity of the project and historical K and D factors from FDOT count stations within the project limits. The K-factors are uniform at 9.0%. The D-factor for studied roadways are the same for the three years worth of data with an average of 52.8%, most likely based on the Narcoossee Road count site.

Table 5.1.6: Peak Hour Traffic Characteristics

Location	Direction	Peak Hour		Daily	AADT	D-Factor AM peak	D-Factor PM peak	K-Factor AM peak	K-Factor PM peak
		AM	PM						
Boggy Creek Rd S. of Lake Nona Blvd	NB	685	1,129	15,160	30,100	37%	56%	6.1%	6.6%
	SB	1,183	902	15,543		63%	44%		
Boggy Creek W. of Narcoossee	NB	573	505	6,766	13,400	59%	47%	7.0%	7.9%
	SB	393	581	6,956		41%	53%		
Simpson Rd W. of Boggy Creek	NB	1,021	999	15,181	29,400	58%	48%	5.8%	6.8%
	SB	745	1,061	15,104		42%	52%		
Narcoossee Rd S. of SR 417	NB	2,468	1,861	28,415	56,400	60%	43%	7.1%	7.6%
	SB	1,630	2,508	29,110		40%	57%		
Narcoossee S. of Boggy Creek	NB	1,394	756	11,595	22,800	72%	35%	8.2%	9.3%
	SB	530	1,428	11,905		28%	65%		
	SB	3,609	3,496	46,498		56%	50%		
SR 417 N. of Boggy Creek Rd	NB	2,783	3,508	42,560	87,700	48%	49%	7.3%	8.0%
	SB	3,609	3,496	45,140		52%	51%		

Considering the OPE is a new tolled expressway, the K and D factors are expected to be higher than local roads in the study area. The SR 417 John Young Main, Curry Ford Main, and Boggy Creek Main Plazas were evaluated for use on this project using 2018 weekday counts. The K and D factors for these locations are shown in Table 5.1.7. The derived 2018 K-factor for Curry Ford Main was 10% and 9% at John Young Main and Boggy Creek Main. The derived 2018 D-Factor was 52% at Boggy Creek Main, 53% at Curry Ford Main, and 54% at John Young Main. The data gathered from the Curry Ford Main plaza is recommended for the future traffic analysis as it is more representative of the traffic peaking characteristics expected on the OPE.

Table 5.1.7: K and D Factors for SR 417 Main Plazas

Location	AADT	K-Factor	D-Factor
SR 417 at John Young Main Plaza	82,700	9.0%	54.0%
SR 417 at Boggy Creek Main Plaza	87,700	9.0%	52.0%
SR 417 at Curry Ford Main Plaza	113,700	10.0%	53.0%

5.1.7 Vehicle Classification

Table 5.1.8 shows the vehicle classification data available for roadways in the study area. Total truck percentages run very low in the corridor; the highest truck percentage is along Narcoossee Road with about 7.8% trucks just north of the Orange / Osceola County line.

Table 5.1.8: Vehicle Classification

Count Location	Year	Passenger Vehicles	Total Trucks	Single Unit Trucks	Combination Trailer Trucks	Multi Trailer Trucks
COSITE #: 750557 Narcoossee Road South of SR 417	2017	94.69%	5.31%	2.76%	1.46%	1.09%
	2014	88.03%	11.97%	5.95%	5.79%	0.23%
	2012	93.81%	6.19%	3.77%	2.38%	0.04%
	Average	**92.18%**	**7.82%**	**4.16%**	**3.21%**	**0.45%**
Boggy Creek Road South of Lake Nona Boulevard	2017	97.05%	2.95%	1.72%	0.64%	0.59%
	2015	97.16%	2.84%	2.22%	0.35%	0.27%
	Average	**97.11%**	**2.90%**	**1.97%**	**0.50%**	**0.43%**
SR 417 at Mainline Boggy Creek Plaza	2017	97.24%	2.76%	1.98%	0.48%	0.30%
	2015	97.65%	2.35%	1.76%	0.43%	0.16%
	Average	**97.45%**	**2.56%**	**1.87%**	**0.46%**	**0.23%**

With the OPE being a new tolled expressway, it will have higher K and D factors than local roadways consequently, a K-factor of 10.5% and a D-factor of 55% are assumed for this traffic analysis, as shown in Table 5.1.9. Truck traffic is typically lower on toll facilities, and a Truck-Factor (T-factor) of 4.0% is assumed.

Table 5.1.9 Recommended K, D and T Factors

Location	K Factor	D Factor	T Factor
Osceola Parkway Extension	10.5%	55.0%	4.0%
SR 417	10.0%	55.0%	4.0%
Other Roadways	9.0%	55.0%	4.0%

5.1.8 Level of Service

In the study area, the daily roadway segment level of service (LOS) analysis is determined for the existing traffic using the 2012 FDOT Quality and Level of Service Handbook tables for the corresponding facilities analyzed. Within this context, the majority of the study area facilities analyzed are treated as either minor rural collectors or principal arterials in the case of Narcoossee Road and Simpson Road. The determined LOS for 2018 daily volumes are shown in Table 5.1.10. Three of the facilities currently operate below the daily LOS standard for this type of facility, including SR 417 west of Boggy Creek Road, Boggy Creek Road north of SR 417, and Boggy Creek Road between SR 417, and Lake Nona Boulevard. Improvements are planned for this section of SR 417 and for Boggy Creek Road from the Orange County line to SR 417.

Table 5.1.10: 2018 Roadway Segment and Peak Hour Level of Service

Facility	Dir	Two Way 2018 Lanes	2018 Peak Hour Segment LOS								
			AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 W of Boggy Creek Road	NB	**4**	87,700	1.04	F	2,783	0.71	C	3,508	0.89	D
	SB	**4**				3,609	0.92	D	3,496	0.89	D
SR 417 NB Off Ramp to Airport Access	NB	2	20,360	0.32	D	575	0.16	C	810	0.23	C
SR 417 SB On Ramp from Airport Access	SB	2				1,155	0.32	C	770	0.21	C
SR 417 NB On Ramp from Airport Access	NB	1	2,930	0.09	D	130	0.07	C	110	0.06	C
SR 417 SB Off Ramp to Airport Access	SB	1				110	0.06	C	170	0.09	C
SR 417 NB Off Ramp to Boggy Creek Rd	NB	1	6,980	0.22	D	421	0.23	C	345	0.19	C
SR 417 SB On Ramp from Boggy Creek Rd	SB	1				332	0.18	C	524	0.29	C
SR 417 NB On Ramp from Boggy Creek Rd	NB	1	9,210	0.29	D	198	0.11	C	278	0.15	C
SR 417 SB Off Ramp to Boggy Creek Rd	SB	1				395	0.22	C	263	0.15	C
SR 417 W of Lake Nona Blvd	NB	**4**	72,500	0.86	D	2,561	0.65	C	2,875	0.73	C
	SB	**4**				2,501	0.63	C	3,157	0.80	D
SR 417 NB Off Ramp to Lake Nona Blvd	NB	1	9,070	0.28	D	285	0.16	C	618	0.34	C
SR 417 SB On Ramp from Lake Nona Blvd	SB	1				763	0.42	C	240	0.13	C
SR 417 NB On Ramp from Lake Nona Blvd	NB	1	8,910	0.28	D	474	0.26	C	424	0.24	C
SR 417 SB Off Ramp to Lake Nona Blvd	SB	1				522	0.29	C	450	0.25	C
SR 417 W of Narcoossee Road	NB	**4**	72,340	0.86	D	2,372	0.60	C	3,069	0.78	D
	SB	**4**				2,742	0.70	C	2,947	0.75	C
SR 417 NB Off Ramp to Narcoossee Rd	NB	1	12,040	0.38	D	1,277	0.71	E	780	0.43	C
SR 417 SB On Ramp from Narcoossee Rd	SB	1				614	0.34	C	1,124	0.62	D
SR 417 NB On Ramp from Narcoossee Rd	NB	1	18,640	0.58	D	308	0.17	C	707	0.39	C
SR 417 SB Off Ramp to Narcoossee Rd	SB	1				665	0.37	C	334	0.19	C
SR 417 E of Narcoossee Road	NB	**4**	78,940	0.93	E	3,341	0.85	D	3,142	0.80	D
	SB	**4**				2,691	0.68	C	3,737	0.95	E

Facility	Dir	Two Way	2018 Peak Hour Segment LOS								
		2018 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
Airport Access Road (North of SR 417)	NB	4	23,290	0.28	B	1,265	0.32	B	940	0.24	B
	SB	4				705	0.18	B	920	0.23	B
Boggy Creek - North of SR 417	NB	2	26,300	1.41	F	1,221	1.33	F	1,172	1.27	F
	SB	2				815	0.89	C	1,318	1.43	F
Boggy Creek Rd - Lake Nona Blvd to SR 417	NB	2	34,600	1.86	F	1,540	1.67	F	1,174	1.28	F
	SB	2				848	0.92	C	1,514	1.65	F
Boggy Creek - West of Narcoossee Rd	EB	2	13,400	0.72	C	597	0.65	C	532	0.58	C
	WB	2				470	0.51	C	608	0.66	C
Narcoossee Rd - North of SR 417	NB	4	32,900	0.83	C	1,246	0.62	C	1,391	0.70	C
	SB	4				1,036	0.52	C	1,289	0.64	C
Narcoossee Rd - South of SR 417	NB	6	56,400	0.94	C	2,815	0.93	C	2,136	0.71	C
	SB	6				1,585	0.52	C	2,751	0.91	C
Narcoossee Rd - North of OPE	NB	6	30,100	0.50	C	2,049	0.68	C	1,139	0.38	C
	SB	6				746	0.25	C	1,949	0.65	C
Narcoossee Rd - Boggy Creek Rd to OPE	NB	6	30,100	0.50	C	2,049	0.68	C	1,139	0.38	C
	SB	6				746	0.25	C	1,949	0.65	C
Narcoossee Rd - South of Boggy Creek Rd	NB	4	22,800	0.57	C	2,055	1.03	F	1,159	0.58	C
	SB	4				879	0.44	C	1,893	0.95	C

These facilities were also evaluated for Peak-Hour LOS using directional peak hour volumes. Of the facilities that operate below LOS standards for daily traffic, Boggy Creek Road north of SR 417 and between SR 417 and Lake Nona Boulevard are substandard in the northbound direction during the AM peak hour and in both directions during the PM peak hour. Narcoossee Road operates at acceptable LOS during AM and PM peak directions, except for the section south of Boggy Creek Road in the northbound direction during the AM peak hour. Intersections in the project area were also evaluated using SYNCHRO software with optimized signal timings for 2018 LOS analysis at a turning movement level and overall intersection LOS for AM peak hour and PM peak hour, as shown in Tables 5.1.11 and 5.1.12. SYNCHRO outputs are provided in Appendix E. All the intersections in the study area operate at an overall LOS E or better for both the AM and PM peak hour. Two of the intersection movements in the AM peak hour and six movements in the PM peak hour have failing operations in the existing condition.

Table 5.1.11: 2018 Intersection AM peak Hour Level of Service

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	49.4	15.8	-	21.3	-	8.4	-	4.5	32.7	19.6
	LOS	-	-	-	D	B	-	C	-	A	-	A	C	B
Boggy Creek Rd at SR 417 NB Off Ramp	Delay (sec/veh)	55.1	11.3	-	-	-	-	-	1.5	10.9	26.4	-	0.9	9.0
	LOS	E	B	-	-	-	-	-	A	B	C	-	A	A
Boggy Creek Rd at Lake Nona Blvd	Delay (sec/veh)	66.5	-	43.9	73.7	19.2	57.6	74.7	4.9	47.1	79.1	0.9	18.6	40.5
	LOS	E	-	D	E	B	E	E	A	D	E	A	B	D
Boggy Creek Rd at Simpson Rd	Delay (sec/veh)	56.8	57.4	10.4	35.1	31.4	97.0	-	-	-	-	-	-	46.6
	LOS	E	E	B	D	C	F	-	-	-	-	-	-	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	45.1	0.1	-	65.0	-	12.2	-	-	49.4	43.4
	LOS	-	-	-	D	A	-	E	-	B	-	-	D	D
Lake Nona Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	24.6	30.4	-	-	-	-	-	4.4	33.3	39.6	-	47.4	36.0
	LOS	C	C	-	-	-	-	-	A	C	D	-	D	D
Narcoossee Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	70.7	12.4	-	60.4	-	12.7	-	14.7	57.1	40.9
	LOS	-	-	-	E	B	-	E	-	B	-	B	E	D
Narcoossee Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	81.4	56.2	-	-	-	-	-	13.6	11.6	1.2	-	0.6	12.3
	LOS	F	E	-	-	-	-	-	B	B	A	-	A	B
Narcoossee Rd at Boggy Creek Rd	Delay (sec/veh)	53.7	17.9	8.7	23.3	5.5	34.0	-	-	-	-	-	-	26.2
	LOS	D	B	A	C	A	C	-	-	-	-	-	-	C

Table 5.1.12: 2018 Intersection PM peak Hour Level of Service

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	51.1	-	20.9	37.7	3.6	-	-	25.7	2.9	20.4
	LOS	-	-	-	D	-	C	D	A	-	-	C	A	C
Boggy Creek Rd at SR 417 NB Off Ramp	Delay (sec/veh)	45.5	-	34.0	-	-	-	-	16.0	2.3	14.8	9.5	-	14.1
	LOS	D	-	C	-	-	-	-	B	A	B	A	-	B
Boggy Creek Rd at Lake Nona Blvd	Delay (sec/veh)	71.9	34.4	-	67.8	59.2	8.4	59.1	37.7	4.2	89.3	24.5	2.2	34.9
	LOS	E	C	-	E	E	A	E	D	A	F	C	A	C
Boggy Creek Rd at Simpson Rd	Delay (sec/veh)	63.8	13.6	76.1	24.3	86.5	30.2	-	-	-	-	-	-	48.6
	LOS	E	B	E	C	F	C	-	-	-	-	-	-	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	53.2	-	11.6	20.1	5.1	-	-	36.7	-	20.7
	LOS	-	-	-	D	-	B	C	A	-	-	D	-	C
Lake Nona Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	41.2	-	6.2	-	-	-	-	20.6	3.1	3.0	2.7	-	11.0
	LOS	D	-	A	-	-	-	-	C	A	A	A	-	B
Narcoossee Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	66.9	-	14.0	96.6	21.2	-	-	99.4	16.4	61.2
	LOS	-	-	-	E	-	B	F	C	-	-	F	B	E
Narcoossee Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	50.9	-	121.6	-	-	-	-	30.8	11.3	18.4	82.1	-	60.4
	LOS	D	-	F	-	-	-	-	C	B	B	F	-	E
Narcoossee Rd at Boggy Creek Rd	Delay (sec/veh)	74.4	11.7	59.7	6.8	36.5	7.2	-	-	-	-	-	-	28.8
	LOS	E	B	E	A	D	A	-	-	-	-	-	-	C

5.2 Future Traffic

5.2.1 Travel Demand Model

The travel demand model used to analyze the OPE alignment alternatives is based on an updated and improved travel demand model developed specifically to forecast toll facilities in Central Florida. The project-specific travel demand model was used to estimate the expected traffic based on input data such as socioeconomic data (i.e. land use, population, employment) and transportation network data (e.g. number of lanes, facility types, trip rates). The primary forecasting tool used over the last 30 years in Florida has been the Florida Standard Urban Transportation Model Structure (FSUTMS). Within the FSUTMS, toll modeling originated by establishing specific toll amounts for appropriate network links and a coefficient to convert tolls to travel time impedance.

CDM Smith previously developed a travel demand model for a coverage area that includes the CFX system and areas of future expansion and influence. This previous model was based on the Central Florida Regional Planning Model (CFRPM) version 6.1, in Cube Voyager, because of the larger study area and updated socio-economic data sets. The new model, CFX Model 3.0, was developed for the purpose of evaluating the OCX Master Plan projects: OPE, Northeast Connector Parkway, Southport Connector Expressway, and the Poinciana Parkway I-4 Connector projects for the CF&M Studies.

The CFX Model 3.0 was validated for a 2015 base year with a concentration on the sub-area of Osceola County and south Orange County. This model covers all of Orange, Seminole, Osceola, Lake, Sumter, Marion, Volusia, Flagler, Polk, Brevard Counties, as well as connected portions of Indian River County. The future (or forecast) years for CFX 3.0 are 2025, 2035, and 2045. The CFX 3.0 model has a total of 5,406 traffic analysis zones (TAZs), including 56 external zones.

Using the CFX Model 3.0 as a starting point, CDM Smith made updates and refinements with special emphasis on the I-4 corridor and SR 429 for better base year validation and updated the base year to 2017. This model was designated CFX Model 3.1. Model documentation for CFX 3.1 can be found under separate cover. For the OPE, a project specific model was developed using the CFX 3.1 model as a base and was designated CFX Model 3.4.

5.2.2 CFX 3.4 – Base Year Model (2017)

The CFX Model 3.1, has a base-year socio-economic (SE) data set for 2017 that included the interpolated 2015 SE Data set from the CFRPM v6.1 model for all locations other than Southeast Orange County and Osceola County. For Southeast Orange County and Osceola County, Fishkind and Associates (FKA) was employed to develop population, dwelling units/households, school enrollment, and employment control totals for the 2015 base year SE data sets. The SE data set is the same used in the OCX Master Plan studies, just interpolated to a 2017 base year for CFX Model 3.4.

The base-year network was reviewed and improved to reflect 2017 existing conditions and include details about the CFX System and other toll roads in the study area. In addition, using Geographic Information System (GIS), the network was compared to 2017 aerial photography in the study area, corrections were made to various link characteristics, such as the number of lanes, facility type, area type and speed. Traffic counts were reviewed and updated to the base year 2017. These included counts from CFX, FDOT, county and municipal governments. For the purpose of evaluating the alternatives for the OPE, some traffic analysis zone adjustments were made as the new alternatives and supporting roadway networks were updated.

The toll rates collected on CFX and other existing toll facilities, including Florida's Turnpike and Osceola County facilities, were reviewed for use in the modeling process. At most toll locations there are two toll rates: one for customers paying through electronic toll collection (ETC), i.e., E-PASS or SunPass; and the other for customers paying with cash. More precisely, the toll rates used in the model are the weighted average of the ETC and cash toll rates using current ETC participation rates as the base. Truck volumes are relatively low on CFX facilities and therefore not included as a model feature.

5.2.3 CFX 3.4 – 2045 Model

By starting with the CFX Model 3.0 and 3.1, the future year model retains all the updates and enhancements created for that model and includes additional model improvements in the study area. The forecast years are set to 2025 and 2045, consistent with the requirements for the CFX CF&M Studies. The information for these years was, in general, taken from the data sets describing fiscal year 2020, fiscal year 2030 and fiscal year 2040 in the CFRPM 6.1.

The future year network in the model contains the transportation improvements identified in the CFX, FDOT and county work programs, as well as the improvements included in the cost feasible plan from the LRTP for year 2025. To ensure that the project is designed to handle traffic through the horizon year, the design network is constrained, specifically the

parallel, or competing roads. In addition to these improvements, additional network links were added, specifically in the high growth areas and the study area. As previously mentioned, to ensure proper loading and distribution of trips on the OPE, there was zonal disaggregation in the study area. These zones are supported in part by a network of "development" roads or roads not considered in the 2040 LRTP or county transportation plans. The 2025 and 2045 design network improvements of note include:

- Four-lane OPE (project);
- Eight-lane SR 417 from SR 528 to International Drive (for assumption of peak hour operations);
- Four-lane Boggy Creek Road from Simpson Road to north of SR 417;
- Six-lane Narcoossee Road from Boggy Creek Road to US 192;
- Four-lane Cyrils Drive from Narcoossee Road to Sunbridge Parkway;
- Four-lane Sunbridge Parkway from SR 528 to OPE;
- A diverging diamond interchange at SR 417 and Narcoossee Road;
- Two-lane Laureate Park Boulevard;
- Two-lane Simpson Road extension from Boggy Creek Road to OPE;
- Four-lane Medical City Drive Extension from Lake Nona Boulevard to Boggy Creek Road; and
- Four-lane Simpson Road from Osceola Parkway to Boggy Creek Road.

Build and No-Build networks were created using the corridor alternative alignments and include the other improvements and development roads.

Future-year tolls in the project-specific model reflect current toll amounts and agency policies concerning future toll rate adjustments. The alternatives for the OPE were evaluated with and without tolls. The alternatives assumed five or six toll locations, one on each of the segments depending on the alternative. For the analysis, the toll rate was set to $0.18 per mile in 2017 for design traffic, consistent with the toll rate established for other planning studies. Toll rates were escalated at 1.5% per year according to the CFX Customer First Toll Policy.

To assess the impact of the proposed OPE project, a cost ratio toll diversion analysis was incorporated that allows alternative routes to be established in the traffic assignment phase of the model. The cost ratio diversion analysis involves using a market share analysis that compares the generalized costs of using the best tolled route versus the generalized cost for the best toll-free route for each zone pair in the model and estimating the proportion, or share, of the drivers that would choose the tolled route versus the toll-free route under the modeled conditions. Based on this approach, all tolled routes other than the proposed project are assessed time penalties through the coefficient of toll (CTOLL), including SR 417 and other

CFX toll facilities and toll facilities operated by others, such as Florida's Turnpike, while cost ratio diversion is only applied to the proposed project.

5.2.4 Alternative Alignments Evaluated

This section describes the alternatives considered and evaluated for the OPE. The alternatives considered in this analysis include four Build Alternatives plus the No-Build Alternative. For travel demand modeling purposes, the two west design alignments were combined with the two east design alignments to create model alternatives. The traffic alternatives are numbered five through eight and shown in Table 5.2.1.

Table 5.2.1: Traffic Alternatives

Traffic Alternative	West Alignment	East Alignment
PD&E	OCX Preferred Alternative (E-5A2B)	
Alternative 5	Lake Nona Alternative	Split Oak Avoidance Alternative
Alternative 6	Boggy Creek Alternative	Split Oak Avoidance Alternative
Alternative 7	Boggy Creek Alternative	Split Oak Minimization Alternative
Alternative 8	Lake Nona Alternative	Split Oak Minimization Alternative

Six segments were used for traffic forecasts based on the access points / interchange locations:

- Segment 1 runs from SR 417 to Boggy Creek Road / Simpson Road;
- Segment 2 runs from Boggy Creek Road / Simpson Road to Medical City Drive;
- Segment 3 runs from Medical City Drive to Narcoossee Road;
- Segment 4 runs from Narcoossee Road to the Cyrils Drive;
- Segment 5 runs from Cyrils Drive to Jack Brack Road; and
- Segment 6 runs from Jack Brack Road to Nova Road (CR 532).

Each segment is assumed to have a toll location. For modeling purposes, a mainline toll point in located in each segment. A toll plan will be developed for the Preferred Alternative.

5.2.5 Interchange Analysis

As part of the preliminary traffic analysis for the alternative alignments, the interchange at Narcoossee Road was evaluated for alternative design configurations. Using a preliminary design traffic forecast a Capacity Analysis for Planning of Junctions (CAP-X) analysis was completed evaluating three interchange design configurations including a tight diamond, a diverging diamond, and single point urban interchange at Narcoossee Road. The ranking of the preliminary interchange design configurations are shown in Table 5.2.2. These rankings were used in consideration with other design, environmental, and social considerations.

Ultimately, the Single Point Urban Interchange was selected as the preferred interchange design.

Table 5.2.2: Preliminary Narcoossee Road Interchange Analysis Ranking

Interchange Design Configurations	Ranking
Diverging Diamond Interchange	1
Single Point Urban Interchange	2
Tight Diamond Interchange	3

The interchange with SR 417 has a different configuration and location in Alternative 5 and 8 compared to Alternatives 6 and 7. Alternatives 6 and 7 have an interchange at Boggy Creek Road but does not include a direct connection to the OIA. Alternatives 5 and 8 have an interchange at the midpoint between the Boggy Creek Road and the existing Lake Nona Boulevard Interchange but will allow access from OPE to the OIA. The Boggy Creek interchange option requires traffic headed to the OIA to exit the OPE at either Simpson Road and travel up local Boggy Creek Road to access the airport or exit at Medical City Drive and travel through Medical City and access SR 417 at Lake Nona Boulevard to access the airport. A simple analysis was completed using preliminary 2045 design traffic to evaluate the two interchange locations. This analysis determined that the Boggy Creek Road location operated acceptably in future conditions while the new Lake Nona Boulevard location operates acceptably for the ramps to / from the west, the ramps to / from the east may have operational issues due to weaving issues with ramps movements at the new Lake Nona Boulevard ramps. The traffic coming to / from the OPE would not have a reason to exit at Lake Nona Boulevard, and vice versa, so a majority of the traffic from each set of ramps would be weaving.

5.2.6 Future Traffic Volume Projections – Corridor Analysis

Using the toll diversion routine in the CFX Model 3.4, a 2025 and 2045 Build No-Toll Alternative was run to establish the assignment trip table. Theoretically, the Build No-Toll Alternative attracts the most traffic to the corridor, establishing origin-destination (O-D) trips with the potential of using the new corridor as a route for travel. This trip table is used for the No-Build and for the four Build Alternatives to maintain consistency in the O-D patterns. Each of the four model alternatives were run, and the model volumes were converted from peak-season average weekday traffic (PSAWDT) to AADT using the model output conversion factor of 0.98. The 2025 and 2045 design traffic AADT volumes per segment are shown in Tables 5.2.3 and 5.2.4. The AADT by segment are also shown on Figures 5.2.1 to 5.2.4.

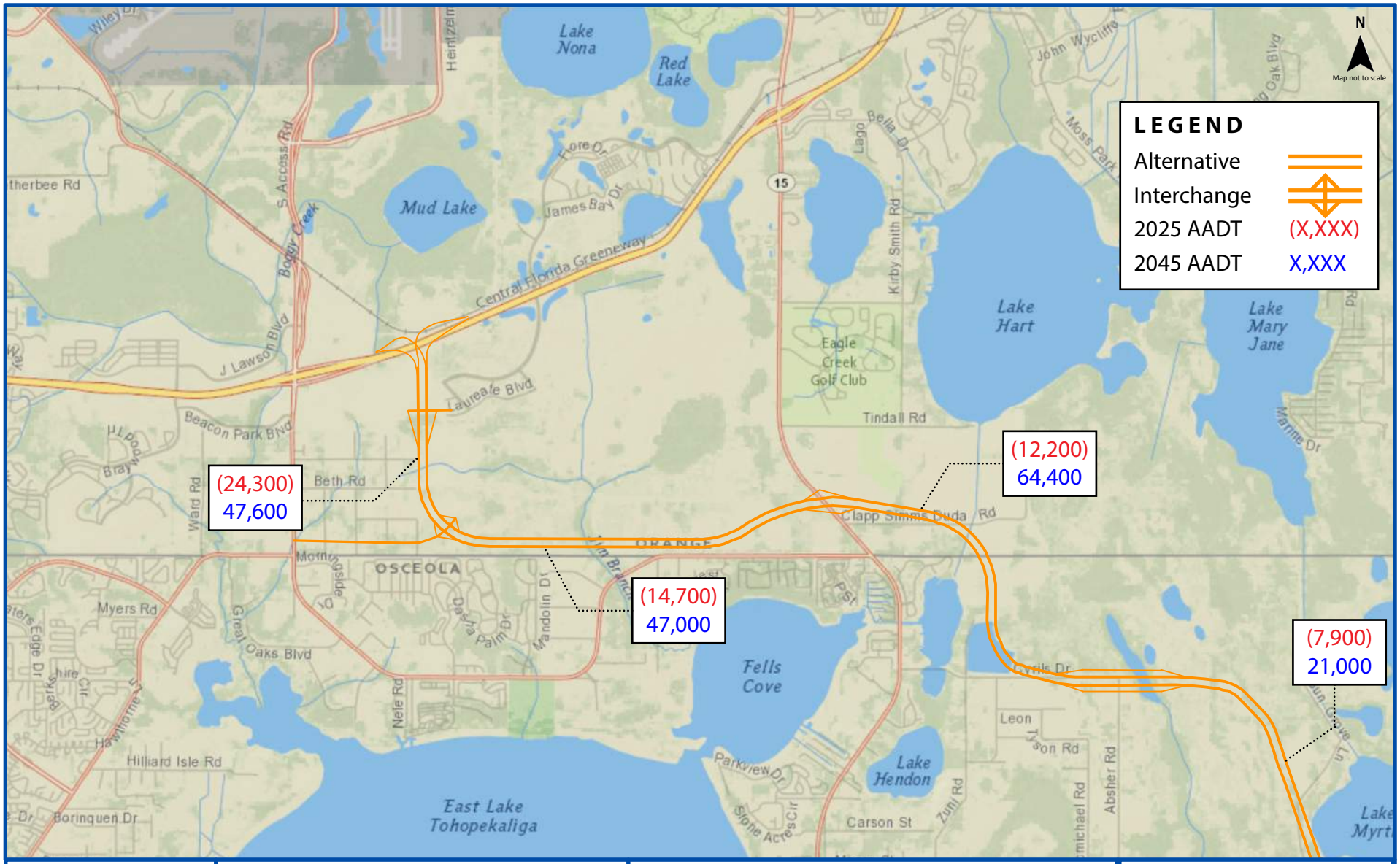
Table 5.2.3: 2025 AADT by Segment for Alternatives

Segments	PD&E	Alt 5	Alt 6	Alt 7	Alt 8
Boggy Creek Road to / from SR 417	27,700	24,300	19,200	19,200	24,100
Boggy Creek Road to Medical City Drive	14,400	0	13,000	13,000	0
Medical City Drive to Narcoossee Road	14,900	14,700	13,600	13,500	14,500
Narcoossee Road to Cyrils Drive	12,900	12,200	13,400	13,100	12,000
Cyrils Drive to Jack Brack Road	9,000	7,900	8,800	9,200	8,400
Jack Brack Road to Nova Road	7,500	6,900	7,600	7,700	6,900
Average AADT	**12,400**	**12,300**	**11,700**	**11,700**	**12,200**

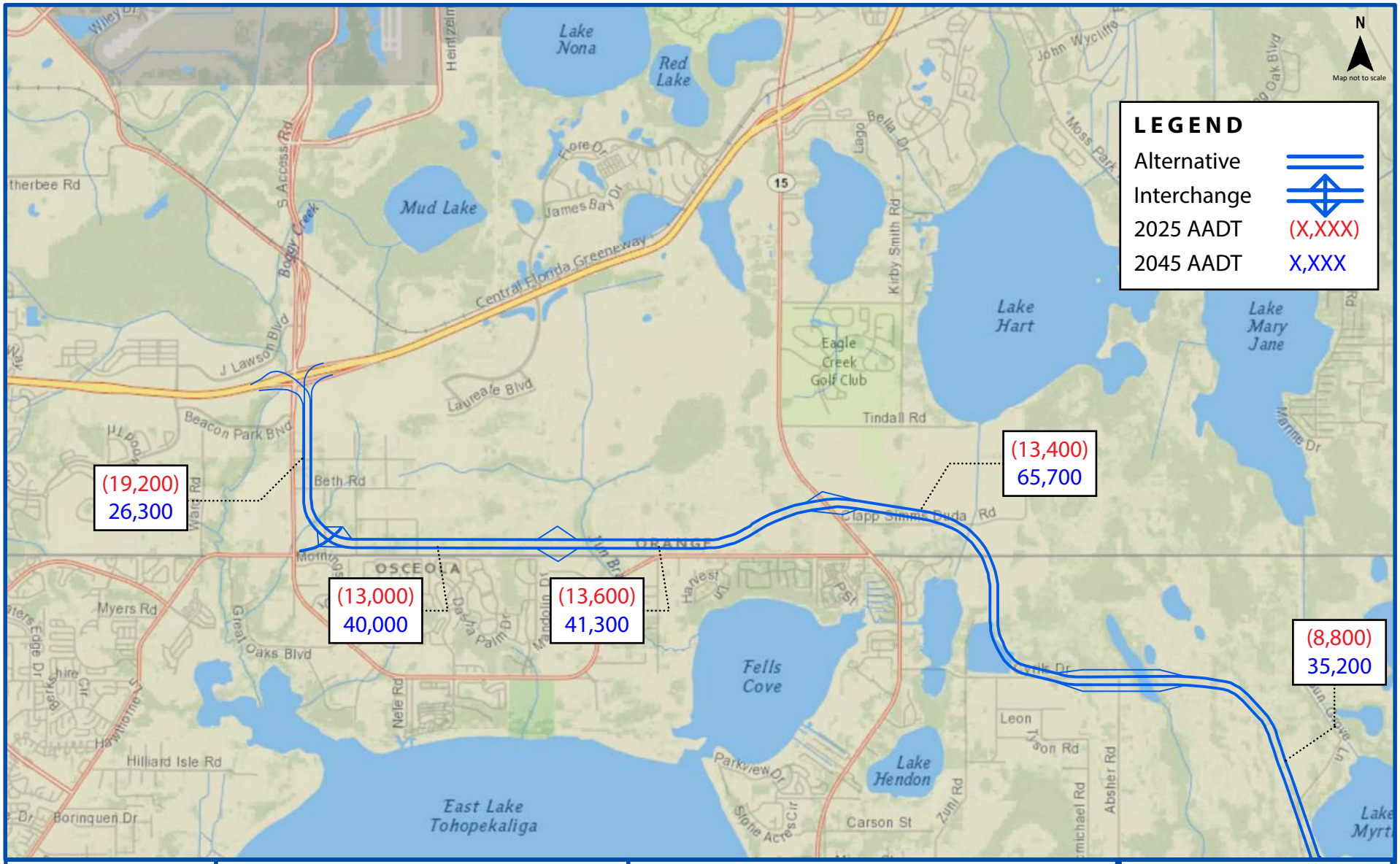
Table 5.2.4: 2045 AADT by Segment for Alternatives

Segments	PD&E	Alt 5	Alt 6	Alt 7	Alt 8
Boggy Creek Road to / from SR 417	34,800	47,600	26,300	25,300	47,200
Boggy Creek Road to Medical City Drive	40,500	0	40,000	38,800	0
Medical City Drive to Narcoossee Road	43,200	47,000	41,300	41,300	46,600
Narcoossee Road to Cyrils Drive	65,700	64,400	65,700	65,100	63,800
Cyrils Drive to Jack Brack Road	37,200	34,300	35,200	36,800	36,000
Jack Brack Road to Nova Road	21,600	21,000	21,500	21,400	21,200
Average AADT	**43,900**	**44,900**	**42,600**	**42,600**	**45,100**

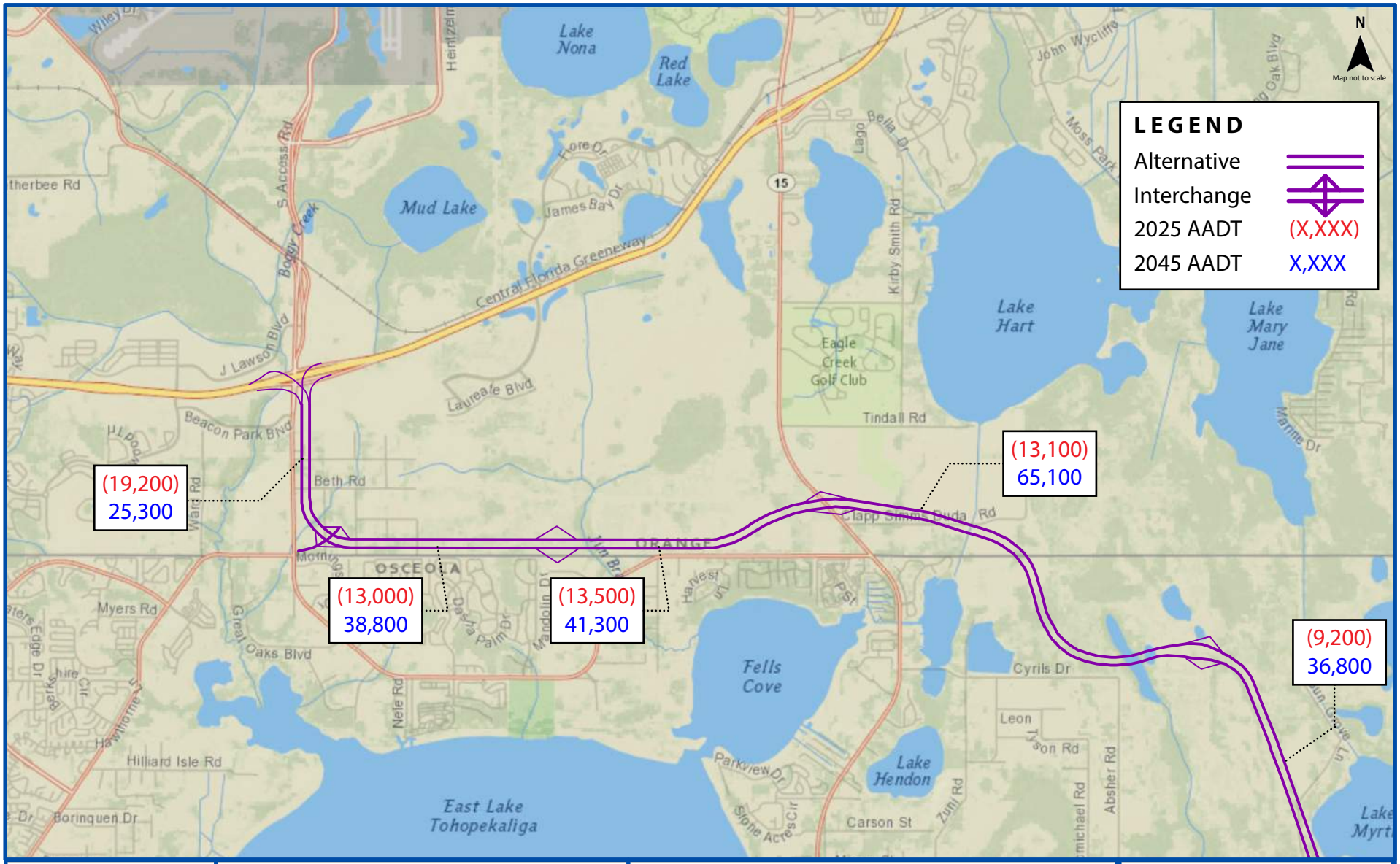
The 2025 and 2045 segment volumes were weighted using the distances of each segment to calculate the weighted average AADT, as shown in Table 5.2.3 and 5.2.4. After considering the four preliminary alternatives for social, environmental, and economic constraints, the Lake Nona Alternative and Split Oak Minimization Alternative are considered the Preferred Alternative as discussed in Chapter 6 (particularly Section 6.13). The remainder of this chapter presents the traffic analysis for Alternative 8 (the Preferred Alternative).



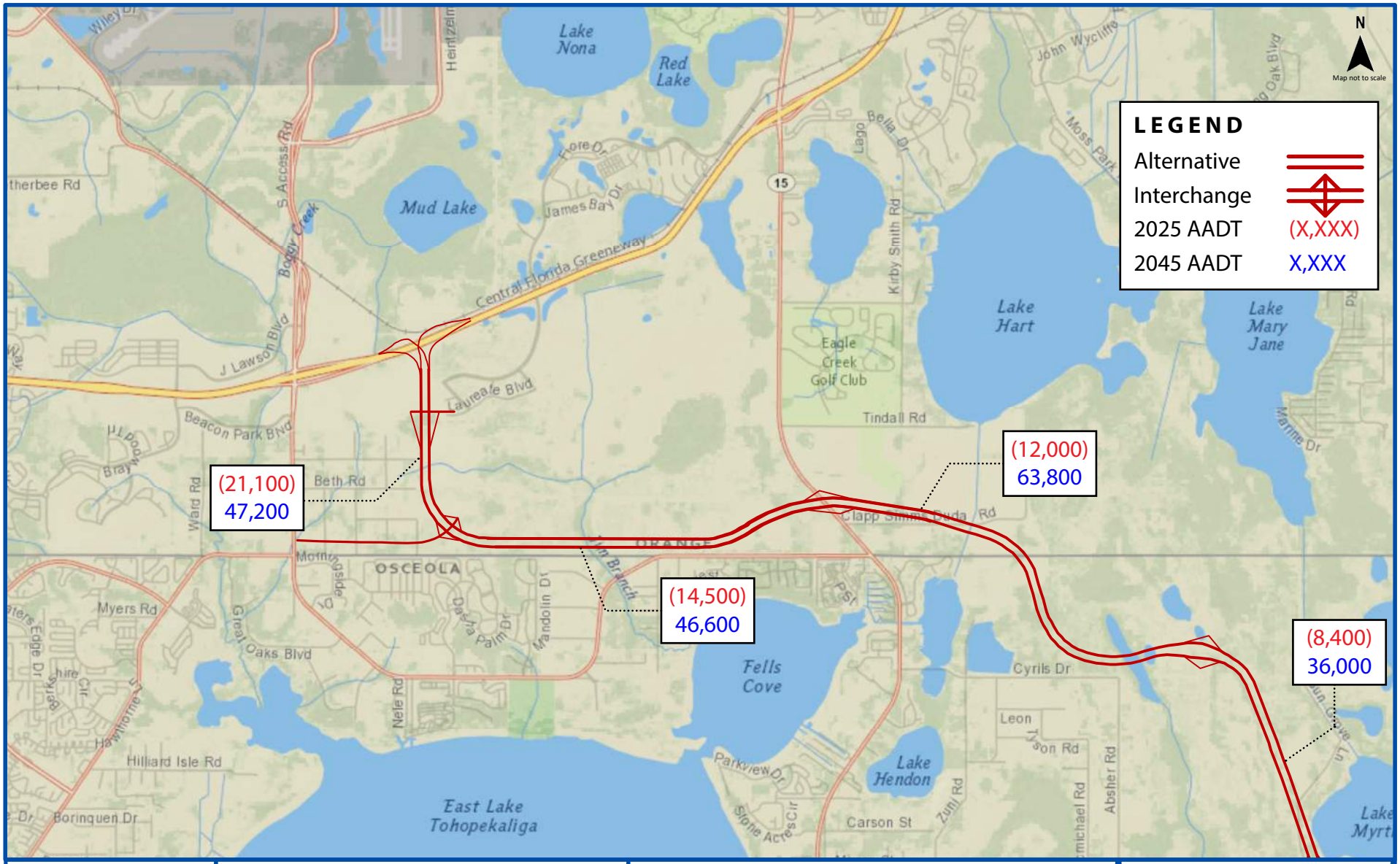
CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension PD&E	Alternative 5 AADT	Figure 5.2.1 Page 5-23



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E**	**Alternative 6 AADT**	**Figure 5.2.2 Page 5-24**



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension PD&E	Alternative 7 AADT	Figure 5.2.3 Page 5-25



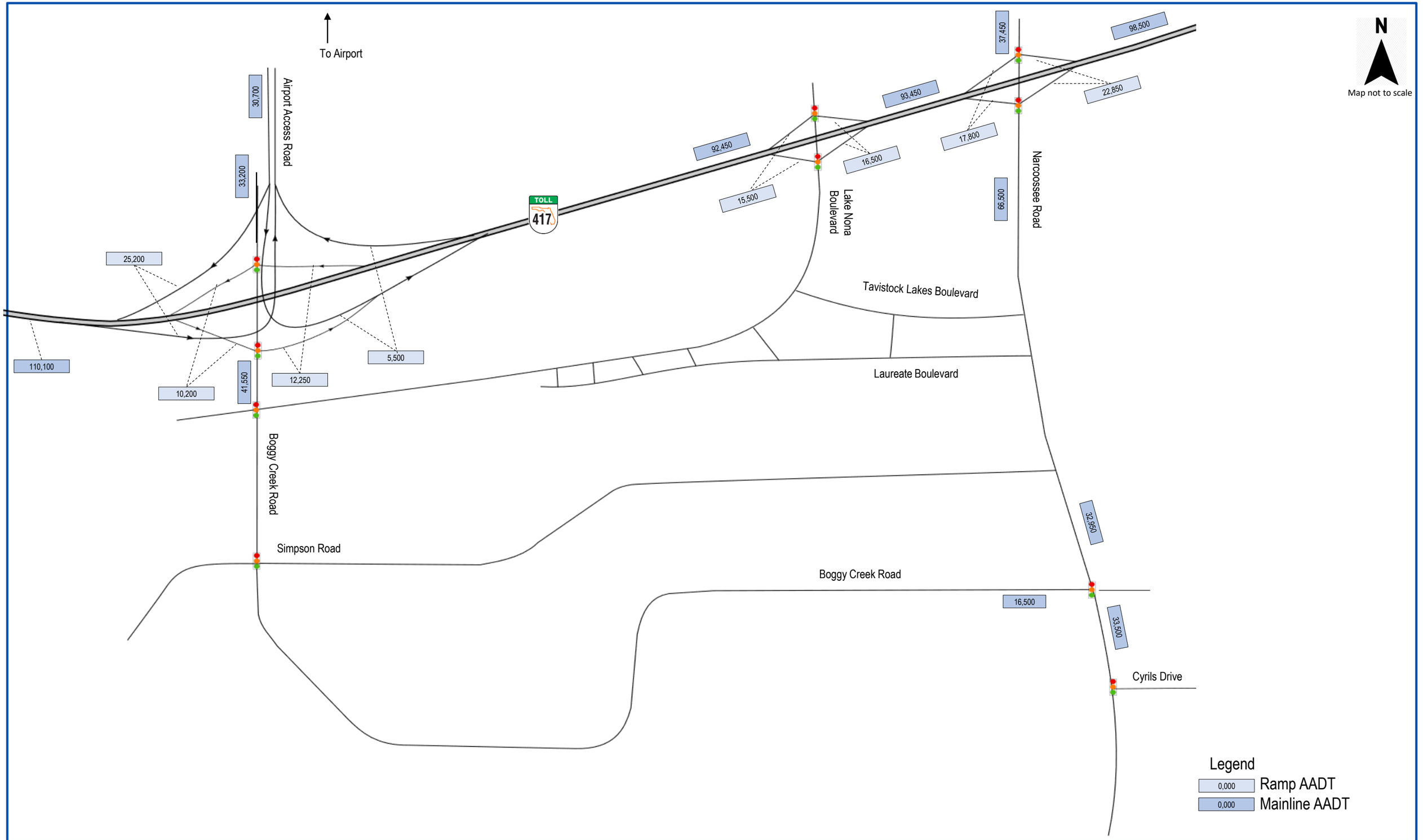
CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E**	**Alternative 8 AADT**	**Figure 5.2.4 Page 5-26**

5.2.7 2025 Daily and Design Hour Traffic Forecasts and LOS

After the preliminary analysis, the travel demand model was further refined to a project-specific travel demand model to forecast traffic. The calibration of the travel demand model was performed for the base year 2017 and is described in sections 5.2.1 to 5.2.3 and in more detail in Appendix F. Using the calibrated model, traffic forecasts were developed for the opening year for the project in 2025 for both the No-Build and Build conditions. Figures 5.2.5 and 5.2.6 provide the AADT for the 2025 No-Build and Build conditions for Alternative 8 – Lake Nona and Split Oak Minimization Alternative, which was selected as the Preferred Alternative. Figures 5.2.7 and 5.2.8 provide DDHVs for the Preferred Alternative for the 2025 No-Build and Build conditions for Alternative 8.

The project has been coded in the network with a toll rate of $0.18 per mile in 2018 dollars, consistent with the average toll on all new CFX facilities. The toll rates have been inflated to 2045 using the new toll policy of a compounded annual growth rate of 1.5% percent, in accordance with the CFX Customer First toll rate policy, adopted by the CFX Board in January 2017. A noteworthy point is that model volumes were converted from PSAWDT to AADT using the model output conversion factor of 0.98. Additional adjustments were made to the model volumes as necessary to develop the future year AADT and DDHVs.

The daily roadway segment LOS analysis was conducted for the No-Build and Build conditions using the 2012 FDOT Quality and Level of Service Handbook tables. A summary of No-Build daily LOS is provided in Table 5.2.5 and Build daily LOS is provided in Table 5.2.6, respectively, for the year of 2025. As shown in the tables, all the roadway segments are projected to operate at LOS E or better for AADT in 2025 under No-Build conditions, except for Boggy Creek Road from Lake Nona Boulevard to SR 417 and Narcoossee Road south of SR 417. All roadway segments also operate at LOS E or better for DDHV in 2025 under No-Build conditions, except for Boggy Creek Road from Lake Nona Boulevard to SR 417 northbound in the AM peak and southbound in the PM peak, Boggy Creek Road north of SR 417 southbound in the PM peak, and Narcoossee Road south of SR 417 northbound in the AM peak and southbound in the PM peak. In the 2025 AADT Build condition, only Narcoossee Road south of SR 417 operates at less than LOS E. However, Boggy Creek Road from Lake Nona Boulevard to SR 417 northbound in the AM peak and southbound in the PM peak, Boggy Creek Road north of SR 417 southbound in the PM peak, and Narcoossee Road south of SR 417 northbound in the AM peak and southbound in the PM peak, and Boggy Creek Road west of Narcoossee Road eastbound in the AM peak operate at less than LOS E for the 2025 DDHVs.

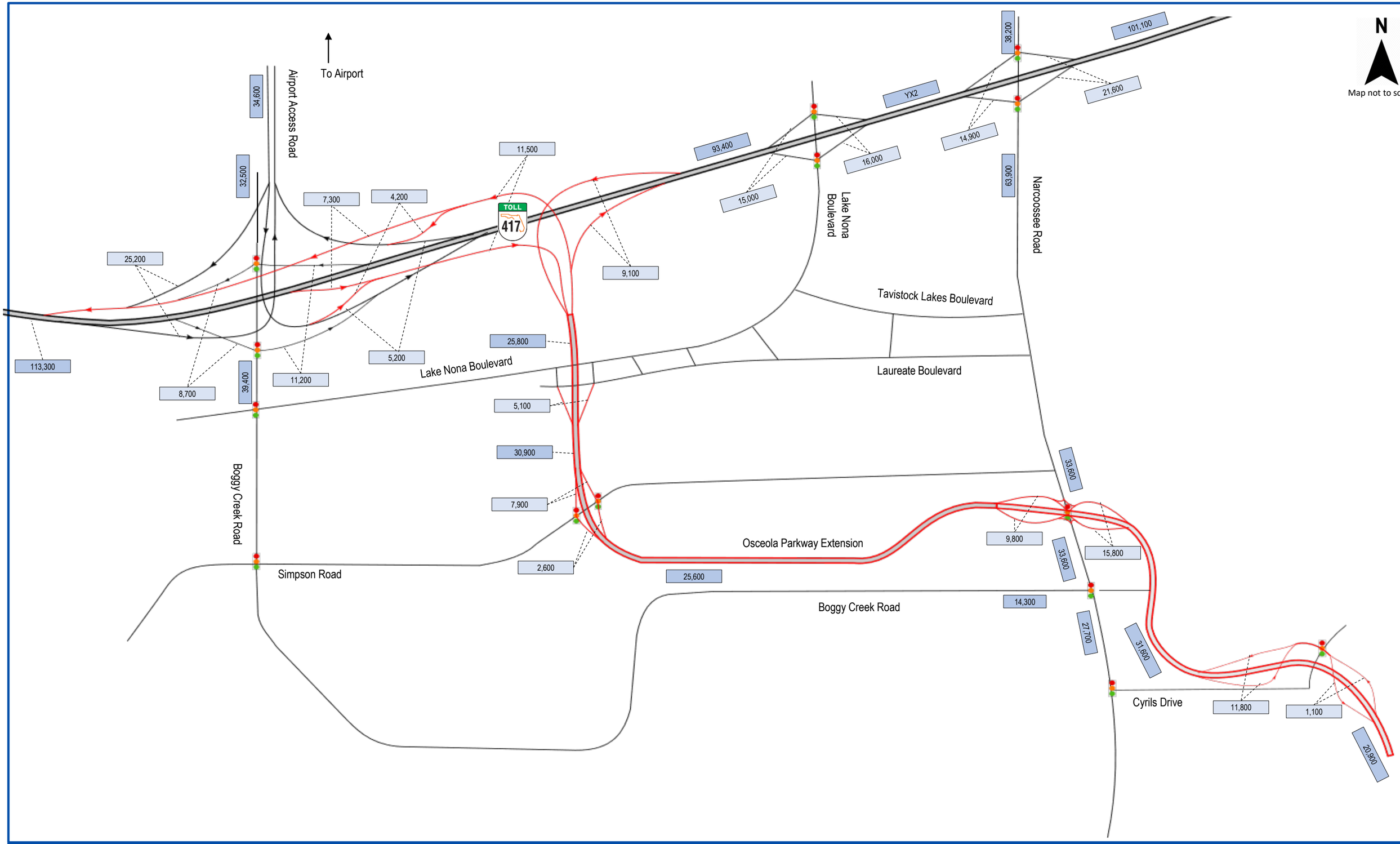


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

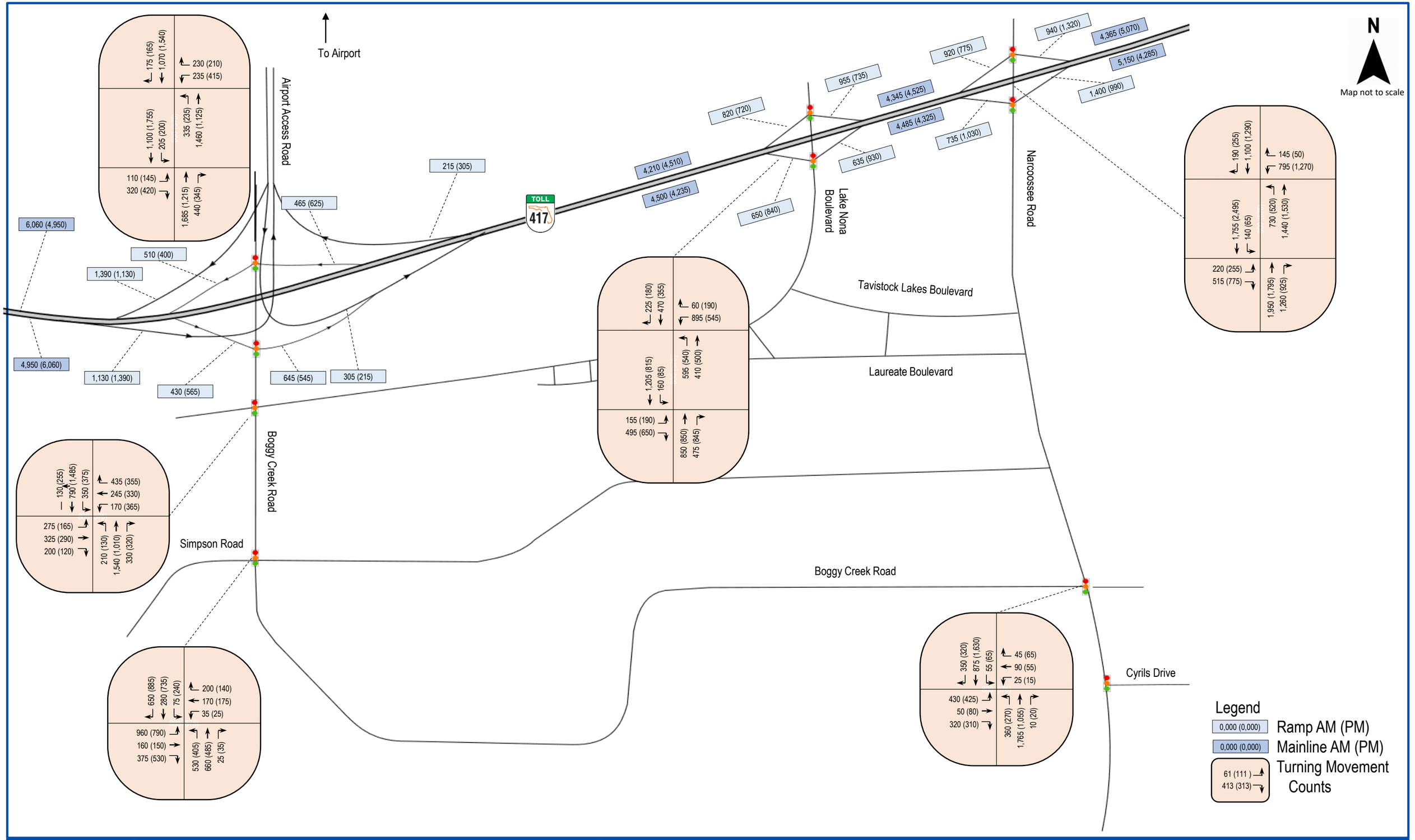
Osceola Parkway Extension
PD&E Re-evaluation

2025 No-Build AADT

Figure 5.2.5
Page 5-28



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E Re-evaluation**	**2025 Build AADT**	**Figure 5.2.6 Page 5-29**

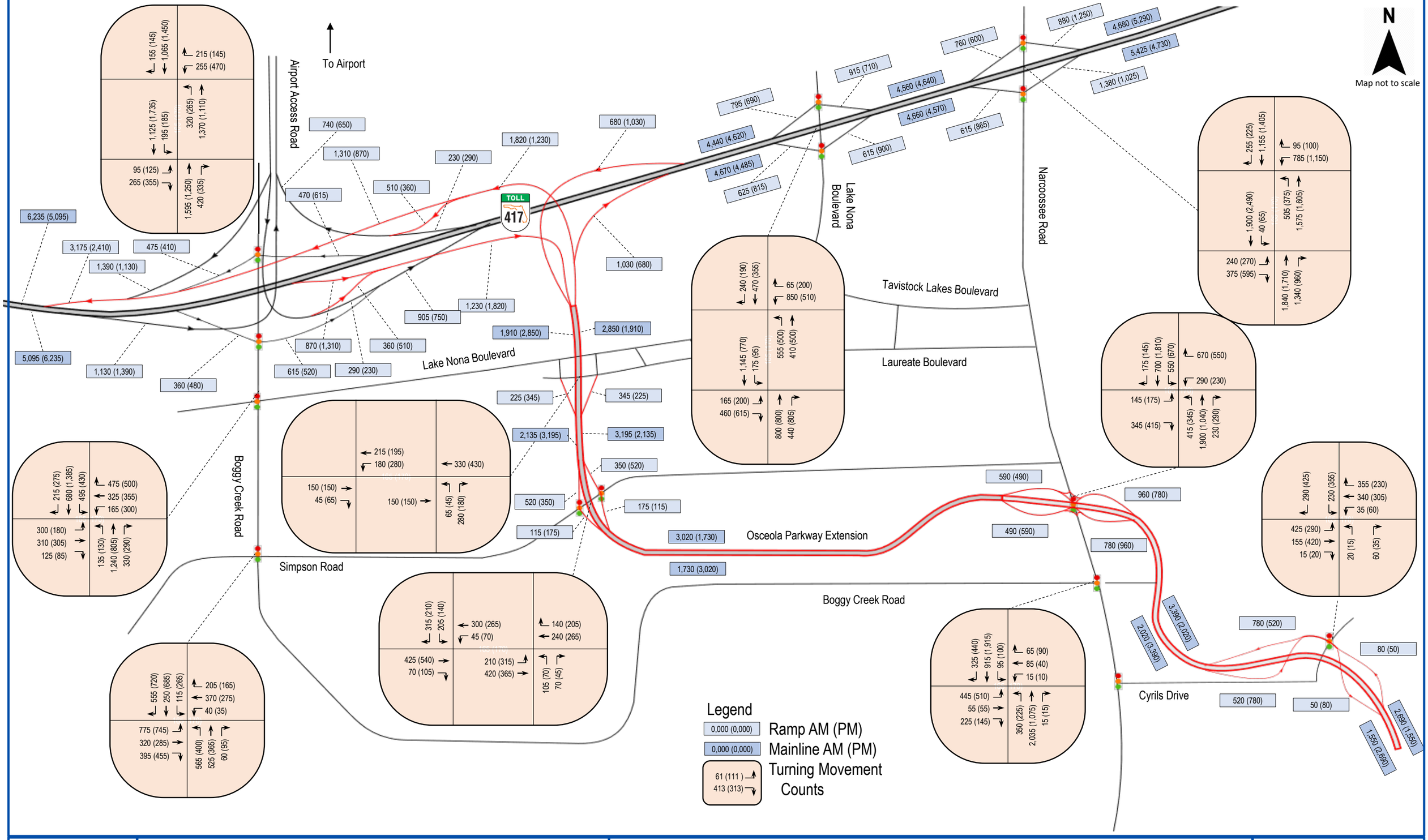


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
PD&E Re-evaluation

2025 No-Build DDHVs

Figure 5.2.7
Page 5-30



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
PD&E Re-evaluation

2025 Build DDHVs

Figure 5.2.8
Page 5-31

Table 5.2.5: No-Build Daily and Peak Hour Roadway Segment LOS

Facility	Dir	Two Way	2025 No-Build AADT and Peak Hour Segment LOS								
		2025 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 S of Boggy Creek Road	NB	**6**	110,100	0.62	C	4,950	0.60	C	6,060	0.74	C
	SB	**6**				6,060	0.74	C	4,950	0.60	C
SR 417 NB Off Ramp to Airport Access	NB	2	25,200	0.39	D	305	0.08	C	215	0.06	C
SR 417 SB On Ramp from Airport Access	SB	2				215	0.06	C	305	0.08	C
SR 417 NB On Ramp from Airport Access	NB	1	5,500	0.17	D	1,130	0.63	D	1,390	0.77	E
SR 417 SB Off Ramp to Airport Access	SB	1				1,390	0.77	E	1,130	0.63	D
SR 417 NB Off Ramp to Boggy Creek Rd	NB	1	10,200	0.32	D	645	0.36	C	545	0.30	C
SR 417 SB On Ramp from Boggy Creek Rd	SB	1				465	0.26	C	625	0.35	C
SR 417 NB On Ramp from Boggy Creek Rd	NB	1	12,250	0.38	D	430	0.24	C	565	0.31	C
SR 417 SB Off Ramp to Boggy Creek Rd	SB	1				510	0.28	C	400	0.22	C
SR 417 S of Lake Nona Blvd	NB	**6**	92,450	0.52	B	4,500	0.55	B	4,235	0.52	B
	SB	**6**				4,210	0.51	B	4,510	0.55	C
SR 417 NB Off Ramp to Lake Nona Blvd	NB	1	15,500	0.48	D	635	0.35	C	930	0.52	D
SR 417 SB On Ramp from Lake Nona Blvd	SB	1				955	0.53	D	735	0.41	C
SR 417 NB On Ramp from Lake Nona Blvd	NB	1	8,250	0.52	D	650	0.36	C	840	0.47	D
SR 417 SB Off Ramp to Lake Nona Blvd	SB	1				820	0.46	D	720	0.40	C
SR 417 S of Narcoossee Road	NB	**6**	93,450	0.53	C	4,485	0.55	B	4,325	0.53	B
	SB	**6**				4,345	0.53	B	4,525	0.55	C
SR 417 NB Off Ramp to Narcoossee Rd	NB	1	17,800	0.56	D	1,400	0.78	E	990	0.55	D
SR 417 SB On Ramp from Narcoossee Rd	SB	1				940	0.52	D	1,320	0.73	E
SR 417 NB On Ramp from Narcoossee Rd	NB	1	22,850	0.71	D	735	0.41	C	1,030	0.57	D
SR 417 SB Off Ramp to Narcoossee Rd	SB	1				920	0.51	D	775	0.43	C
SR 417 N of Narcoossee Road	NB	**6**	98,500	0.56	C	5,150	0.63	C	4,285	0.52	B
	SB	**6**				4,365	0.53	B	5,070	0.62	C

Facility	Dir	Two Way	2025 No-Build AADT and Peak Hour Segment LOS								
		2025 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
Airport Access Road (North of SR 417)	NB	4	30,700	0.36	B	1,345	0.34	B	1,695	0.43	B
	SB	4				1,695	0.43	B	1,345	0.34	B
Boggy Creek - North of SR 417	NB	4	33,200	0.83	C	1,690	0.85	C	1,335	0.67	C
	SB	4				1,420	0.71	C	2,175	1.09	F
Boggy Creek Rd - Lake Nona Blvd to SR 417	NB	4	41,550	1.04	F	2,250	1.13	F	1,530	0.77	C
	SB	4				1,270	0.64	C	2,115	1.06	F
Boggy Creek - West of Narcoossee Rd	EB	2	16,500	0.89	C	800	0.87	C	815	0.89	C
	WB	2				800	0.87	C	645	0.70	C
Narcoossee Rd - North of SR 417	NB	6	37,450	0.63	C	1,585	0.52	C	1,580	0.52	C
	SB	6				1,290	0.43	C	1,545	0.51	C
Narcoossee Rd - South of SR 417	NB	6	66,500	1.11	F	3,210	1.06	F	2,720	0.90	C
	SB	6				2,270	0.75	C	3,270	1.08	F
Narcoossee Rd - N of Boggy Creek Rd	NB	6	32,950	0.55	C	2,240	0.74	C	1,545	0.51	C
	SB	6				1,280	0.42	C	2,015	0.67	C
Narcoossee Rd - South of Boggy Creek Rd	NB	4	33,500	0.56	C	2,135	0.71	C	1,345	0.45	C
	SB	4				1,220	0.40	C	1,955	0.65	C

Table 5.2.6: 2025 Build Daily and Peak Hour Roadway Segment LOS

Facility	Dir	Two Way 2025 Lanes	2025 Build AADT and Peak Hour Segment LOS								
			AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 S of Boggy Creek Road	NB	**6**	113,300	0.64	C	5,095	0.62	C	6,235	0.76	D
	SB	**6**				6,235	0.76	D	5,095	0.62	C
SR 417 NB Off Ramp to Airport Access	NB	2	25,200	0.39	D	305	0.08	C	215	0.06	C
SR 417 SB On Ramp from Airport Access	SB	2				215	0.06	C	305	0.08	C
SR 417 NB On Ramp from Airport Access	NB	1	5,200	0.16	D	1,130	0.63	D	1,390	0.77	E
SR 417 SB Off Ramp to Airport Access	SB	1				1,390	0.77	E	1,130	0.63	D
SR 417 NB Off Ramp to Boggy Creek Rd	NB	1	8,700	0.27	D	615	0.34	C	520	0.29	C
SR 417 SB On Ramp from Boggy Creek Rd	SB	1				470	0.26	C	615	0.34	C
SR 417 NB On Ramp from Boggy Creek Rd	NB	1	11,200	0.35	D	360	0.20	C	480	0.27	C
SR 417 SB Off Ramp to Boggy Creek Rd	SB	1				475	0.26	C	410	0.23	C
SR 417 NB Off Ramp to OPE	NB	1	11,500	0.36	D	870	0.48	D	1,310	0.73	E
SR 417 SB On Ramp from OPE	SB	1				1,310	0.73	E	870	0.48	D
SR 417 NB On Ramp from OPE	NB	1	9,100	0.28	D	1,030	0.57	D	680	0.38	C
SR 417 SB Off Ramp to OPE	SB	1				680	0.38	C	1,030	0.57	D
OPE EB On Ramp from Airport	EB	1	5,200	0.16	D	360	0.20	C	510	0.28	C
OPE WB Off Ramp to Airport	WB	1				510	0.28	C	360	0.20	C
SR 417 S of Lake Nona Blvd	NB	**6**	93,400	0.53	C	4,670	0.57	C	4,485	0.55	B
	SB	**6**				4,440	0.54	B	4,510	0.55	C
SR 417 NB Off Ramp to Lake Nona Blvd	NB	1	15,000	0.47	D	615	0.34	C	900	0.50	D
SR 417 SB On Ramp from Lake Nona Blvd	SB	1				915	0.51	D	710	0.39	C
SR 417 NB On Ramp from Lake Nona Blvd	NB	1	16,000	0.50	D	625	0.35	C	815	0.45	D
SR 417 SB Off Ramp to Lake Nona Blvd	SB	1				795	0.44	C	690	0.38	C
SR 417 S of Narcoossee Road	NB	**6**	94,400	0.53	C	4,660	0.57	C	4,570	0.56	C
	SB	**6**				4,560	0.55	C	4,640	0.56	C

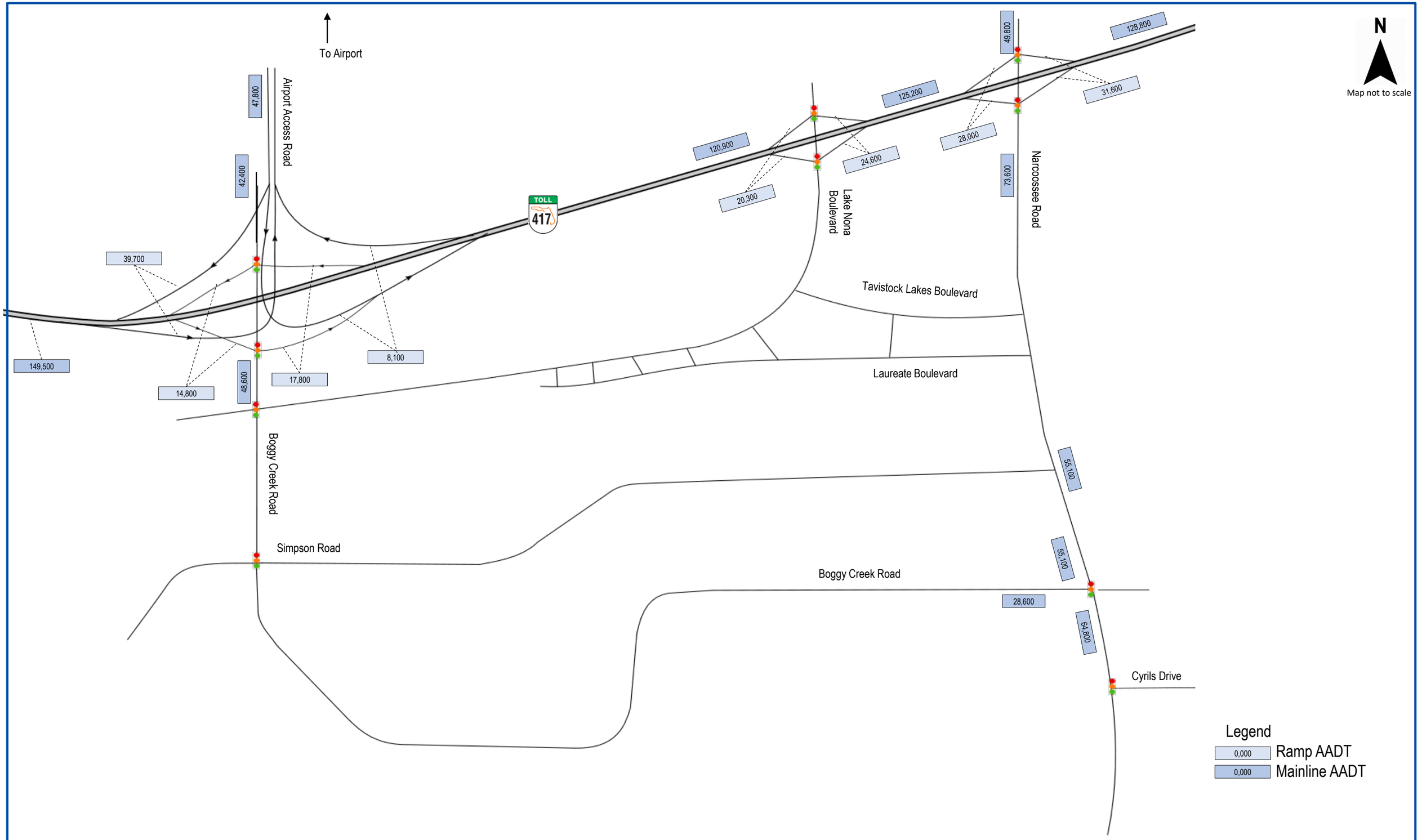
Facility	Dir	Two Way	2025 Build AADT and Peak Hour Segment LOS								
		2025 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 NB Off Ramp to Narcoossee Rd	NB	1	14,900	0.47	D	1,380	0.77	E	1,025	0.57	D
SR 417 SB On Ramp from Narcoossee Rd	SB	1				880	0.49	D	1,250	0.69	E
SR 417 NB On Ramp from Narcoossee Rd	NB	1	21,600	0.68	D	615	0.34	C	865	0.48	D
SR 417 SB Off Ramp to Narcoossee Rd	SB	1				760	0.42	C	600	0.33	C
SR 417 N of Narcoossee Road	NB	**6**	101,100	0.57	C	5,420	0.66	C	4,730	0.58	C
	SB	**6**				4,680	0.57	C	5,290	0.64	C
OPE South of SR 417	EB	**4**	25,800	0.30	B	1,910	0.48	B	2,850	0.72	C
	WB	**4**				2,850	0.72	C	1,910	0.48	B
OPE EB On Ramp from Laureate	EB	1	2,550	0.16	D	225	0.13	C	345	0.19	C
OPE WB Off Ramp to Laureate	WB	1			B	345	0.19	C	225	0.13	C
OPE South of Laureate Blvd	EB	**4**	30,900	0.37	B	2,135	0.54	B	3,195	0.81	D
	WB	**4**				3,195	0.81	D	2,135	0.54	B
OPE EB Off Ramp to Simpson Rd/Poitras	EB	1	7,900	0.25	D	520	0.29	C	350	0.19	C
OPE WB On Ramp from Simpson Road/Poitras	WB	1			B	350	0.19	C	520	0.29	C
OPE EB On Ramp from Simpson Rd/Poitras	EB	1	2,600	0.08	D	115	0.06	C	175	0.10	C
OPE WB Off Ramp to Simpson Rd/Poitras	WB	1			B	175	0.10	C	115	0.06	C
OPE West of Narcoossee Road	EB	**4**	25,600	0.30	B	1,730	0.44	B	3,020	0.77	C
	WB	**4**				3,020	0.77	C	1,730	0.44	B
OPE EB Off Ramp to Narcoossee Rd	EB	1	9,800	0.31	D	490	0.27	C	590	0.33	C
OPE WB On Ramp from Narcoossee Rd	WB	1			B	590	0.33	C	490	0.27	C
OPE EB On Ramp from Narcoossee Rd	EB	1	15,800	0.49	D	780	0.43	C	960	0.53	D
OPE WB Off Ramp to Narcoossee Rd	WB	1			B	960	0.53	D	780	0.43	C
OPE East of Narcoossee Road	EB	**4**	31,600	0.37	B	2,020	0.51	B	3,390	0.86	D
	WB	**4**				3,390	0.86	D	2,020	0.51	B
OPE EB Off Ramp to Sunbridge Parkway	EB	1	11,800	0.37	D	520	0.29	C	780	0.43	C
OPE WB On Ramp from Sunbridge Parkway	WB	1			B	780	0.43	C	520	0.29	C

Facility	Dir	Two Way	2025 Build AADT and Peak Hour Segment LOS								
		2025 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
OPE EB On Ramp from Sunbridge Parkway	EB	1	1,100	0.03	D	50	0.03	C	80	0.04	C
OPE WB Off Ramp to Sunbridge Parkway	WB	1			B	80	0.04	C	50	0.03	C
OPE East of Sunbridge Parkway	EB	4	41,800	0.25	B	1,550	0.39	B	2,690	0.68	C
	WB	4				2,690	0.68	C	1,550	0.39	B
Airport Access Road (North of SR 417)	NB	4	34,600	0.41	B	1,870	0.47	B	2,040	0.52	B
	SB	4				2,040	0.52	B	1,870	0.47	B
Boggy Creek - North of SR 417	NB	4	32,500	0.82	C	1,585	0.79	C	1,255	0.63	C
	SB	4				1,390	0.70	C	2,090	1.05	F
Boggy Creek Rd - Lake Nona Blvd to SR 417	NB	4	39,400	0.99	D	2,015	1.01	F	1,485	0.74	C
	SB	4				1,390	0.70	C	2,090	1.05	F
Boggy Creek - West of Narcoossee Rd	EB	2	14,300	0.77	C	1,170	1.27	F	710	0.77	C
	WB	2				760	0.83	C	705	0.77	C
Narcoossee Rd - North of SR 417	NB	6	38,200	0.64	C	1,670	0.55	C	1,705	0.56	C
	SB	6				1,380	0.46	C	1,630	0.54	C
Narcoossee Rd - South of SR 417	NB	6	63,900	1.07	F	3,180	1.05	F	2,670	0.88	C
	SB	6				2,275	0.75	C	3,085	1.02	F
Narcoossee Rd - North of OPE	NB	6	33,600	0.56	C	2,715	0.90	C	1,765	0.58	C
	SB	6				1,425	0.47	C	2,625	0.87	C
Narcoossee Rd - N of Boggy Creek Rd	NB	6	33,600	0.56	C	2,545	0.84	C	1,675	0.55	C
	SB	6				1,335	0.44	C	2,455	0.81	C
Narcoossee Rd - South of Boggy Creek Rd	NB	4	27,700	0.46	C	2,400	0.79	C	1,315	0.44	C
	SB	4				1,155	0.38	C	2,070	0.69	C

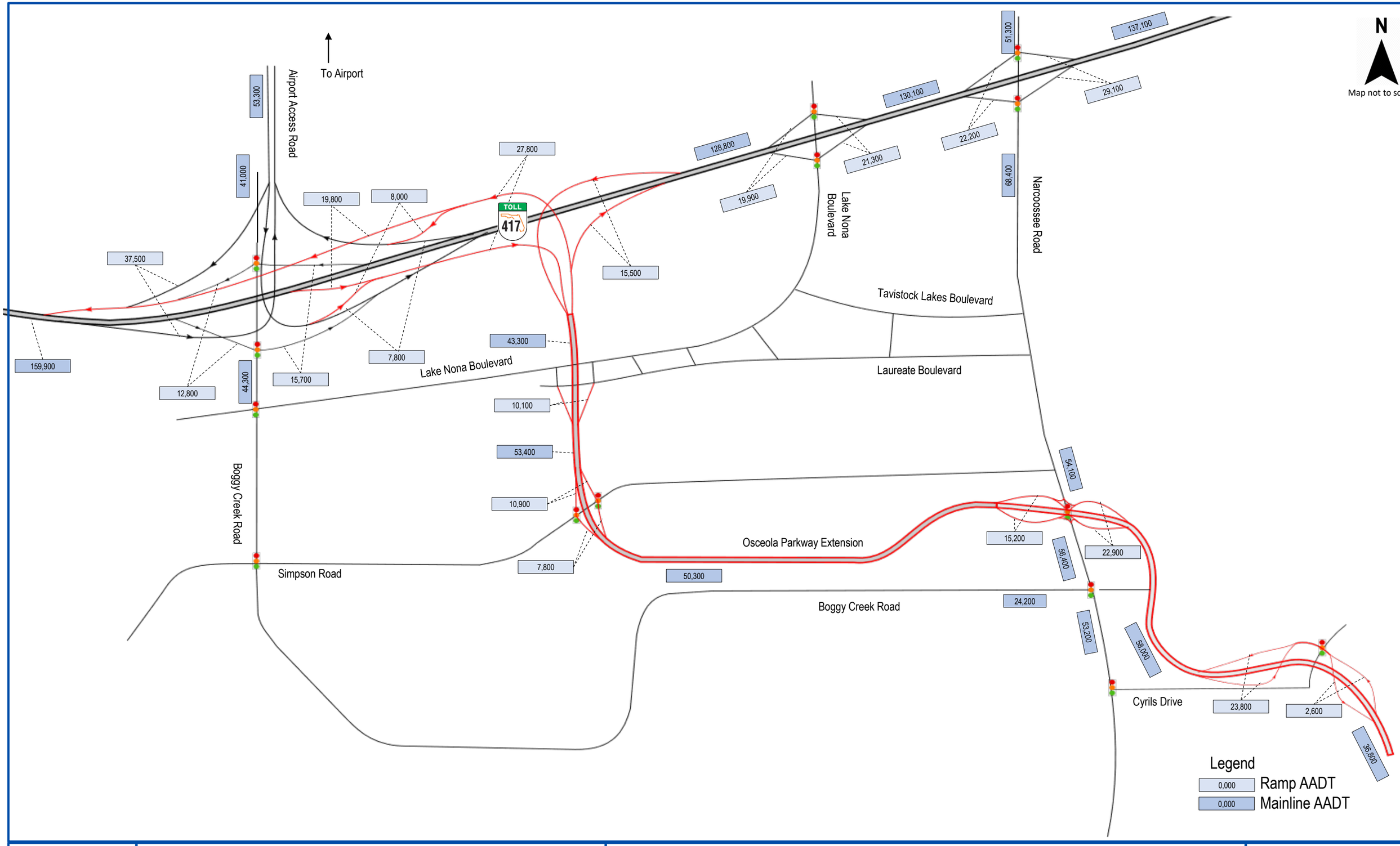
5.2.8 2045 Daily and Design-Hour Traffic Forecasts and LOS

Using the calibrated model as a base, daily traffic forecasts were developed for the design year for 2045 for both the No-Build and Build conditions using one of four methods. The first method considers the volume difference between the 2017 existing model volumes and the Build or No-Build conditions model volumes. This volume difference is then added to the 2018 existing AADT. This method was generally used on the SR 417 mainline forecasts. The second method is to use a standard growth factor applied to the 2018 AADT over the growth period, either 2018 to 2025 or 2018 to 2045 for the build condition with adjustments for the No-Build condition. These factors were then applied to SR 417 ramp forecasts. The third method is to use a growth rate factor where the percentage growth between the base model year (2017) and the horizon year (either 2025 or 2045) is applied to the 2018 existing AADT. This method was mainly used for local street network forecasts. The fourth method is the absolute growth, where the volume forecast from the horizon year of the model is used with the model output conversion factor and this method was used the OPE project. Figures 5.2.9 and 5.2.10 provide AADT for the 2025 No-Build and Build conditions for the Alternative 8, selected as the Preferred Alternative.

The DDHV for the design year 2045 were developed using the K and D factors (described in Section 5.1.6) along with the forecasted AADTs and present-day intersection turning movement volumes (described and shown in Section 5.1.5). Figures 5.2.11 and 5.2.12 provide DDHV for the Preferred Alternative for the 2045 No-Build and Build conditions.



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E Re-evaluation**	**2045 No-Build AADT**	**Figure 5.2.9 Page 5-38**



CENTRAL FLORIDA EXPRESSWAY AUTHORITY	**Osceola Parkway Extension PD&E Re-evaluation**	**2045 Build AADT**	**Figure 5.2.10 Page 5-39**

To Airport

Map not to scale

Airport Access Road

Boggy Creek Road

Simpson Road

Lake Nona Boulevard

Narcoossee Road

Tavistock Lakes Boulevard

Laureate Boulevard

Boggy Creek Road

Cyrils Drive

TOLL 417

410 (400) 1,445 (2,100) 510 (480) 250 (475)
1,205 (2,090) 490 (485) 375 (300) 1,940 (1,465)
300 (365) 335 (435) 2,015 (1,400) 450 (355)

360 (450)
760 (955)
785 (700)
2,065 (1,685)
8,025 (6,925)
6,925 (8,025)
1,685 (2,065)
635 (800)
940 (840)
450 (360)

6,295 (5,945)
5,995 (6,360)
1,070 (945)
1,420 (1,090)
6,645 (6,090)
6,085 (6,655)
940 (1,395)
850 (1,100)
1,395 (1,220)
1,165 (1,590)
1,320 (1,800)
6,570 (6,670)
6,890 (6,425)
1,970 (1,360)

245 (200) 615 (465) 75 (235) 1,345 (855)
1,760 (1,215) 200 (105) 825 (745) 510 (615)
170 (205) 680 (895) 1,165 (1,155) 740 (1,290)

525 (640) 1,355 (1,455) 365 (220) 955 (1,580)
2,005 (2,845) 305 (190) 870 (580) 1,820 (2,010)
560 (675) 605 (915) 2,130 (1,915) 1,665 (1,170)

180 (375) 825 (1,680) 525 (470) 485 (580) 350 (495) 175 (420)
330 (170) 505 (435) 210 (140) 230 (135) 1,660 (1,080) 355 (455)

700 (920) 390 (885) 145 (315) 205 (315) 295 (250) 60 (50)
985 (815) 295 (220) 500 (670) 605 (525) 945 (645) 50 (60)

405 (885) 1,580 (2,180) 70 (75) 60 (80) 130 (85) 50 (25)
580 (575) 90 (125) 725 (610) 710 (635) 2,440 (1,915) 30 (40)

Legend

0,000 (0,000) Ramp AM (PM)

0,000 (0,000) Mainline AM (PM)

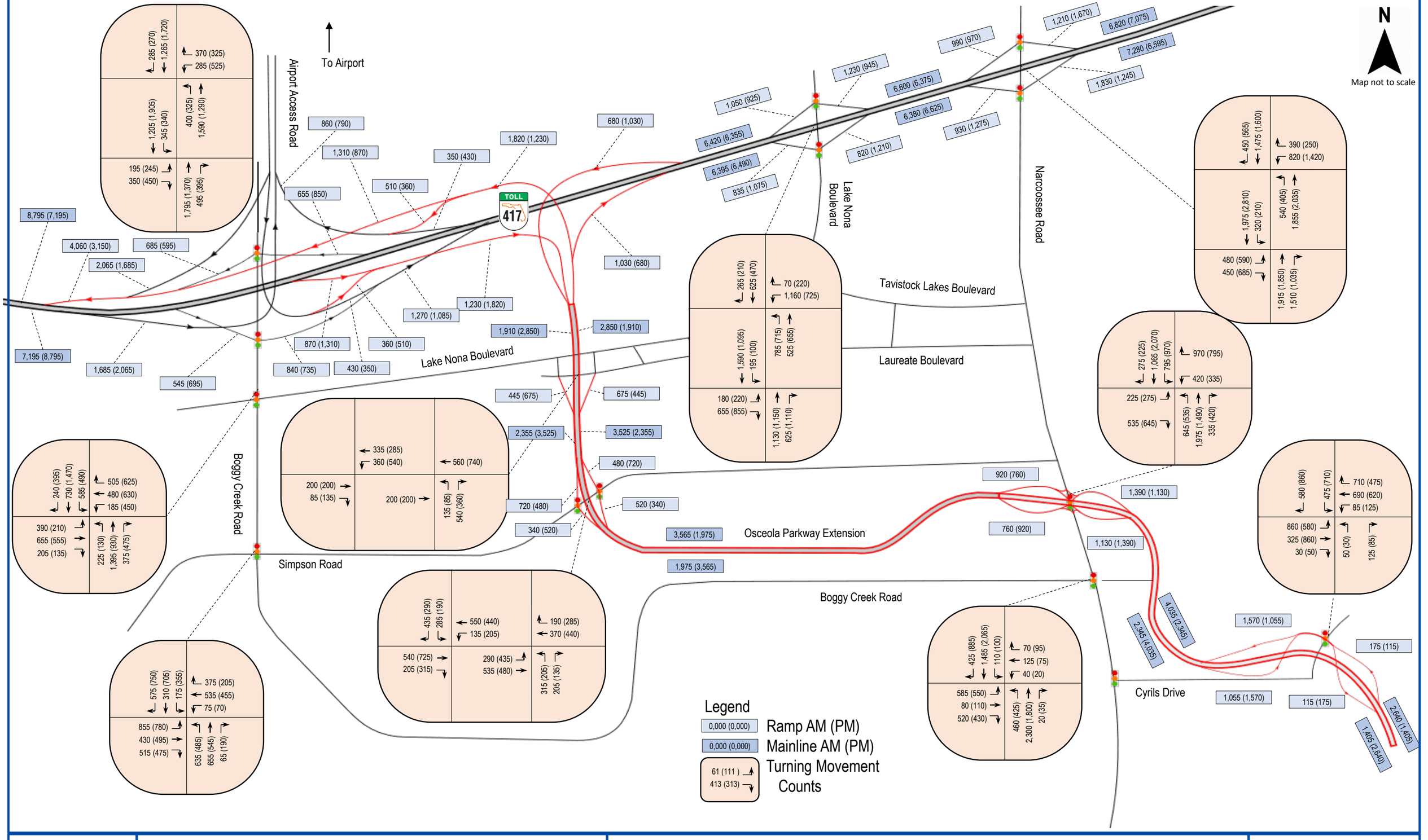
61 (111) 413 (313) Turning Movement Counts

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
PD&E Re-evaluation

2045 No-Build DDHVs

Figure 5.2.11
Page 5-40



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
PD&E Re-evaluation

2045 Build DDHVs

Figure 5.2.12
Page 5-41

The roadway segment LOS analysis was conducted daily using AADT and in the AM peak and PM peak hours using the DDHVs for the No-Build and Build conditions. Summaries of the 2045 No-Build Segment and the Peak Hour Segment LOS and the 2045 Build Peak Hour Segment LOS are provided in Tables 5.2.7 and 5.2.8, respectively.

As shown in the following tables, all of the roadway segments are projected to operate at a daily LOS E or better in 2045 for the No-Build conditions, except for Boggy Creek Road north of SR 417, Boggy Creek Road between Lake Nona Boulevard and SR 417, Boggy Creek Road west of Narcoossee Road, Narcoossee Road south of SR 417, and Narcoossee Road south of Boggy Creek Road. For peak hour segment LOS, the following segments fail in the 2045 No-Build condition:

- SR 417 northbound off ramp at Narcoossee Road during the AM peak hour;
- Boggy Creek Road north of SR 417 and between Lake Nona Boulevard and SR 417 northbound during the AM peak hour and southbound during the PM peak hour;
- Boggy Creek Road west of Narcoossee Road in both directions for both AM and PM peak hours; Narcoossee Road south of SR 417 northbound during both AM and PM peaks, and southbound in the PM peak hour;
- Narcoossee Road north of Boggy Creek Road northbound during the AM peak hour and southbound during the PM peak hour; and
- Narcoossee Road south of Boggy Creek Road northbound in the AM peak hour.

In the Build condition, the operational condition of Narcoossee Road south of Boggy Creek Road improves due to the extension of the Osceola Parkway, but operational conditions remain the same for Boggy Creek Road north of SR 417, Boggy Creek Road between Lake Nona Boulevard and SR 417, Boggy Creek Road west of Narcoossee Road, and Narcoossee Road south of SR 417. All other roadway segments are projected to operate at LOS E or better. For peak hour segment LOS the following segments fail in the 2045 No-Build condition:

- SR 417 south of Boggy Creek Road southbound in the AM peak and northbound in the PM peak hour;
- SR 417 northbound off ramp at Narcoossee Road during the AM peak hour;
- Boggy Creek Road between Lake Nona Boulevard and SR 417 northbound during the AM peak and southbound during the PM peak hour;
- Boggy Creek west of Narcoossee Road in both directions for both AM and PM peak hours;
- Narcoossee Road south of SR 417 northbound during the AM peak and southbound in the PM peak hour; and
- Narcoossee Road north of Boggy Creek Road southbound during the PM peak hour.

Table 5.2.7: 2045 No-Build Daily and Peak Hour Roadway Segment LOS

Facility	Dir	Two Way 2045 Lanes	2045 No-Build AADT and Peak Hour Segment LOS								
			AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 S of Boggy Creek Road	NB	**8**	149,500	0.85	D	6,925	0.84	D	8,025	0.98	E
	SB	**8**				8,025	0.98	E	6,925	0.84	D
SR 417 NB Off Ramp to Airport Access	NB	2	39,700	0.62	D	1,685	0.47	D	2,065	0.57	D
SR 417 SB On Ramp from Airport Access	SB	2				2,065	0.57	D	1,685	0.47	D
SR 417 NB On Ramp from Airport Access	NB	1	8,100	0.25	D	450	0.25	C	360	0.20	C
SR 417 SB Off Ramp to Airport Access	SB	1				360	0.20	C	450	0.25	C
SR 417 NB Off Ramp to Boggy Creek Rd	NB	1	14,800	0.46	D	940	0.52	D	840	0.47	D
SR 417 SB On Ramp from Boggy Creek Rd	SB	1				760	0.42	C	955	0.53	D
SR 417 NB On Ramp from Boggy Creek Rd	NB	1	17,800	0.56	D	635	0.35	C	800	0.44	C
SR 417 SB Off Ramp to Boggy Creek Rd	SB	1				785	0.44	C	700	0.39	C
SR 417 S of Lake Nona Blvd	NB	**8**	120,900	0.68	C	5,995	0.73	C	6,360	0.77	D
	SB	**8**				6,295	0.77	D	5,945	0.72	C
SR 417 NB Off Ramp to Lake Nona Blvd	NB	1	20,300	0.63	D	940	0.52	D	1,395	0.78	E
SR 417 SB On Ramp from Lake Nona Blvd	SB	1				1,420	0.79	E	1,090	0.61	D
SR 417 NB On Ramp from Lake Nona Blvd	NB	1	24,600	0.77	E	850	0.47	D	1,100	0.61	D
SR 417 SB Off Ramp to Lake Nona Blvd	SB	1				1,070	0.59	D	945	0.53	D
SR 417 S of Narcoossee Road	NB	**8**	125,200	0.71	C	6,085	0.74	D	6,655	0.81	D
	SB	**8**				6,645	0.81	D	6,090	0.74	D
SR 417 NB Off Ramp to Narcoossee Rd	NB	1	28,000	0.88	E	1,970	1.09	F	1,360	0.76	E
SR 417 SB On Ramp from Narcoossee Rd	SB	1				1,320	0.73	E	1,800	1.00	E
SR 417 NB On Ramp from Narcoossee Rd	NB	1	31,600	0.99	E	1,165	0.65	D	1,590	0.88	E
SR 417 SB Off Ramp to Narcoossee Rd	SB	1				1,395	0.78	E	1,220	0.68	E
SR 417 N of Narcoossee Road	NB	**8**	128,800	0.73	D	6,890	0.84	D	6,425	0.78	D
	SB	**8**				6,570	0.80	D	6,670	0.81	D

Facility	Dir	Two Way	2045 No-Build AADT and Peak Hour Segment LOS								
		2045 Lanes	AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
Airport Access Road (North of SR 417)	NB	4	23,900	0.28	B	2,425	0.62	C	2,135	0.54	B
	SB	4				2,135	0.54	B	2,425	0.62	C
Boggy Creek - North of SR 417	NB	4	42,400	1.07	F	2,450	1.23	F	1,945	0.97	D
	SB	4				1,855	0.93	C	2,500	1.25	F
Boggy Creek Rd - Lake Nona Blvd to SR 417	NB	4	48,600	1.22	F	2,465	1.23	F	1,755	0.88	C
	SB	4				1,540	0.77	C	2,525	1.26	F
Boggy Creek - West of Narcoossee Rd	EB	2	28,600	1.54	F	1,395	1.52	F	1,310	1.42	F
	WB	2				1,245	1.35	F	1,605	1.74	F
Narcoossee Rd - North of SR 417	NB	6	49,800	0.83	C	2,185	0.72	C	2,230	0.74	C
	SB	6				1,880	0.62	C	2,095	0.69	C
Narcoossee Rd - South of SR 417	NB	6	73,600	1.23	F	3,795	1.26	F	3,085	1.02	F
	SB	6				2,610	0.86	C	3,760	1.25	F
Narcoossee Rd - North of Boggy Creek Rd	NB	6	55,100	0.92	C	3,080	1.02	F	2,570	0.85	C
	SB	6				2,055	0.68	C	3,140	1.04	F
Narcoossee Rd - South of Boggy Creek Rd	NB	6	64,800	1.08	F	3,180	1.05	F	2,590	0.86	C
	SB	6				2,355	0.78	C	2,815	0.93	C

Table 5.2.8: 2045 Build Daily and Peak Hour Roadway Segment LOS

Facility	Dir	Two Way 2045 Lanes	2045 Build AADT and Peak Hour Segment LOS								
			AADT	V/C Ratio	LOS	AM Peak	V/C Ratio	LOS	PM Peak	V/C Ratio	LOS
SR 417 S of Boggy Creek Road	NB	8	159,900	0.91	E	7,195	0.88	D	8,795	1.07	F
	SB	8				8,795	1.07	F	7,195	0.88	D
SR 417 NB Off Ramp to Airport Access	NB	2	37,500	0.59	D	1,685	0.47	D	2,065	0.57	D
SR 417 SB On Ramp from Airport Access	SB	2				2,065	0.57	D	1,685	0.47	D
SR 417 NB On Ramp from Airport Access	NB	1	7,800	0.24	D	430	0.24	C	350	0.19	C
SR 417 SB Off Ramp to Airport Access	SB	1				350	0.19	C	430	0.24	C
SR 417 NB Off Ramp to Boggy Creek Rd	NB	1	12,800	0.40	D	840	0.47	D	735	0.41	C
SR 417 SB On Ramp from Boggy Creek Rd	SB	1				655	0.36	C	850	0.47	D
SR 417 NB On Ramp from Boggy Creek Rd	NB	1	15,700	0.49	D	545	0.30	C	695	0.39	C
SR 417 SB Off Ramp to Boggy Creek Rd	SB	1				685	0.38	C	595	0.33	C
SR 417 NB Off Ramp from OPE	NB	1	19,800	0.62	D	1,030	0.57	D	680	0.38	C
SR 417 SB On Ramp to OPE	SB	1			B	680	0.38	C	1,030	0.57	D
SR 417 NB On Ramp to OPE	NB	1	15,500	0.48	D	870	0.48	D	1,310	0.73	E
SR 417 SB Off Ramp from OPE	SB	1			B	1,310	0.73	E	870	0.48	D
OPE EB On Ramp from Airport	EB	1	8,000	0.25	D	360	0.20	C	510	0.28	C
OPE WB Off Ramp to Airport	WB	1			B	510	0.28	C	360	0.20	C
SR 417 S of Lake Nona Blvd	NB	8	128,800	0.73	D	6,395	0.78	D	6,490	0.79	D
	SB	8				6,420	0.78	D	6,355	0.77	D
SR 417 NB Off Ramp to Lake Nona Blvd	NB	1	19,900	0.62	D	820	0.46	D	1,210	0.67	E
SR 417 SB On Ramp from Lake Nona Blvd	SB	1				1,230	0.68	E	945	0.53	D
SR 417 NB On Ramp from Lake Nona Blvd	NB	1	21,300	0.67	D	835	0.46	D	1,075	0.60	D
SR 417 SB Off Ramp to Lake Nona Blvd	SB	1				1,050	0.58	D	925	0.51	D

SR 417 S of Narcoossee Road	NB	8	130,200	0.74	D	6,380	0.78	D	6,625	0.81	D
	SB	8				6,600	0.80	D	6,375	0.78	D
SR 417 NB Off Ramp to Narcoossee Rd	NB	1	22,200	0.69	D	1,830	1.02	F	1,245	0.69	E
SR 417 SB On Ramp from Narcoossee Rd	SB	1				1,210	0.67	E	1,670	0.93	E
SR 417 NB On Ramp from Narcoossee Rd	NB	1	29,100	0.91	E	930	0.52	D	1,275	0.71	E
SR 417 SB Off Ramp to Narcoossee Rd	SB	1				990	0.55	D	970	0.54	D
SR 417 N of Narcoossee Road	NB	8	137,100	0.78	D	7,280	0.89	D	6,595	0.80	D
	SB	8				6,820	0.83	D	7,075	0.86	D
OPE South of SR 417	EB	4	43,300	0.51	B	1,910	0.48	B	2,850	0.72	C
	WB	4				2,850	0.72	C	1,910	0.48	B
OPE WB Off Ramp to Laureate	EB	1	10,100	0.32	D	445	0.25	C	675	0.38	C
OPE EB On Ramp from Laureate	WB	1			B	675	0.38	C	445	0.25	C
OPE South of Laureate Blvd	EB	4	53,400	0.63	C	2,355	0.60	C	3,525	0.89	D
	WB	4				3,525	0.89	D	2,355	0.60	C
OPE EB Off Ramp to Simpson Rd/Poitras	EB	1	10,900	0.34	D	720	0.40	C	480	0.27	C
OPE WB On Ramp from Simpson Road/Poitras	WB	1			B	480	0.27	C	720	0.40	C
OPE EB On Ramp from Simpson Rd/Poitras	EB	1	7,800	0.24	D	340	0.19	C	520	0.29	C
OPE WB Off Ramp to Simpson Rd/Poitras	WB	1			B	520	0.29	C	340	0.19	C
OPE West of Narcoossee Road	EB	4	50,300	0.59	C	1,975	0.50	B	3,565	0.90	D
	WB	4				3,565	0.90	D	1,975	0.50	B
OPE EB Off Ramp to Narcoossee Rd	EB	1	15,200	0.48	D	760	0.42	C	920	0.51	D
OPE WB On Ramp from Narcoossee Rd	WB	1			B	920	0.51	D	760	0.42	C
OPE EB On Ramp from Narcoossee Rd	EB	1	22,900	0.72	D	1,130	0.63	D	1,390	0.77	E
OPE WB Off Ramp to Narcoossee Rd	WB	1			B	1,390	0.77	E	1,130	0.63	D
OPE East of Narcoossee Road	EB	4	58,000	0.69	C	1,975	0.50	B	3,565	0.90	D
	WB	4				3,565	0.90	D	1,975	0.50	B
OPE EB Off Ramp to Sunbridge Parkway	EB	1	23,800	0.74	D	1,055	0.59	D	1,570	0.87	E
OPE WB On Ramp from Sunbridge Parkway	WB	1			B	1,570	0.87	E	1,055	0.59	D

OPE EB On Ramp from Sunbridge Parkway	EB	1	2,600	0.08	D	115	0.06	C	175	0.10	C
OPE WB Off Ramp to Sunbridge Parkway	WB	1			B	175	0.10	C	115	0.06	C
OPE East of Sunbridge Parkway	EB	4	36,800	0.43	B	1,405	0.36	B	2,640	0.67	C
	WB	4				2,640	0.67	C	1,405	0.36	B
Airport Access Road (North of SR 417)	NB	4	53,300	0.63	C	2,925	0.74	C	2,475	0.63	C
	SB	4				2,475	0.63	C	2,925	0.74	C
Boggy Creek - North of SR 417	NB	4	41,100	1.03	F	1,960	0.98	D	1,615	0.81	C
	SB	4				1,550	0.78	C	1,990	1.00	D
Boggy Creek Rd - Lake Nona Blvd to SR 417	NB	4	44,300	1.11	F	2,290	1.15	F	1,765	0.88	C
	SB	4				1,555	0.78	C	2,355	1.18	F
Boggy Creek - West of Narcoossee Rd	EB	2	24,200	1.30	F	1,185	1.29	F	1,090	1.18	F
	WB	2				1,010	1.10	F	1,385	1.51	F
Narcoossee Rd - North of SR 417	NB	6	51,300	0.86	C	2,245	0.74	C	2,285	0.76	C
	SB	6				1,925	0.64	C	2,165	0.72	C
Narcoossee Rd - South of SR 417	NB	6	68,400	1.14	F	3,425	1.13	F	2,885	0.96	C
	SB	6				2,425	0.80	C	3,495	1.16	F
Narcoossee Rd - North of Boggy Creek Rd	NB	6	56,400	0.94	C	2,955	0.98	D	2,445	0.81	C
	SB	6				2,020	0.67	C	3,050	1.01	F
Narcoossee Rd - South of Boggy Creek Rd	NB	6	53,200	0.89	C	2,780	0.92	C	2,260	0.75	C
	SB	6				2,045	0.68	C	2,515	0.83	C

The intersection LOS analysis was also conducted for the AM peak and PM peak hours for each turning movement. A summary of No-Build 2025 AM and PM Peak Hour Intersection LOS are provided in Tables 5.2.9 and 5.2.10.

For analysis purposes, the future intersection geometry on all intersections included dual exclusive left turn lanes, two through lanes, and a single exclusive right turn lane on all legs of the intersections. The OPE interchanges at Laureate Park Boulevard, Simpson Road Extension, Narcoossee Road and Cyrils Drive are recommended to include the following interchange geometry:

- Dual exclusive left turn lanes and single right turn lane at the ramp termini;
- Dual exclusive left turn lanes from cross street on to the receiving ramps, and;
- On-ramps will need to accommodate two lanes of receiving traffic.

Narcoossee Road and Cyrils Drive interchanges were analyzed as Single Point Urban Interchanges (SPUI), while the Laureate Park Boulevard and Simpson Road Extension interchanges were analyzed as tight diamond interchanges.

A summary of Build 2025 AM and PM peak hour intersection LOS are provided in Tables 5.2.11 and 5.2.12.

A summary of No-Build 2045 AM and PM peak hour intersection LOS are provided in Tables 5.2.13 and 5.2.14. Build 2045 AM and PM peak hour intersection LOS are provided in Tables 5.2.15 and 5.2.16.

The intersection LOS analysis shows that the Build condition generally improves AM and PM peak hour intersection delay conditions over the No-Build condition in both year 2025 and 2045. In the No-Build condition, the Boggy Creek Road / SR 417 northbound off ramp and Lake Nona Boulevard / SR 417 southbound off ramp operate at a LOS F in the year 2045 AM peak hour. The LOS at these intersections improves to LOS D and E, respectively, in the 2045 Build AM peak hour condition.

The estimated queue lengths for the 2045 Build AM and PM peak conditions are presented in Table 5.2.17. Documentation of the Associated Synchro outputs are provided in Appendix E.

Table 5.2.9: 2025 No-Build AM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	37.9	76.9	-	66.8	-	55.4	-	5.9	45.8	50.7
	LOS	-	-	-	D	E	-	E	-	E	-	A	D	D
Boggy Creek Rd at SR 417 NB Off Ramp	Delay (sec/veh)	75.3	123.5	-	-	-	-	-	0.5	6.7	933.5	-	3.4	112.5
	LOS	E	F	-	-	-	-	-	A	A	F	-	A	F
Boggy Creek Rd at Lake Nona Blvd	Delay (sec/veh)	85.9	-	122.8	128.1	50.2	78.0	53.0	21.5	81.0	104.4	4.9	43.2	70.3
	LOS	F	-	F	F	D	E	D	C	F	F	A	D	E
Boggy Creek Rd at Simpson Rd	Delay (sec/veh)	71.0	8.6	32.9	77.0	-	82.5	34.3	-	73.7	91.0	21.6	82.4	51.0
	LOS	E	A	C	E	-	F	C	-	E	F	C	F	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	104.1	5.7	-	103.4	-	32.5	-	-	116.8	86.9
	LOS	-	-	-	F	A	-	F	-	C	-	-	F	F
Lake Nona Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	30.6	90.0	-	-	-	-	-	22.5	53.1	67.3	-	97.6	70.0
	LOS	C	F	-	-	-	-	-	C	D	E	-	F	E
Narcoossee Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	26.2	-	16.2	-	4.9	-	-	63.4	-	26.9
	LOS	-	-	-	C	-	B	-	A	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	35.1	-	28.4	-	-	-	-	41.2	-	-	43.1	-	40.2
	LOS	D	-	C	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay (sec/veh)	98.0	58.6	57.3	93.8	-	122.7	88.4	-	52.7	141.2	24.5	68.3	64.7
	LOS	F	E	E	F	-	F	F	-	D	F	C	E	E

Table 5.2.10: 2025 No-Build PM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	26.6	3.6	-	22.5	-	-	-	0.3	-	16.7
	LOS	-	-	-	C	A	-	C	-	-	-	A	-	B
Boggy Creek Rd at SR 417 NB Off Ramp	Delay (sec/veh)	13.8	2.3	-	-	-	-	-	0.4	-	40.7	-	-	10.1
	LOS	B	A	-	-	-	-	-	A	-	D	-	-	B
Boggy Creek Rd at Lake Nona Blvd	Delay (sec/veh)	73.6	-	84.5	82.9	35.5	61.4	78.7	11.2	48.5	65.0	7.6	41.5	48.2
	LOS	E	-	F	F	D	E	E	B	D	E	A	D	D
Boggy Creek Rd at Simpson Rd	Delay (sec/veh)	43.2	10.9	24.8	82.6	-	49.0	57.6	-	68.9	67.5	17.0	80.7	43.9
	LOS	D	B	C	F	-	D	E	-	E	E	B	F	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	33.2	4.4	-	17.0	-	-	-	-	0.3	19.3
	LOS	-	-	-	C	A	-	B	-	-	-	-	A	B
Lake Nona Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	35.2	5.9	-	-	-	-	-	2.8	-	12.3	-	-	7.9
	LOS	D	A	-	-	-	-	-	A	-	B	-	-	A
Narcoossee Blvd at SR 417 SB Off Ramp	Delay (sec/veh)	-	-	-	14.5	-	28.2	-	6.9	-	-	56.4	-	28.9
	LOS	-	-	-	B	-	C	-	A	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay (sec/veh)	29.5	-	42.3	-	-	-	-	48.8	-	-	38.8	-	42.2
	LOS	C	-	D	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay (sec/veh)	75.2	32.7	51.0	96.9	-	68.3	81.2	-	29.9	94.4	13.5	45.2	43.8
	LOS	E	C	D	F	-	E	F	-	C	F	B	D	D

Table 5.2.11: 2025 Build AM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	47.0	-	38.9	8.3	7.7	-	-	27.5	3.0	18.7
	LOS	-	-	-	D	-	D	A	A	-	-	C	A	B
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	53.2	-	40.4	-	-	-	-	7.3	1.4	31.0	6.6	-	11.2
	LOS	D	-	D	-	-	-	-	A	A	C	A	-	B
Boggy Creek Rd at Lake Nona Blvd	Delay	81.2	65.7	-	83.3	77.2	45.3	59.6	54.4	18.3	58.6	20.8	2.7	48.0
	LOS	F	E	-	F	E	D	E	D	B	E	C	A	D
Boggy Creek Rd at Simpson Rd	Delay	57.6	26.7	3.8	78.3	59.4	-	37.9	57.0	-	69.5	71.0	26.1	41.0
	LOS	E	C	A	E	E	-	D	E	-	E	E	C	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	44.0	-	6.9	62.4	13.2	-	-	44.2	-	38.1
	LOS	-	-	-	D	-	A	E	B	-	-	D	-	D
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	29.4	-	37.8	-	-	-	-	45.0	7.5	36.8	41.1	-	36.1
	LOS	C	-	D	-	-	-	-	D	A	D	D	-	D
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	24.7	-	17.6	-	5.9	-	-	61.2	-	26.6
	LOS	-	-	-	C	-	B	-	A	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	33.5	-	28.1	-	-	-	-	41.9	-	-	39.9	-	39.4
	LOS	C	-	C	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay	81.0	50.9	19.8	96.3	82.4	-	79.8	46.3	-	87.0	30.9	5.1	45.9
	LOS	F	D	B	F	F	-	E	D	-	F	C	A	D
OPE EB On Ramp at Laureate Blvd	Delay	0.1	0.3	0.4	0.3	-	-	-	-	-	-	-	-	0.3
	LOS	A	A	A	A	-	-	-	-	-	-	-	-	A
OPE WB On Ramp at Laureate Blvd	Delay	28.1	-	-	20.2	30.7	4.3	-	-	-	-	-	-	23.6
	LOS	C	-	-	C	C	A	-	-	-	-	-	-	C
OPE EB Off Ramp at Simpson Rd Ext.	Delay	-	25.5	4.4	12.0	13.6	-	-	-	-	32.2	-	5.0	17.6
	LOS	-	C	A	B	B	-	-	-	-	C	-	A	B
OPE WB Off Ramp at Simpson Rd Ext.	Delay	8.9	9.9	-	-	29.4	4.8	36.5	-	8.5	-	-	-	15.3
	LOS	A	A	-	-	C	A	D	-	A	-	-	-	B
OPE Ramps at Narcoossee Blvd	Delay	64.2	-	9.9	82.8	-	35.1	62.4	50.7	5.8	81.5	29.1	5.8	46.1
	LOS	E	-	A	F	-	D	E	D	A	F	C	A	D
OPE Ramps at Cyrils Dr	Delay	50.0	16.1	-	69.1	34.6	4.9	41.0	-	2.5	43.9	-	6.8	27.4
	LOS	D	B	-	E	C	A	D	-	A	D	-	A	C

Table 5.2.12: 2025 Build PM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	60.1	-	14.7	17.1	7.4	-	-	25.7	2.3	22.5
	LOS	-	-	-	E	-	B	B	A	-	-	C	A	C
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	37.6	-	54.3	-	-	-	-	16.5	1.6	25.2	32.6	-	26.7
	LOS	D	-	D	-	-	-	-	B	A	C	C	-	C
Boggy Creek Rd at Lake Nona Blvd	Delay	72.6	72.3	-	79.2	64.3	39.8	60.4	54.2	24.6	61.9	29.1	2.5	45.2
	LOS	E	E	-	E	E	D	E	D	C	E	C	A	D
Boggy Creek Rd at Simpson Rd	Delay	54.1	31.2	11.6	78.4	65.6	-	38.2	60.1	-	70.8	66.4	14.1	41.6
	LOS	D	C	B	E	E	-	D	E	-	E	E	B	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	43.4	-	5.8	29.4	10.2	-	-	35.0	-	24.6
	LOS	-	-	-	D	-	A	C	B	-	-	D	-	C
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	27.6	-	41.4	-	-	-	-	36.4	6.3	41.2	41.5	-	30.8
	LOS	C	-	D	-	-	-	-	D	A	D	D	-	C
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	27.8	-	27.6	-	7.8	-	-	57.4	-	30.0
	LOS	-	-	-	C	-	C	-	A	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	28.6	-	38.8	-	-	-	-	48.8	-	-	37.2	-	40.8
	LOS	C	-	D	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay	76.3	49.6	24.3	94.4	62.8	-	88.1	33.8	-	90.0	31.6	10.8	38.8
	LOS	E	D	C	**F**	E	-	**F**	C	-	**F**	C	B	D
OPE EB On Ramp at Laureate Blvd	Delay	0.1	0.4	0.3	0.2	-	-	-	-	-	-	-	-	0.3
	LOS	A	A	A	A	-	-	-	-	-	-	-	-	A
OPE WB On Ramp at Laureate Blvd	Delay	24.4	-	-	13.9	37.1	11.5	-	-	-	-	-	-	23.2
	LOS	C	-	-	B	D	B	-	-	-	-	-	-	C
OPE EB Off Ramp at Simpson Rd Ext.	Delay	-	19.7	2.6	7.2	7.5	-	-	-	-	40.9	-	7.2	15.5
	LOS	-	B	A	A	A	-	-	-	-	D	-	A	B
OPE WB Off Ramp at Simpson Rd Ext.	Delay	8.5	6.8	-	-	31.9	4.7	39.6	-	4.0	-	-	-	13.9
	LOS	A	A	-	-	C	A	D	-	A	-	-	-	B
OPE Ramps at Narcoossee Blvd	Delay	66.5	-	29.4	72.4	-	22.9	74.9	58.2	11.2	63.3	40.2	4.2	45.6
	LOS	E	-	C	E	-	C	E	E	B	E	D	A	D
OPE Ramps at Cyrils Dr	Delay	54.5	36.5	-	65.1	45.2	6.8	26.0	-	0.1	29.3	-	4.2	29.2
	LOS	D	D	-	E	D	A	C	-	A	C	-	A	C

Table 5.2.13: 2045 No-Build AM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	37.9	76.9	-	66.8	-	55.4	-	5.9	45.8	50.7
	LOS	-	-	-	D	E	-	E	-	E	-	A	D	D
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	75.3	123.5	-	-	-	-	-	0.5	6.7	933.5	-	3.4	112.5
	LOS	E	**F**	-	-	-	-	-	A	A	**F**	-	A	**F**
Boggy Creek Rd at Lake Nona Blvd	Delay	85.9	-	122.8	128.1	50.2	78.0	53.0	21.5	81.0	104.4	4.9	43.2	70.3
	LOS	**F**	-	**F**	**F**	D	E	D	C	**F**	**F**	A	D	E
Boggy Creek Rd at Simpson Rd	Delay	71.0	8.6	32.9	77.0	-	82.5	34.3	-	73.7	91.0	21.6	82.4	51.0
	LOS	E	A	C	E	-	**F**	C	-	E	**F**	C	**F**	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	104.1	5.7	-	103.4	-	32.5	-	-	116.8	86.9
	LOS	-	-	-	**F**	A	-	**F**	-	C	-	-	**F**	**F**
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	30.6	90.0	-	-	-	-	-	22.5	53.1	67.3	-	97.6	70.0
	LOS	C	**F**	-	-	-	-	-	C	D	E	-	**F**	E
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	48.2	-	19.3	-	9.0	-	-	71.5	-	33.2
	LOS	-	-	-	D	-	B	-	A	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	50.4	-	32.2	-	-	-	-	51.2	-	-	44.9	-	46.6
	LOS	D	-	C	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay	98.0	58.6	57.3	93.8	-	122.7	88.4	-	52.7	141.2	24.5	68.3	64.7
	LOS	**F**	E	E	**F**	-	**F**	**F**	-	D	**F**	C	E	E

Table 5.2.14: 2045 No-Build PM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	49.4	15.8	-	21.3	-	8.4	-	4.5	32.7	19.6
	LOS	-	-	-	D	B	-	C	-	A	-	A	C	B
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	55.1	11.3	-	-	-	-	-	1.5	10.9	26.4	-	0.9	9.0
	LOS	E	B	-	-	-	-	-	A	B	C	-	A	A
Boggy Creek Rd at Lake Nona Blvd	Delay	66.5	-	43.9	73.7	19.2	57.6	74.7	4.9	47.1	79.1	0.9	18.6	40.5
	LOS	E	-	D	E	B	E	E	A	D	E	A	B	D
Boggy Creek Rd at Simpson Rd	Delay	56.8	57.4	10.4	35.1	31.4	97.0	-	-	-	-	-	-	46.6
	LOS	E	E	B	D	C	F	-	-	-	-	-	-	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	45.1	0.1	-	65.0	-	12.2	-	-	49.4	43.4
	LOS	-	-	-	D	A	-	E	-	B	-	-	D	D
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	24.6	30.4	-	-	-	-	-	4.4	33.3	39.6	-	47.4	36.0
	LOS	C	C	-	-	-	-	-	A	C	D	-	D	D
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	70.7	12.4	-	60.4	-	12.7	-	14.7	57.1	40.9
	LOS	-	-	-	E	B	-	E	-	B	-	B	E	D
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	81.4	56.2	-	-	-	-	-	13.6	11.6	1.2	-	0.6	12.3
	LOS	F	E	-	-	-	-	-	B	B	A	-	A	B
Narcoossee Rd at Boggy Creek Rd	Delay	53.7	17.9	8.7	23.3	5.5	34.0	-	-	-	-	-	-	26.2
	LOS	D	B	A	C	A	C	-	-	-	-	-	-	C

Table 5.2.15: 2045 Build AM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	41.6	-	51.6	43.5	17.1	-	-	38.4	3.7	29.8
	LOS	-	-	-	D	-	D	D	B	-	-	D	A	C
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	62.7	-	121.9	-	-	-	-	7.5	1.2	272.9	4.6	-	38.5
	LOS	E	-	F	-	-	-	-	A	A	F	A	-	D
Boggy Creek Rd at Lake Nona Blvd	Delay	97.1	117.6	-	112.8	74.5	39.8	52.9	83.0	28.5	100.6	48.5	8.6	71.4
	LOS	F	F	-	F	E	D	D	F	C	F	D	A	E
Boggy Creek Rd at Simpson Rd	Delay	83.4	28.4	7.1	77.5	83.1	-	48.1	81.5	-	97.6	86.6	28.8	54.2
	LOS	F	C	A	E	F	-	D	F	-	F	F	C	D
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	91.2	-	6.5	91.8	25.1	-	-	90.2	-	72.3
	LOS	-	-	-	F	-	A	F	C	-	-	F	-	E
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	29.1	-	68.3	-	-	-	-	55.9	19.5	70.4	94.6	-	66.2
	LOS	C	-	E	-	-	-	-	E	B	E	F	-	E
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	45.3	-	21.3	-	10.4	-	-	65.6	-	33.3
	LOS	-	-	-	D	-	C	-	B	-	-	E	-	C
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	38.6	-	33.3	-	-	-	-	51.6	-	-	37.2	-	42.7
	LOS	D	-	C	-	-	-	-	D	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay	98.8	54.8	44.7	97.0	124.3	-	86.5	53.6	-	108.1	50.8	21.2	58.6
	LOS	F	D	D	F	F	-	F	D	-	F	D	C	E
OPE EB On Ramp at Laureate Blvd	Delay	0.2	0.6	0.7	0.4	-	-	-	-	-	-	-	-	0.5
	LOS	A	A	A	A	-	-	-	-	-	-	-	-	A
OPE WB On Ramp at Laureate Blvd	Delay	67.5	-	-	23.0	51.0	19.2	-	-	-	-	-	-	46.8
	LOS	E	-	-	C	D	B	-	-	-	-	-	-	D
OPE EB Off Ramp at Simpson Rd Ext.	Delay	-	32.9	3.5	18.5	20.1	-	-	-	-	34.6	-	15.8	22.7
	LOS	-	C	A	B	C	-	-	-	-	C	-	B	C
OPE WB Off Ramp at Simpson Rd Ext.	Delay	23.4	16.1	-	-	38.5	5.1	36.8	-	5.0	-	-	-	22.7
	LOS	C	B	-	-	D	A	D	-	A	-	-	-	C
OPE Ramps at Narcoossee Blvd	Delay	66.2	-	23.2	120.3	-	35.2	55.9	84.2	9.1	108.8	47.1	12.3	63.2
	LOS	E	-	C	F	-	D	E	F	A	F	D	B	E
OPE Ramps at Cyrils Dr	Delay	61.5	16.6	-	74.3	41.5	21.2	46.2	-	8.5	55.0	-	19.2	37.9
	LOS	E	B	-	E	D	C	D	-	A	E	-	B	D

Table 5.2.16: 2045 Build PM Peak Hour Intersection LOS

Intersection		EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	TOT
Boggy Creek Rd at SR 417 SB Off Ramp	Delay	-	-	-	88.8	-	59.7	46.8	6.5	-	-	34.5	3.2	33.6
	LOS	-	-	-	F	-	E	D	A	-	-	C	A	C
Boggy Creek Rd at SR 417 NB Off Ramp	Delay	46.8	-	141.3	-	-	-	-	11.4	1.4	99.2	36.7	-	41.4
	LOS	D	-	F	-	-	-	-	B	A	F	D	-	D
Boggy Creek Rd at Lake Nona Blvd	Delay	82.5	102.3	-	98.9	57.4	42.3	67.8	65.8	32.2	67.0	56.6	10.4	59.5
	LOS	F	F	-	F	E	D	E	E	C	E	E	B	E
Boggy Creek Rd at Simpson Rd	Delay	88.3	39.6	14.4	77.1	100.9	-	41.0	92.2	-	77.7	64.0	18.4	55.0
	LOS	F	D	B	E	F	-	D	F	-	E	E	B	E
Lake Nona Blvd at SR 417 SB Off Ramp	Delay	-	-	-	48.0	-	5.7	55.9	21.0	-	-	46.4	-	37.3
	LOS	-	-	-	D	-	A	E	C	-	-	D	-	D
Lake Nona Blvd at SR 417 NB Off Ramp	Delay	26.1	-	127.8	-	-	-	-	50.0	57.5	112.3	48.4	-	66.3
	LOS	C	-	F	-	-	-	-	D	E	F	D	-	E
Narcoossee Blvd at SR 417 SB Off Ramp	Delay	-	-	-	38.9	-	35.5	-	13.4	-	-	62.7	-	35.4
	LOS	-	-	-	D	-	D	-	B	-	-	E	-	D
Narcoossee Blvd at SR 417 NB Off Ramp	Delay	40.0	-	43.1	-	-	-	-	57.1	-	-	41.9	-	46.6
	LOS	D	-	D	-	-	-	-	E	-	-	D	-	D
Narcoossee Rd at Boggy Creek Rd	Delay	101.5	57.4	44.5	99.5	111.6	-	106.2	39.1	-	79.6	41.5	27.2	49.3
	LOS	F	E	D	F	F	-	F	D	-	E	D	C	D
OPE EB On Ramp at Laureate Blvd	Delay	0.2	0.9	0.6	0.3	-	-	-	-	-	-	-	-	0.6
	LOS	A	A	A	A	-	-	-	-	-	-	-	-	A
OPE WB On Ramp at Laureate Blvd	Delay	84.6	-	-	15.3	59.7	34.2	-	-	-	-	-	-	59.1
	LOS	F	-	-	B	E	C	-	-	-	-	-	-	E
OPE EB Off Ramp at Simpson Rd Ext.	Delay	-	28.0	3.0	27.0	9.4	-	-	-	-	49.5	-	8.4	19.7
	LOS	-	C	A	C	A	-	-	-	-	D	-	A	B
OPE WB Off Ramp at Simpson Rd Ext.	Delay	35.8	7.8	-	-	38.8	4.5	48.1	-	8.2	-	-	-	24.6
	LOS	D	A	-	-	D	A	D	-	A	-	-	-	C
OPE Ramps at Narcoossee Blvd	Delay	79.7	-	34.8	98.0	-	23.3	84.5	84.0	13.8	75.6	49.0	6.7	57.8
	LOS	E	-	C	F	-	C	F	F	B	E	D	A	E
OPE Ramps at Cyrils Dr	Delay	70.3	55.0	-	87.6	67.0	9.0	22.3	-	3.5	28.8	-	30.7	43.8
	LOS	E	E	-	F	E	A	C	-	A	C	-	C	D

Table 5.2.17: 95th Percentile Queue Lengths for 2045 Build

Intersection	Movement	AM Peak - Queue Lengths (feet)	PM Peak - Queue Lengths (feet)
Boggy Creek Rd & SR 417 SB Off Ramp	WBL	159	330
	WBR	433	#411
	NBL	198	#180
	NBT	493	334
	SBT	670	904
	SBR	57	54
Boggy Creek Rd & SR 417 NB Off Ramp	EBL	139	147
	EBR	#507	#759
	NBT	m254	330
	NBR	m23	m22
	SBL	m#354	m#227
	SBT	139	648
Boggy Creek Rd & Lake Nona Blvd.	EBL	#314	#165
	EBT	#659	#530
	WBL	#178	#357
	WBT	#340	390
	WBR	515	710
	NBL	m233	m137
	NBT	m#843	m440
	NBR	m207	m256
	SBL	m#416	m284
	SBT	m344	m#902
	SBR	m97	m143
Boggy Creek Rd & Simpson Rd	EBL	#602	#561
	EBT	194	262
	EBR	144	230
	WBL	134	127
	WBT	#615	#498
	NBL	324	#214
	NBT	#520	#542
	SBL	m#282	m383
	SBT	m213	m336
	SBR	m266	m283
Lake Nona Blvd & SR 417 SB Off Ramp	WBL	#738	408
	WBR	35	62
	NBL	m#479	m386
	NBT	m172	m225
	SBT	#572	376
Lake Nona Blvd & SR 417 NB Off Ramp	EBL	178	202
	EBR	#900	#1285
	NBT	#690	671
	NBR	375	#1013

Intersection	Movement	AM Peak - Queue Lengths (feet)	PM Peak - Queue Lengths (feet)
	SBL	m193	m#156
	SBT	m#880	492
Narcoossee Rd & Boggy Creek Rd	EBL	#502	#478
	EBT	132	177
	EBR	652	533
	WBL	97	60
	WBT	#413	#339
	NBL	#363	#387
	NBT	1070	726
	SBL	m#236	m154
	SBT	m555	816
	SBR	m260	m#596
OPE EB Off Ramp / OPE WB Off Ramp & Cyrils	EBL	#531	#390
	EBT	120	546
	WBL	146	#226
	WBT	370	401
	WBR	430	107
	NBL	81	38
	NBR	56	27
	SBL	289	310
	SBR	277	#812
OPE EB Off Ramp / OPE WB Off Ramp	EBL	349	443
	EBR	251	369
	WBL	#796	#612
	WBR	590	381
	NBL	m429	m#438
	NBT	m#1032	m659
	NBR	m114	m222
	SBL	#686	#739
	SBT	441	918
	SBR	173	100
Simpson Rd Extension & OPE EB Off Ramp	EBT	484	613
	EBR	44	51
	WBL	116	205
	WBT	364	260
	SBL	270	219
	SBR	220	76
OPE WB Off Ramp & Simpson Rd Extension	EBL	215	346
	EBT	288	200

Intersection	Movement	AM Peak - Queue Lengths (feet)	PM Peak - Queue Lengths (feet)
	WBT	358	424
	WBR	51	58
	NBL	304	232
	NBR	53	53
OPE EB On Ramp & Laureate Blvd	EBT	0	0
	EBR	0	0
	WBL	m0	m0
	WBT	m0	m0
OPE WB Off Ramp & Laureate Blvd	EBT	#861	#1054
	WBT	315	203
	NBL	#726	#633
	NBR	217	363

Note: # indicates 95th percentile volume exceeds capacity, queue may be longer
m indicates volume for 95th percentile queue is metered by upstream signal

5.2.9 Traffic Conclusion

The Preferred Alternative (Alternative 8 – Lake Nona Alternative with Split Oak Minimization Alternative) considers a nine-mile, four-lane tolled expressway extension of the Osceola Parkway from SR 417 east of Boggy Creek Road in Orange County to Cyrils Drive in Osceola County. The Preferred Alternative has interchanges with five roadways: SR 417 with direct connections to the OIA, Laureate Boulevard, Simpson Road Extension, Narcoossee Road, and Cyrils Drive. The following conditions should be noted:

The intersections within the study area are analyzed with the following recommended improvements:

- OPE interchange ramp intersections at Boggy Creek Road, Lake Nona Boulevard, and Narcoossee Road were analyzed with dual dedicated left turn lanes and single dedicated right turn lane at the ramp termini, as well as dual dedicated left turn lanes on the cross streets and dual receiving lanes and the on-ramps.
- Local intersections at Boggy Creek Road / Lake Nona Boulevard, Boggy Creek Road / Simpson Road and Boggy Creek Road / Narcoossee Road were analyzed with dual dedicated left turn lanes, dual through lanes, and a single dedicated right turn lane for each leg of the intersection as appropriate.
- To ensure that adequate right-of-way is secured for future demand, the interchange geometry for the proposed interchanges at Laureate Boulevard, Simpson Road Extension, Narcoossee Road, and Cyrils Drive should include:
    - Dual exclusive left turn lanes and single right turn lane at the ramp termini;

- Dual exclusive left turn lanes from cross street on to the receiving ramps, and;
- On-ramps will need to accommodate two lanes of receiving traffic.

The traffic analysis shows that the OPE will help traffic conditions in the study area in the Build condition over the No-Build condition. The OPE provides the opportunity for high-speed travel between the OIA, Lake Nona and the Medical City area, Narcoossee residential areas, and the future Northeast District development.

6.0 Alternative Analysis

6.1 No-Build Alternative

A scenario in which the project is not undertaken is included as a benchmark by which the build alternatives can be compared. This scenario is referred to as the No-Build Alternative. The No-Build Alternative is used to show conditions in the project's design year if no transportation improvements are made but does include minor construction activities such as safety upgrades, regular maintenance, and any programmed transportation projects already committed in MetroPlan Orlando's 2040 LRTP and TIP. In essence, the No-Build Alternative includes the existing transportation system plus any additional funded future transportation projects, including the proposed Sunbridge Parkway and the Northeast Connector Expressway.

In the case of the OPE, under the No-Build scenario, the limited access toll road would not be built.

The No-Build Alternative has certain advantages and disadvantages. The advantages of the No-Build Alternative include:

- No disruption or temporary impacts (air, noise, vibration, travel patterns) due to construction activities;
- No right-of-way acquisition or displacements; and
- No impacts to the natural environment.

The disadvantages of the No-Build Alternative include:

- Does not meet the project's purpose and need;
- Is not consistent with CFX Master Plan, Northeast District Element, Osceola County Comprehensive Plan, Orange County Comprehensive Plan, or the East Central Florida Corridor Task Force;
- No traffic relief for Osceola Parkway and other local roadways;
- Does not provide a critical limited-access connection between the Northeast District and the OIA;
- Increased vehicular congestion and delay, which leads to increased travel costs and reduced accessibility in the study area;
- Increased safety concerns, particularly with respect to intersection crashes and access management;
- Increased emergency response and evacuation time;
- Does not meet economic development goals in Osceola County; and
- Increased air pollution from vehicular emissions.

6.2 Transportation Systems Management

Transportation System Management (TSM) alternatives include improvements, such as separate turn lanes, traffic signal timing optimization, and pavement marking improvements to enhance traffic safety and mobility. The implementation of TSM strategies will aid in local intersection safety and will be utilized in the proposed alternatives. However, TSM improvements alone do not sufficiently address the purpose and need, the capacity problems, or improve overall network efficiency, and the majority of the disadvantages of the No-Build Alternative will remain. The TSM Alternative, by itself, is not considered a viable option, and no further evaluation of only the TSM Alternative is conducted in this study.

6.3 Transit, Intermodal, Multi-Modal Alternatives

Transit services within the study area would be operated by an agency other than CFX. Potential transit operators include: LYNX, GOAA, Orange County, Osceola County, or a private entity. This approach was suggested in the Central Florida Expressway Multimodal Investment Assessment Report[1], whose policy statement recommended "funding or partnering 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." The report advised that CFX's operation of a transit system would not be financially prudent. CFX adopted the multimodal policy statement in March 2017.

The Osceola County 2015 Long Range Transit Plan foresees the OPE as a route for premium transit service. The Long-Range Transit Plan also calls for a Bus Rapid Transit line along Narcoossee Road, running from St. Cloud to Lake Nona. MetroPlan Orlando's 2040 Long-Range Transportation Plan also calls for premium transit service in the study area, connecting the Innovation Way Industrial Center near SR 528 to the OIA and Lake Nona. The Intermodal Transportation Facility at OIA is envisioned to ultimately include access to bus service, SunRail, and Virgin Trains USA high-speed rail service. The OPE study area could be served by multiple transit technologies.

6.3.1 Future LYNX Forward Long Range Transit Improvements

As part of their long-term planning process (LYNX Forward), LYNX is restructuring their system to provide faster service, decreased headways, and easier-to-understand routes. As part of this effort, LYNX is consolidating and re-structuring their fixed-route bus service in the study area. In the next five to 10 years, the existing LYNX service currently serving the study area will be replaced by four LYNX local routes and two LYNX express routes. The six routes serving the study area will use Nemours Children's Hospital as a transfer point,

[1] Central Florida Expressway Authority Multimodal Investment Assessment; January 2017

providing the ability for riders to use multiple routes. The extent of the future LYNX routes within the study area is illustrated on Figure 6.3.1.

Future LYNX routes include:

- LYNX Route 101: SR 436 Local
- LYNX Route 201: SR 436 Limited Stop Express
- LYNX Route 311: UCF Medical City / Lake Nona Express
- LYNX Route 606: Kissimmee / Lake Nona Local
- LYNX Route 612: Lake Nona / St. Cloud Local
- LYNX Route 621: Lee Visa / Lake Nona Local

6.3.2 Future Park and Ride Locations

To serve the multimodal needs within the study area, park and ride locations at key interchanges could be warranted. Park and ride locations with the highest benefit would be located in the general vicinity of Lake Nona Boulevard, Boggy Creek Road, and at Narcoossee Road. Such facilities could support multiple modes and provide access to key destinations, such as, OIA and Medical City and function as transit stops for express routes and limited stop routes identified in the LYNX Forward Plan.

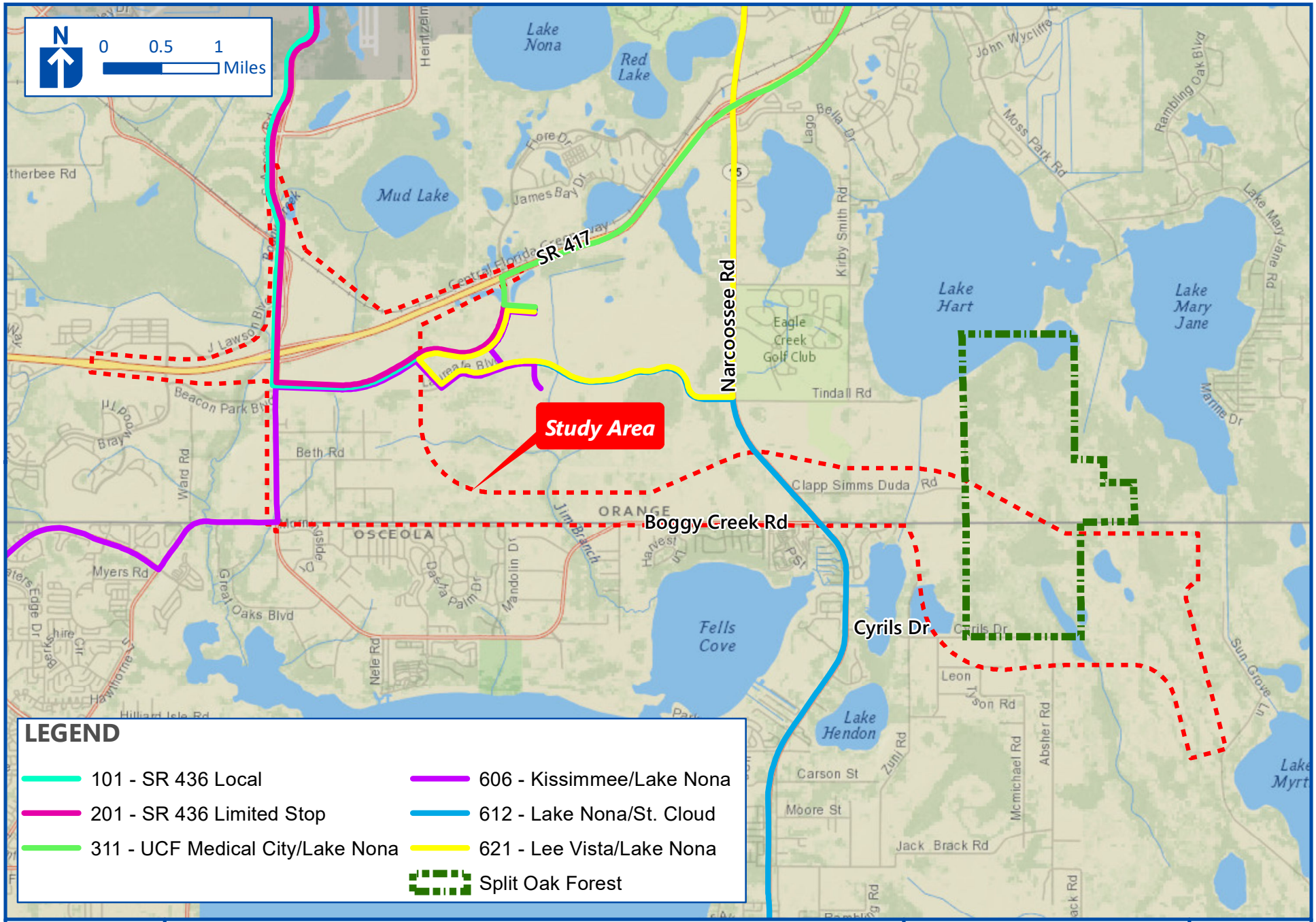
6.3.3 Future Bicycle and Pedestrian Network Connectivity

The OPE overpass locations will provide connectivity to existing and planned multimodal facilities that are intersected by the OPE. Consideration will be given to provide high emphasis crosswalks for cyclists and pedestrians at interchanges to address potential conflicts with motorized vehicles entering and exiting the OPE.

6.4 Tolled Limited-Access Alternatives

Since the No-Build, TSM, and Multi-Modal only alternatives do not meet the purpose and need for this study, tolled limited-access alternatives were evaluated.

A single mainline typical section is proposed for the length of the project. This 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, a four-foot buffer, 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 roadway. The proposed typical section is illustrated on Figure 6.4.1.

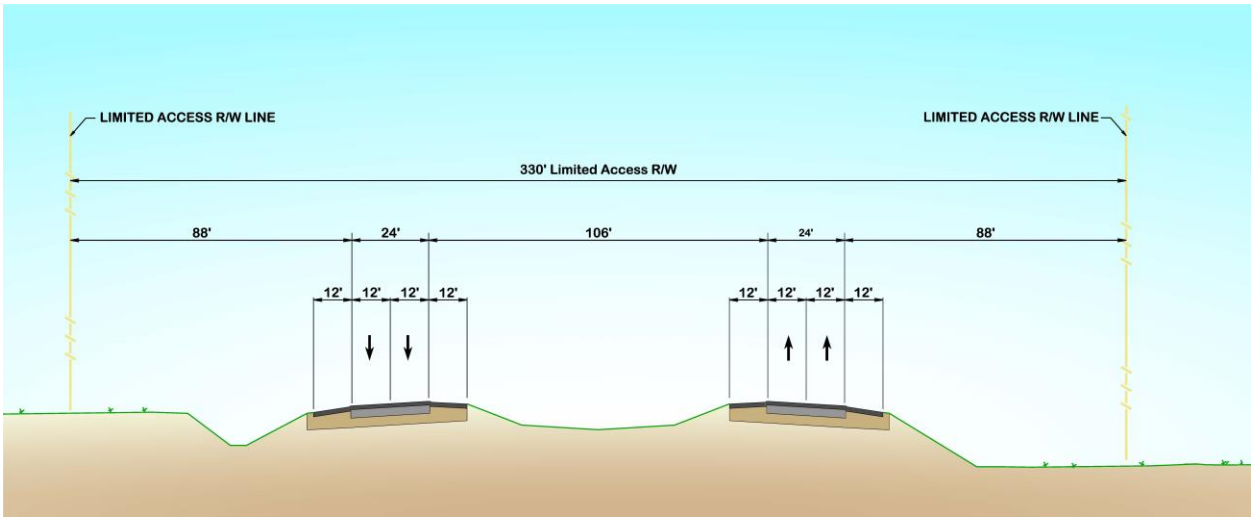


CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Figure 6.3.1
Future LYNX Routes in Study Area

Figure 6.4.1: Proposed OPE Typical Section



The alternatives for the project are split into two segments and are discussed in the subsequent sections:

- West Segment – SR 417 to Narcoossee Road (Section 6.4.1); and
- East Segment – Narcoossee Road to Cyrils Drive (Section 6.4.2).

6.4.1 West Segment

The SR 417 to Narcoossee Road segment features two roadway alternatives. The two alternatives for the west segment are as follows:

- Boggy Creek Alternative; and
- Lake Nona Alternative.

6.4.1.1 Boggy Creek Alternative

The Boggy Creek Alternative begins with a system-to-system interchange with SR 417 at the same location as the existing local interchange with Boggy Creek Road and SR 417. A noteworthy point is that this alternative has no direct connection between the OPE and Jeff Fuqua Boulevard, which provides access to the OIA. After the system-to-system interchange, the alternative traverses south, paralleling Boggy Creek Road and bridges over three local roads: Lake Nona Boulevard, New Hope Road, and Beth Road.

The Boggy Creek Alternative then turns eastwardly via a 2,865-foot radius curve just north of the Orange / Osceola County line. An interchange with an extension of Simpson Road is located within this curve. This alternative then continues east, paralleling the afore-mentioned county line. As the alignment continues east, an interchange with the planned

extension of Medical City Drive is being provided on the Poitras property, as well as an overpass for a future road which will connect to Boggy Creek Road in Osceola County.

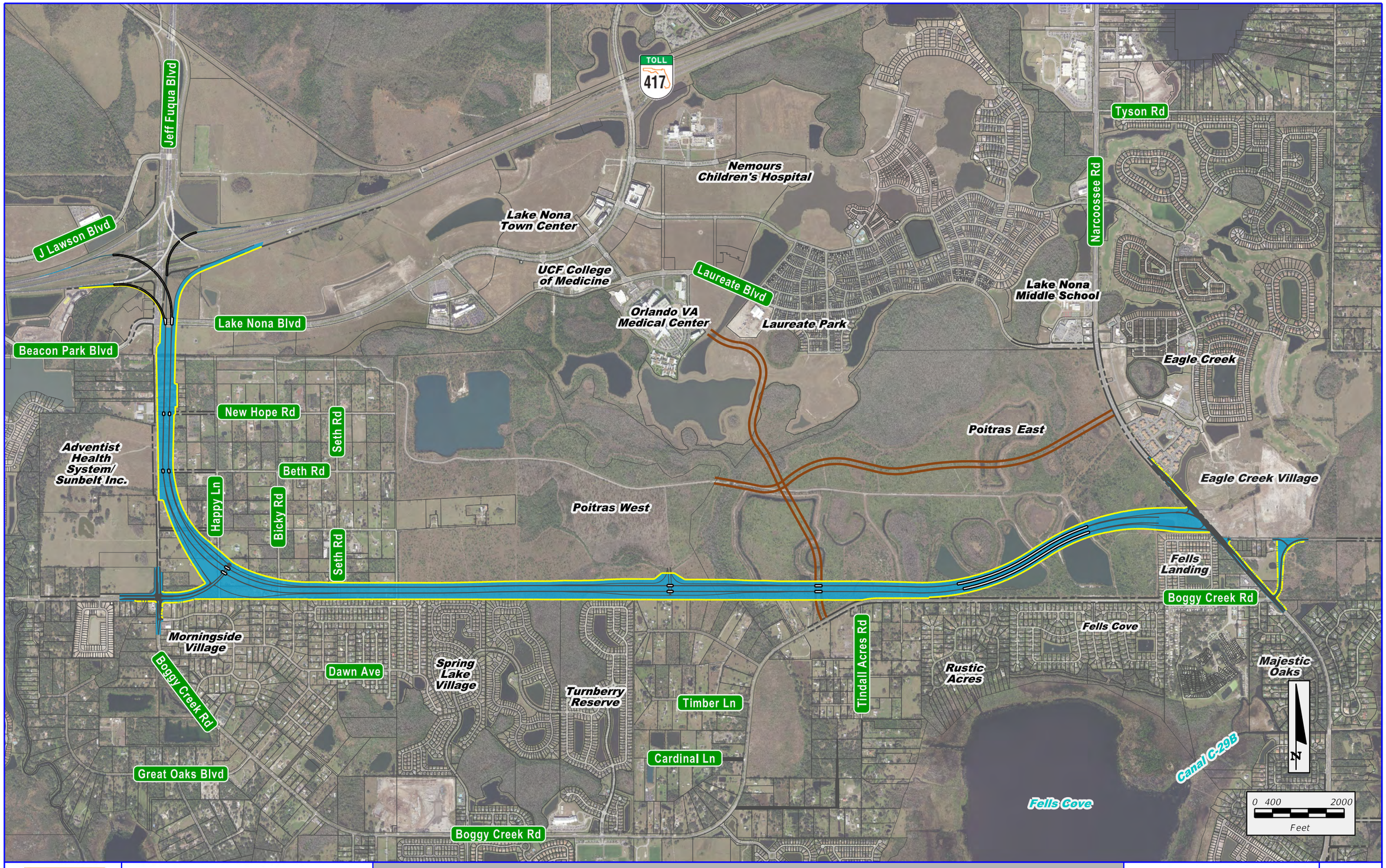
To the east of the overpass of the future connection to Boggy Creek Road, the Boggy Creek Alternative dips slightly south using a 40,077-foot radius curve before entering into a series of curves that turns OPE northeast and then east as it approaches Narcoossee Road. The first curve in this series has a 2,307-foot radius, followed by a tangent of 517 feet, and a second curve with a radius of 2,700 feet. OPE will be constructed on bridges within the reverse curves as they traverse over existing borrow pits, which will also serve as stormwater retention ponds for both the roadway and the future Poitras development.

The Boggy Creek Alternative ends at Narcoossee Road by providing two of the four planned ramps of a SPUI. The bridge over Narcoossee Road and remaining two ramps will be included in the eastern portion of OPE. An overview of this alternative is shown on Figure 6.4.2.

The system-to-system interchange for OPE and SR 417, as shown on Figure 6.4.3, is accomplished by providing ramps between the northbound and southbound exit and entrance ramps on SR 417 and northbound and southbound travel lanes on OPE. The ramp design speeds are 50 mile per hour (mph). The northbound exit ramp from SR 417 to northbound Jeff Fuqua Boulevard will be widened to provide a southbound connection to OPE via a single lane ramp utilizing a 975-foot curved bridge. The curvature of this ramp connection will require a super elevation rate of 9.1 percent.

The southbound ramp from Jeff Fuqua Boulevard to the northbound entrance ramp of SR 417 will be reconfigured to allow for the northbound ramp from OPE. This ramp from OPE is designed using a 955-foot radius and taper-type entrance onto the existing SR 417 entrance ramp prior to the toll collection building. The super elevation rate for this ramp connection is 9.2 percent.

The SR 417 southbound exit ramp to northbound Jeff Fuqua Boulevard will be modified just west of the existing toll facility to provide a connection to southbound OPE. The ramp is a third-level flyover ramp, bridging over mainline SR 417 and the second-level flyover ramp from southbound Jeff Fuqua Boulevard to northbound SR 417. The curvature of this single 15-foot lane ramp is 842 feet, requiring a super elevation rate of 9.7 percent.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

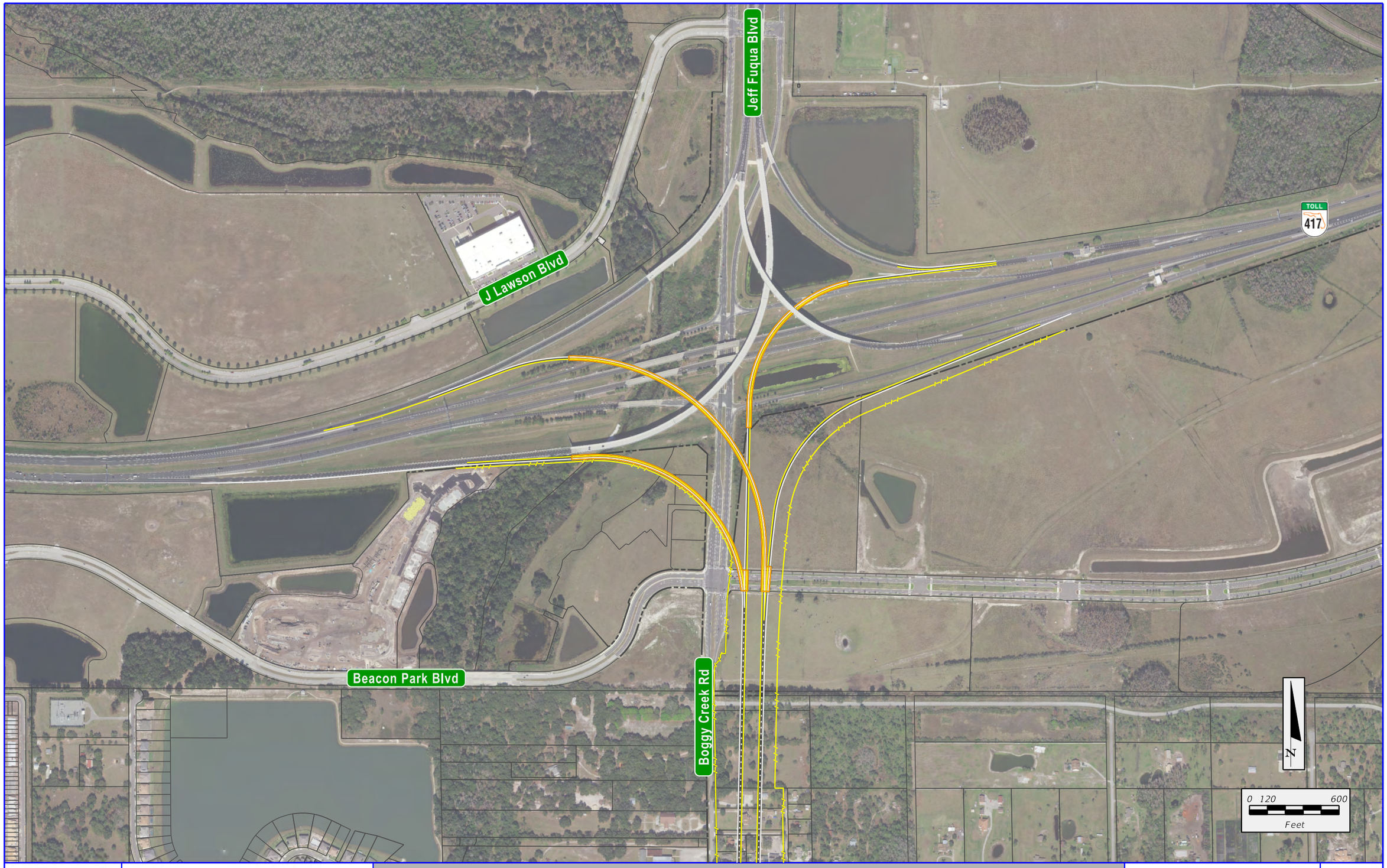
Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Future Roadway by Others
- Alternative Corridor
- Pavement
- Structure

Figure 6.4.2
Boggy Creek Alternative Overview

SHEET NO.
6-7



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Pavement
- Structure

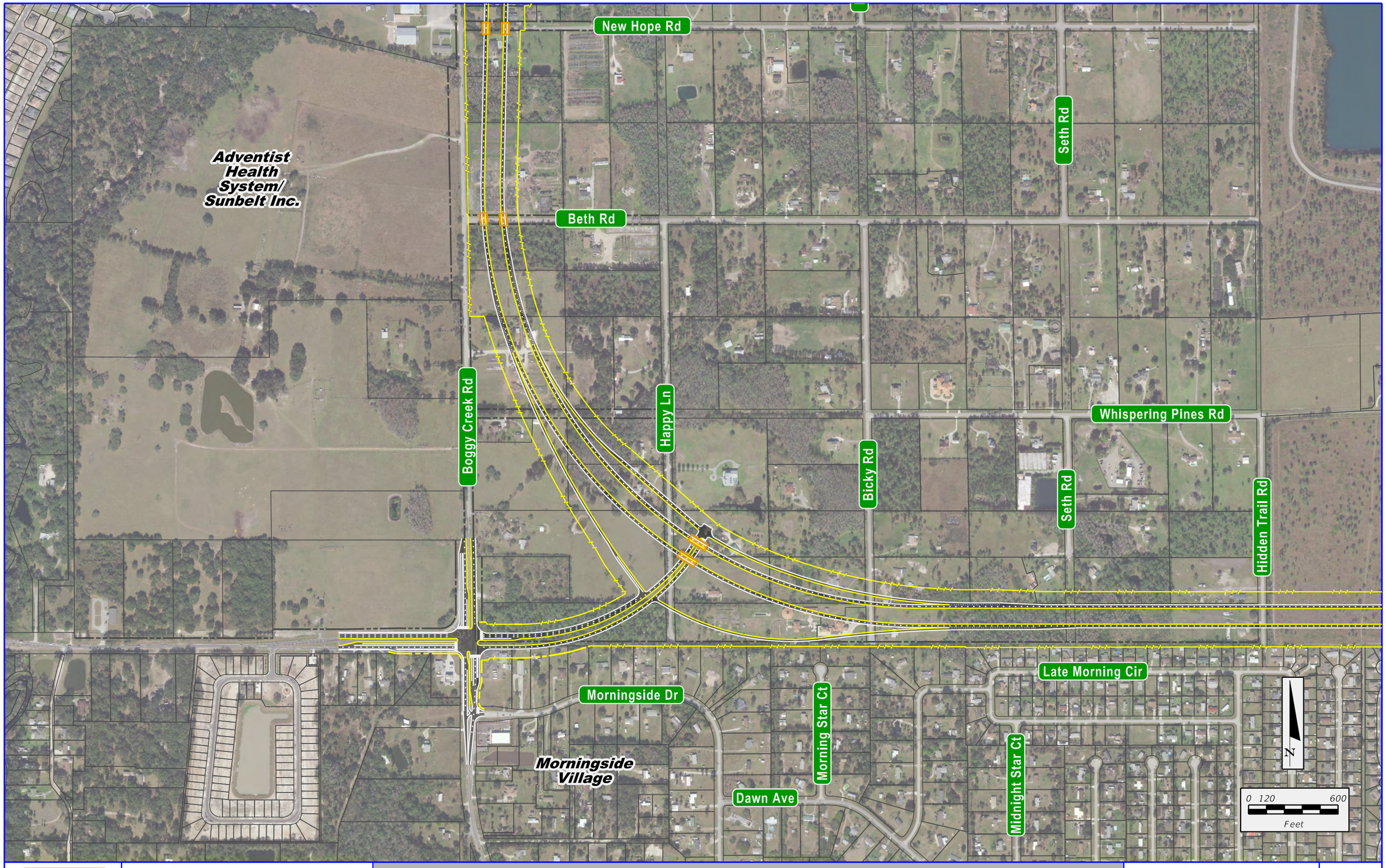
Figure 6.4.3
Boggy Creek Alternative Interchange with SR 417

SHEET NO.
6-8

The last ramp connection from OPE and SR 417 is also a third-level flyover ramp; it connects the northbound OPE to the southbound Jeff Fuqua Boulevard ramp as it turns to the west to connect to southbound SR 417. The existing ramp will be widened to accommodate a parallel-type entrance ramp before joining the SR 417 travel lanes. The proposed flyover ramp will bridge over the existing SR 417 northbound exit ramp to Boggy Creek Road and the second-level flyover ramp from northbound SR 417 to northbound Jeff Fuqua Boulevard. This ramp has a 1,280-foot radius and a super elevation rate of 7.8 percent.

The relationship of the Boggy Creek Alternative to local roads, such as Boggy Creek Road and Narcoossee Road, will require additional local roads to be extended or reconfigured. The interchange at Simpson Road is an extension of an existing road that currently terminates into Boggy Creek Road. This existing intersection will be reconstructed to add through lanes on Simpson Road, and turn lanes from Boggy Creek Road toward OPE providing a crucial link to a major road network. The Simpson Road extension will terminate 300 feet past the radius return of the eastern most ramps from OPE. The reconstruction of the intersection of Boggy Creek Road and Simpson Road, as well as the interchange of Simpson Road with OPE is illustrated on Figure 6.4.4.

Due to the close proximity of the proposed interchange with Narcoossee Road, the Clapp Simms Duda Road intersection will be closed and relocated opposite of Boggy Creek Road. A cul-de-sac will be placed at the new terminus of Clapp Simms Duda Road, prior to Narcoossee Road, to maintain access to residential properties. The realignment of Clapp Simms Duda Road is shown on Figure 6.4.5.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

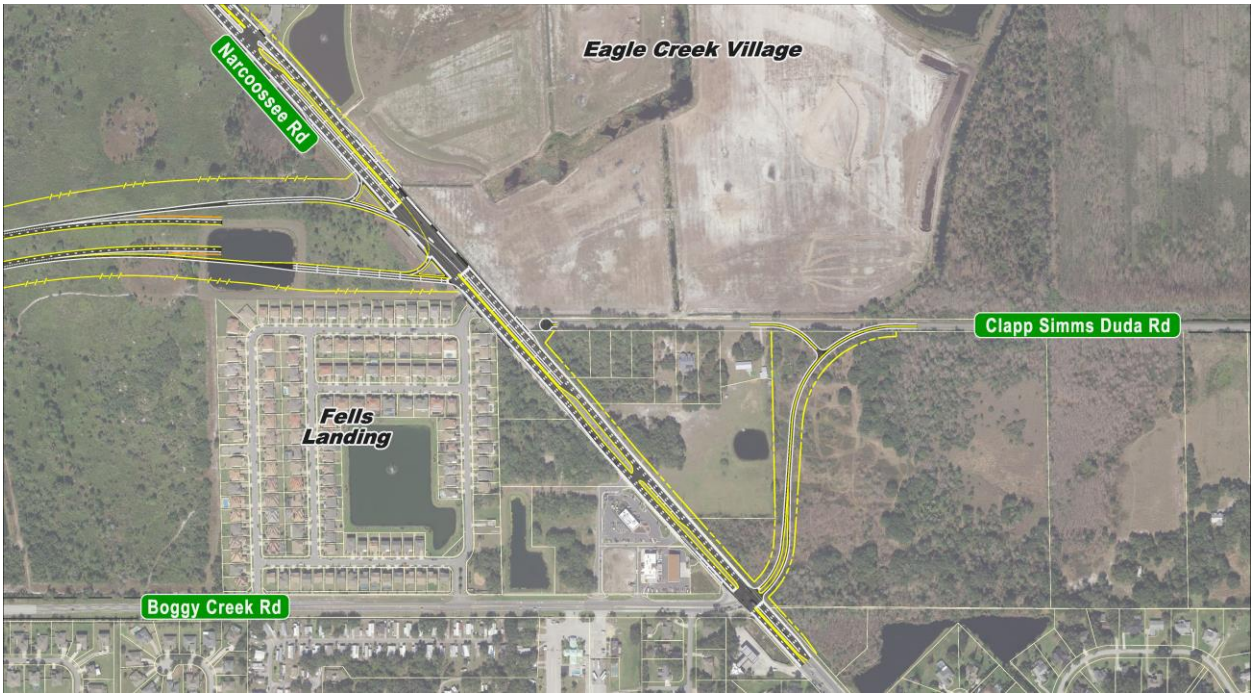
Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Pavement
- Structure

Figure 6.4.4
Boggy Creek Alternative
Interchange with Simpson Road

SHEET NO.
6-10

Figure 6.4.5: Clapp Simms Duda Road Realignment



6.4.1.2 Lake Nona Alternative

Similar to the Boggy Creek Alternative, the Lake Nona Alternative begins with a system-to-system interchange with SR 417. However, unlike the Boggy Creek Alternative, the Lake Nona Alternative provides access to the OIA via Jeff Fuqua Boulevard, which is located approximately 4,500 feet west of the proposed system-to-system interchange between OPE and SR 417. After the interchange, the alternative turns slightly south via a 3,903-foot radius curve, bridges over Lake Nona Boulevard, and provides a partial interchange with Laureate Boulevard. As the alternative continues south, it parallels the right-of-way of a residential area to the west before turning east. The 2,935-foot radius curve turns the alignment east as it approaches the Orange / Osceola County line. An interchange with the extension of Simpson Road is provided within this curve.

The Lake Nona Alternative extends eastward along the county line as it bridges over an extension of Medical City Drive connecting to Boggy Creek Road before turning northeast and then east to Narcoossee Road via a series of curves. The first curve in the series has a 4,651-foot radius, followed by a tangent of 400 feet, and a second curve with a radius of 4,200 feet. OPE will be constructed on bridges within the reverse curves as they traverse over existing borrow pits which will also serve as stormwater retention ponds for both the roadway and the future Poitras development. Once the alignment traverses this series of curves, it is identical to the Boggy Creek Alternative described in Section 6.4.1.1. An overview of the Lake Nona Alternative is shown on Figure 6.4.6.

Greeneway Park
Boggy Creek Rd
Jeff Fuqua Blvd
Boggy Creek Swamp
J Lawson Blvd
Beacon Landing
Lake Nona Blvd
Beacon Park Blvd
Preston Pointe
Bristol Shores
Lake Preserve
Adventist Health System/ Sunbelt Inc.
New Hope Rd
Seth Rd
Beth Rd
Happy Ln
Bicky Rd
Seth Rd
TOLL 417
Lake Nona Town Center
Nemours Children's Hospital
UCF College of Medicine
Orlando VA Medical Center
Laureate Blvd
Laureate Park
Narcoossee Rd
Kirby Smith Rd
Tyson Rd
Lake Nona Middle School
Eagle Creek
Poitras East
Eagle Creek Village
Poitras West
Fells Landing
Boggy Creek Rd
Fells Cove
Lake Ajay Village
Majestic Oaks
Rustic Acres
Tindall Acres Rd
Turnberry Reserve
Timber Ln
Spring Lake Village
Dawn Ave
Morningside Village
Boggy Creek Rd
Quail Ridge
Amberley Park
Saratoga Park
Walmart
Villa Sol
Great Oaks Blvd
Boggy Creek Rd
Fish Camp Rd
Cardinal Ln
Canal C-29B
Lake Ajay
Narcoossee Rd
Fells Cove
Narcoossee Middle School
N
0 500 2500
Feet

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Future Roadway by Others
- Alternative Corridor
- Pavement
- Structure

Figure 6.4.6
Lake Nona Alternative
Overview

SHEET NO.
6-12

The OPE and SR 417 interchange for the Lake Nona Alternative not only accommodates movements to and from SR 417 and the OIA via Jeff Fuqua Boulevard, it also accommodates future connections to Medical City Drive. The planned extension of Medical City Drive from Lake Nona Boulevard bridges over SR 417 with connections to Boggy Creek Road and J Lawson Boulevard.

Several improvements along SR 417 are required to accommodate the ramp movements for the SR 417 interchange. These improvements are as follows:

- Addition of auxiliary lanes:
    - North of the Boggy Creek Road exit on northbound SR 417;
    - South of the Lake Nona Boulevard exit on northbound SR 417;
    - South of the Lake Nona Boulevard entrance ramp on southbound SR 417;
- Ramp realignments:
    - Northbound exit ramp to Boggy Creek Road;
    - Northbound entrance ramp from southbound Jeff Fuqua Boulevard;
    - Northbound exit for Lane Nona Boulevard;
    - Southbound entrance from Lake Nona Boulevard;
    - Southbound exit ramp to northbound Jeff Fuqua Boulevard;
    - Southbound exit ramp to Boggy Creek Road;
    - Southbound entrance ramp from Boggy Creek Road;
    - Southbound entrance ramp from southbound Jeff Fuqua Boulevard;
- Widening of southbound SR 417 from southbound entrance ramp from Boggy Creek Road to the existing toll plaza; and
- Widening of existing bridge over Wyndham Lakes Boulevard.

The system-to-system ramps from OPE and SR 417 begin with reconfiguring the existing two-lane entrance ramp from southbound Jeff Fuqua Boulevard to northbound SR 417. This two-lane ramp splits into two separate entrance ramps on northbound SR 417. The left lane becomes the entrance ramp to SR 417 for vehicles with electronic tolling devices, and the right lane adjoins the entrance ramp from Boggy Creek Road for vehicles utilizing cash. This ramp will be reconfigured to redirect the existing left lane entrance ramp from SR 417 to southbound OPE while bridging over the existing Boggy Creek Road entrance ramp to northbound SR 417. The right lane from southbound Jeff Fuqua Boulevard will continue to adjoin the Boggy Creek Road entrance ramp to northbound SR 417 (no change).

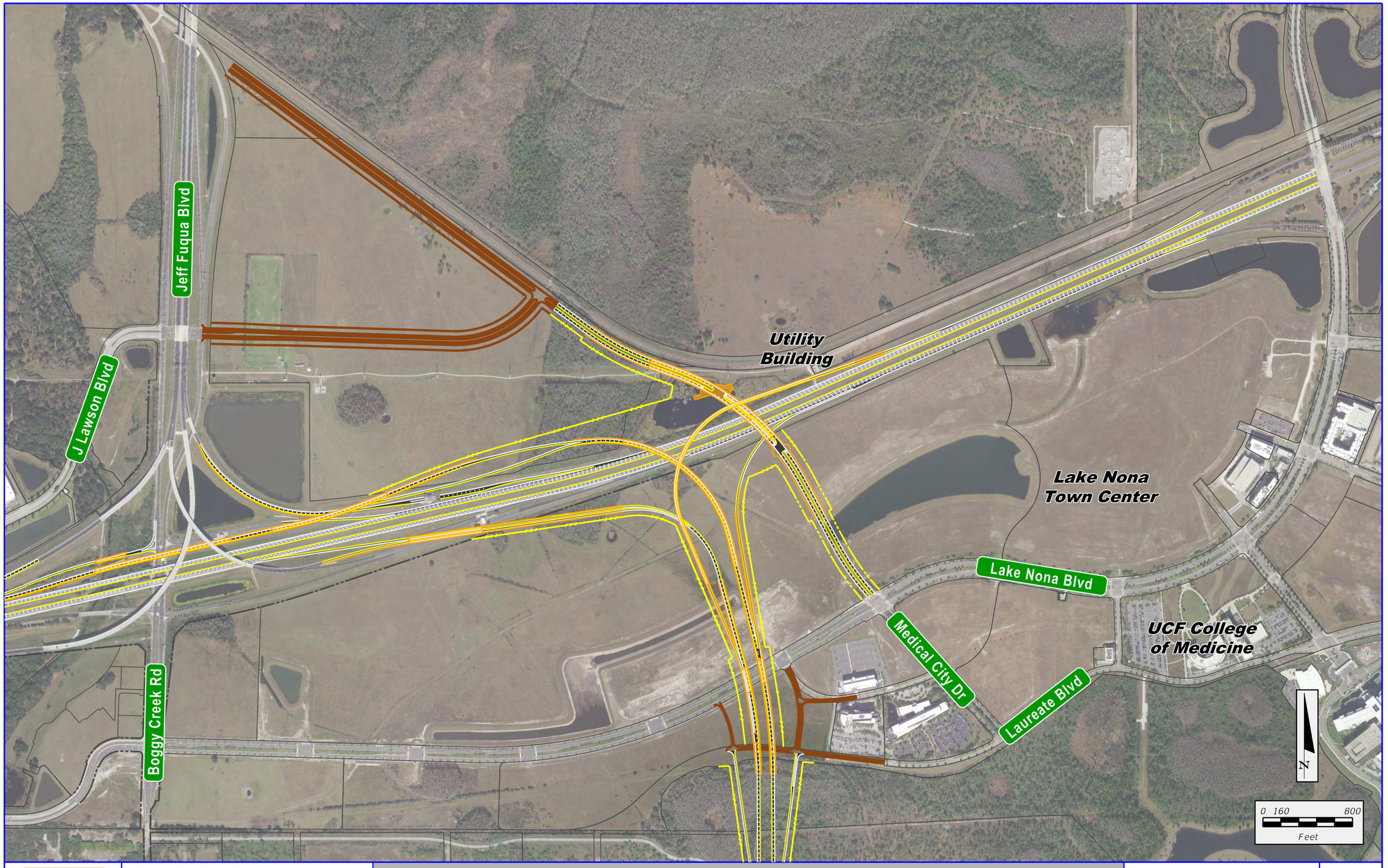
A new exit ramp on northbound SR 417 will be developed from an auxiliary lane, which begins at the existing ramp to Boggy Creek Road and will form the left lane of the two-lane ramp to OPE. The new exit ramp from SR 417 will adjoin the redirected ramp from southbound Jeff Fuqua Boulevard, as described previously, forming the right lane of the two-

lane ramp. A median barrier wall will be required to separate these two movements to avoid weaving conflicts when the future ramp to Medical City Drive is constructed from the left lane. As this barrier-separated, two-lane ramp continues east, the barrier ends, and the two lanes join next to one another. The two lanes continue through a 50 mph, 716-foot radius curve with a super elevation rate of 10 percent. The ramp then transitions south to become the mainline travel lanes for OPE, as shown on Figure 6.4.7.

In the southbound direction on SR 417, an auxiliary lane will be constructed between the entrance ramp from Lake Nona Boulevard and a new exit ramp for traffic traveling to southbound OPE. The distance between entrance and exit ramps is 2,000 feet to provide sufficient weaving distance for vehicles entering and exiting SR 417. After the physical gore with southbound SR 417, the ramp will be constructed on mechanically stabilized earth walls in order to avoid impacts to a local utility building north of SR 417. The ramp climbs to a third-level elevation prior to curving south via an 804-foot radius. The third-level bridge provides a minimum clearance of 16.5 feet over the extension of Medical City Drive. After the overpass of Medical City Drive, the ramp climbs to a fourth-level elevation to bridge over SR 417 and a two-lane, third-level northbound OPE ramp. The ramp from southbound SR 417 to southbound OPE will taper into the mainline travel lanes near the Lake Nona Boulevard overpass.

The northbound lanes on OPE will provide ramp connections to northbound and southbound SR 417, as well as the OIA via Jeff Fuqua Boulevard. The connection to northbound SR 417 is achieved by creating a taper-type exit ramp from the right lane of northbound OPE. The exit ramp curves northeastwardly with a 955-foot radius curve before merging into the northbound SR 417 auxiliary lane that becomes the exit ramp for Lake Nona Boulevard approximately 2,500 feet north. When the future Medical City Drive extension is built, the ramp from northbound SR 417 to southbound OPE to Medical City Drive and the Medical City Drive extension will both bridge over this at-grade ramp.

The northbound OPE connection to southbound SR 417 and the OIA via Jeff Fuqua Boulevard is accomplished by a 1,146-foot radius flyover ramp. This ramp requires a third-level elevation due to the need to bridge over the planned Medical City Drive ramp connection from northbound SR 417 to southbound OPE exit ramp. The two-lane northbound exit ramp diverges after overpassing SR 417. The left lane proceeds downward to meet the exit ramp from southbound SR 417 to northbound Jeff Fuqua Boulevard, creating a two-lane ramp that merges into the existing ramp to Jeff Fuqua Boulevard.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Future Roadway By Others
- SR 417 Widening Project
- Pavement
- Structure

Figure 6.4.7
Lake Nona Alternative
Interchange with SR 417

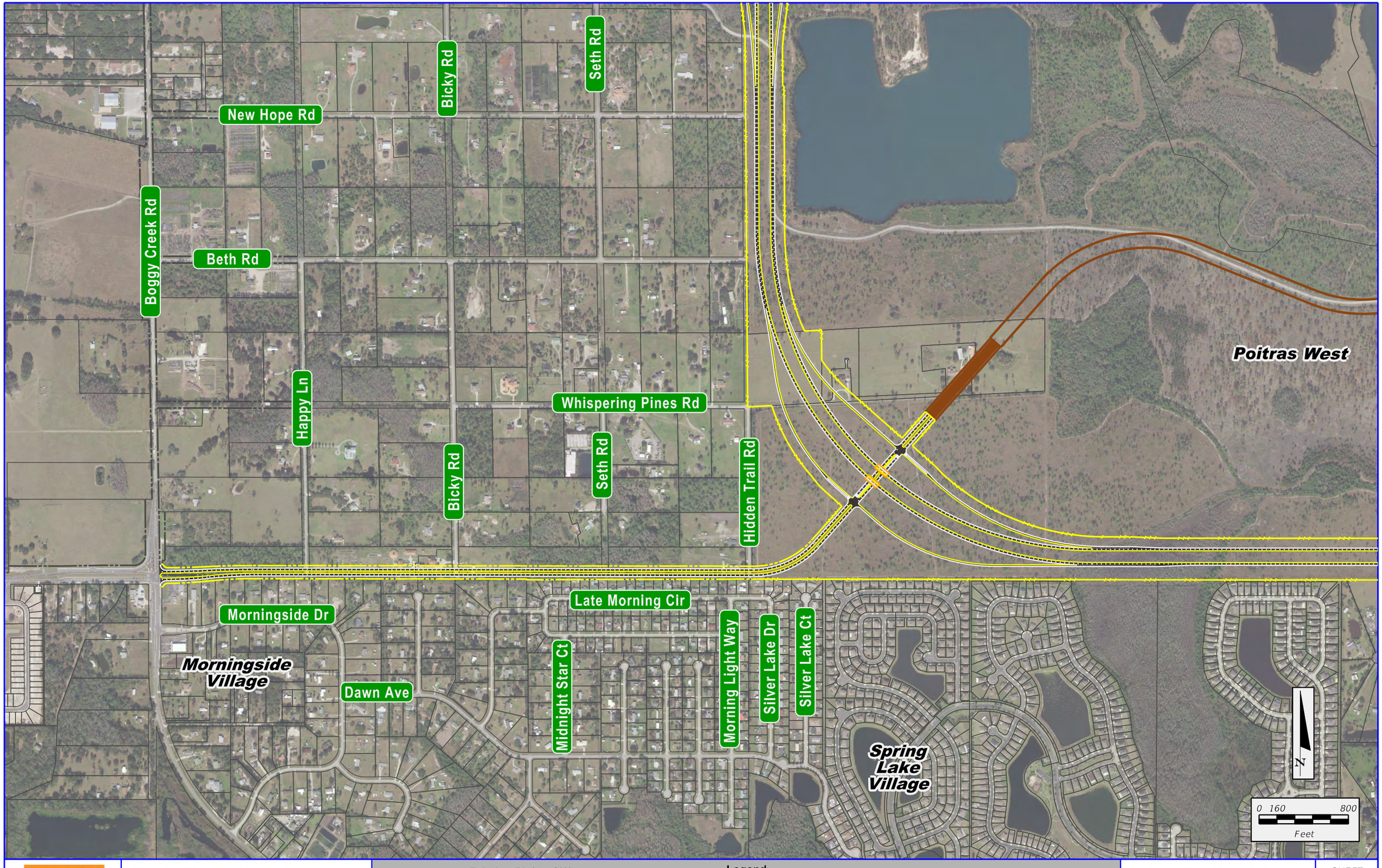
SHEET NO.
6-15

After the divergence, the right lane will be widened into two lanes before crossing over the two exit ramps from southbound SR 417. The second lane will be reconfigured when the future ramp from Medical City Drive is constructed. This two-lane ramp continues west, paralleling southbound SR 417 as it passes under the two flyover ramps from the existing system-to-system interchange with Boggy Creek Road and SR 417. This two-lane exit ramp will continue over Boggy Creek Road and Boggy Creek. The ramp is barrier separated from southbound SR 417 until it reaches the Boggy Creek Main toll plaza as described in Section 2.16, where it merges with the realigned entrance ramp from southbound Jeff Fuqua Boulevard.

The Simpson Road interchange occurs within the curve of OPE as it transitions from a south to east direction. Simpson Road will be extended eastwardly from its intersection with Boggy Creek Road; the extension will be a four-lane roadway with a 22-foot median. The median will be widened at the intersection of Boggy Creek Road in order to match existing Simpson Road. Once the Simpson Road median narrows to 22 feet, it will parallel the Orange / Osceola County line as it travels east toward OPE. Simpson Road will curve northeast via a 751-foot radius curve to provide a perpendicular crossing of OPE. The extension will be carried 350 feet beyond the radius return of the eastern most OPE ramp. See Figure 6.4.8 for more information.

6.4.1.3 OCX PD&E Preferred Alternative

The OCX PD&E Preferred Alternative for the west segment as defined in this PD&E Study is a combination of the West and Central segment alternatives (W-4A2 and C-1) from the OCX Study. The OCX Western Preferred Alternative includes an interchange at SR 417 and Boggy Creek Road with direct connections to the OIA. The OPE alignment then parallels Boggy Creek Road before turning east near Simpson Road. An interchange with Boggy Creek / Simpson Road is included in this alternative. The OPE alignment continues east parallel to the Orange / Osceola County line. An interchange with the planned extension of Medical City Drive is provided on the Poitras property. The alignment continues to the east to an interchange with Narcoossee Road. The OCX PD&E Western Preferred Alternative is shown on Figure 6.4.9.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

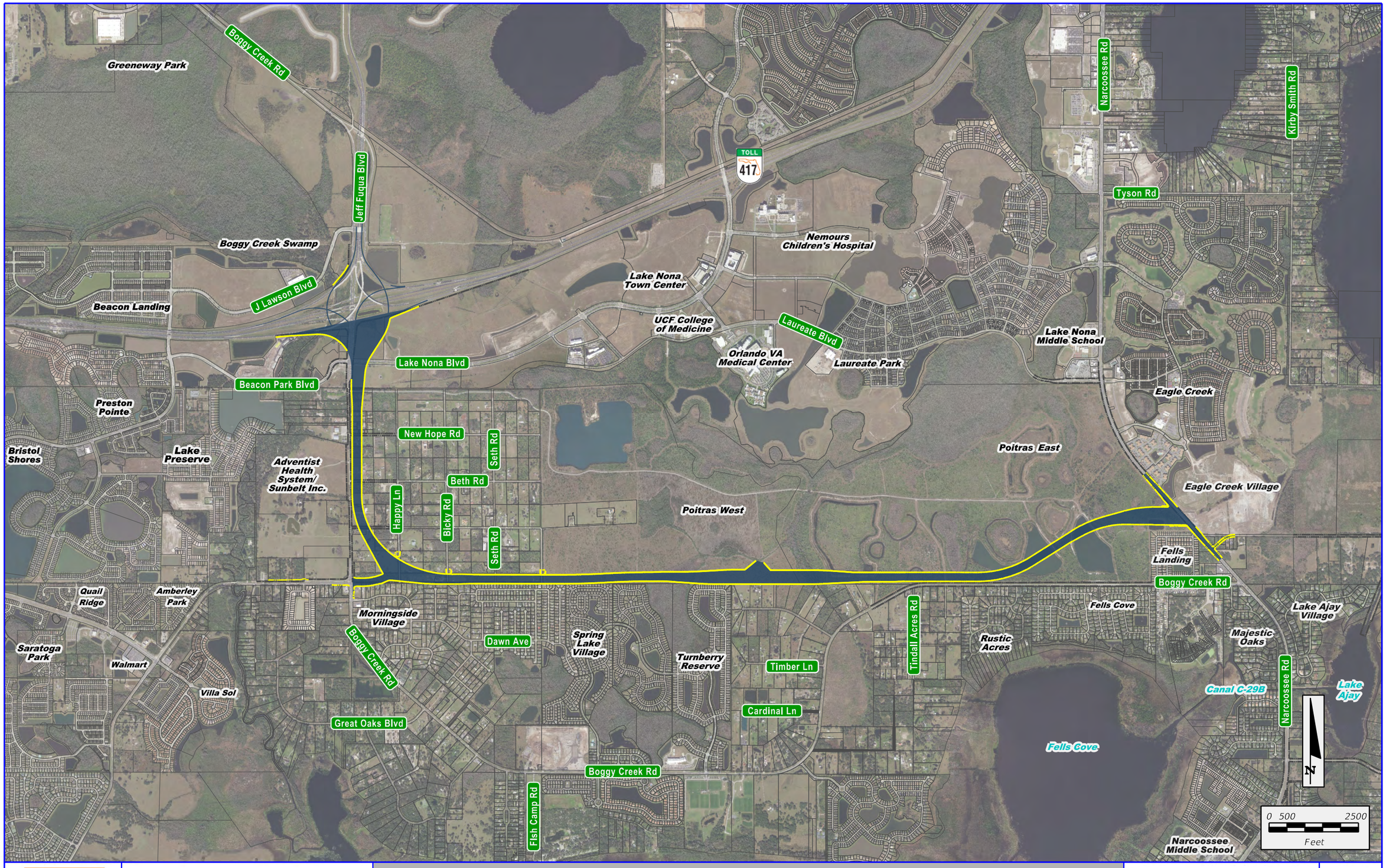
Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Future Roadway By Others
- Pavement
- Structure

Figure 6.4.8
Lake Nona Alternative
Interchange with Simpson Road

SHEET NO.
6-17



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Right-of-Way
- OCX Preferred Alternative
- Proposed Limited Access Right-of-Way
- Property Lines

Figure 6.4.9
OCX West
Preferred Alternative

SHEET NO.
6-18

6.4.1.4 Comparison of Alternatives to OCX Preferred Alternative

The Boggy Creek Alternative is similar to the OCX Preferred Alternative with the following exceptions:

- Does not include direct connection to OIA;
- A consistent 330-foot typical section (compared to 252-foot and 257-foot typical sections);
- Relocates Clapp Simms Duda Road to align with the eastern terminus of Boggy Creek Road at Narcoossee Road; and
- Includes minor geometric shifts to comply with 70 mph horizontal curve and seven percent superelevation criteria on the OPE mainline.

The Lake Nona Alternative has more changes from the OCX Preferred Alternative; the most substantive changes contained in the Lake Nona Alternative include:

- No interchange at SR 417 and Boggy Creek Road;
- Includes a new directional interchange between OPE and SR 417, approximately one mile east of the SR 417 and Boggy Creek Road interchange;
- Includes a partial interchange (ramps to and from the south only) with Laureate Boulevard to serve the Lake Nona properties;
- Includes the Boggy Creek Road / Simpson Road interchange but on the Poitras West property, resulting in long connector ramps to Boggy Creek Road;
- Does not include an interchange at the planned Medical City Drive extension on the Poitras property; and
- Relocates Clapp Simms Duda Road to align with the eastern terminus of Boggy Creek Road at Narcoossee Road.

Figure 6.4.10 shows the two west alternatives compared to the OCX Preferred Alternative.

Greeneway Park
Boggy Creek Rd
Jeff Fuqua Blvd
Boggy Creek Swamp
J Lawson Blvd
Beacon Landing
Lake Nona Blvd
Beacon Park Blvd
Preston Pointe
New Hope Rd
Seth Rd
Beth Rd
Happy Ln
Bicky Rd
Bristol Shores
Lake Preserve
Adventist Health System/ Sunbelt Inc.
TOLL 417
Lake Nona Town Center
Nemours Children's Hospital
UCF College of Medicine
Orlando VA Medical Center
Laureate Blvd
Laureate Park
Lake Nona Middle School
Narcoossee Rd
Kirby Smith Rd
Tyson Rd
Eagle Creek
Poitras East
Eagle Creek Village
Poitras West
Fells Landing
Boggy Creek Rd
Fells Cove
Lake Ajay Village
Majestic Oaks
Rustic Acres
Tindall Acres Rd
Turnberry Reserve
Timber Ln
Spring Lake Village
Dawn Ave
Morningside Village
Quail Ridge
Amberley Park
Saratoga Park
Walmart
Villa Sol
Great Oaks Blvd
Fish Camp Rd
Cardinal Ln
Canal C-29B
Lake Ajay
Narcoossee Middle School
N
0 500 2500
Feet

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Property Lines
- Future Roadway by Others
- Boggy Creek Alternative
- Lake Nona Alternative
- OCX Preferred Alternative

Figure 6.4.10
Comparison of West Alternatives

SHEET NO.
6-20

6.4.2 East Segment

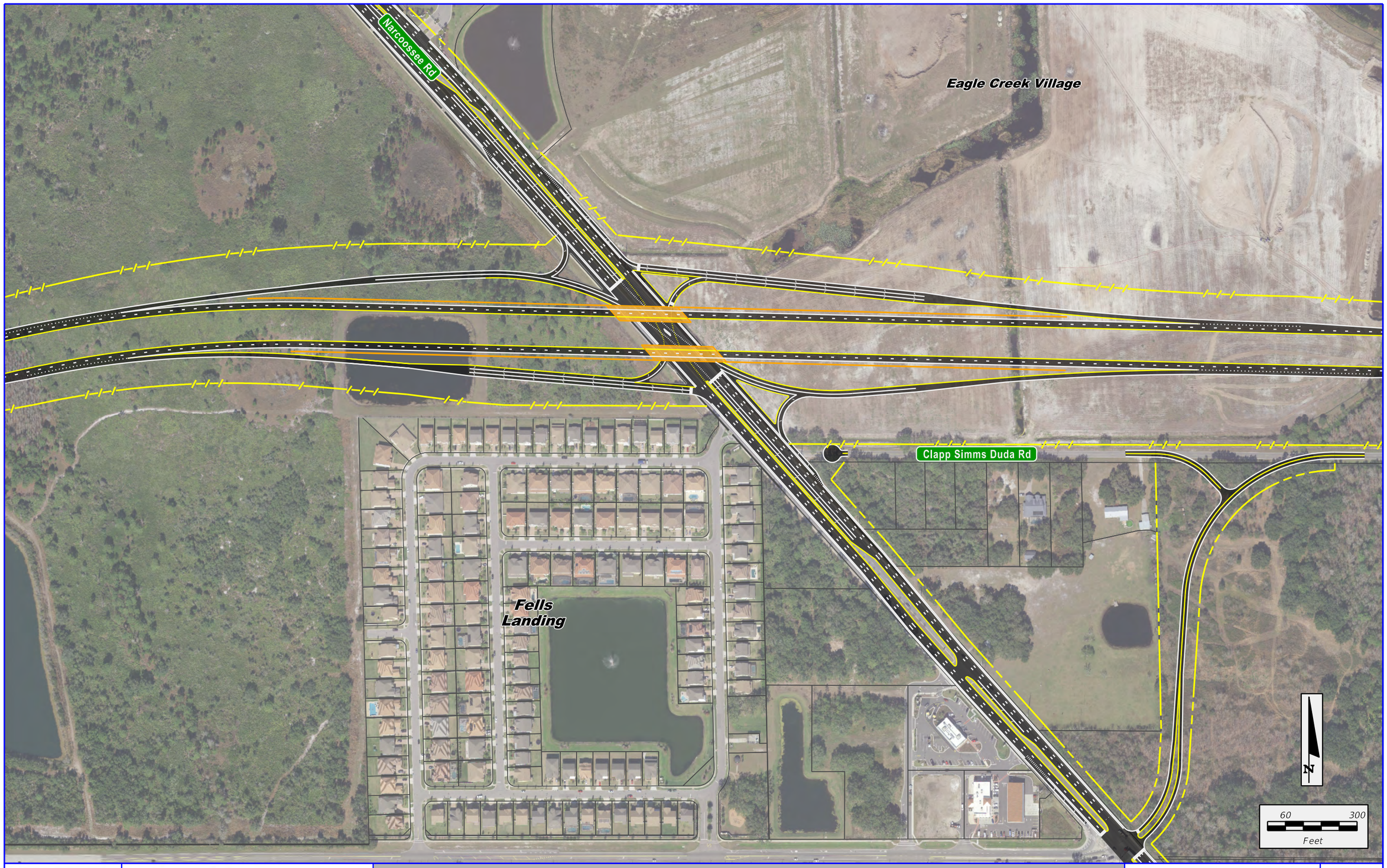
The Narcoossee Road to Cyrils Drive segment features two roadway alternatives. The two alternatives for the east segment are the Split Oak Minimization Alternative and the Split Oak Avoidance Alternative. Each of these alternatives begin in the same manner, which is to construct the bridge over Narcoossee Road and the two eastern ramps of the SPUI interchange at Narcoossee Road, described in Section 6.4.1.1 and shown on Figure 6.4.11.

6.4.2.1 Split Oak Minimization Alternative

After bridging Narcoossee Road, the Split Oak Minimization Alternative continues east, north of and parallel to Clapp Simms Duda Road before turning southeast through a 2,865-foot radius curve that begins just west of Canal C-29A. The alternative bridges over Canal C-29-A and Clapp Simms Duda Road within this curve before entering Split Oak Forest, where it travels south before turning east via another 2,865-foot radius curve. As the alignment crosses through Split Oak Forest, a bridge is provided as a wildlife crossing that will also accommodate the future Florida Scenic Trails path. Utilizing a horizontal curve with a radius of 3,000 feet, the alternative turns south, bridging over the new arterial roadway (proposed Sunbridge Parkway extension). A local access interchange provides access to and from the OPE. The Split Oak Minimization Alternative continues south, passing through the north portion of the proposed Northeast District, where the alternative terminates. An overview of this alternative is shown on Figure 6.4.12.

The new Sunbridge Parkway extension and OPE interchange provides access from OPE to Cyrils Drive to the south. To the north, the Sunbridge Parkway extension terminates approximately 250 feet beyond the radius returns of the ramps, where it will be extended in the future by others.

All of the interchange ramps for the Sunbridge Parkway extension will be consolidated at a single signalized intersection located approximately 530 feet north of the OPE mainline lanes. This configuration provides a distance of 1,600 feet between the signal at the Cyrils Drive intersection and the interchange ramps as shown on Figure 6.4.13.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

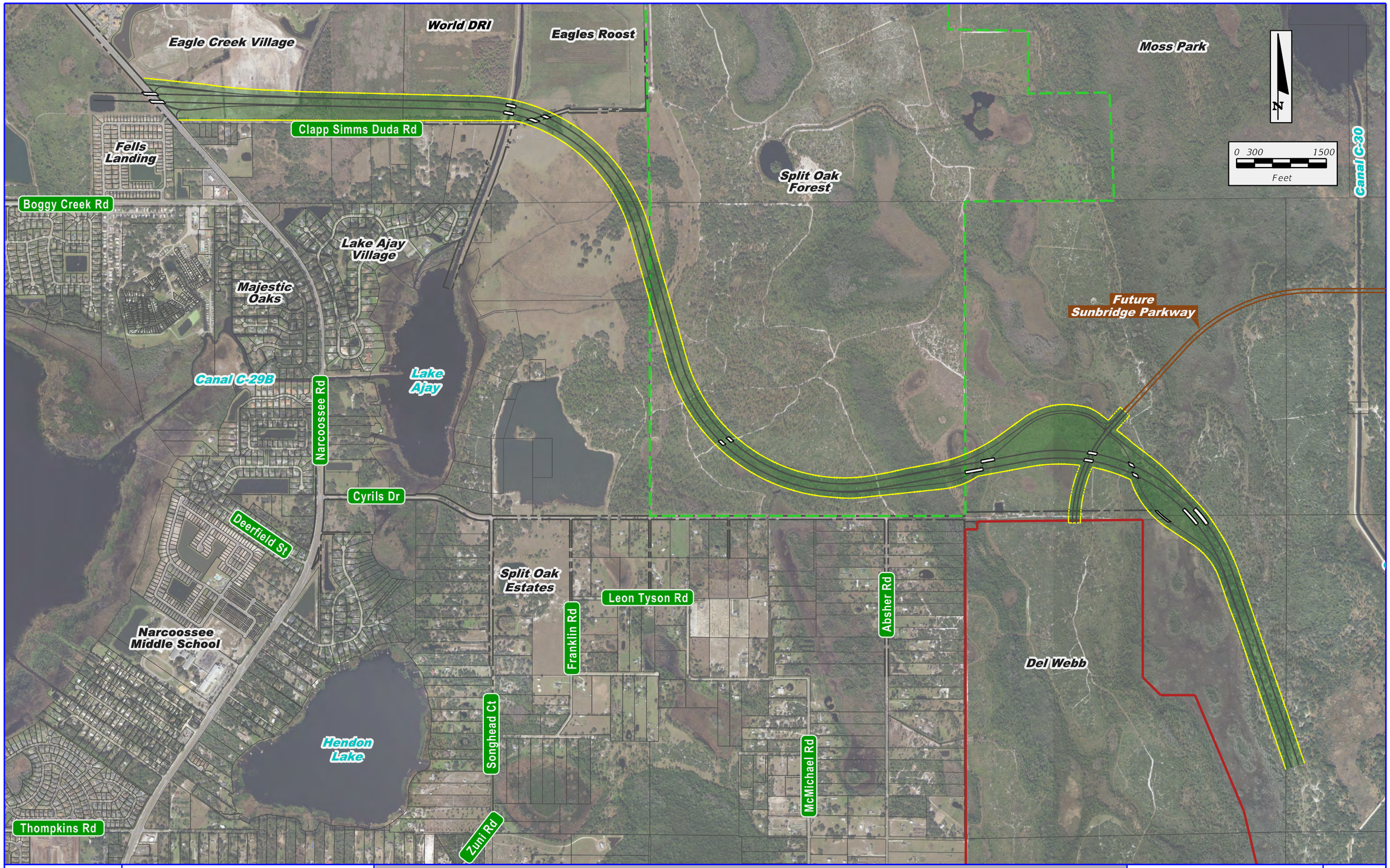
Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Pavement
- Structure

Figure 6.4.11
OPE Interchange with
Narcoossee Road

SHEET NO.
6-22



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Split Oak Forest Boundary
- Alternative Corridor
- Pavement
- Structure

Figure 6.4.12
Split Oak Minimization Alternative Overview

SHEET NO.
6-23

Split Oak Forest

Future Sunbridge Parkway

N

0 160 800

Feet

Cyrils Dr

Leon Tyson Rd

Franklin Rd

Absher Rd

Del Webb

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proosed Right-of-Way
- Property Lines
- Future Roadway by Others
- Split Oak Forest Boundary
- Pavement
- Structure

Figure 6.4.13
Split Oak Minimization Alternative
Sunbridge Parkway Interchange

SHEET NO.

6-24

6.4.2.2 Split Oak Avoidance Alternative

As previously stated, the Split Oak Avoidance Alternative matches the Split Oak Minimization Alternative as it bridges over Narcoossee Road. The Split Oak Avoidance Alternative also continues east before turning south via a 2,865-foot radius curve. The curve in the Split Oak Avoidance Alternative occurs approximately 1,550 feet prior to the curve used for the Split Oak Minimization Alternative. The Split Oak Avoidance Alternative continues south for a distance of 888 feet before turning to the east via a 2,865-foot radius curve, then continues along Cyrils Drive. This alternative is located west of Split Oak Forest and east of the Lake Ajay Village residential community. The alignment will bridge over an existing borrow pit and Cyrils Drive.

As the alternative continues east, the existing Cyrils Drive will be reconstructed into a pair of one-way frontage roads, one on each side of OPE. Connections are provided between Cyrils Drive and OPE by utilizing slip ramps before and after the bridge over Absher Road. These connections create an interchange configuration that provides access to the existing communities south of Cyrils Drive and the new developments east and west of Split Oak Forest (Del Webb, Northeast District, and Southern Oaks). An overview of the Split Oak Avoidance Alternative is shown on Figure 6.4.14.

The OPE mainline bridges, the Cyrils Drive frontage road bridges, and the ramp bridges will serve as wildlife crossings as they overpass a wetland system that is west of Absher Road. Just east of the Absher Road overpass, OPE bridges over a new crossroad (Sunbridge Parkway extension) that will provide access to the Del Webb development to the south. OPE also bridges over the Cyrils Drive extensions that provide access to the Northeast District. Just east of the Sunbridge Parkway extension, OPE turns south via a 2,865-foot radius curve, ending in the same manner as the Split Oak Minimization Alternative. An overview of Cyrils Drive is shown on Figure 6.4.15.

6.4.2.3 OCX PD&E Preferred Alternative

The OCX PD&E Preferred Alternative for the east segment is E-5A2B. The OCX Eastern Preferred Alternative begins at the Narcoossee Road interchange, then runs north of and parallel to Clapp Simms Duda Road before turning southeast near Canal C-29A. The alignment continues on a southeast alignment, intersects the Split Oak Forest Property north of the Orange / Osceola County line, crosses the county line in Split Oak Forest, and exits Split Oak Forest north of Cyrils Drive. A system interchange with the future Northeast Connector Expressway is located shortly after the alignment exits Split Oak Forest. This alternative includes a two-mile connection to the proposed Sunbridge Parkway. The OCX Eastern Preferred Alternative is shown on Figure 6.4.16.

Eagle Creek Village
World DRI
Eagles Roost
Moss Park
Clapp Simms Duda Rd
Fells Landing
Boggy Creek Rd
Lake Ajay Village
Majestic Oaks
Split Oak Forest
Canal C-30
0 300 1500
Feet
N
Future Sunbridge Parkway
Canal C-29B
Lake Ajay
Narcoossee Rd
Southern Oaks
Northeast District
Cyrils Dr
Deerfield St
Split Oak Estates
Leon Tyson Rd
Absher Rd
Franklin Rd
Narcoossee Middle School
Del Webb
Songhead Ct
McMichael Rd
Hendon Lake
Thompkins Rd
Zuni Rd

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Split Oak Forest Boundary
- Alternative Corridor
- Pavement
- Structure

Figure 6.4.14
Split Oak Avoidance Alternative Overview

SHEET NO.
6-26

Split Oak Forest

Future Sunbridge Parkway

N

0 160 800

Feet

Leon Tyson Rd

Franklin Rd

Absher Rd

Del Webb

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Split Oak Forest Boundary
- Pavement
- Structure

Figure 6.4.15
Split Oak Avoidance Alternative
Cyrils Drive Interchange

SHEET NO.

6-27

Eagle Creek Village
World DRI
Eagles Roost
Moss Park
Clapp Simms Duda Rd
Fells Landing
Split Oak Forest
Canal C-30
Boggy Creek Rd
Lake Ajay Village
Majestic Oaks
Canal C-29B
Lake Ajay
Narcoossee Rd
Cyrils Dr
Deerfield St
Split Oak Estates
Leon Tyson Rd
Franklin Rd
Absher Rd
Narcoossee Middle School
Del Webb
Songhead Ct
McMichael Rd
Hendon Lake
Zuni Rd
Thompkins Rd

N

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Feet

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Proposed Right-of-Way
- Property Lines
- Split Oak Forest Boundary
- OCX Preferred Alternative

Figure 6.4.16
OCX East
Preferred Alternative

SHEET NO.
6-28

6.4.2.4 Comparison of Alternatives to OCX Preferred Alternative

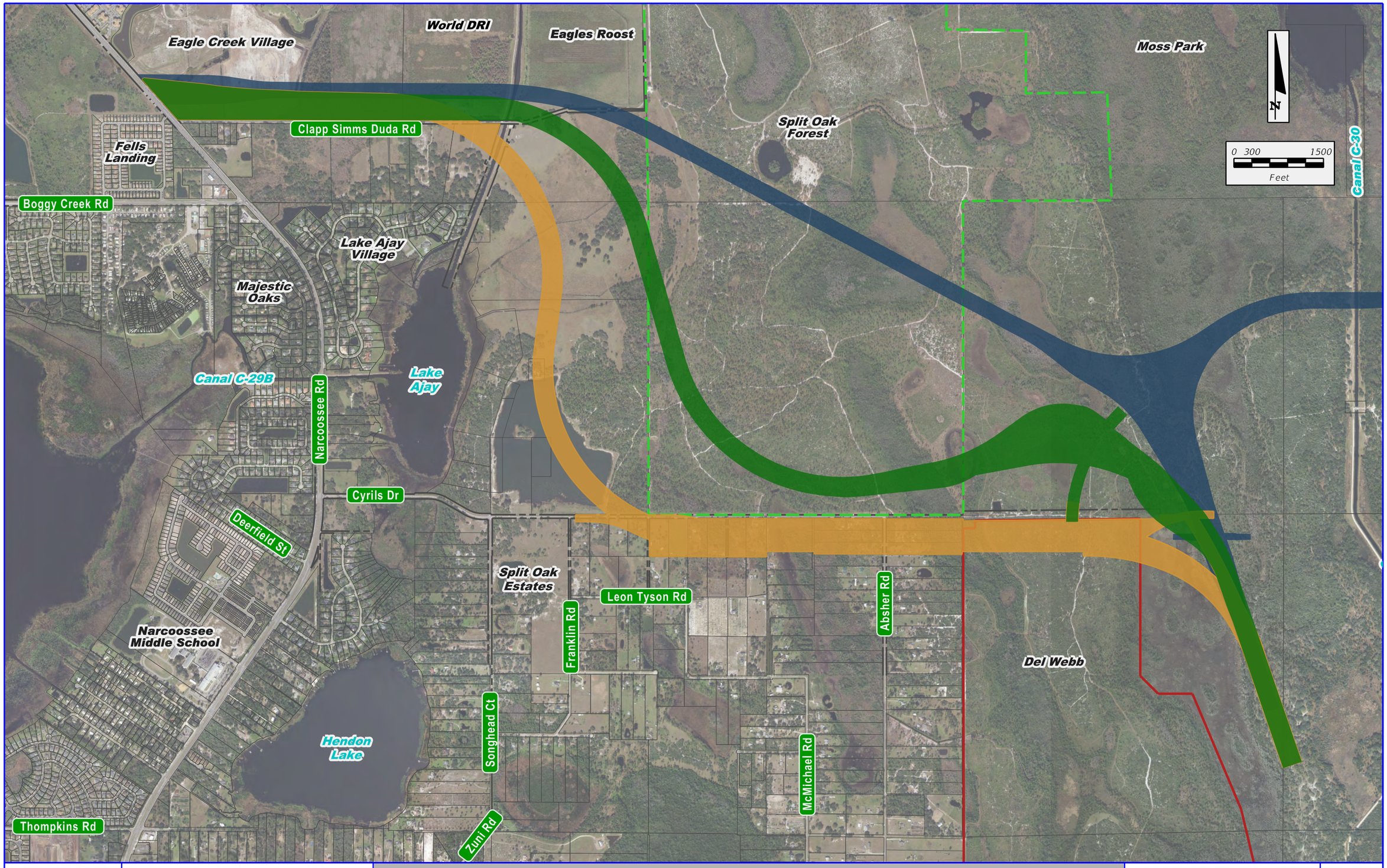
The Split Oak Minimization Alternative is the most similar to the OCX Preferred Alternative but attempts to minimize the impacts to Split Oak Forest. The most notable differences include:

- A consistent 330-foot wide typical section (compared to 400-foot and 264-foot typical sections).
- Does not impact Split Oak Forest in Orange County;
- Crosses Split Oak Forest near the southern boundary instead of crossing in the middle;
- Includes a local interchange with Sunbridge Parkway extension / Cyrils Drive instead of a system-to-system interchange with the Northeast Connector; and
- Does not include the connection to the future Sunbridge Parkway (assumes it will be built by others).

The Split Oak Avoidance Alternative has significant changes from the OCX Preferred Alternative, the most significant changes include:

- A consistent 330-foot wide typical section (compared to 400-foot and 264-foot typical sections).
- Does not impact Split Oak Forest in Orange County or Osceola County;
- Turns southeast before Canal C-29A, which brings the alignment closer to residential developments (Lake Ajay), and crosses a large borrow pit near Cyrils Drive;
- Involves converting Cyrils Drive to a one-way frontage road;
- Includes a local interchange with Cyrils Drive instead of a system-to-system interchange with the Northeast Connector; and
- Does not include the connection to the future Sunbridge Parkway (assumes it will be built by others).

Figure 6.4.17 shows the two east alternatives compared to the OCX Preferred Alternative.



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend

- Existing Right-of-Way
- Property Lines
- Split Oak Forest Boundary
- OCX Preferred Alternative
- Split Oak Minimization Alternative
- Split Oak Avoidance Alternative

Figure 6.4.17
Comparison of East Alternatives

SHEET NO.
6-30

6.5 Bridge Analysis

6.5.1 Boggy Creek Alternative

The Boggy Creek Alternative begins at the SR 417 and Boggy Creek Road interchange. Three 29'-8" wide multi-span ramps at the OPE and SR 417 interchange will utilize Florida U-Beams due to the horizontal curve geometry and for consistency with adjacent interchanges. The first ramp is a 1,515-foot long exit ramp from SR 417 northbound to southbound OPE. The second ramp is a 2,175-foot long exit ramp from northbound OPE to southbound SR 417. Just before these two ramps touch down onto OPE, they transition into adjacent single span bridges spanning a maximum of 170 feet over Lake Nona Boulevard. The third ramp is a 1,300-foot long exit ramp from southbound SR 417 to southbound OPE.

The OPE mainline then crosses New Hope Road and Beth Road via two sets of parallel bridges that span roughly 80 feet long with a width of 50'-8". At the OPE and Simpson Road interchange, the OPE mainline crosses over the Simpson Road extension via twin single span bridges with a span length of approximately 130 feet. OPE also crosses over a future extension of Medical City Drive, where there is an interchange located on the Poitras West property. OPE crosses the Medical City Drive extension via twin single span bridges with an approximate span length of 135 feet. OPE then overpasses a future road connection to Boggy Creek Road (required on the Poitras property by the City of Orlando) via a set of single span bridges with a span length of 165 feet. Lastly, OPE crosses over a set of existing borrow pits, a distance of approximately 3,120 feet, with twin multi-span bridges with moderate horizontal curvature at a clearance of five feet.

The 12 simple structures (all bridges except the three that will utilize Florida U-beams) will consist of prestressed Florida I-Beams. The substructures will be comprised of concrete end bents at begin and end supports. The bridges over non-navigable waters will utilize pile bents for intermediate supports. Single column hammerhead piers will serve as intermediate supports for all other multi-span bridges. The Boggy Creek Alternative has a total of 15 bridges and a total bridge length of 12,668 feet. The estimated structure cost for the Boggy Creek Alternative is $101.5 million.

6.5.2 Lake Nona Alternative

The Lake Nona Alternative begins on SR 417 due east of the Boggy Creek Road interchange. Part of the southbound SR 417 traffic will overpass Wyndham Lakes Boulevard via a single span bridge with a span length of 115 feet and a width of 71'-4" before this traffic ties into the SR 417 mainline. At the SR 417 and Boggy Creek Road interchange, the existing SR 417 southbound entrance ramp bridge from Boggy Creek Road will be removed and realigned for a 275-foot multi-span bridge, spanning over Boggy Creek, with a width varying from 42'-10"

to 29'-8". Adjacent to this bridge is another multi-span bridge that also spans over Boggy Creek Road and Boggy Creek Road. This structure carries OPE northbound traffic to southbound SR 417 and spans a total of 1,260 feet at a width of 44'-8". Further east on this ramp is a roughly 1,070-foot multi-span bridge that is also 44'-8" wide; this structure will carry traffic over the SR 417 southbound ramp onto Boggy Creek Road. The proposed structure will be six spans, four of which range from 150 to 175 feet and utilize prestressed Florida I-Beams. The two remaining 210-foot spans will have a steel superstructure. A straddle pier will most likely be needed to span over the exit ramp below. On northbound SR 417, a tangent 675-foot multi-span bridge with a width of 59'-0" is planned for SR 417 northbound exiting to southbound OPE. A straddle pier will be needed to span over an existing exit ramp at this location.

A 1,625-foot long multi-level multi-span ramp is 44'-8" wide and carries traffic from northbound OPE to southbound SR 417. A second multi-level multi-span ramp is 2,600 feet long and has a width of 29'-8" and carries traffic from southbound SR 417 to southbound OPE. Due to the horizontal curve geometry and for consistency with adjacent interchanges, prestressed Florida U-Beams will be utilized at these two bridges. Under the multi-level ramps is a bridge which serves as the Medical City Drive extension. This bridge is 1,375 feet long and 96'-8" wide. The OPE mainline then crosses over Lake Nona Boulevard via a set of multi-span bridges that are approximately 220 feet long. A set of 90'-0" long single span bridges cross over the future Laureate Boulevard extension. At the OPE and Simpson Road interchange, the OPE mainline crosses over the Simpson Road extension via twin single span bridges with a span length of approximately 130 feet. OPE then overpasses a future road connection to Boggy Creek Road (required on the Poitras property by the City of Orlando) via a set of single span bridges with a span length of 165 feet. Lastly, OPE crosses over a set of existing borrow pits, a distance of approximately 3,120 feet, with twin multi-span bridges with moderate horizontal curvature at a clearance of five feet.

Unless noted otherwise, all structures mentioned will consist of prestressed Florida I-Beams. The substructures will be comprised of concrete end bents at begin and end supports. The bridges over non-navigable waters will utilize pile bents for intermediate supports. Single column hammerhead piers will serve as intermediate supports for all other multi-span bridges. The Lake Nona Alternative has a total of 18 bridges for a total length of 16,677 feet. The structure cost for the Lake Nona Alternative is estimated to be approximately $167.9 million.

6.5.3 Split Oak Minimization Alternative

The Split Oak Minimization Alternative begins with twin multi-span, skewed bridges spanning 240 feet over Narcoossee Road. Further east along OPE, there are twin tangent, single span bridges spanning 170 feet over Canal C-29A. A set of skewed, single span bridges are 160 feet long crossing over Clapp Simms Duda Road. Twin skewed, single span bridges with a span length of 110 feet are provided for the future Florida Greenways Trail and wildlife connectivity in Split Oak Forest. CFX will work with Split Oak Forest to design an elevated structure that minimizes visual and aesthetic disturbances within the park. Approaching the offset interchange for Sunbridge Parkway, an eastbound and westbound tangent multi-span bridge, 305 foot and 230-foot-long, respectively, will carry OPE mainline traffic over the southbound (eastbound) exit ramp. Two skewed single span twin bridges will span 155 feet over Sunbridge Parkway. Two highly skewed single span bridges will span a maximum of 110 feet over the OPE southbound entrance ramp. This entrance ramp also includes a crossing over Cyrils Drive; the bridge will be a 29'-8" wide, multi-span, skewed, and moderately curved bridge spanning 300 feet. The OPE mainline also spans Cyrils Drive with two multi-span tangent bridges with a span length of 345 feet. Other than the entrance ramp bridge, all bridges on the Split Oak Minimization Alternative will be 50'-8" wide. All structures mentioned will utilize prestressed Florida I-Beam girders. The substructure will be comprised of concrete end bents at begin and end supports. Single column hammerhead piers will be used as intermediate supports in the case of multi-span bridges. The Split Oak Minimization Alternative has 17 proposed bridges for a total length of 3,349 feet. The estimated structure cost for the Split Oak Minimization Alternative is $34.5 million.

6.5.4 Split Oak Avoidance Alternative

The Split Oak Avoidance Alternative also begins with twin multi-span, skewed bridges spanning 240 feet over Narcoossee Road. Further east along OPE, a set of tangent multi-span bridges with a span length of 195 feet and 240 feet span over Clapp Simms Duda Road. Another set of tangent single span bridges span 305 feet over Canal C-29A. A set of multi-span bridges with moderate horizontal curvature span over an existing borrow pit for a maximum length of 2,575 feet at a clearance of five feet. Two skewed single span bridges will then span 160 and 185 feet over Cyrils Drive. OPE mainline spans 400 feet over a wetland and acts as a designated wildlife crossing with twin tangent, multi-span bridges. Adjacent to the OPE mainline bridges are two bridges of equivalent span length carrying one 15-foot lane, two-lanes at 23 feet total, six-foot shoulders, and a varying gore area. These two adjacent bridges will serve to carry exiting and entering traffic for Cyrils Drive and the OPE. A set of tangent, multi-span bridges will span 350 feet over Absher Road. At Sunbridge Parkway, twin tangent, single span bridges will span 150 feet. The OPE mainline crosses over the eastbound Cyrils Drive in the Del Webb property via two tangent multi-span bridges with

span lengths of 300 feet and 200 feet. Other than the entrance and exit ramp bridges, all bridges on the Split Oak Avoidance Alternative will be 50'-8" wide. All structures utilize prestressed Florida I-Beam girders. The substructure will be comprised of concrete end bents at begin and end supports. Intermediate supports for the bridges over non-navigable waters and wildlife crossings will utilize pile bents. All other multi-span bridges will utilize single column hammerhead piers. The Split Oak Avoidance Alternative has three additional structures, compared to the Split Oak Avoidance Alternative for a total of 20, but has a significantly longer structure length at 10,010 feet. The estimated structure cost for the Split Oak Avoidance Alternative is $81 million, approximately $46.5 million more than the Minimization Alternative.

Table 6.5.1: Summary of Structures

Evaluation Criteria	Lake Nona	Boggy Creek	Split Oak Minimization	Split Oak Avoidance
Proposed Number of Bridges	18	15	17	20
Proposed Length of Bridges	16,677	12,668	3,349	10,010
Estimated Bridge Construction Cost ($ million)	$167.9	$101.5	$34.5	$81.0

6.6 Vertical Alignment

The proposed roadway profile was designed to be three feet above the existing ground. A 16.5-foot vertical clearance will be implemented where the OPE alignment crosses over another roadway. The proposed roadway profile was also designed to include a five-foot vertical clearance over the existing borrow pits, canals, and ponds. The Split Oak Minimization Alternative includes a structure in Split Oak Forest to allow for trail and wildlife connectivity, this structure was designed to have a vertical clearance of 16.5 feet.

6.7 Access Management

As a limited access tolled freeway, OPE will be a Class 1 Access Management facility. The interchange spacing requirements are determined based on the type of location, Table 6.7.1 shows the freeway spacing requirements. The spacing requirements most appropriate based on the current conditions is Area Type 3, Transitioning Urbanized Areas, which results in a recommended interchange spacing of three miles. The majority of the proposed interchanges do not meet the three-mile suggested interchange spacing and are described further below.

Table 6.7.1: Freeway Interchange Spacing Requirements

Access Class	Area Type	Segment Location	Interchange Spacing (miles)
1	1	Central Business District	1.0
	2	Existing Urbanized Areas Other than Area Type 1	2.0
	3	Transitioning Urbanized Areas, and Urban Areas Other than Area Type 1 or 2	3.0
	4	Rural Areas	6.0

The Lake Nona Alternative has three full and one-half interchanges located at: SR 417, a partial interchange at Laureate Boulevard, at the Simpson Road extension, and at Narcoossee Road. The spacing between the SR 417 and partial Laureate Boulevard interchange is approximately 0.5 mile. The spacing between the partial Laureate Boulevard interchange and the Simpson Road extension interchange is approximately one mile. The Simpson Road extension interchange and the Narcoossee Road interchange are a little over three miles apart (meets spacing requirements).

The Boggy Creek Alternative has four interchanges located at: SR 417, a Simpson Road extension, at the Medical City Drive extension, and at Narcoossee Road. The spacing between SR 417 and the Simpson Road extension is approximately 1.4 miles. The spacing between the Simpson Road extension and the Medical City Drive extension is approximately two miles. The spacing between the Medical City Drive and Narcoossee Road is approximately 2.3 miles.

The Split Oak Minimization Alternative has two interchanges located at: Narcoossee Road and just east of Split Oak Forest. The interchange spacing is approximately 3.5 miles.

The Split Oak Avoidance Alternative has two and one-half interchanges located at: Narcoossee Road, Absher Road, and a partial interchange at Cyrils Drive. The spacing between Narcoossee Road and Absher Road is approximately 3.2 miles and the spacing between the Absher Road interchange and the partial Cyrils Drive interchange is one mile.

6.8 Preliminary Geotechnical

The NRCS Soil Survey maps predominantly depict soils made up of fine sand (A-3) to silty fine sand (A-2-4) with shallow groundwater levels. These materials are generally suitable for roadway construction and are classified by FDOT as Select material. However, the sands are poorly drained and sensitive to moisture compact during compaction efforts. The seasonal

high water table (SHWT) is typically within 3.5 feet of the natural ground surface. Sands with shallow groundwater (<1 foot) are highlighted in pink on the NRCS Soil Survey Maps. As shown on Figures 6.8.1 and 6.8.2, the majority of the alignments are characterized by shallow groundwater levels.

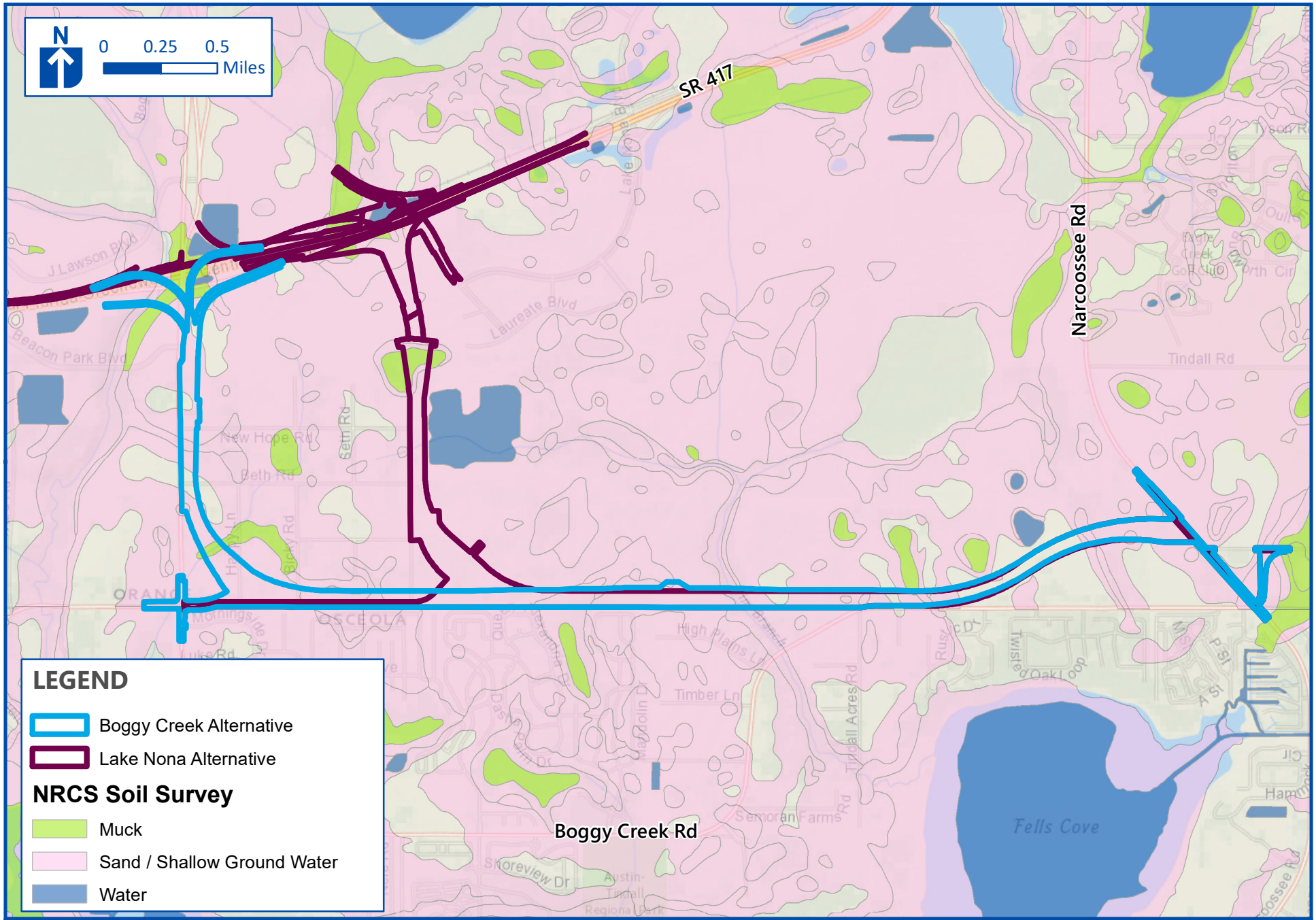
The NRCS Soil Survey also depicts Sanibel, Hontoon, and Samsula muck. Muck is predominantly visible at the intersection of SR 417 and Boggy Creek Road, just east of Narcoossee Road, and near Cyrils Drive. Muck soils are highlighted in green on Figures 6.8.1 and 6.8.2 and consist of highly decomposed organic material to a depth of more than 65 inches. Muck is classified as A-8 in the AASHTO system and has severe limitations for roadway construction. Muck is generally unsuitable for embankment support and typically requires removal and replacement with engineered fill. The NRCS soil survey predicts the seasonal high groundwater levels for these soil types to be from two feet above ground surface to natural ground surface. Water features, highlighted in blue on Figures 6.8.1 and 6.8.2, can also contain muck deposits that are not identified on the NRCS maps.

To compare corridor alternatives from a geotechnical engineering perspective, the length of Sanibel, Hontoon, and Samsula muck deposits along each of the four alternatives is shown in Table 6.8.1.

Table 6.8.1: Summary of Muck Impacts by Alternative

Alternative	Approximate Length Affected (feet)	Percent of Total Length of Alternative
Boggy Creek Alternative	3,200	11.4%
Lake Nona Alternative	3,000	13.2%
Split Oak Avoidance Alternative	14,800	57.2%
Split Oak Minimization Alternative	14,000	55.2%

Based on this review, the geotechnical conditions along the western alternatives pose the least geotechnical risk to project development. The eastern alternatives pose a significantly higher risk than the western alternatives. Since the geotechnical risk assessments for the western alternatives are essentially the same, as are the risk assessments for the eastern alternatives, any combination of the western and eastern alternatives would result in roughly equivalent geotechnical risk.



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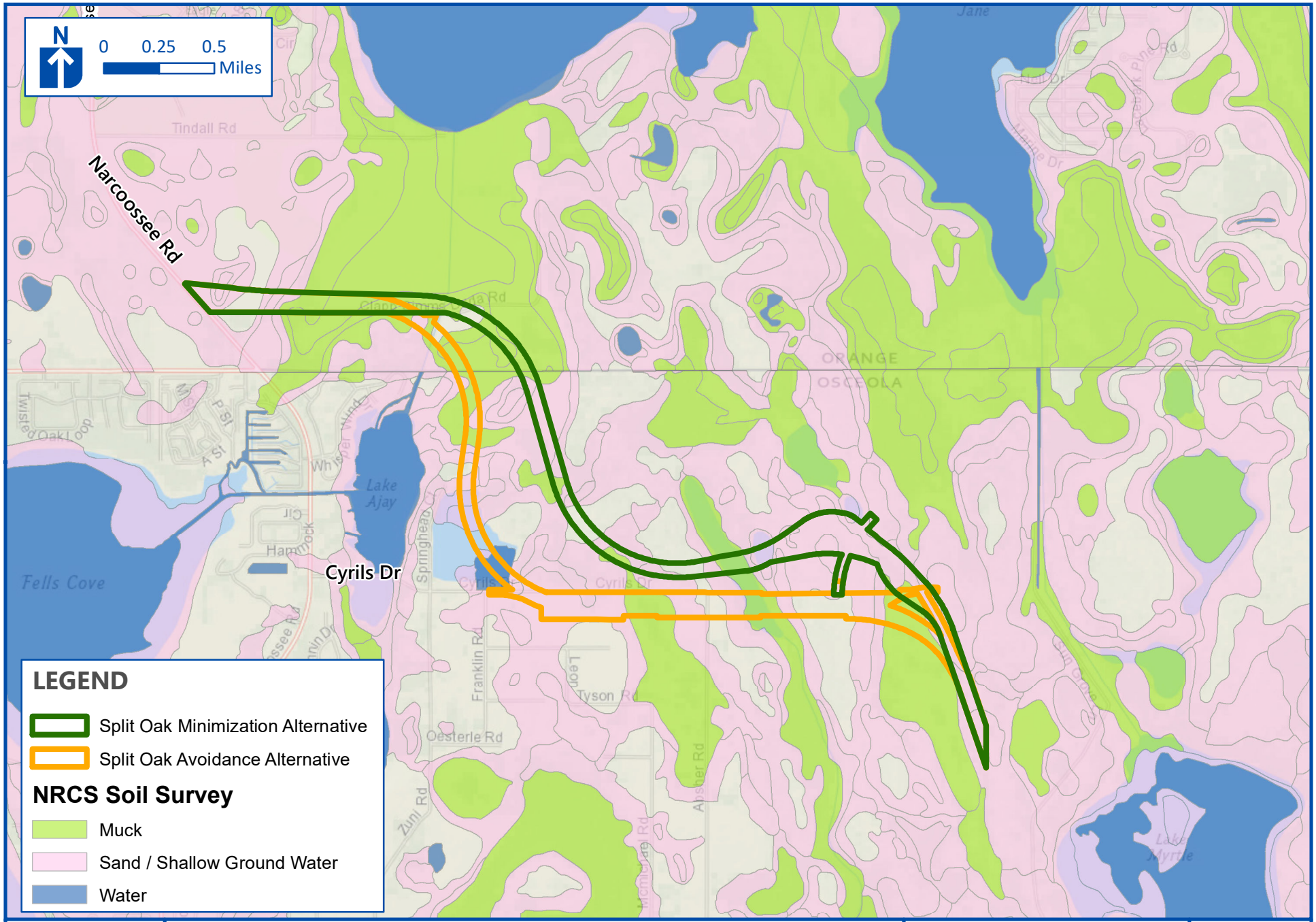
Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Figure 6.8.1
NRCS Soil Survey
West Alternatives



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Osceola Parkway Extension
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Engineering Analysis Technical Memorandum

Figure 6.8.2
NRCS Soil Survey
East Alternatives

6.9 Preliminary Drainage

The proposed OPE will introduce a new roadway alignment in some areas where there is no existing roadway and will alter drainage patterns to some extent as a result. The proposed drainage patterns will follow the existing / historic drainage patterns as closely as possible. Cross drains will be proposed to convey existing ditches / streams, or function as equalizer pipes for existing depressional areas. The Location Hydraulics Report (LHR) for the project is available under separate cover.

Four alternative alignments were analyzed for potential pond site locations. Two of the alternative alignments are located west of Narcoossee Road, and two of the alternative alignments are located east of Narcoossee Road. These alternative alignments are Boggy Creek Alternative, Lake Nona Alternative, Split Oak Minimization Alternative, and Split Oak Avoidance Alternative. There are between four and six basins per alternative. Generally, two potential pond option configurations were evaluated for each basin. A pond option was not sited within the interchange with SR 417 for the Boggy Creek Alternative or Lake Nona Alternative because stormwater management in this area will be performed with a future widening of SR 417. A few locations have only one potential pond option due to limited available right-of-way and utilization of remnant parcels. More information on the pond sites for each alternative is contained in the PSR, available under separate cover.

6.9.1 Boggy Creek Pond Sites

The Boggy Creek Alternative evaluated 12 pond sites and three floodplain compensation sites, these pond sites are show on Figure 6.9.1 and described below.

Four wet detention pond sites (1A, 1B, 1C, and 1D) were identified within Basin 1. One of these ponds are off-site and three are located within the Simpson Road extension interchange. All four pond sites are used together for a single pond option for this basin. Pond Site 1A is located within two parcels and a portion of the Happy Lane right-of-way within the in-field area of the proposed interchange with Boggy Creek Road and Simpson Road. The pond site consists of 2.7 acres of property within the interchange, and therefore, a drainage easement is not necessary. Pond Site 1B is located within two parcels and utilizes a portion of the Happy Lane right-of-way within the proposed interchange with Boggy Creek Road and Simpson Road. The pond site consists of 4.6 acres of property within the interchange and, therefore, a drainage easement is not necessary. Pond Site 1C is located on one parcel southwest of the proposed interchange with Boggy Creek Road and Simpson Road and utilizes a remnant parcel. The pond site consists of 2.9 acres of property adjacent to the right-of-way and, therefore, a drainage easement is not necessary. Pond Site 1D is located within two parcels, a portion of the Happy Lane right-of-way, and a portion of an apparent utility

right-of-way due east of the Boggy Creek Road and Simpson Road intersection. The pond site consists of 2.0 acres of property within the interchange right-of-way, and therefore, a drainage easement is not necessary. Floodplain Compensation (FPC)1A is a 7.8-acre site located on four parcels and a portion of the Happy Lane right-of-way which will affect three property owners. The site is located adjacent to the proposed right-of-way, so an easement is not necessary. The site was drawn to take as many remnant parcels created by the OPE alignment that are adjacent to the Federal Emergency Management Agency (FEMA) floodplain.

One potential wet detention pond site, Pond 2A, has been identified within Basin 2. This one pond site is located adjacent to the Boggy Creek Road and Simpson Road interchange and is located on a remnant parcel. The pond site consists of 2.1 acres of property just west of the interchange and, therefore, a drainage easement is not necessary.

Two wet detention pond sites (3A, and 3B) have been identified within Basin 3. These sites function as independent pond options for this basin. Pond Site 3A is located within one parcel and consists of 11.1 acres of property adjacent to the road right-of-way, therefore, a drainage easement is not necessary. Pond Site 3B is located within three parcels and consists of 11.1 acres of property adjacent to the road right-of-way; therefore, a drainage easement is not necessary. FPC 3A is a 6.2-acre site located on one parcel. The site is located adjacent to the proposed right-of-way, so an easement is not necessary. The site is situated to expand the impacted FEMA floodplain, Zone A. FPC 3B is a 6.2-acre site located on one parcel. The site is located adjacent to the proposed right-of-way, so an easement is not necessary. The site is situated to expand the impacted FEMA floodplain, Zone A.

Two wet detention pond sites (4A, and 4B) have been identified within Basin 4. The preliminary results indicate that either pond option would provide sufficient treatment and attenuation. Pond Site 4A is located within one parcel. The pond site consists of 5.1 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary. Pond Site 4B is located within one parcel between OPE and Boggy Creek Road. The pond site consists of 4.9 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary.

One potential wet detention pond site, Pond 5A, has been identified within Basin 5. This pond site consists of 4.9 acres and is located under the OPE's bridge over the existing borrow pits. The pond site is intended to expand the existing borrow pits to accommodate the required treatment and attenuation for this basin.

Two wet detention pond sites (6A, and 6B) have been identified within Basin 6. Pond Site 6A is located within one parcel. The pond site consists of 8.8 acres of property which is not adjacent to the road right-of-way and therefore requires a drainage easement. Pond Site 6B is located in the southeast corner of the existing Narcoossee Road and Clapp Simms Duda Road intersection. The pond is proposed to fully take nine parcels and partially take one parcel, affecting a total of five property owners. The pond site consists of 8.2 acres of property that is adjacent to the road right-of-way, therefore, a drainage easement is not necessary.

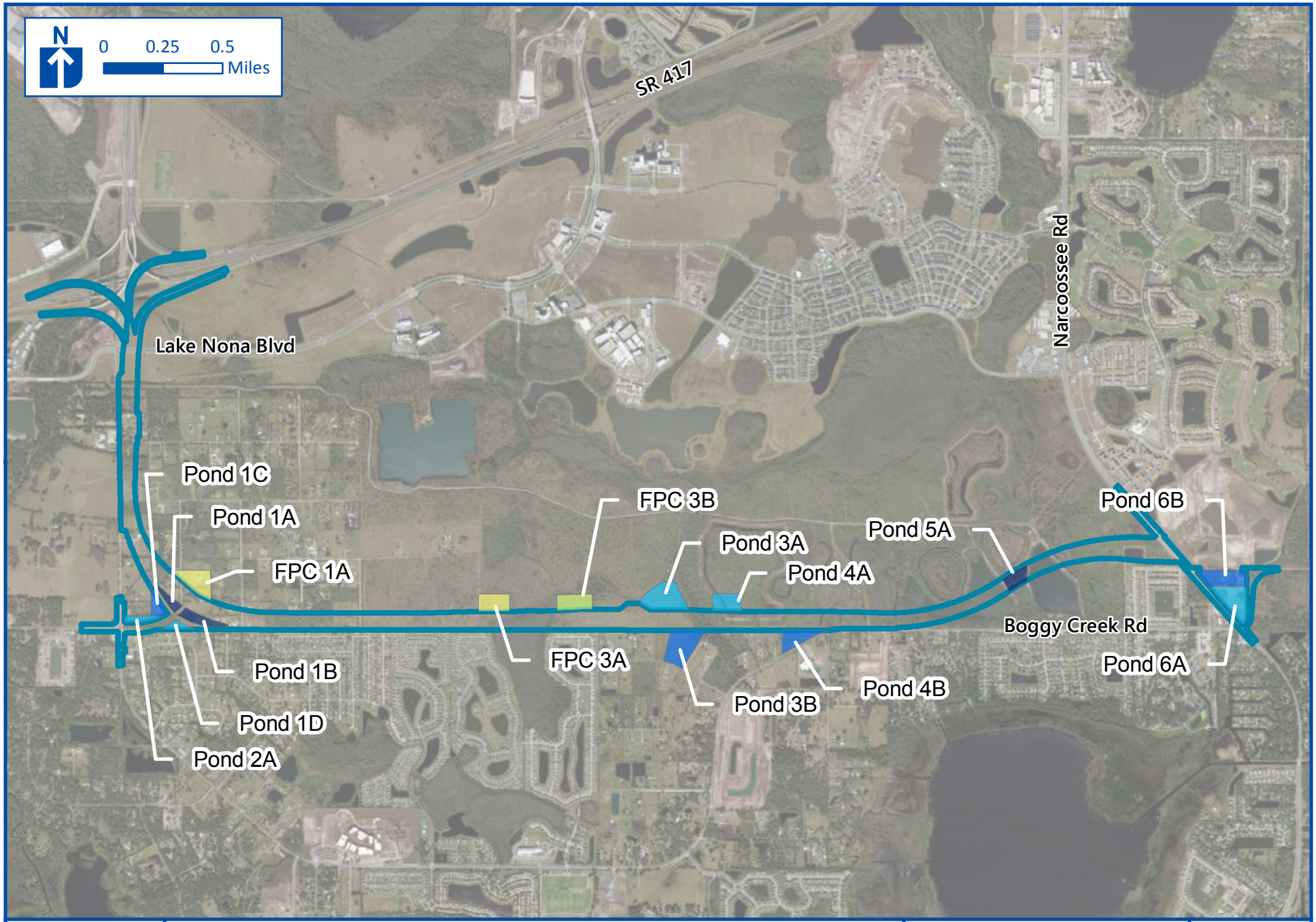

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Figure 6.9.1
Boggy Creek Alternative
Potential Pond Sites

6.9.2 Lake Nona Pond Sites

The Lake Nona Alternative evaluated 14 pond sites and two floodplain compensation sites; these pond sites are show on Figure 6.9.2 and described below.

Four wet detention pond sites (1A, 1B, 1C, and 1D) were identified within Basin 1. Two of these ponds are off-site and two are located within the Simpson Road extension interchange. The pond options are as follows: 1A, 1C, and 1D or 1B, 1C, and 1D. Pond Site 1A is located within two parcels and a portion of the Hidden Trail Road right-of-way and utilizes remnant remaining parcels resulting from the proposed alignment. The pond site consists of 5.9 acres of property adjacent to the interchange right-of-way, and therefore, a drainage easement is not necessary. Pond Site 1B is located within two parcels and utilizes remnant remaining parcels resulting from the proposed alignment. The pond site consists of 4.1 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary. Pond Site 1C is located within the proposed infield of the Simpson Road extension interchange. The pond site consists of 1.9 acres of property within the interchange right-of-way and, therefore, a drainage easement is not necessary. Pond Site 1D is located within the proposed infield of the Simpson Road extension interchange. The pond site consists of 3.7 acres of property within the interchange right-of-way and, therefore, a drainage easement is not necessary.

One potential wet detention pond site, Pond 2A, has been identified within Basin 2. This one pond site is located adjacent to the Simpson Road extension interchange and is located on a remnant parcel. The pond site consists of 11.2 acres of property. Another pond option was not evaluated for this basin since the remnant parcel is more than 2.5 times larger than the required pond area.

Four wet detention pond sites (3A, 3B, 3C, and 3D) have been identified within Basin 3. Two of these ponds are off-site and two are located within the Simpson Road extension interchange. The pond options are as follows: 3A, 3B, and 3C or 3A, 3B, and 3D. Approximately 17.5 acre-feet of floodplain storage are impacted in this basin. Two potential FPC areas adjacent to the impacted floodplain have been identified: FPC 3A and FPC 3B. Either site can be chosen to provide the necessary floodplain compensation within the basin. Pond Site 3A is located within the proposed infield of the Simpson Road extension interchange. The pond site consists of 1.8 acres of property within the interchange right-of-way and, therefore, a drainage easement is not necessary. Pond Site 3B is located within the proposed infield of the Simpson Road extension interchange. The pond site consists of 4.1 acres of property within the interchange right-of-way and, therefore, a drainage easement is not necessary. Pond Site 3C is located within one parcel. The pond site consists of 5.2 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not

necessary. Pond Site 3D is located within one parcel. The pond site consists of 5.2 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary. FPC 3A is a 9.7-acre site located on one parcel. The site is located adjacent to the proposed right-of-way, so an easement is not necessary. The site is situated to expand the impacted FEMA floodplain, Zone A. FPC 3B is a 9.7-acre site located on one parcel. The site is located adjacent to the proposed right-of-way, so an easement is not necessary. The site is situated to expand the impacted FEMA floodplain, Zone A.

Two wet detention pond sites (4A, and 4B) have been identified within Basin 4. The preliminary results indicate that either pond option would provide sufficient treatment and attenuation. Pond Site 4A is located within one parcel. The pond site consists of 5.0 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary. This site is located on a historic borrow pit. Pond Site 4B is located within one parcel between OPE and Boggy Creek Road. The pond site consists of 4.9 acres of property adjacent to the road right-of-way and, therefore, a drainage easement is not necessary.

One potential wet detention pond site, Pond 5A, has been identified within Basin 5. This pond site consists of 4.9 acres and is located under the OPE's bridge over the existing borrow pits. The pond site is intended to expand the existing borrow pits to accommodate the required treatment and attenuation for this basin.

Two wet detention pond sites (6A, and 6B) have been identified within Basin 6. Pond Site 6A is located within one parcel. The pond site consists of 8.8 acres of property which is not adjacent to the road right-of-way and, therefore, requires a drainage easement. Pond Site 6B is located in the southeast corner of the existing Narcoossee Road and Clapp Simms Duda Road intersection. The pond is proposed to fully take nine parcels and partially take one parcel, affecting a total of five property owners. The pond site consists of 8.2 acres of property that is adjacent to the road right-of-way; therefore, a drainage easement is not necessary.

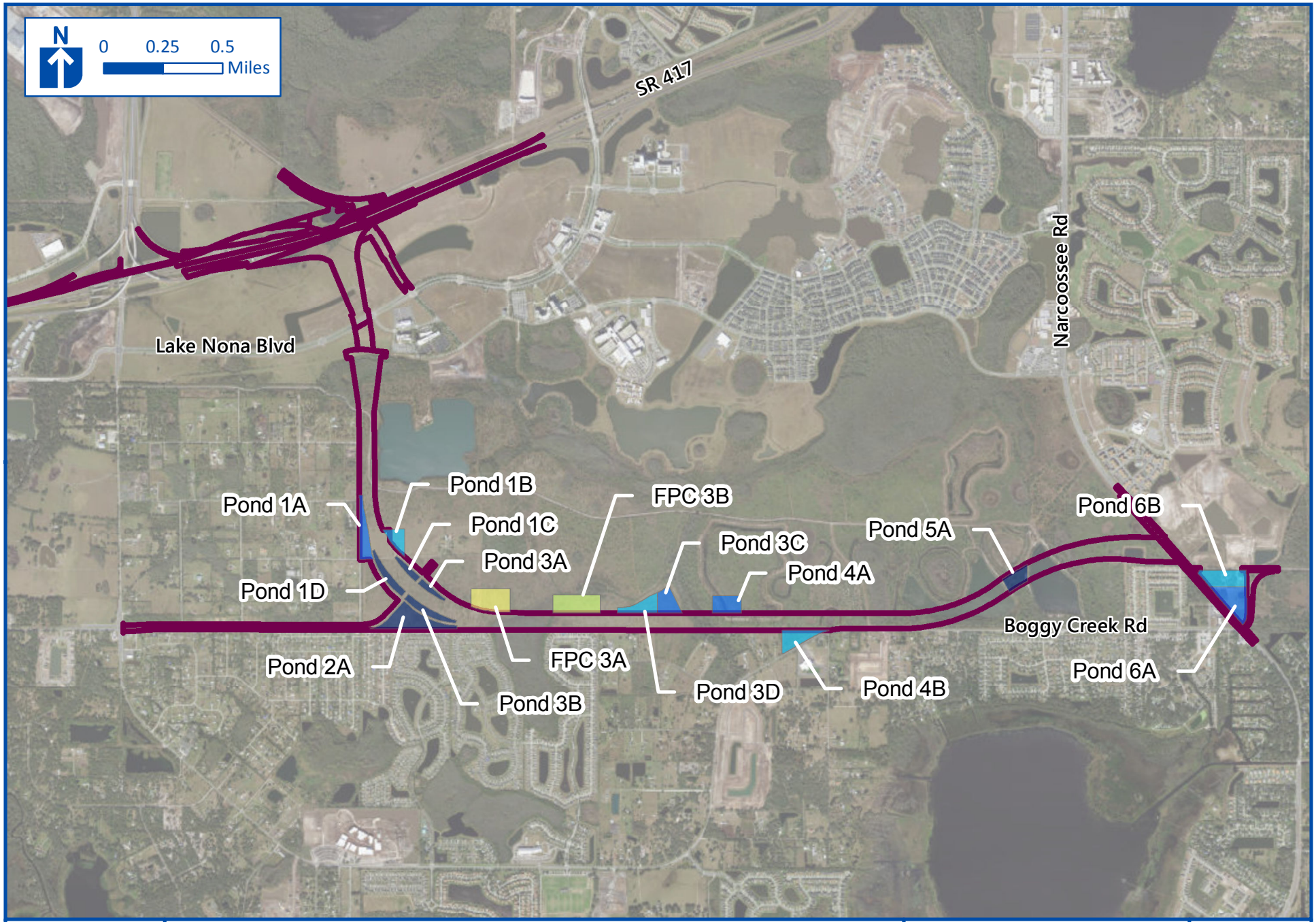

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Figure 6.9.2
Lake Nona Alternative
Potential Pond Sites

6.9.3 Split Oak Minimization Pond Sites

The Split Oak Minimization Alternative evaluated eight pond sites and two floodplain compensation sites, these pond sites are show on Figure 6.9.3 and described below.

Four wet detention pond sites (1A, 1B, 1C, and 1D) were identified within Basin 1. One site is located within a remnant parcel adjacent to the OPE mainline, and the other three are off-site pond locations. The pond options are as follows: 1A, 1B, and 1C or 1A, and 1D. Pond 1A is located on two remnant parcels that utilize the basin area between the OPE mainline and Clapp Simms Duda Road. The pond site consists of 25.1 acres of property adjacent to the roadway; therefore, a drainage easement is not necessary. Pond Site 1B is located on two parcels between the Clapp Simms Duda Road re-alignment and Narcoossee Road. The pond site consists of 8.8 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary. Pond Site 1C is located on one parcel south of the re-aligned Clapp Simms Duda Road. The pond site consists of 1.3 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary. Pond Site 1D is located on one parcel south of the re-aligned Clapp Simms Duda Road. The pond site consists of 10.0 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary.

Two potential wet detention pond sites (2A, and 2B) have been identified within Basin 2. Both sites are off-site pond locations. Two potential FPC areas adjacent to the impacted floodplain have been identified: FPC 2A and FPC 2B. Pond Site 2A is located on one parcel on the west side of the proposed alignment. The pond site consists of 14.3 areas of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary. Pond Site 2B is located on one parcel on the west side of the proposed alignment. The pond site consists of 14.2 acres of property, which is not directly adjacent to the road right-of-way; therefore, a drainage easement (0.7 acre) is necessary. FPC 2A is located on one parcel on the south side of the proposed alignment within Split Oak Forest. The pond site consists of 3.5 acres of property which is directly adjacent to the road right-of-way; therefore, a drainage easement is not necessary. FPC 2B is located on two parcels and a portion of the Cyrils Drive right-of-way on the south side of the proposed alignment. The pond site consists of 3.5 acres of property, which is not directly adjacent to the road right-of-way; therefore, a drainage easement (0.4 acre) is necessary.

One potential wet detention pond site, Pond 3A has been identified within Basin 3. Pond Site 3A is located on a remnant parcel within the mainline OPE interchange with Cyrils Drive. The pond site consists of 15.9 acres of property, which is within the interchange; therefore, a drainage easement is not necessary.

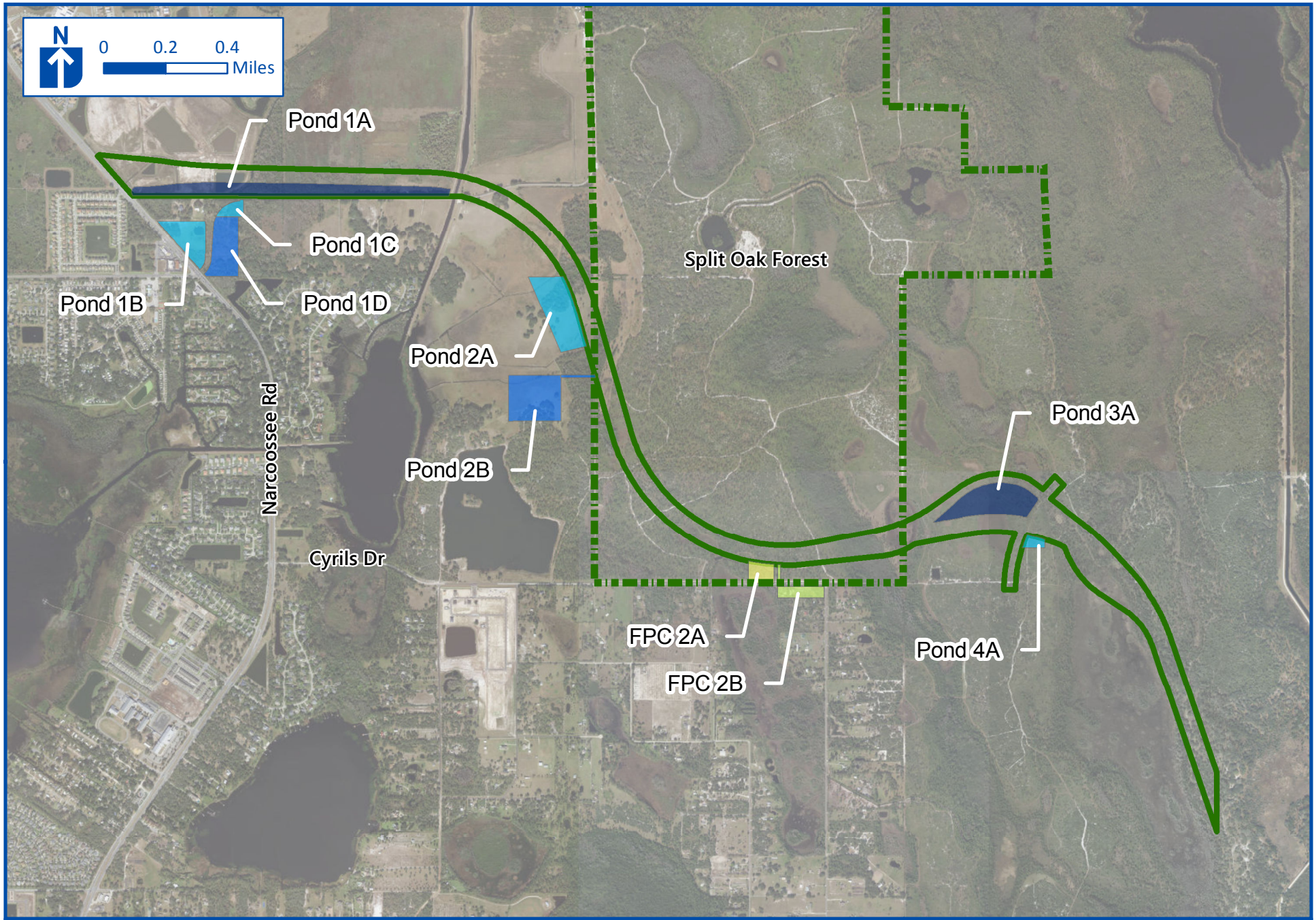

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Figure 6.9.3
Split Oak Minimization Potential Pond Sites

One wet detention pond site, Pond 4A has been identified within Basin 4. The pond site is located on one parcel that is adjacent to the interchange and utilizes a remnant parcel on the south side of the interchange between the OPE mainline and Cyrils Drive. The pond site consists of 1.3 acres of property, which is adjacent to the interchange and, therefore, a drainage easement is not necessary.

6.9.4 Split Oak Avoidance Pond Sites

The Split Oak Avoidance Alternative evaluated nine pond sites and one floodplain compensation site, these pond sites are shown on Figure 6.9.4 and described below.

Three wet detention pond sites (1A, 1B, and 1C) were identified within Basin 1. One site is located within a remnant parcel adjacent to the OPE mainline, and the other two are off-site pond locations. The pond options are as follows: 1A, and 1B, or 1A, and 1C. Pond 1A is located on two remnant parcels that utilize the basin area between the OPE mainline and Clapp Simms Duda Road. The pond site consists of 20.2 acres of property adjacent to the roadway; therefore, a drainage easement is not necessary. Pond Site 1B is located on two parcels between the Clapp Simms Duda Road re-alignment and Narcoossee Road. The pond site consists of 8.8 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary. Pond Site 1C is located on one parcel south of the re-aligned Clapp Simms Duda Road. The pond site consists of 6.3 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary.

Two potential wet detention pond sites (2A, and 2B) have been identified within Basin 2. Both sites are off-site pond locations. Pond Site 2A is located on one parcel on the east side of the proposed alignment. The pond site consists of 23.0 areas of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary. Pond Site 2B is located on one parcel on the east side of the proposed alignment. The pond site consists of 23.0 acres of property, which is adjacent to the road right-of-way; therefore, a drainage easement is not necessary.

Three potential wet detention pond sites (3A, 3B, and 3C) and one FPC site (FPC 3A) have been identified within Basin 3 and 4. One site is located within a remnant parcel within the OPE mainline footprint, and the other three are off-site pond locations. The three pond options include the following combinations: Pond 3A with FPC 3A, Pond 3A with Pond 3B, or Pond 3A with Pond 3C. Pond 3A is located on a remnant parcel within the mainline OPE right-of-way. The pond site consists of 16.3 acres of property and does not require a drainage easement. Pond Site 3B is located on three parcels on the south side of the OPE mainline right-of-way. The pond site consists of 23.4 acres of property, which is adjacent to the road right-of-way and, therefore, does not require a drainage easement. Pond Site 3C is located on

three parcels and a portion of Absher Road right-of-way on the south side of the OPE mainline right-of-way. The pond site consists of 22.8 acres of property, which is adjacent to the road right-of-way and therefore, does not require a drainage easement. FPC 3A is located on two parcels and a portion of the Absher Road right-of-way on the south side of the OPE mainline right-of-way. The pond site consists of 17.2 acres of property, which is adjacent to the road right-of-way and, therefore, does not require a drainage easement.

One wet detention pond site, Pond 5A, has been identified within Basin 5. Pond 5A is located on a remnant parcel within the mainline OPE interchange with Cyrils Drive. The pond site consists of 12.4 acres of property which is within the interchange and, therefore, does not require a drainage easement.

6.10 Construction Phasing

The majority of the OPE roadway can be constructed without maintenance of traffic since it is on new alignment. The connections to existing roadways will be phased as needed, and the details of this phasing will be considered during final design. Both of the eastern alternatives will have a similar level of complexity for construction phasing, which is minimal. The Split Oak Avoidance Alternative will have a slightly more complex construction phasing due to the frontage road design associated with Cyrils Drive. The western alternatives present more opportunities for increased complexity in construction phasing than the eastern alternatives. The Boggy Creek Alternative will be easier to construct but does overpass more existing roadways along Boggy Creek Road. The Lake Nona Alternative requires a more complex construction phasing plan due to the SR 417 interchange and the associated ramp connections. The OPE northbound to SR 417 southbound ramp intertwines with the ramp to Boggy Creek Road and the ramp from the OIA, significantly complicating the construction phasing. The details of the construction phasing for each alternative will be determined during final design.

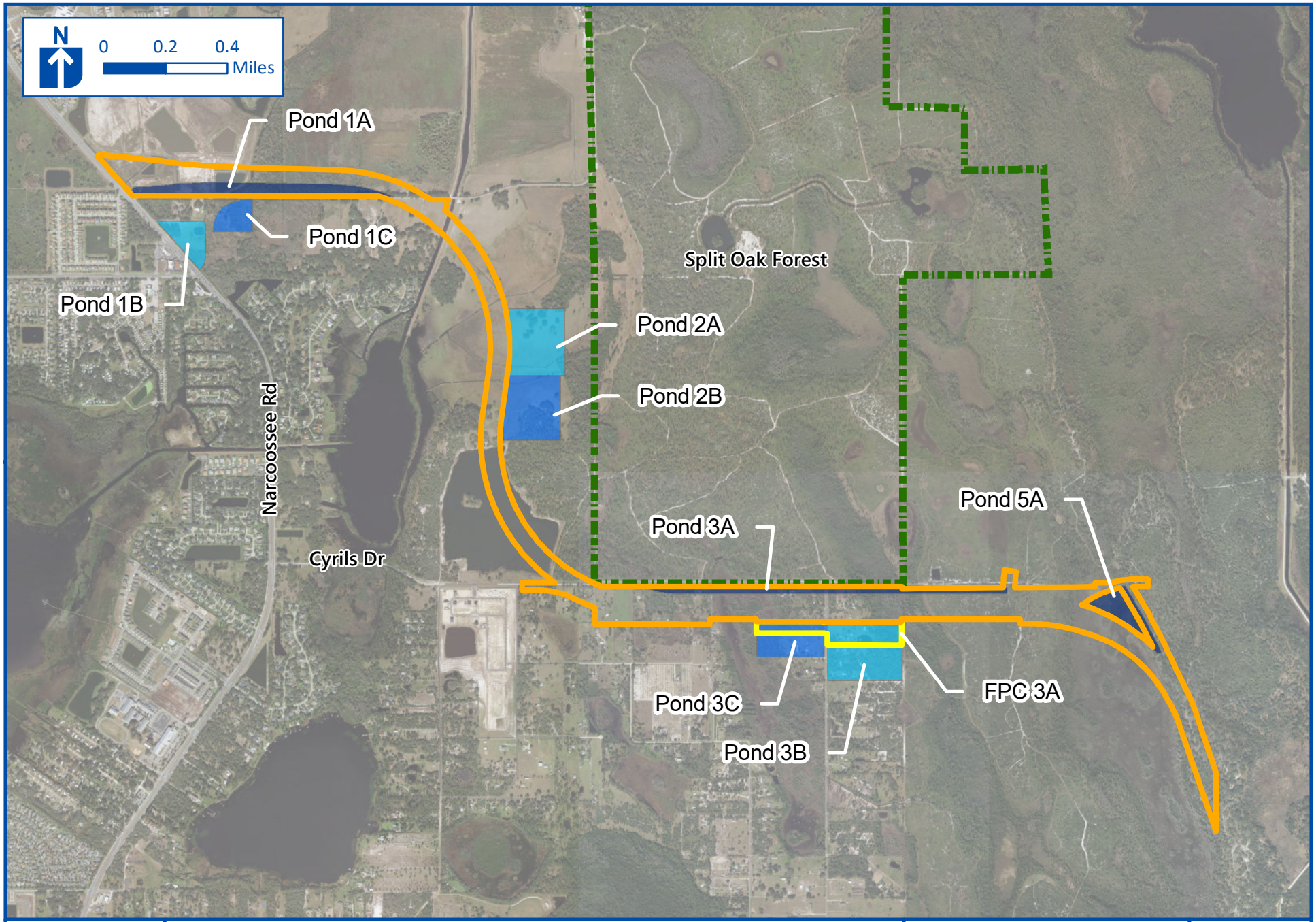

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Figure 6.9.4
Split Oak Avoidance
Potential Pond Sites

6.11 Evaluation of Impacts

6.11.1 Socioeconomic Impacts

The eastern alternatives have no cultural environment impacts. The western alternatives have no known archaeological resource impacts but do impact potentially historic resources. The Lake Nona Alternative impacts six potentially historic resources. The Boggy Creek Alternative impacts 18 potentially historic resources and one historic linear resource.

The eastern alternatives have no impacts to community facilities. The Lake Nona Alternative impacts one community facility, and the Boggy Creek Alternative impacts two community facilities. Both alternatives impact the Iglesia Cristiana Luz de Salvacion Worship Center as a result of the Simpson Road extension and interchange. A strip of right-of-way is required from the back of the property, but no displacements are anticipated. The Boggy Creek Alternative also impacts the Iglesia Hispana Pentecostal Asamblea De Iglesias Cristianas Worship Center located on the east side of the existing Boggy Creek Road. This worship center will be displaced as a result of the Boggy Creek Alternative.

The western alternatives and the Split Oak Avoidance Alternative have no park or recreational facility impacts. The Split Oak Minimization Alternative impacts two parks: Split Oak Forest and Eagles Roost Park. The Split Oak Minimization Alternative also impacts one trail, the Split Oak Forest Wildlife and Environmental Area trail, which is part of the Florida Greenways Trail System. This trail will be overpassed by the Split Oak Minimization Alternative.

The Lake Nona Alternative has low impacts to community cohesion, since the majority of the alternative is located on vacant property owned by Tavistock Development Company. The Boggy Creek Alternative has high impacts to community cohesion since the OPE alignment travels parallel to Boggy Creek Road through a number of existing residential parcels. The number of residential displacements and the church displacement makes the anticipated impacts to community cohesion rated as high. The Split Oak Minimization Alternative has a low impact to community cohesion since the majority of the alignment traverses across vacant or recreational property. Although the impacts to parks is high, the impacts to community cohesion are rated as low. Whereas, the Split Oak Avoidance Alternative has a moderate impact on community cohesion, due to the residential impacts and displacements anticipated along Cyrils Drive. In addition, the Split Oak Avoidance Alternative also impacts a significant quantity of planned residential developments (some of which are currently under construction).

Socioeconomic impacts to special populations are rated as low for the eastern alternatives and the Lake Nona Alternative. The Boggy Creek Alternative is rated as moderate for impacts to socioeconomic impacts due to the high percentage of minorities, as well as the relatively high percentage of Limited English Proficiency population present along Boggy Creek Road and the anticipated displacements in this area.

6.11.2 Right-of-Way Impacts

The Boggy Creek Alternative has significantly more right-of-way impacts than the Lake Nona Alternative. The Boggy Creek Alternative impacts 25 residential parcels, 39 non-residential parcels, and requires 25 displacements. Whereas, the Lake Nona Alternative impacts nine residential parcels, 21 non-residential parcels, and requires six displacements. The Split Oak Avoidance Alternative has significantly more right of-way impacts than the Split Oak Minimization Alternative. The Split Oak Avoidance Alternative impacts 19 residential parcels, and 14 non-residential parcels resulting in 16 displacements. The Split Oak Minimization Alternative impacts one residential parcel, nine non-residential parcels and requires one displacement. The right-of-way impacts include the roadway and the pond right-of-way footprint and are summarized in Table 6.11.1.

Table 6.11.1: Summary of Right-of-Way Impacts

	Lake Nona	Boggy Creek	Split Oak Minimization	Split Oak Avoidance
Right-of-Way Area (acres)	305	336	295	334
Potential Residential Parcel Impacts	9	25	1	19
Potential Non-Residential Parcel Impacts	21	39	9	14
Potential Displacements	6	25	1	16

6.11.3 Drainage Impacts

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 sitings, archaeological or historical sites, and conservation areas. No site-specific investigations were performed, which includes field survey, geotechnical testing, wetland delineation, threated and endangered species observations, archaeological / cultural resource investigations, or contamination screenings. The results of the pond siting analysis are summarized in Tables 6.11.2 to 6.11.5. The rows highlighted in green are the recommended pond sites for each alternative.

Table 6.11.2: Lake Nona Alternative Pond Siting Matrix

Pond Site	Wetland Impacts (acre)	Wildlife and Habitat Impacts	Contamination Risk	Floodplain Impact (acre)	Cultural Resources Impacts	Access Issues	Number of Property Owners	Pond Right-of-way Area (acre)
1A	0	Low	Low	0	Low	None	2	5.9
1B	0	Low	Low	0	Low	None	2	4.1
1C	0	Low	Low	0	Low	None	N/A	1.9
1D	0	Low	Low	0	Low	None	N/A	3.7
2A	1.95	Medium	Low	0	Low	None	N/A	11.2
3A	0	Low	Low	0	Low	None	N/A	1.8
3B	0.48	Medium	Low	0	Low	None	N/A	4.1
3C	0.04	Medium	Low	0	Low	None	1	5.2
3D	0	Low	Low	0	Low	None	1	5.2
4A	0	Low	Low	0	Low	None	1	5.0
4B	0	Low	Low	0	Low	None	1	4.9
5A	0	Low	Low	0	Low	None	N/A	4.9
6A	0	Medium	Low	9.48	Low	0.6 acre easement	1	8.8
6B	0	Low	Low	0	Low	None	5	8.2
FPC 3A	0	Low	Low	4.28	Low	None	1	9.7
FPC 3B	2.67	Medium	Low	5.45	Low	None	1	9.7

Table 6.11.3: Boggy Creek Alternative Pond Siting Matrix

Pond Site	Wetland Impacts (acre)	Wildlife and Habitat Impacts	Contamination Risk	Floodplain Impact (acre)	Cultural Resources Impacts	Access Issues	Number of Property Owners	Pond Right-of-way Area (acre)
1A	0	Low	Low	0	Low	None	N/A	2.7
1B	0	Low	Low	0	Low	None	N/A	4.6
1C	0.20	Medium	Low	0	Low	None	2*	2.9
1D	0	Low	Low	0	Low	None	N/A	2.0
2A	0	Low	Medium	0	Low	None	1	2.1
3A	2.09	Medium	Low	1.92	Low	None	1	11.1
3B	0.59	Medium	Low	1.26	Low	None	3	11.1
4A	0	Low	Low	0	Low	None	1	5.1
4B	0	Low	Low	0	Low	None	1	4.9
5A	0	Low	Low	0	Low	None	N/A	4.9
6A	0	Medium	Low	9.48	Low	0.6 acre easement	1	8.8
6B	0	Low	Low	0	Low	None	5	8.2
FPC 1A	0.65	Medium	Low	0.01	Low	None	3	7.8
FPC 3A	0	Low	Low	4.15	Low	None	1	6.2
FPC 3B	1.35	Medium	Low	3.95	Low	None	1	6.2

* One of the parcels is a remnant and required by the roadway right-of-way

Table 6.11.4: Split Oak Minimization Alternative Pond Siting Matrix

Pond Site	Wetland Impacts (acre)	Wildlife and Habitat Impacts	Contamination Risk	Floodplain Impact (acre)	Cultural Resources Impacts	Access Issues	Number of Property Owners	Pond Right-of-way Area (acre)
1A	1.64	Medium	Low	14.70	Low	None	N/A	25.1
1B	0	Low	Low	0.50	Low	None	2	8.8
1C	0	Low	Low	0.34	Low	None	1	1.3
1D	0	Low	Low	6.86	Low	None	1	10.0
2A	0.57	Medium	Low	5.06	Low	None	1	14.3
2B	0.53	Medium	Low	0.51	Low	0.7 acre easement	1	14.2
3A	1.40	Medium	Low	2.68	Low	None	N/A	15.9
4A	0	Low	Low	0	Low	None	1	1.3
FPC 2A	0	High	Low	1.99	Low	None	1	3.5
FPC 2B	0.06	High	Low	1.07	Low	0.4 acre easement	2	3.5

Table 6.11.5: Split Oak Avoidance Alternative Pond Siting Matrix

Pond Site	Wetland Impacts (acre)	Wildlife and Habitat Impacts	Contamination Risk	Floodplain Impact (acre)	Cultural Resources Impacts	Access Issues	Number of Property Owners	Pond Right-of-way Area (acre)
1A	1.33	Medium	Low	11.33	Low	None	N/A	20.2
1B	0	Low	Low	0.50	Low	None	2	8.8
1C	0	Medium	Low	3.85	Low	None	1	6.3
2A	2.95	Medium	Low	2.22	Low	None	1	23.0
2B	0.22	Medium	Low	0.83	Low	None	1	23.0
3A	4.43	Medium	Low	5.35	Low	None	N/A	16.3
3B	1.63	Medium	Low	1.32	Low	None	3	23.4
3C	6.53	Medium	Low	7.32	Low	None	3	22.8
5A	10.44	Medium	Low	9.34	Low	None	N/A	12.4
FPC 3A	4.34	Medium	Low	4.32	Low	None	2	17.2

6.11.4 Utility Impacts

The Lake Nona and Boggy Creek Alternative both impact nine existing utilities in the corridor. The Split Oak Minimization Alternative impacts five existing utilities and the Split Oak Avoidance Alternative impacts seven existing utilities. No known proposed / planned utilities are impacted.

6.11.5 Construction Impacts

Construction activities will have minimal, temporary, yet unavoidable air, noise and water quality impacts on wildlife and associated habitats within the immediate vicinity of the project.

The air quality impacts will be temporary and can be attributed to exhaust from heavy equipment and fugitive dust. Noise impacts will result from heavy equipment movement as well as from vibration associated with soil compaction or pile driving. Air quality impacts, noise control measures, and water quality impacts associated with erosion and sedimentation will be implemented in accordance with FDOT's Standard Specifications for Road and Bridge Construction and through the use of Best Management Practices.

6.11.6 Cost Estimates

The total cost estimate for each alternative includes the construction cost estimate (roadway, bridges, interchange, toll collection), right-of-way cost, mitigation cost, and engineering, administration, and legal fees. The total cost estimate for the Lake Nona Alternative is approximately $176 million more than the Boggy Creek Alternative. The Split Oak Avoidance Alternative is approximately $103 million more than the Split Oak Minimization Alternative.

The Boggy Creek Alternative has a higher roadway cost, but a lower bridge and interchange cost compared to the Lake Nona Alternative. The major difference between the two alternatives is the right-of-way cost; the right-of-way required for the Lake Nona Alternative is anticipated to cost $82 million more than the Boggy Creek Alternative. Costs for bridges and interchanges account for the additional increase in cost of the Lake Nona Alternative over the Boggy Creek Alternative.

The Split Oak Minimization Alternative has a significantly lower construction cost than the Split Oak Avoidance Alternative. The primary reason for this disparity is due to the length of bridge. Therefore, the bridge construction cost is $47 million more for the Avoidance Alternative than the Minimization Alternative. The Split Oak Minimization Alternative also has a lower right-of-way cost by $27 million. Table 6.11.6 displays the summary of costs for each of the alternatives. Appendix C contains the construction cost estimates for the project.

Table 6.11.6: Summary of Cost Estimates

Estimated Costs	Lake Nona	Boggy Creek	Split Oak Minimization	Split Oak Avoidance
Roadway Construction ($ millions)	$87.2	$115.8	$95.5	$103.1
Bridges Construction ($ millions)	$167.9	$101.5	$34.5	$81.0
Interchanges Construction ($ millions)	$84.3	$45.4	$13.7	$21.2
Toll Collection Equipment ($ millions)	$4.4	$5.3	$0.8	$0.8
Right-of-Way Cost ($ millions)	$212.0	$130.0	$77.0	$104.0
Mitigation, Wetlands, & Wildlife ($ millions)	$5.4	$5.9	$9.5	$9.2
Engineering / Administration / Legal ($ millions)	$81.5	$63.0	$34.5	$49.3
Total Estimated Alternative Costs ($ millions)	**$642.6**	**$466.9**	**$265.6**	**$368.5**

6.12 Summary Matrix – Alternatives Evaluation

The matrix shows that the west alternatives have the same number of utility conflicts. However, the Boggy Creek Alternative has a higher number of conflicts with contamination sites (19 compared to 13). The Boggy Creek Alternative also has a higher impact to the cultural environment, with 18 conflicts with potentially historic resources and one conflict with a historic canal, compared to only six conflicts with potentially historic resources and no linear resource conflicts for the Lake Nona Alternative. The west segment alternatives have a similar impact to ponds, floodways, floodplains, and wetlands. The Lake Nona Alternative has a higher impact to Gopher Tortoise habitat compared to the Boggy Creek Alternative (123 acres versus 58 acres). However, the Boggy Creek Alternative impacts one Bald Eagle nest. Overall, the species impact for both alternatives is rated as moderate. Neither alternative impacts any mitigation properties or conservation easements. The Boggy Creek Alternative has significantly more right-of-way impacts than the Lake Nona Alternative. The Boggy Creek Alternative impacts 25 residential parcels, 39 non-residential parcels and requires 25 displacements. Whereas, the Lake Nona Alternative impacts nine residential parcels, 21 non-residential parcels, and requires six displacements. The Lake Nona Alternative has low impacts to community cohesion, since the majority of the alternative is located on vacant property owned by Tavistock Development Company. The Boggy Creek Alternative has high impacts to community cohesion since the OPE alignment travels parallel to Boggy Creek Road through a number of existing residential parcels. The

number of residential displacements and the church displacement makes the anticipated impacts to community cohesion rated as high.

On the east segment, the matrix shows that there are a similar number of utility conflicts and contamination conflicts between the Split Oak Minimization and Split Oak Avoidance Alternatives. The east segment alternatives have no cultural environment impacts. The Split Oak Avoidance alternative has a higher impact to ponds and lakes at 13 acres compared to only one acre for the Split Oak Minimization Alternative. The impacts to floodplains are similar between the two alternatives (107 and 116 acres). The Split Oak Avoidance Alternative also has a higher impact to wetlands at 51 acres compared to only 36 acres for the Split Oak Minimization Alternative. The impacts to Gopher Tortoise habitat are higher for the Split Oak Minimization Alternative but the impacts to Caracara habitat is higher for the Split Oak Avoidance Alternative. The potential species impact is rated as high for the Split Oak Minimization Alternative and moderate for the Split Oak Avoidance Alternative. The Split Oak Minimization Alternative impacts two mitigation properties: Split Oak Forest and Gcb Associates LLC property and one conservation easement: Eagles Roost. The Split Oak Avoidance Alternative only impacts the Gcb Associates LLC property.

The Split Oak Avoidance Alternative has significantly more right of-way impacts than the Split Oak Minimization Alternative. The Split Oak Avoidance Alternative impacts 19 residential parcels, and 14 non-residential parcels resulting in 16 displacements. The Split Oak Minimization Alternative impacts one residential parcel, nine non-residential parcels and requires one displacement. The Split Oak Minimization Alternative has a low impact to community cohesion since the majority of the alignment traverses across vacant or recreational property. Although the impacts to parks is high, the impacts to community cohesion are rated as low. Whereas, the Split Oak Avoidance Alternative has a moderate impact on community cohesion, due to the residential impacts and displacements anticipated along Cyrils Drive. In addition, the Split Oak Avoidance Alternative also impacts a significant quantity of planned residential developments (some of which are currently under construction).

A summary and relative comparison of the pertinent impacts of the four alternatives are displayed in Table 6.12.1.

Table 6.12.1: Summary of Engineering Matrix

Estimated Costs	Lake Nona	Boggy Creek	Split Oak Minimization	Split Oak Avoidance
Design Elements				
Alternative Length (miles)	4.1	5.1	4.9	5.0
Proposed Number of Bridges	18	15	17	20
Proposed Bridge Length (feet)	16,677	12,668	3,349	10,010
Projected 2045 Annual Average Daily Traffic (AADT) Volume	47,300	35,867	65,100	65,700
Physical Impacts				
Major Utility Conflicts - Existing	9	9	5	7
Major Utility Conflicts - Planned	0	0	0	0
Contamination Sites & Facilities	13	19	5	7
Railroad Involvement	0	0	0	0
Cultural Impacts				
Potential Historic Resources	6	18	0	0
Potential Historic Linear Resources	0	1	0	0
Potential Archaeological Resources	0	0	0	0
Natural Environment Impacts				
Water Features				
Ponds / Lakes	16	17	1	13
Canals / Regulated Floodways	0	0	0	0
Flood Hazard Areas – 100-year floodplain	60	67	107	116
Wetlands (non-forested and forested)	35	39	36	51
Potential Habitat – Federal Listed Species (Scrub Jay)	0	0	0	0
Potential Habitat – Federal Listed Species (Caracara)	0	0	20	29
Potential Habitat – Federal Listed Species (Gopher Tortoise)	123	58	77	31
Potential Bald Eagle Nest	0	1	0	0
Potential Species Impacts (composite rating)	Moderate	Moderate	High	Moderate
Mitigation Properties				
Split Oak Forest (direct impact)	0	0	60	0
Word DRI / GCB Associates LLC	0	0	17	8
Conservation Easement				
Eagle Roost	0	0	3	0
Socioeconomic Impacts				
Community Facilities Impacted	1	2	0	0
Parks and Recreation Facilities Impacted	0	0	2	0

Estimated Costs	Lake Nona	Boggy Creek	Split Oak Minimization	Split Oak Avoidance
Trails Impacted	0	0	1	0
Community Cohesion Effects	Low	High	Low	Moderate
Socioeconomic Impacts to Special Populations	Low	Moderate	Low	Low
Residential Planned Developments Impacted (acres)	0	0	88	175
Right-of-way Impacts				
Right-of-Way Area (acres)	305	336	295	334
Potential Residential Parcel Impacts	9	25	1	19
Potential Non-Residential Parcel Impacts	21	39	9	14
Potential Displacements	6	25	1	16
Estimated Costs ($ millions)				
Roadway Construction	$87.2	$115.8	$95.5	$103.1
Bridges Construction	$167.9	$101.5	$34.5	$81.0
Interchanges Construction	$84.3	$45.4	$13.7	$21.2
Toll Collection Equipment	$4.4	$5.3	$0.8	$0.8
Right-of-Way Cost	$212.0	$130.0	$77.0	$104.0
Mitigation, Wetlands, & Wildlife	$5.4	$5.9	$9.5	$9.2
Engineering / Administration / Legal	$81.5	$63.0	$34.5	$49.3
Total Estimated Alternative Costs	**$642.6**	**$466.9**	**$265.6**	**$368.5**

6.13 Preferred Alternative

Each of the alternatives have distinct advantages and disadvantages. Below is a summary of the major differences between the alternatives based on the Alternatives Evaluation Matrix.

6.13.1 No-Build Alternative

Primary Advantages

- No disruption or temporary impacts (air, noise, vibration, travel patterns) due to construction activities;
- No right-of-way acquisition or residential displacements; and
- No impacts to the natural environment.

Primary Disadvantages

- Does not meet the project's purpose and need;
- No traffic relief for local roadways in project corridor;
- Increased vehicular congestion and delay, which leads to increased travel costs;

- Increased safety concerns;
- Increased emergency response and evacuation time; and
- Increasing air pollution from vehicular emissions.

6.13.2 Lake Nona Alternative

Primary Advantages

- Meets the purpose and need for the project;
- Provides a direct connection to the OIA via Jeff Fuqua Boulevard;
- Highest AADT for the west segment;
- Minimal natural environment impacts;
- Low impacts to community cohesion and special populations;
- Preferred by Osceola and Orange County;
- Least number of displacements for the west segment; and
- Consistent with Poitras Master Plan.

Primary Disadvantages

- Requires more structures and more structure length than the Boggy Creek Alternative;
- The estimated cost for the Lake Nona Alternative is higher than Boggy Creek by approximately $176 million.

6.13.3 Boggy Creek Alternative

Primary Advantages

- Meets the purpose and need for the project;
- Less reconstruction on SR 417;
- Lowest estimated cost for the west segment;
- Minimal natural environment impacts; and
- Consistent with Poitras Master Plan.

Primary Disadvantages

- No direct connection to the OIA;
- Lowest AADT for the west segment;
- Most impacts to potentially historic resources;
- Moderate impacts to special populations;
- High impact to community cohesion;
- Requires the displacement of Iglesia Hispana Pentecostal Asamblea de Iglesias Cristianas;
- Most number of displacements for the west segment; and

- Not preferred by Osceola and Orange County.

6.13.4 Split Oak Minimization Alternative

Primary Advantages

- Meets the purpose and need for the project;
- Lowest estimated cost for the east segment;
- Lowest wetland impacts and pond / lake impacts for the east segment;
- Lowest impacts to community cohesion for the east segment;
- Requires only one displacement (compared to 16 for the Split Oak Avoidance Alternative); and
- Lowest impacts to planned developments in the east segment, including the Del Webb development which is under construction.

Primary Disadvantages

- Impacts the most Scrub Jay and Caracara habitat;
- Results in the highest potential impact to species;
- Impacts Split Oak Forest and Gcb Associates LLC mitigation properties and Eagles Roost conservation easement; and
- Impacts two parks (Split Oak Forest and Eagles Roost).

6.13.5 Split Oak Avoidance Alternative

Primary Advantages

- Meets the purpose and need for the project;
- Lower potential impact to species (moderate versus high);
- Does not impact any conservation easement and has minor impacts to Gcb Associates LLC mitigation properties; and
- Does not have any park impacts.

Primary Disadvantages

- Requires a significantly larger quantity of structure;
- Highest estimated cost for the east segment;
- Highest wetland impacts and pond / lake impacts for the east segment;
- Most impacts to community cohesion for the east segment;
- Requires 16 displacements; and
- Highest impact to planned developments in the east segment, including significant impacts to Del Webb.

After considering the various social, cultural, environmental, and engineering issues with all of the alternatives, the **Lake Nona Alternative**, and the **Split Oak Minimization Alternative** are determined to be the Preferred Alternatives for each segment, respectively.

7.0 Public Involvement Summary

Public involvement and interagency coordination have been an integral part of the assessment process, and multiple opportunities for participation have been provided. A Public Involvement Plan (PIP) was established to initiate and maintain early, meaningful, continuous, and high-level public and stakeholder involvement during the study.

The public involvement techniques utilized provided information to, and helped obtain vital input from: citizens; residential and business groups; elected and appointed officials; other government entities; environmental advocates; and others interested in the corridor-wide implications of the study re-evaluation segments.

Community groups could request a presentation via the www.CFXWay.com website, by emailing Public Involvement Coordinator Mary Brooks at ProjectStudies@CFXWay.com or calling the study hotline at 407-802-3210. Citizens could submit comments via the website or project email address, or follow the study on Facebook (@OsceolaPkwyExtPDE) for updates as well as to submit comments.

7.1 Stakeholder Coordination and Meetings

7.1.1 Environmental Advisory Group

An Environmental Advisory Group (EAG) was formed to provide input for this study. As a special advisory resource to CFX and the consultant team, the EAG provided input regarding environmental impacts, local needs, concerns, and potential physical, natural, social, and cultural impacts that are crucial in the evaluation of corridor and alternative alignments.

For the PD&E Study Re-evaluation, one EAG meeting was scheduled. Meeting invitations were sent to representatives from environmental agencies and organizations, other government agencies, large landholders, community groups, and other key stakeholders.

The EAG meeting was held on November 18, 2019 from 1:30 PM to 4:15 PM at the Central Florida Expressway Authority, Board Room, 4974 ORL Tower Road, Orlando, FL 32807. The meeting was attended by 61 people including 22 EAG members, 22 study personnel and 17 other attendees in the audience. Invitation letters were mailed to 89 members of the EAG. A GoToMeeting invitation was sent to members who indicated a need to join remotely. Organizations represented by the EAG members attending the meeting included:

- Audubon Society of Florida (Also Orange County and Kissimmee Valley Chapters);
- Bear Warriors United;
- East Central Florida Regional Planning Council;

- Florida Fish and Wildlife Conservation Commission;
- Florida Native Plant Society (State and Tarflower Chapters);
- Florida Trail Association (State and Central Florida Chapters);
- Friends of Split Oak Forest;
- Lake Mary Jane Alliance;
- League of Women Voters of Orange County;
- Orange County;
- Osceola County;
- Sierra Club; and
- South Florida Water Management District.

The purpose of the EAG meeting was to review the study history and background, discuss the advisory group roles, discuss the project purpose and need, describe the study methodology, review the results of the study re-evaluation, and receive comments from the group. During this meeting, the CFX study team presented their findings from the development and comparative evaluation of the alternatives and requested input from EAG members. All factors related to the conceptual design and location of the facility, including transportation needs, financial feasibility, social impacts, economic factors, environmental impacts, engineering analysis, and right-of-way requirements were considered during the study re-evaluation.

Comments and suggestions from the EAG included:

- Provide funding for restoration and ongoing management of 1,550 acres of dedicated conservation land if donated by nearby landowners.
- Consider bridging the expressway over wetlands, trails, and wildlife crossings in Split Oak Forest.
- Provide multiple, high quality pedestrian and wildlife underpasses for the segment through Split Oak Forest.
- Provide a map showing the larger regional impact of the addition of 1,550 acres of conservation land indicating the proximity to other nearby conservation lands, as well as the St. Johns and Econlockhatchee Rivers.
- Do not go through Split Oak Forest.

7.1.2 Project Advisory Group

A Project Advisory Group (PAG) was formed to provide input for this study. As a special advisory resource to CFX and the consultant team, the PAG provides input regarding local needs, concerns and potential physical, natural, social, and cultural impacts that are crucial in the evaluation of corridor and alternative alignments.

During the PD&E Study Re-evaluation, one PAG meeting was scheduled. Meeting invitations were sent to representatives from homeowner associations, government agencies, large landholders, community groups and other key stakeholders.

The PAG meeting was held on November 18, 2019 from 9:30 AM to 11:30 AM at the Central Florida Expressway Authority, Board Room, 4974 ORL Tower Road, Orlando, FL 32807. The meeting was attended by 44 people including 11 PAG members, 21 study personnel and 12 other attendees in the audience. Invitation letters were mailed to 45 members of the PAG. A GoToMeeting invitation was sent to members who indicated a need to join remotely. Organizations represented by the PAG members attending the meeting included:

- Deseret Ranches;
- Lake Ajay Village;
- League of Women Voters of Orange County;
- Orange County;
- Osceola County;
- Osceola County Public Schools;
- Suburban Land Reserves;
- Southern Oaks – Lennar Homes; and
- Tavistock Development Company.

The purpose of the PAG meeting was to review the study history and background, discuss the advisory group roles, discuss the project purpose and need, describe the study methodology, review the results of the study re-evaluation, and to receive comments from the group. During this meeting, the CFX study team presented their findings from the development and comparative evaluation of the alternatives and requested input from PAG members. All factors related to the conceptual design and location of the facility, including transportation needs, financial feasibility, social impacts, economic factors, environmental impacts, engineering analysis, and right-of-way requirements were considered during the study.

Comments and suggestions from the PAG included:

- Questions regarding the recommendation of the Minimization Alternative on the eastern portion of the corridor.
- Question about the possibility of any development on the 1,550 acres of dedicated conservation land.

7.1.3 Local Government Officials

The Public Involvement Program involved identifying and communicating with state, regional, and local agencies having a potential interest in this project due to jurisdictional review or expressed interest.

Staff from Orange and Osceola Counties regularly attended the first study progress meeting of each month throughout the re-evaluation process. Elected and appointed officials were provided notice of all public meetings. Municipal and agency officials also participated in the EAG and PAG meetings.

On Thursday, October 24, 2019, a meeting was held at the CFX offices at 4974 ORL Tower Road, Orlando to discuss matters relating to the Osceola Parkway Extension PD&E Study Re-evaluation. Attendees included CFX staff, members of the Osceola Parkway Extension PD&E Study Re-evaluation consultant team, and staff from Orange and Osceola Counties.

Dan Kristoff of RS&H, the consultant for the Study Re-evaluation, provided an overview of the PD&E Study corridor and alternatives. A PowerPoint presentation was shared that included background on the study corridor. Mr. Kristoff discussed the major constraints in the study area and reviewed the typical section and various alignment alternatives. He described in detail the location and attributes of the Boggy Creek and Lake Nona Alternatives on the west end of the study area, and the Split Oak Avoidance and Split Oak Minimization Alternatives on the east end.

Ms. Kelsey Lucas of RS&H then discussed the alternative evaluation matrix, starting with the west segment. She noted the alternatives on the west end had very similar impacts in regard to utilities and contamination sites. Regarding cultural and historic effects, the Boggy Creek Alternative has higher impacts on historic properties than the Lake Nona Alternative: 18 conflicts versus six conflicts.

Regarding the natural environment, the two west alternatives have similar impacts to lakes, floodplains, and wetlands. The Lake Nona Alternative has a higher impact on gopher tortoises (123 acres versus 58 acres). The Boggy Creek Alternative impacts an eagle's nest. The species ratings for the two alternatives are both moderate. Neither alternative would impact conservation or mitigation properties.

Regarding potential social impacts, Ms. Lucas stated the Boggy Creek Alternative has higher impacts to residential and non-residential properties. The Boggy Creek Alternative would have 25 displacements, while the Lake Nona Alternative would have six displacements. The

socioeconomic impacts to special populations would be moderate for the Boggy Creek Alternative, and low for the Lake Nona Alternative, as most of that land is vacant.

The impacts between the two to DRI's are similar, though slightly higher for the Lake Nona Alternative. There is a difference of just under $100 million more in right-of-way costs for the Lake Nona Alternative. She noted the Lake Nona Alternative was being recommended as the Preferred Alternative due to the lower impacts previously mentioned.

Ms. Lucas discussed the evaluation matrix for the east segment alternatives. She noted there were similar utility and contamination site impacts between the Split Oak Avoidance and Minimization Alternatives. There were no historic impacts for either alternative.

She stated a significant distinction between the two alternatives is the impacts to the natural environment. Ms. Lucas noted the avoidance alternative has a higher impact to lakes, ponds, and wetlands; the Minimization Alternative has a lesser impact to caracara, but a higher impact to gopher tortoises than the Avoidance Alternative.

She noted that both alternatives have similar impacts to floodplains. The Minimization Alternative has a high composite rating for potential species impacts; the Avoidance Alternative has a moderate impact.

Ms. Lucas stated as far as social impacts, the Avoidance Alternative involves 16 potential displacements compared to one parcel for the Minimization Alternative. The Minimization Alternative avoids disruption to the residences along Cyrils Drive; avoids potential impacts to the Southern Oaks development where construction is expected to begin soon; and moves the expressway farther away from the Lake Ajay community.

The Minimization Alternative impacts two parks and one trail, which the alternative will overpass. There would be a moderate impact to community cohesion for the Avoidance Alternative, and a low impact in that regard for the Minimization Alternative.

The impacts to DRI's would be the same for either alternative (48 acres each). As far as impacts to residential planned developments, the avoidance alternative would impact 175 acres versus 88 acres for the Minimization Alternative.

Ms. Lucas noted the cost of the Avoidance Alternative is $100 million higher. She noted for the east segment, CFX is recommending the Minimization Alternative as the Preferred Alternative. Mr. Kristoff discussed the recommended Preferred Alternative.

Glenn Pressimone, CFX's Chief of Infrastructure, presented information about the 1,550 acres of proposed dedication land from others, noting about 582 acres would be in Osceola County and 968 acres in Orange County. He noted the proposed conservation lands have been discussed previously with staff at this meeting and with the Split Oak Forest Working Group. He noted the property owners relocated a proposed water treatment facility further south in response to working group requests.

Orange and Osceola County staff attending were:

- Renzo Nastasi, Orange County Transportation Planning Manager;
- Beth Jackson, Orange County Environmental Protection Division;
- Bob Mindick, Director of Osceola County Parks and Public Lands; and
- Tawny Olore, Executive Director of Osceola County Transportation and Transit.

CFX and consultant staff addressed their questions regarding connection to local roads, distance from Lake Ajay, access to Split Oak Forest, funding for restoration and land management.

Seven members of the CFX Governing Board sit on local government boards, including the Orange County Commission and Osceola County Commission.

7.1.4 Other Stakeholder Meeting

The study team met with large landholders, community associations, environmental advocates, and agencies during the course of the study re-evaluation including:

- GOAA;
- Tavistock Development Company;
- Deseret Ranches;
- Suburban Land Reserve;
- Friends of Split Oak;
- Annamarie Reithmiller, Landholder;
- Lake Ajay Homeowners Association;
- South Florida Water Management District; and
- Kimberly Buchheit, Environmental Advocate.

A summary of the stakeholder meetings that occurred throughout the study process are included below:

- On Tuesday, June 5, 2018 a meeting with CFX and Tavistock was held at CFX headquarters. The purpose was to discuss the OPE Study Re-evaluation and its anticipated schedule. CFX requested development planning documents from

Tavistock; they said they would share those. Tavistock asked about potential interchanges or connections to roadways in the Lake Nona area. They also inquired about the corridor width of the planned expressway.

- On Wednesday, June 13, 2018 CFX met with representatives of GOAA at their offices. The purpose was to update GOAA on the OPE Study Re-evaluation. CFX asked about GOAA's Poitras property. GOAA indicated it sold the eastern portion of that property, along with the conservation easements, to Tavistock, but GOAA retained the western portion of Poitras. CFX asked for the master plan documents for that property; GOAA said they would provide those documents. GOAA expressed its strong desire for a direct connection to OIA from OPE.

- On Monday, July 9, 2018 a meeting with CFX and Tavistock was held at CFX headquarters. The purpose of the meeting was to discuss the timeline of the PD&E schedule compared to the application to Florida Communities Trust (FCT). CFX made it clear that the application to FCT is separate from the PD&E study re-evaluation and is not part of the schedule. Discussion centered on potential requirements to secure FCT approval of a land grant and linear facility easement in Split Oak Forest.

- On Monday, July 23, 2018 a meeting with CFX, Tavistock, Deseret Ranches, Suburban Land Reserve, and Hopping Green & Sams was held at CFX headquarters. The purpose of the meeting was to discuss the timeline of the PD&E schedule compared to the application to FCT.

- On Tuesday, August 7, 2018 a meeting with CFX and Tavistock was held at CFX headquarters to share study information with Tavistock staff responsible for the development and build-out of the Lake Nona area and Poitras parcel.

- On Monday, August 13, 2018 the project team gathered at the main entrance to Split Oak Forest for the purpose of a guided tour of the portions of Split Oak Forest potentially affected by the proposed roadway alternatives. Attendees included representatives from the Florida Fish and Wildlife Conservation Commission, Audubon of Florida, Orange County, and Osceola County. The tour primarily focused on traversing the areas affected by the 2015 PD&E Study alignment as well as the previous Refinement 1A alignment.

- On Thursday, August 16, 2018 a meeting with CFX, Tavistock, and Deseret Ranches was held at CFX headquarters. The purpose of the meeting was to discuss the Osceola Parkway Expressway alternatives. Tavistock noted that Del Webb is closing in

December on about 270 acres from Cyrils Drive south. There was also discussion related to the actual land arrangements associated with Refinement 1A from the previous CF&M Study.

- On Wednesday, September 5, 2018 a meeting with CFX, Tavistock, Deseret Ranches, and Suburban Land Reserve was held at CFX headquarters. The purpose of the meeting was to discuss the OPE alternatives. Access to the airport was the main topic of this discussion. Both Tavistock and Deseret representatives agreed near-term access to the airport could be provided via an upgraded Boggy Creek Road and therefore the direct OPE connection to the airport could be deferred to a later phase. Direct access between OPE and SR 417 via new ramps is critical. CFX confirmed the existing Boggy Creek interchange was designed to accommodate the SR 417 / OPE future direct connect ramps to / from the south, but not the direct north / south movement that bypasses the existing diamond ramp termini. Extensive discussion regarding the prominent movement / direction east of Split Oak Forest occurred. Based on information developed through the Northeast Connector Expressway Extension study, CFX suggested that only one east / west limited access facility was needed and it should extend to the southeast linking with Nova Road and eventually connecting with I-95 in Brevard County; the other east / west facility could be a high-capacity arterial.

- On Monday, September 17, 2018 a meeting with CFX, Tavistock, Deseret Ranches, and Suburban Land Reserve was held at CFX headquarters. The purpose of the meeting was to update information for the re-evaluation with a review of alternatives and the impact that recent development plans would have on them. Tavistock informed CFX that the alternative shown would impact a planned water / sewer treatment plant for the Sunbridge development. They also reported that the Lennar property to the west of Split Oak Forest received approval for a planned development. Tavistock indicated its plans for a future extension of Medical City Drive over SR 417. There was discussion about the mainline / through traffic going south toward Nova Road and the need to modify the ramps to 70 mph criteria instead of 60 mph for all alternatives.

- On Friday, September 28, 2018, Public Involvement Coordinator Mary Brooks with Quest Corporation of America met as requested with Annamarie Riethmiller at her 15-acre property, located at 5900 Cyrils Drive. Ms. Riethmiller stated it would be very difficult to get the east-west corridor through this area without affecting the Split Oak Forest. She requested the following be part of the project:

- A wildlife crossing between Split Oak Forest and the wetlands on the east side of her property;
- If her property must be affected, she only wants a partial take – not full – so she can have enough left to build a wildlife sustainability center;
- If the alternative selected is associated with the developer-offered, conservation land dedication, she wants the Split Oak Forest remainder to be used for a wildlife education center;
- PD&E Study field staff must contact her for property access as she has pigs and mini horses that kick; and
- The wetlands that extend east to Absher and south to Jack Brack should be protected at all costs.

- On Monday, October 22, 2018 a meeting with CFX, Tavistock, and Deseret Ranches was held at CFX headquarters. The purpose of the meeting was to discuss the OPE alternatives. They discussed the significant elements of the SR 417 west interchange alternative that combines the OPE and SR 417 systems interchange with a local access interchange at Lake Nona Boulevard and Laureate Boulevard. Joe Berenis, CFX's Chief of Infrastructure, explained that CFX does not allow local traffic and system interchange traffic to mix for safety and operational reasons.

- On Monday, November 5, 2018 a meeting with CFX, Tavistock, and Deseret Ranches was held at CFX headquarters. The purpose of the meeting was to discuss the OPE alternatives, with the key items being the OPE / SR 417 Interchange and the OPE interchange adjacent to Split Oak Forest.

- On Thursday, November 15, 2018, the study team, and Osceola County Commissioner and CFX Board Member Fred Hawkins met with the Lake Ajay Homeowners Association (HOA) at the Eagle Creek clubhouse. The HOA had requested an update on the Osceola Parkway Extension PD&E Study Re-evaluation at its annual meeting. Mr. Hawkins said he was there as an Osceola County Commissioner. The study team presented the alternatives that were being reviewed and fielded questions from meeting attendees.

- On Tuesday, November 27, 2018, CFX met with the South Florida Water Management District for purposes of a pre-application meeting for the Osceola Parkway Extension. The group reviewed stormwater criteria and environmental concerns connected with the proposed project.

- On February 7, 2019, Glenn Pressimone, CFX Director of Engineering, and consultant Public Involvement Coordinator Mary Brooks met with Kim Buchheit to address her questions and comments regarding the Osceola Parkway Extension PD&E Study Re-evaluation.

- On Friday, March 8, 2019 a meeting with CFX and Tavistock was held at CFX headquarters. The purpose of the meeting was to discuss proposed pond sites for the various OPE alternatives.

7.2 Public Workshop

The PIP included conducting a public meeting to present the study re-evaluation information and to gather feedback. An effort to obtain public input regarding the Osceola Parkway Extension PD&E Study Re-evaluation was conducted by meeting with key stakeholders, engaging the media, meeting with the Project and Environmental Advisory Groups, and holding a public workshop.

The Public Workshop was held on November 19, 2019 from 5:30 PM to 7:30 PM in the cafeteria of Lake Nona Middle School, 13700 Narcoossee Road, Orlando, FL 32832. The meeting was advertised in advance with legal ads in the Orange and Osceola editions of the *Orlando Sentinel* and the Spanish-language *El Sentinel* on Sunday, November 3; Sunday, November 10 and Sunday, November 17; the *Osceola News Gazette* on Thursday, November 7 and Thursday, November 14; and the Spanish-language *El Osceola Star* on Thursday, November 7 and Thursday, November 14. An ad was posted in the *Florida Administrative Register (FAR)* on Thursday, October 31, 2019, and a news release was distributed to major media outlets on Wednesday, November 13, 2019. The media outlets that received the news release are shown in Table 7.1.1.

Workshop invitation letters were mailed to 3,607 property owners and tenants within the corridor and to 42 elected officials on Tuesday, October 29, 2019. Public Workshop invitation letters were emailed on Thursday, October 31, 2019, to 48 elected officials and their aides; 31 local, regional, state, and federal agency contacts; and 182 people in the database. Meeting information was also posted on the study re-evaluation website and Facebook page.

There were 433 attendees who signed in at the Public Workshop. This included 396 members of the public and 37 staffers. Officials attending included representatives of the offices of U.S. Senator Marco Rubio, State Representative Mike LaRosa, and Orange County Commissioner Emily Bonilla; Tawny Olore and Joshua DeVries of Osceola County; Beth Jackson of Orange County; and Rax Jung of Florida's Turnpike Enterprise.

Table 7.1.1: Media Outlets Notified of Public Workshop

Discover Osceola	La Prensa	Spectrum News 13, Ch. 13
Osceola News Gazette	Telemundo	WESH-TV, Ch. 2
El Osceola Star	Orlando Business Journal	WKMG-TV, Ch. 6
Orlando Sentinel	Florida Politics	WFTV-TV, Ch. 9
El Sentinel	Osceola Woman	WOFL-TV, Ch. 35
Orlando Weekly	Orange Observer	WOTF-TV, Ch. 43
Sunshine State News	Florida Politics	News Service of Florida
WFLA Radio	Florida's Radio Network	WDBO Radio
WMFE-FM	Celebration News	GrowthSpotter
WTLN Radio	Positively Osceola	Engineering News-Record (ENR)

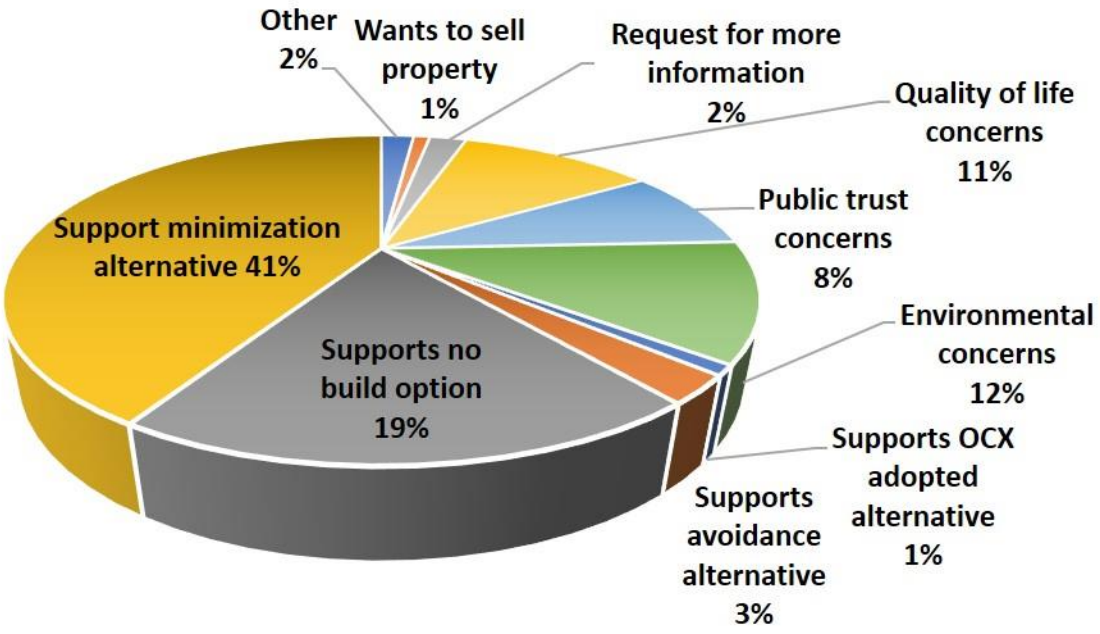
During the workshop, attendees viewed a looped audiovisual presentation that provided an overview of the study re-evaluation process, history and details, alternatives considered, and the proposed preferred alternative. They were also able to view multiple exhibits showing the OCX adopted alternative that was re-evaluated, the alternatives that were developed during the re-evaluation, the typical section of the proposed road, and an evaluation matrix of the various factors considered in recommending a preferred alternative. Study team members were on hand to answer questions and manage three smart screens that allowed attendees to zoom into various locations along the corridor.

7.2.1 Summary of Public Comments

A total of 288 written comments were received during the Public Workshop comment period: 178 were submitted at the meeting and 110 were emailed by November 30, 2019. Figure 7.2.1 reflects the general nature of the comments received. Many comment forms touched on multiple topics, so referenced numbers may exceed the total number of comment forms received.

The vast majority of the commenters supporting the Minimization Alternative indicated their support was tied to full restoration of the dedicated conservation lands to match the quality of Split Oak Forest, funding for ongoing maintenance of the conservation lands, and connectivity of both uplands and wetlands to nearby preserves. Appendix G contains the Comments and Coordination Report for this project.

Figure 7.2.1: Summary of Public Comments



Comment categories and related statements from the Public Workshop are listed below.

- I support the minimization alternative with the "full compensation package."
- I strongly oppose any roads through conservation areas, specifically Split Oak Forest.
- We have options and we need to protect endangered species.
- Split Oak Forest needs to be preserved in perpetuity, as intended by the measures taken in the 90's.
- Ensure critter crossing for animals and light and noise barriers for people.
- Please leave the turn lane open to make a U-turn by Narcoossee Road and Clapp Simms Duda Road.
- Can people at Fells Landing get a wall buffer?
- The proposed roadway will be a few feet from our house. This is a huge negative change in our lifestyle.
- I would like to see Boggy Creek Road widened before the project even gets started. Too many cars using it now.
- Let's put it up for a decision and start building!

7.3 Website

Study information was housed for easy public access on the study's website: https://www.cfxway.com/agency-information/plans-studies/project-studies/osceola-parkway-extension-pde/

The website was updated with the latest alternatives exhibits, schedules, fact sheets, presentations, meeting notices and summaries, photos, and news releases. Information from the EAG and PAG meetings were also posted on the website. Between July 2018 and December 2019, the study website had 4,448 visits. An electronic comment form was available on the website, as well as a request form to receive email updates.

Additionally, a study Facebook page (@OsceolaPkwyExtPDE) provided meeting notices, photos, and links to information available on the website.

7.4 Media Coverage

The Public Involvement Program included the strategy of using the media to help share information and meeting notices about the PD&E Study Re-evaluation.

The news release regarding the Public Workshop was sent to major media outlets on Wednesday, November 13, 2019. Deanna Albrittin of WFTV-TV, Ch. 9 conducted interviews and did a live shot from Lake Nona Middle School for the late evening newscasts.

Table 7.4.1 provides detail on the media coverage of this study.

Table 7.4.1: Media Coverage

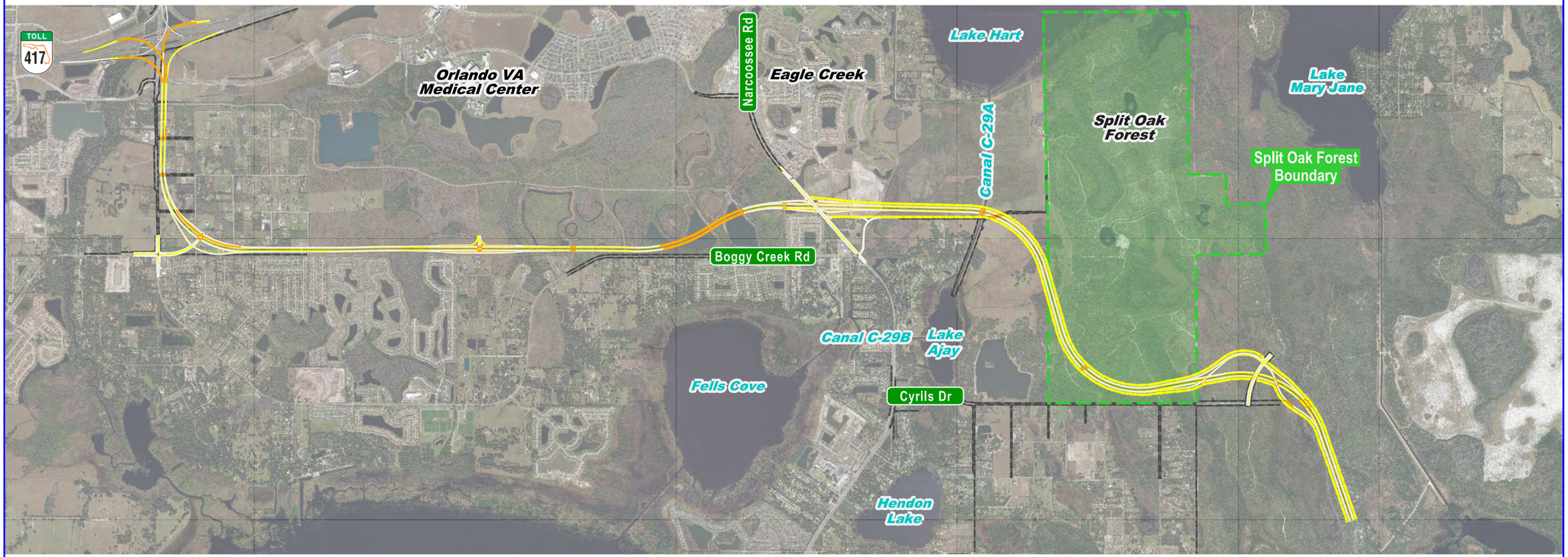
Date	Media Outlet	Medium	Headline	Summary and Link
11/19/18	WFTV-TV, Ch. 9	TV	None	Report about the Public Workshop and plans for the Osceola Parkway Extension. http://mms.tveyes.com/MediaCenterPlayer.aspx?u=aHR0cDovL21lZGlhY2VudGVyLnR2ZXllcy5jb20vZG93bmxvYWRnYXRld2F5LmFzcHg%2FVXNlcklEPTQyNDI1MiZNRElEPTEyNTEyMTE5Jk1EU2VlZD00MTQzJlR5cGU9TWVkaWE%3D
11/19/19	Spectrum News 13	TV/Online	None	Preview story on the Public Workshop and what attendees will see at the meeting. https://www.mynews13.com/fl/orlando/environment/2019/11/19/plan-calls-for-toll-road-through-forest-near-lake-nona
11/19/19	WESH-TV, Ch. 2	TV	None	Report previewing the Public Workshop. http://mms.tveyes.com/MediaCenterPlayer.aspx?u=aHR0cDovL21lZGlhY2VudGVyLnR2ZXllcy5jb20vZG93bmxvYWRnYXRld2F5LmFzcHg%2FVXNlcklEPTQyNDI1MiZNRElEPTEyNTEyMTc5Jk1EU2VlZD02NTI5JlR5cGU9TWVkaWE%3D

Date	Media Outlet	Medium	Headline	Summary and Link
11/18/19	Growth Spotter	Online	CFX consultant to recommend developer-backed route for Osceola Parkway Extension	Report that CFX consultant to recommend route for Osceola Parkway Extension. https://www.cfxway.com/wp-content/uploads/2019/11/GROWTHSPOTTER-11.19.19.pdf
11/5/19	Florida Politics	Print / Online	Orange Co. proposal would lock down Split Oak Forest preserve	Article about an amendment before the Orange County Charter Review Commission. https://floridapolitics.com/archives/310426-orange-co-proposal-would-lock-down-split-oak-forest-preserve
10/31/19	Orlando Sentinel	Print / Online	Split Oak controversy over expressway route re-emerges with tough choices	Report about upcoming meetings on the recommended preferred alternative for the Osceola Parkway Extension. https://www.orlandosentinel.com/news/transportation/os-ne-split-oak-road-controversy-reawakens-20191031-5vq47stbf5fdtflbghmq6lyyja-story.html
10/29/19	Growth Spotter	Online	Tavistock, Deseret Ranches sign $93M right-of-way agreement for Osceola Parkway Extension	Article about a ROW agreement for the Osceola Parkway Extension. https://www.cfxway.com/wp-content/uploads/2019/11/GROWTHSPOTTER-10.29.19.pdf

APPENDIX A

Conceptual Alternatives Plan Sheets

Appendix A



Osceola Parkway Extension
SR 417 to Sunbridge Parkway
Engineering Analysis Technical Memorandum

Contract No.: 001250

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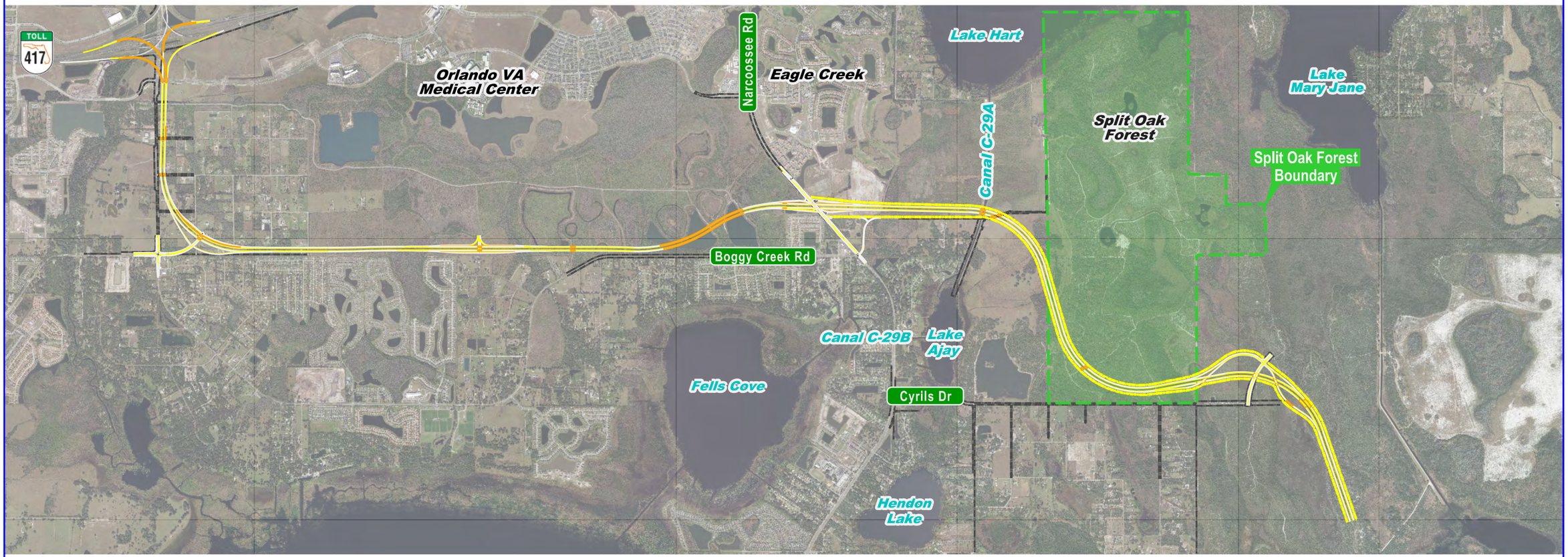
Appendix A



Index of Drawings

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26-43	Boggy Creek Road Alternative
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57-68	Split Oak Avoidance Alternative

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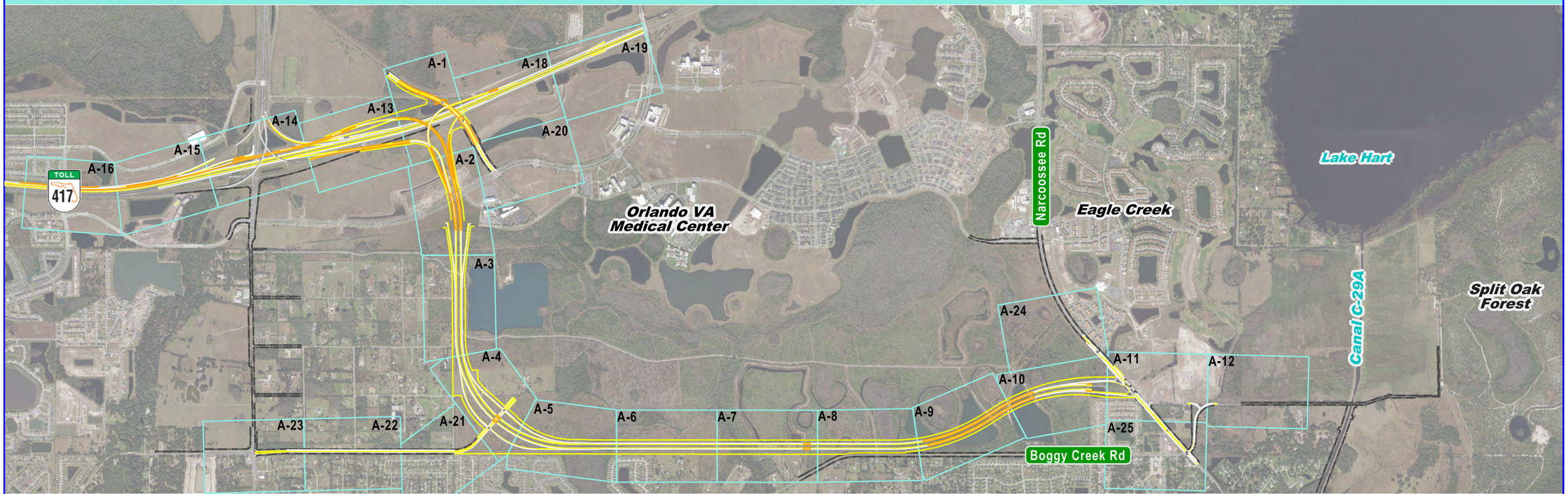
Lake Nona Alternative



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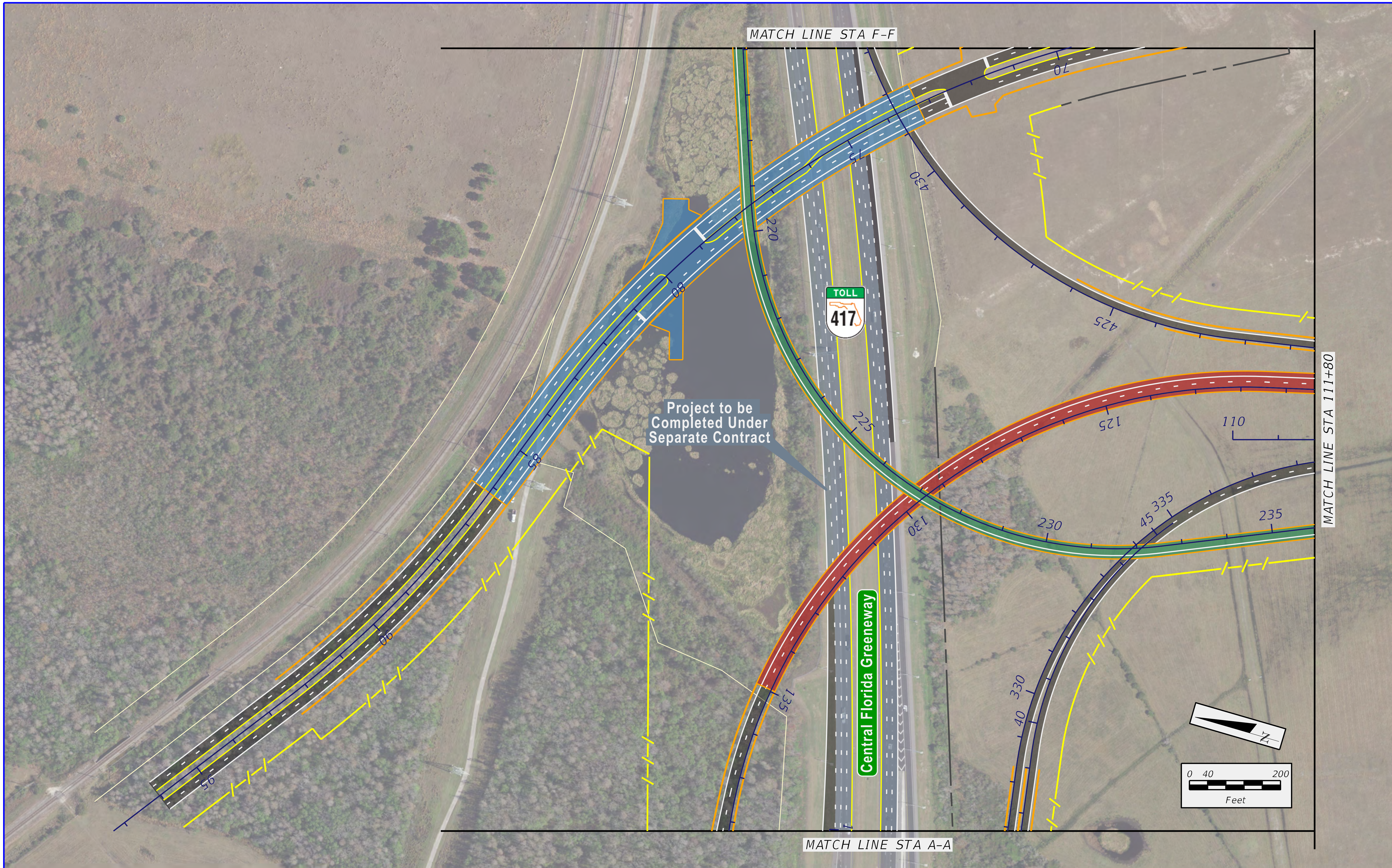

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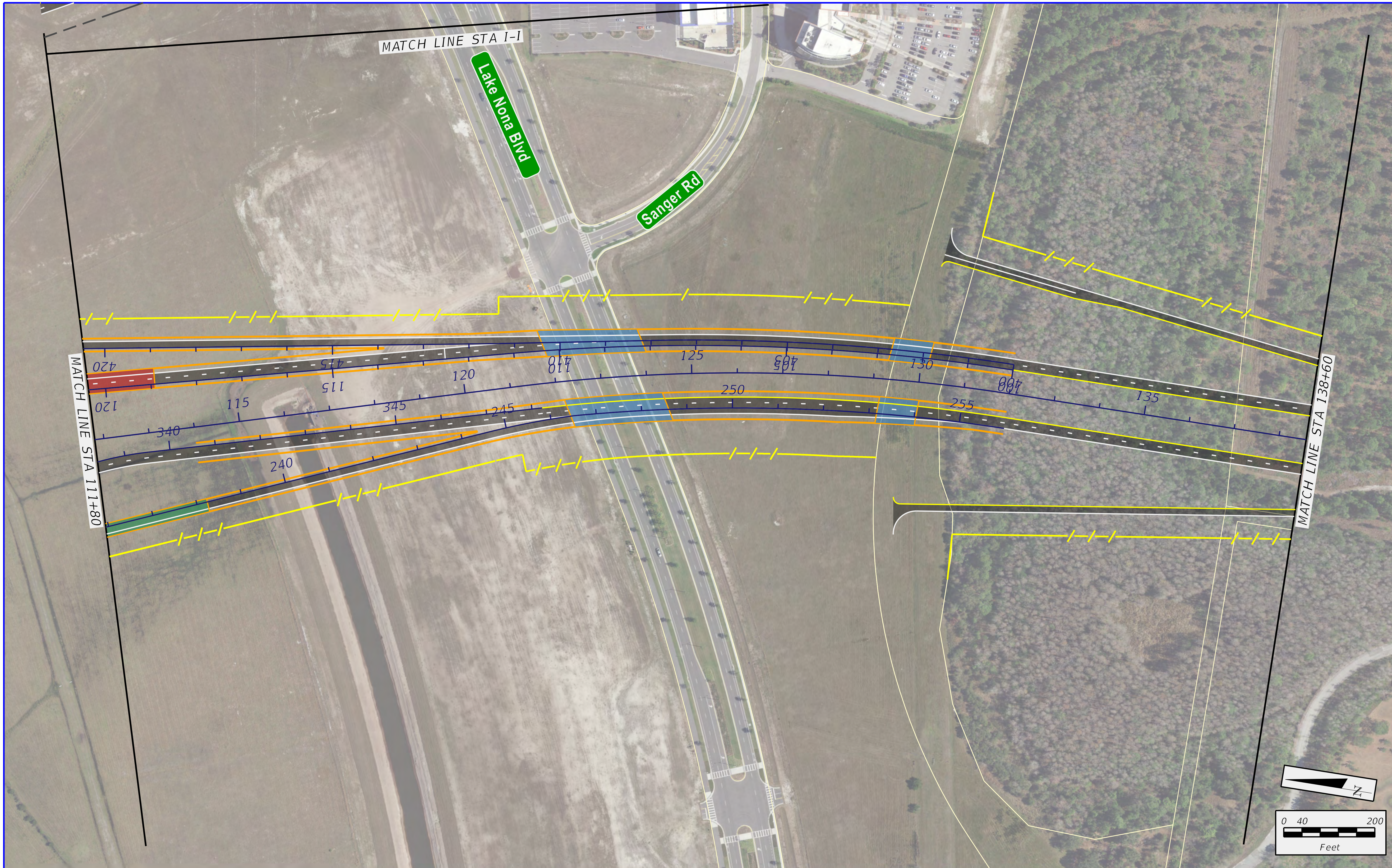
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way	Barrier Wall
Proposed Limited Access Right-of-Way	Pavement
Property Lines	At-Grade Structure
2nd Level Structure	
3rd Level Structure	
4th Level Structure	

Appendix A
Lake Nona
Alternative

SHEET NO.
A-1



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

	Existing Right-of-Way		Barrier Wall		2nd Level Structure
	Proposed Limited Access Right-of-Way		Pavement		3rd Level Structure
	Property Lines		At-Grade Structure		4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-2

11/14/2019 9:13:45 AM DonohueM

MATCH LINE STA 138+60

140

145

150

155

160

165

MATCH LINE STA 165+40

New Hope Rd

Beth Rd

N

0 40 200

Feet

Existing Right-of-Way	Barrier Wall	2nd Level Structure	
Proposed Limited Access Right-of-Way	Pavement	3rd Level Structure	
Property Lines	At-Grade Structure	4th Level Structure	

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Appendix A
Lake Nona
Alternative

SHEET NO.

A-3

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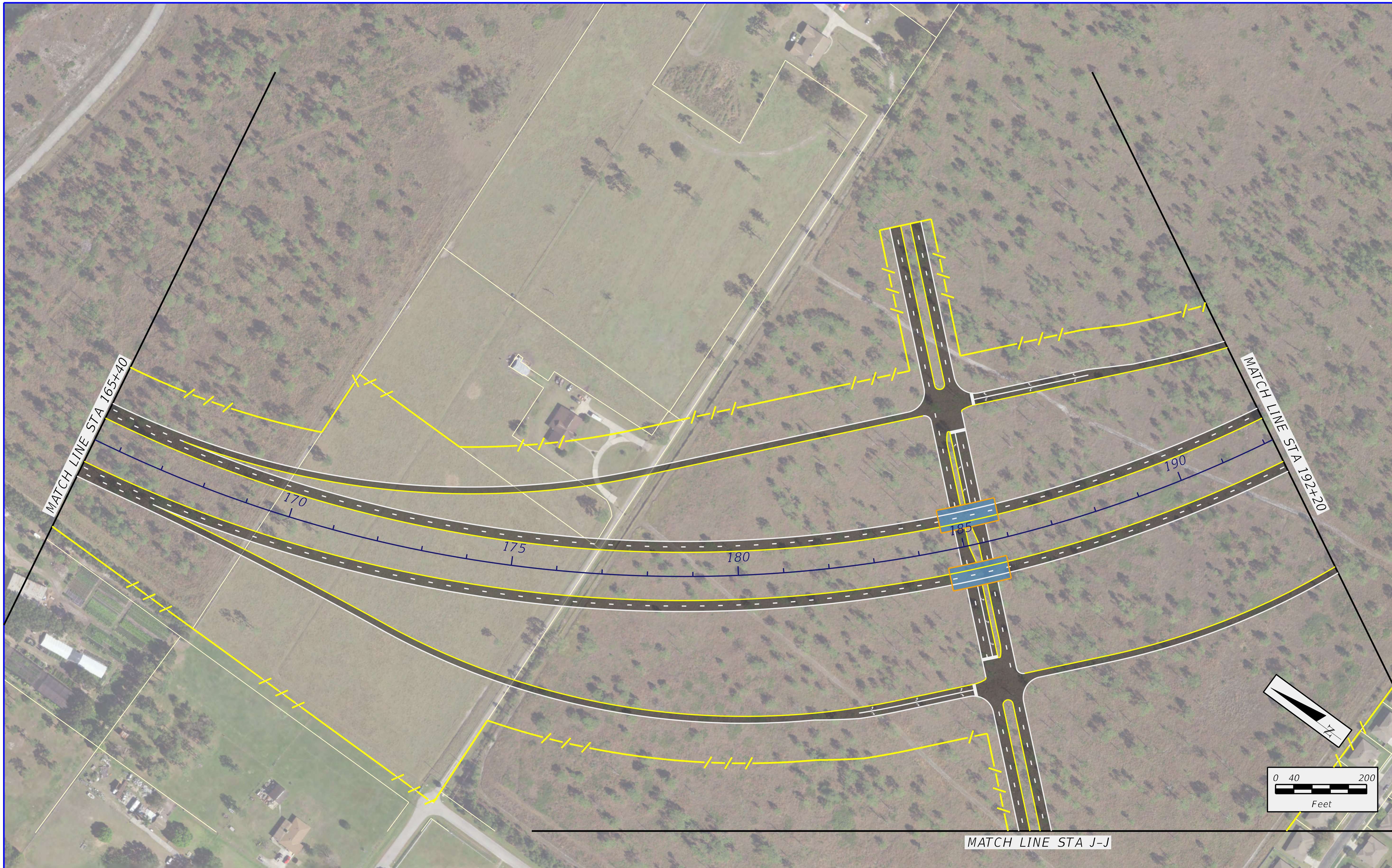

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Appendix A Lake Nona Alternative	SHEET NO. A-4

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Property Lines
- Barrier Wall
- Pavement
- At-Grade Structure
- 2nd Level Structure
- 3rd Level Structure
- 4th Level Structure

DonohueM 11/14/2019 9:15:48 AM

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Appendix A Lake Nona Alternative	SHEET NO. A-5

Legend

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Property Lines
- Barrier Wall
- Pavement
- At-Grade Structure
- 2nd Level Structure
- 3rd Level Structure
- 4th Level Structure

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Donchuet

MATCH LINE STA 219+00

MATCH LINE STA 245+80

220 225 230 235 240 245

Turnberry Reserve

N

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-6

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Donchuell

MATCH LINE STA 245+80

MATCH LINE STA 272+60

250 255 260 265 270

N

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines Barrier Wall Pavement At-Grade Structure 2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Lake Nona Alternative

SHEET NO.

A-7

MATCH LINE STA 272+60

MATCH LINE STA 299+40

275

280

285

290

295

Boggy Creek Rd

Rustic Acres

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.

A-8

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MATCH LINE STA 299+40

MATCH LINE STA 326+20

300

305

310

315

320

325

Boggy Creek Rd

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.

A-9

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MATCH LINE STA M-M

MATCH LINE STA 326+20

MATCH LINE STA 353+00

330

335

340

345

350

Fells Landing

Fells Ln

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.

A-10

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way	Barrier Wall	2nd Level Structure
Proposed Limited Access Right-of-Way	Pavement	3rd Level Structure
Property Lines	At-Grade Structure	4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-11

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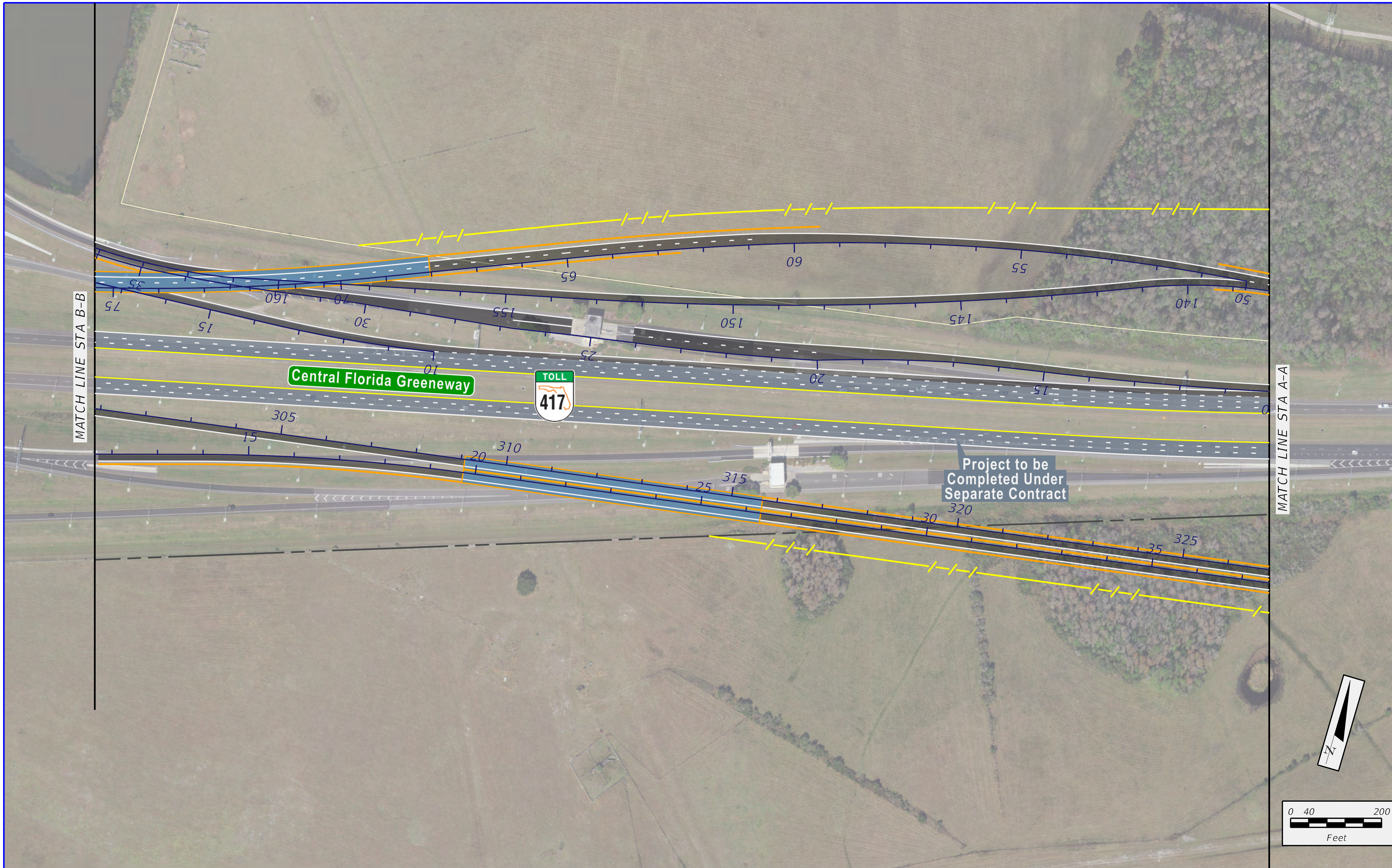
CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Lake Nona Alternative	SHEET NO. A-12



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend		
Existing Right-of-Way	Barrier Wall	2nd Level Structure
Proposed Limited Access Right-of-Way	Pavement	3rd Level Structure
Property Lines	At-Grade Structure	4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-13

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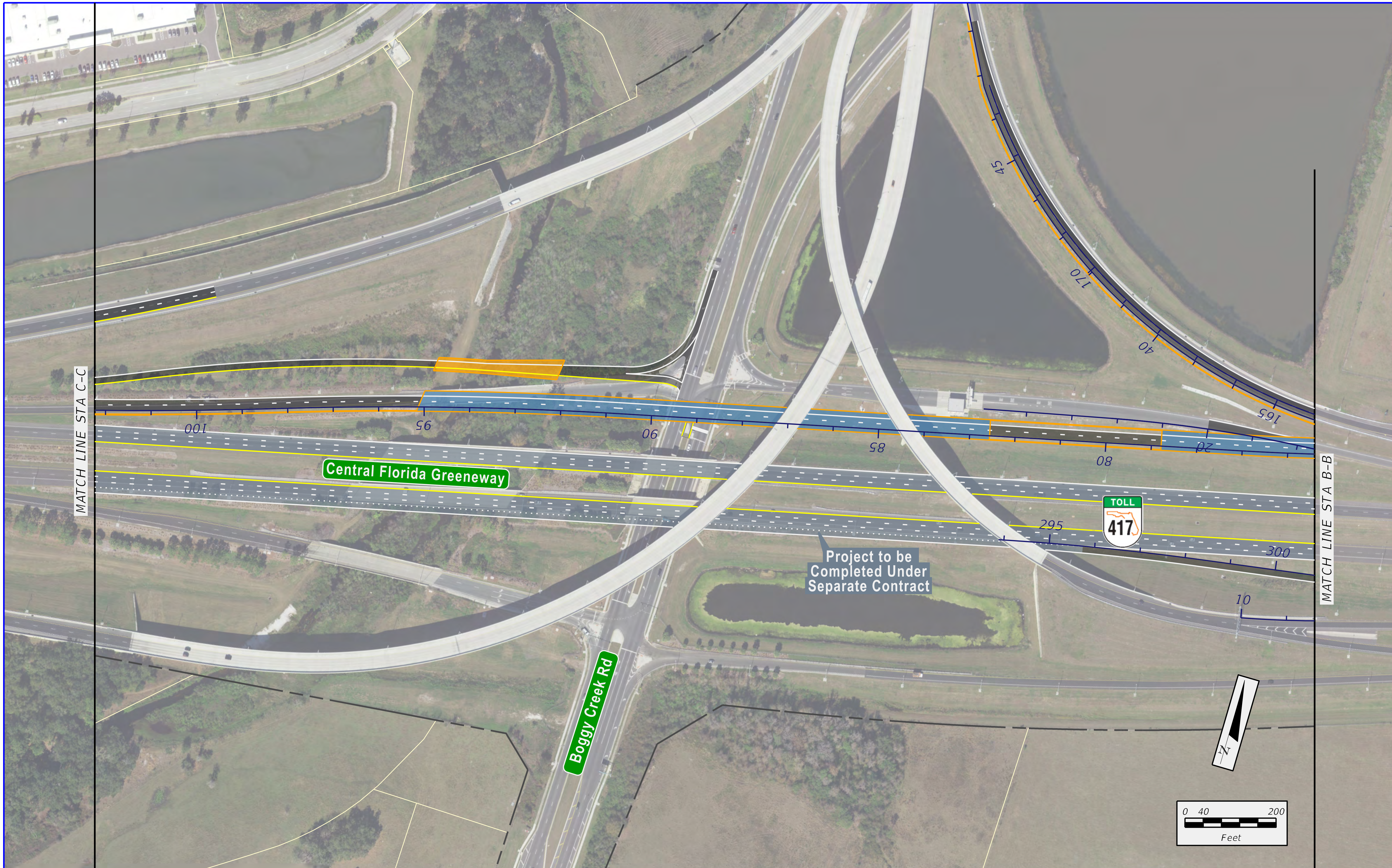

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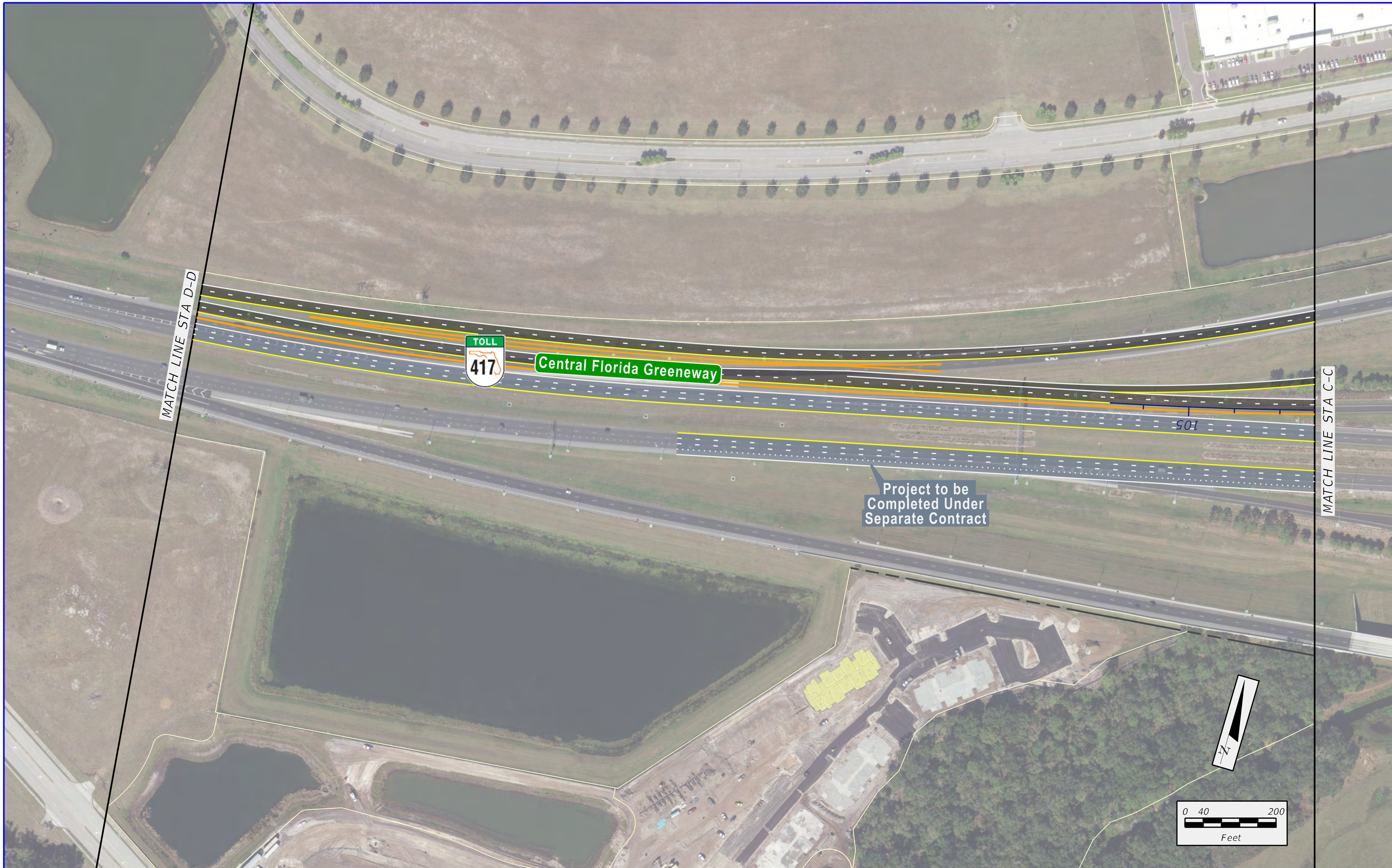
CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Lake Nona Alternative	SHEET NO. A-14



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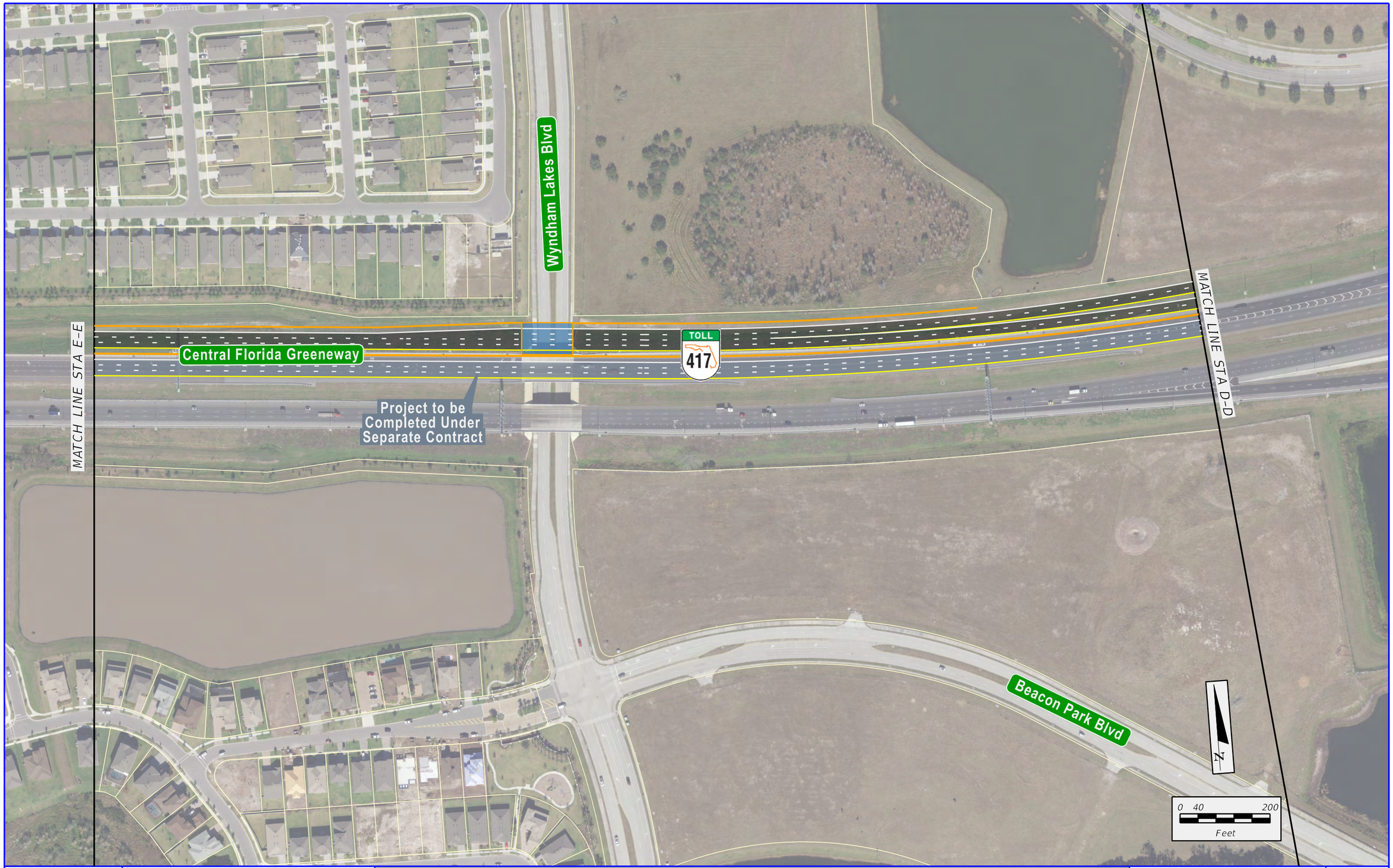
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Legend		
Existing Right-of-Way	Barrier Wall	2nd Level Structure
Proposed Limited Access Right-of-Way	Pavement	3rd Level Structure
Property Lines	At-Grade Structure	4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-15



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Property Lines
- Barrier Wall
- Pavement
- At-Grade Structure
- 2nd Level Structure
- 3rd Level Structure
- 4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-16

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-17

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-18

MATCH LINE STA G-G

Central Florida Greeneway

TOLL 417

Project to be Completed Under Separate Contract

Lake Nona Blvd

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.

A-19

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DonohueM

MATCH LINE STA H-H

MATCH LINE STA I-I

65

60

55

50

Medical City Dr

Lake Nona Blvd

N

0 40 200

Feet

\\vsorfh.com\Files\Transportation\P\07005001_Osceola_Pkwy\emo\Eng Reports\Engineering Analysis Tech Memo\Appendix A\Alt 525C\planset20.dgn

11/14/2019 9:22:41 AM

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Property Lines
- Barrier Wall
- Pavement
- At-Grade Structure
- 2nd Level Structure
- 3rd Level Structure
- 4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.

A-20

11/14/2019 9:23:05 AM DonohueM

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way	Barrier Wall
Proposed Limited Access Right-of-Way	Pavement
Property Lines	At-Grade Structure
2nd Level Structure	
3rd Level Structure	
4th Level Structure	

Appendix A
Lake Nona
Alternative

SHEET NO.
A-21

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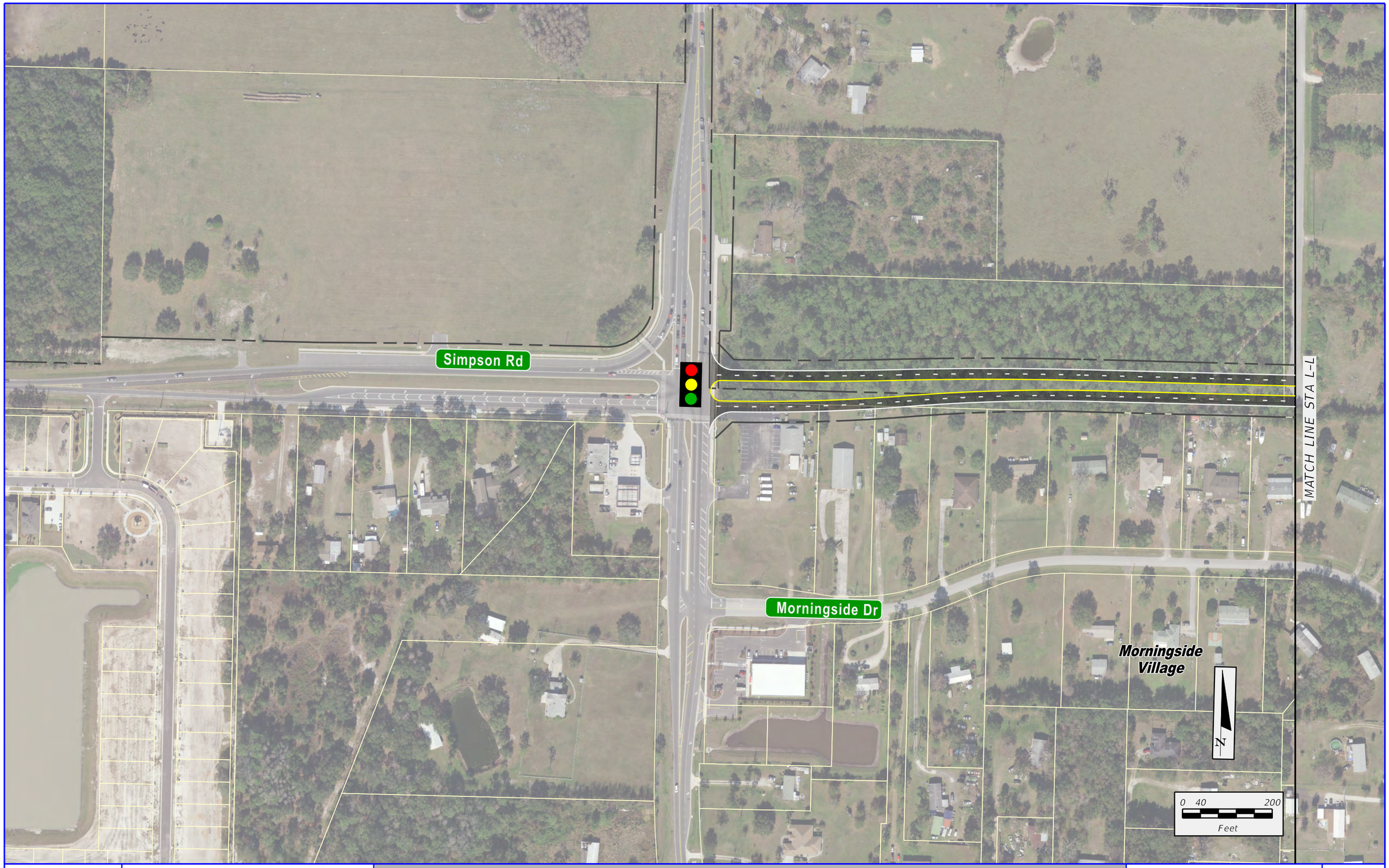
CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Lake Nona Alternative	SHEET NO. A-22



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-23

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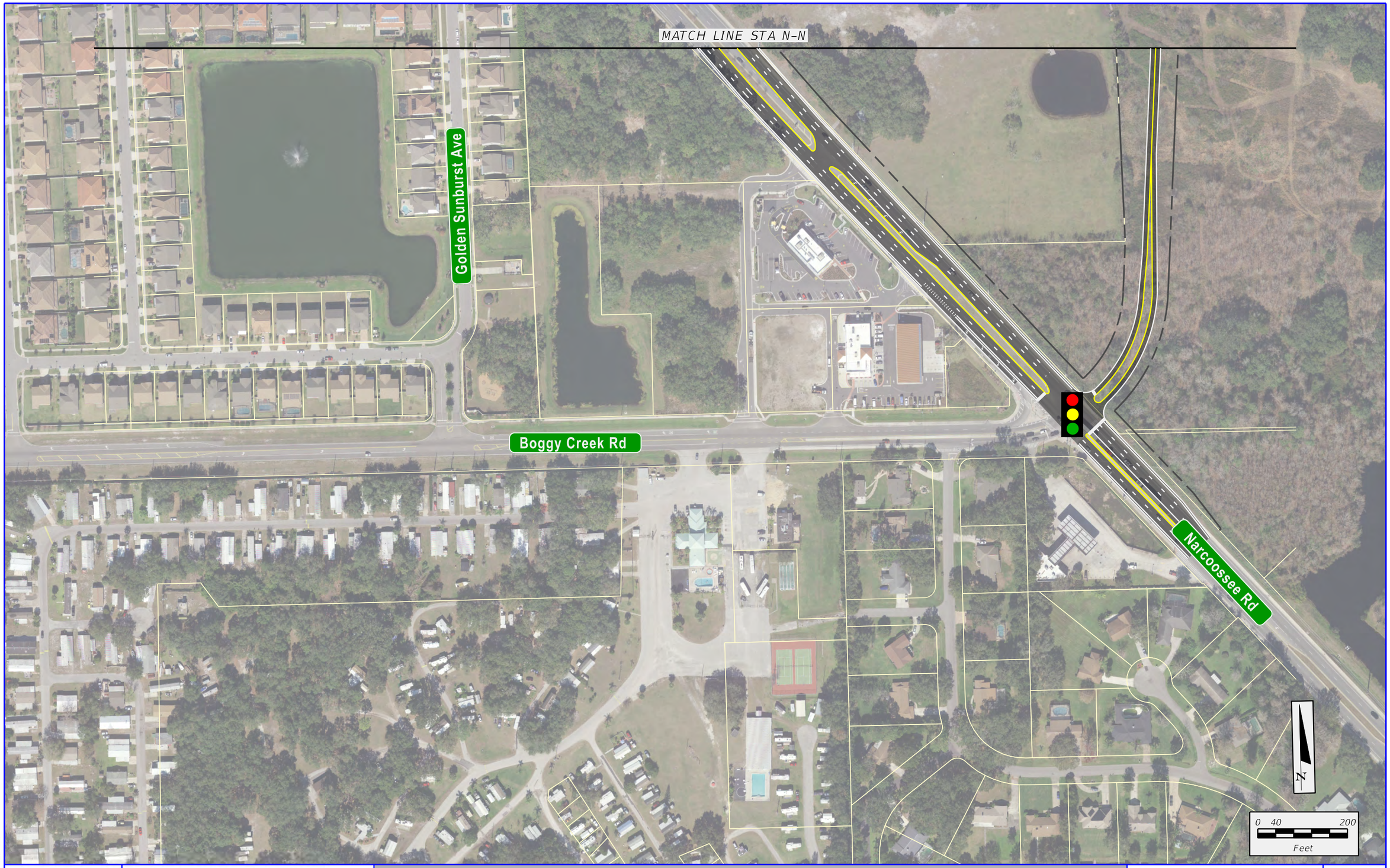
CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-24



CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Lake Nona
Alternative

SHEET NO.
A-25

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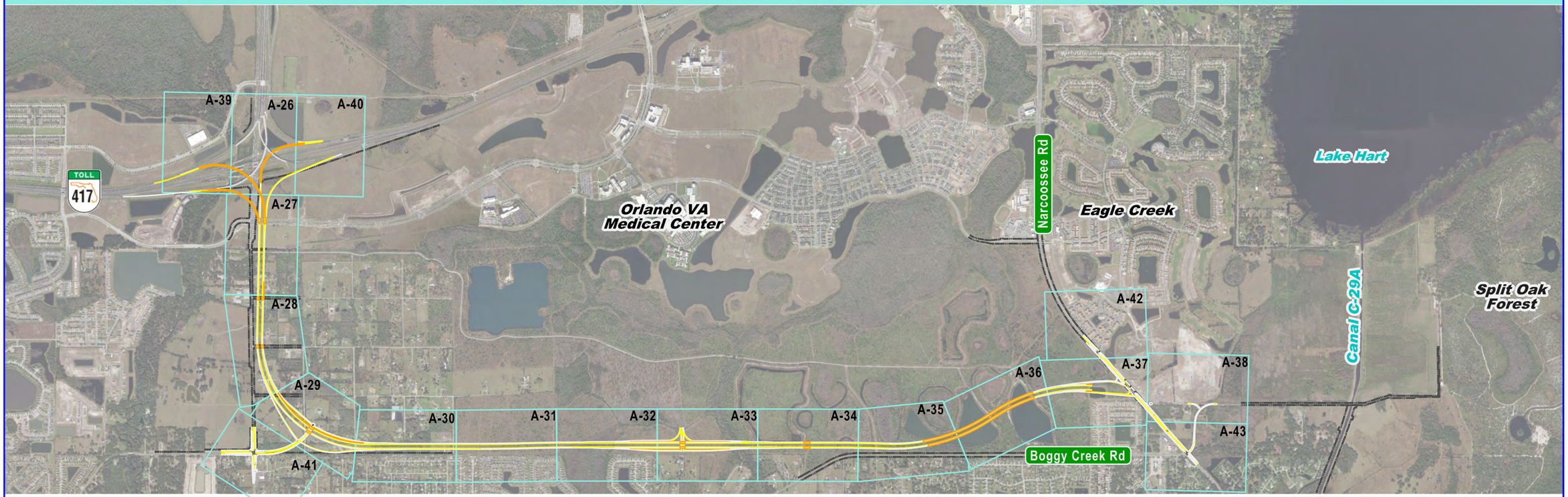
Boggy Creek Alternative



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CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.
A-26

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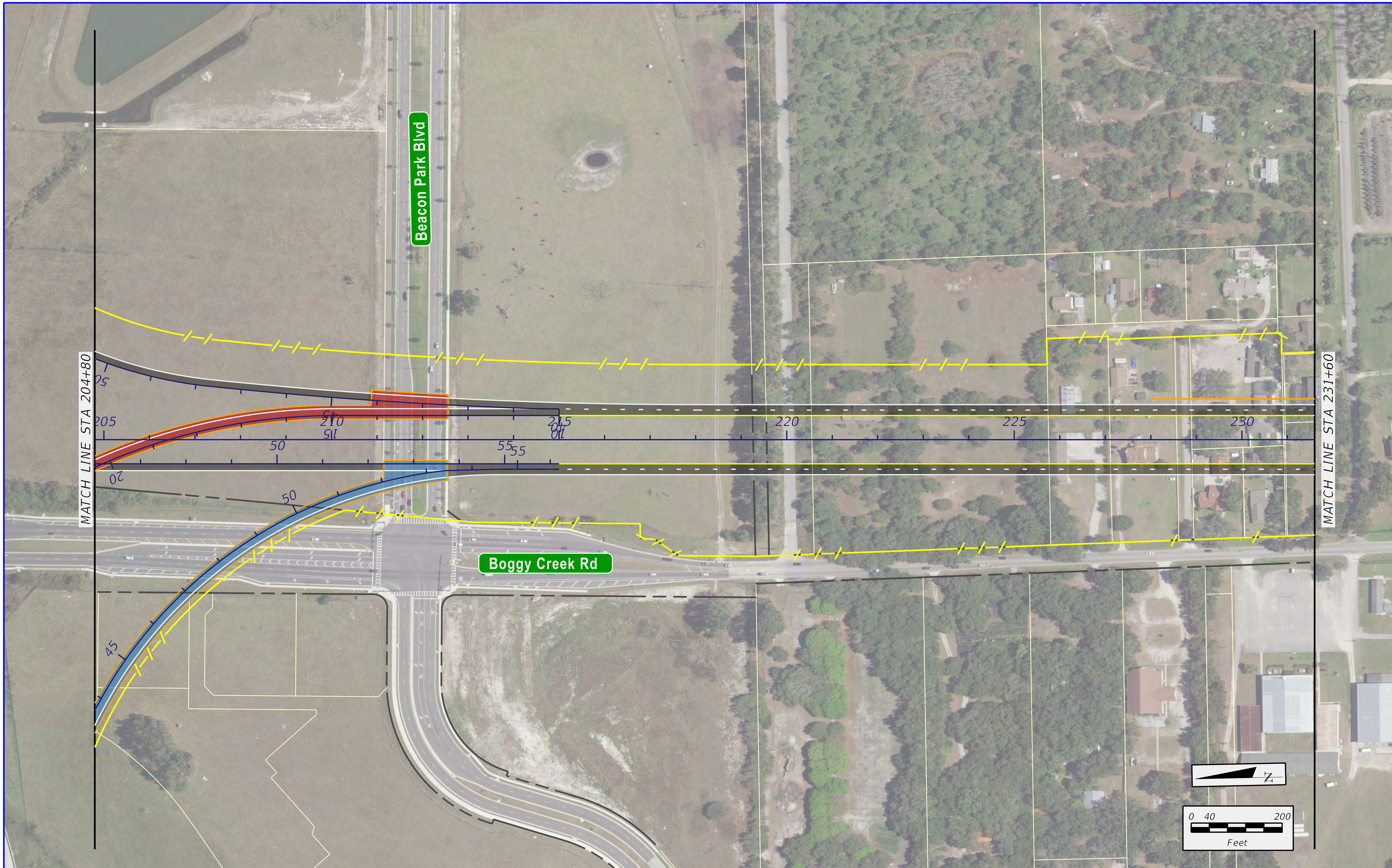

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way	Barrier Wall	2nd Level Structure
Proposed Limited Access Right-of-Way	Pavement	3rd Level Structure
Property Lines	At-Grade Structure	4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.
A-27

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Boggy Creek Road Alternative	SHEET NO. A-28

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DonoharM

Happy Ln

Bicky Rd

MATCH LINE STA 258+40

MATCH LINE STA 285+20

MATCH LINE STA C-C

260

265

270

275

280

285

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.
A-29

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Donahue#

Seth Rd

Hidden Trail Rd

MATCH LINE STA 285+20

MATCH LINE STA 312+00

290 295 300 305 310

N

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines	Barrier Wall Pavement At-Grade Structure	2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Boggy Creek Road Alternative	SHEET NO. A-30

MATCH LINE STA 312+00

315

320

325

330

335

MATCH LINE STA 338+80

Spring Lake Village

Turnberry Reserve

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.

A-31

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DonohueM

MATCH LINE STA 338+80

MATCH LINE STA 365+60

340 345 350 355 360 365

Turnberry Reserve

N

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.
A-32

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MATCH LINE STA 365+60

MATCH LINE STA 392+40

370 375 380 385 390

N

0 40 200
Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

- Existing Right-of-Way
- Proposed Limited Access Right-of-Way
- Property Lines
- Barrier Wall
- Pavement
- At-Grade Structure
- 2nd Level Structure
- 3rd Level Structure
- 4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.

A-33

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CENTRAL FLORIDA EXPRESSWAY AUTHORITY	Osceola Parkway Extension SR 417 to Cyrils Drive Engineering Analysis Technical Memorandum	Existing Right-of-Way Proposed Limited Access Right-of-Way Property Lines Barrier Wall Pavement At-Grade Structure 2nd Level Structure 3rd Level Structure 4th Level Structure	Appendix A Boggy Creek Road Alternative	SHEET NO. A-34

MATCH LINE STA 419+20

MATCH LINE STA 446+00

420

425

430

435

440

445

Boggy Creek Rd

Rustic Acres

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

Osceola Parkway Extension
SR 417 to Cyrils Drive
Engineering Analysis Technical Memorandum

Existing Right-of-Way
Proposed Limited Access Right-of-Way
Property Lines
Barrier Wall
Pavement
At-Grade Structure
2nd Level Structure
3rd Level Structure
4th Level Structure

Appendix A
Boggy Creek Road
Alternative

SHEET NO.

A-35

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MATCH LINE STA 446+00

MATCH LINE STA 472+80

450

455

460

465

470

Boggy Creek Rd

N

0 40 200

Feet

CENTRAL FLORIDA EXPRESSWAY AUTHORITY

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A-36

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